

SIGTTO NEWSLETTER

Issue 53

Autumn - Winter 2025

Message from the General Manager



During these first few months working for SIGTTO, I have enjoyed the opportunity to engage in meaningful discussions with many members and stakeholders. It was gratifying to hear from many members that our refreshed strategy and implementation plans were well received. Increasingly, we receive questions from members who want to participate in the organisation's various committees. With the approval of the implementation plans during our recent November Board meeting, we will be able to share updates more widely with the membership. Clearly communicating the mission of the organisation and reaffirming our commitment to safety and environmental responsibility will continue to be important to align expectations and to ensure that our organisation maintains its status as the authoritative voice in the liquefied gas shipping industry. The refreshed strategy embraces the values of adaptability, partnership, stewardship and member leadership, which will guide our work going forward. Several strategic priorities were identified to help SIGTTO sharpen its focus, improve internal processes, and optimise the

use of resources. Implementation is well underway, and several initiatives have already been launched or are being prepared. As an example, one key area of focus has been improving the visibility and communication of SIGTTO's work. Looking ahead to 2026, we will expand these efforts through audio-visual communication tools that foster more engagement with members and stakeholders.

As part of our strategy revision, we have introduced revised procedures to share incidents and lessons learnt among the members. This will allow a structured approach to capture, address and communicate lessons learnt, focusing on the industry's most significant risks. More information about this important topic is available in this newsletter. We will continue to invite all members and stakeholders to share any incidents or lessons learnt with the SIGTTO Secretariat. Even when anonymity is requested, this information remains highly valuable as it helps strengthen the industry's safety case through updated guidelines or future regulatory revisions.

In September 2025, the Sub-Committee on Carriage of Cargoes and Containers (CCC) finalised the text for the revised IGC Code at the International Maritime Organization (IMO). With the support of the membership, SIGTTO has been able to significantly contribute to this project over many years. In parallel with our core activities, as well as strategic and procedural developments, SIGTTO's panel meetings in Singapore, London and Houston provided vital platforms for member engagement and technical exchange. These gatherings

allowed us to present updates to, and gather feedback from, a broad cross-section of the industry. From regulatory developments to operational innovations, each panel meeting shared innovations and new insights, providing an opportunity to meet and discuss with many members around the globe. With so many knowledgeable people attending, there were high-quality presentations and in-depth discussions. At the Secretariat, we have strengthened our technical team through the addition of a full-time Technical Adviser. We welcome Ibrahim Hassan-Adde to the organisation, and I invite you to read about his experience and thoughts about his new assignment in the following section. I would like to conclude with a call to all members to continue engaging with the organisation.

Meetings in 2026

15th April, Houston

General Purposes Committee 92

16th April, Houston

Regional Panel

20th May, London

Spring Board Meeting

4th June, Oslo

Regional Panel

7th October, London

General Purposes Committee 93

8th October, London

Regional Panel

11th November, Singapore

Autumn Board Meeting

12th November, Singapore

Regional Panel

November, Online

Virtual AGM

Board Meetings & AGM

Technical Visit

In November, SIGTTO began its planned programme in Houston with a technical visit hosted by ExxonMobil and Golden Pass LNG, attended by Board Directors. The visit highlighted the rapid growth of LNG export development and highlighted the importance of strong collaboration among port stakeholders. It concluded with the Sabine Pass pilots hosting an informative meeting with the Board, sharing their perspectives on managing increased shipping movements to accommodate significant LNG export growth.



Board Members on Golden Pass Technical visit in Houston



Board Meeting at ExxonMobil HQ in Houston

Board Update

Following the visit, the Board convened at ExxonMobil's headquarters for the Autumn Board meeting. The Board's strategy session focused on refining SIGTTO's environmental remit and advancing the next phase of strategy implementation. To support these priorities, the Board approved the transition from the Environmental Committee (EC) to a new Environmental Advisory Group (EAG). EAG will provide technical expertise and input to the Board, the General Purposes Committee (GPC) and the Secretariat. This streamlined structure is designed to improve agility and reduce administrative overhead. EAG will offer a flexible forum for members and experts to exchange perspectives on environmental regulations affecting gas shipping and terminal operations. This approach will help SIGTTO remain responsive and authoritative, while maintaining a neutral, non-advocacy stance.

A key part of SIGTTO's environmental remit is to support members in implementing environmental regulations safely and effectively. The organisation will strive to promote and share best practices across the membership. In addition, SIGTTO intends to work together with members and other industry stakeholders to establish a position on technical input to, and support for, regulatory and standard-setting bodies, including the IMO and classification societies. The aim is to help ensure that new or revised environmental regulations are as safe and effective as reasonably possible. Importantly, SIGTTO will not lead on decarbonisation target setting or market-based measures. Where appropriate, SIGTTO will continue to work with other organisations to avoid duplication and strengthen the gas sector's voice in wider discussions. The Society's environmental remit remains anchored in safety and operational relevance for liquefied gas shipping and terminals.

The Board also approved dedicated budgets to support several strategic initiatives, including improved communication tools, strengthening the Secretariat, and updating processes. These measures aim to boost efficiency, the responsiveness of the organisation, and membership engagement. Governance matters included the election of new directors and recognition of outgoing directors and their organisations. Special thanks were extended to Lloyd Bland (Chevron) for six years of dedicated service first as Vice-President and then as

President. The Board commended Lloyd's leadership and the collaborative efforts of several Board members, which have guided SIGTTO into a new phase of growth and development.

The Board elected Carl Henrickson (Shell International Trading and Shipping) as the new President of the Board and Jeroen Deelen (Bernhard Schulte Shipmanagement) as the new Vice-President alongside Vice-President Tetsuya Watabe (JERA). The Board reviewed the Society's financial position, plans for the 2026 budget, and a membership report including updates on recent activities. The meeting concluded with a discussion around membership feedback, recent incidents and lessons learnt.



Carl Henrickson (Shell) and Lloyd Bland (Chevron)



Carl Henrickson (Shell) and Irtiza Sayyed (ExxonMobil)

AGM – 19 November 2025

The Annual General Meeting (AGM) took place online, enabling global participation by members and reflecting SIGTTO's strategy to improve communication. The meeting opened with an introduction from Lloyd Bland and concluded with remarks from newly appointed President Carl Henrickson. Both Lloyd and Carl thanked the members for their engagement and emphasised the importance of continued collaboration.

Members endorsed several important decisions. The minutes of the 2024 AGM were approved, along with the 2024 financial statement and the 2026 budget. Despite a budgeted deficit, SIGTTO reported a surplus for 2024, driven by lower staff costs and increased publication sales. Membership fees will remain unchanged for 2026, providing stability as the organisation plans for moderate expense increases to support strategy implementation. Membership now stands at 186, following new additions such as Yara, OSM Tanker Management and OCEOS.

Board appointments were confirmed, with Carl Henrickson taking on the role of President and Jeroen Deelen Vice-President. Gopal Hariharan (BP) and Yumiko Yao (Tokyo Gas) were confirmed as new Board members. Members also ratified the appointment of Menzies as auditors for 2026.

The AGM highlighted SIGTTO's refreshed strategy, developed through a focus group and member feedback. The revised mission reinforces SIGTTO's role as the industry leader in safety for liquefied gas shipping and terminal operations, while supporting environmental performance. Implementation will focus on modernised processes, improved communication, productive partnerships, and careful financial monitoring.

Members were invited to share incidents and lessons learnt confidentially with the Secretariat and to advise if interested in joining any of the committees or working groups.

GPC Update

Summary of SIGTTO GPC 91 Meeting

The 91st meeting of the SIGTTO GPC convened at the Hilton London Tower Bridge on 7 October 2025, gathering representatives from member companies, observers and the Secretariat. The meeting was chaired by Giovanni Giorgi (OLT Offshore LNG Toscana SpA) with Eleni Lazaratou (Maran Gas Maritime Inc.) as Vice-Chair. The session focused on advancing SIGTTO's mission of promoting safe and environmentally responsible operations for the liquefied gas shipping industry.

Giovanni's tenure as Chair concluded with this meeting. We thank him for his dedication and leadership in the three years he has chaired the Committee. Eleni is the incoming Chair and Vaibhav Kumar (BW LNG) was approved as Vice-Chair.

SIGTTO's Strategy Updates

Hans Weverbergh, General Manager, provided updates on SIGTTO's refreshed strategy, which emphasises adaptability, partnership, stewardship and member leadership. For GPC, this means that revised terms of reference, expectations and induction information will be developed. Going forward, the GPC meetings will include an intersessional online meeting, which will help with the progress of projects.

Publications

The Committee approved Suggested Minimum Content for LNG Carriers Training Courses. More details are provided in the Upcoming Publications section. It also approved the concept draft of the LCO2 and Large LPG and Ammonia Carriers appendix to Recommendations for Liquefied Gas Carrier Manifolds and the concept draft of LCO2 Pressure Relief Systems.

Working Groups and Projects

Emergency Release Systems

This working group is made up of equipment manufacturers and terminal operators and addresses incidents related to the activation of emergency release systems in the industry. Editing of a guidance



Reliquefaction Working Group

document is currently ongoing to improve communication of the technical concepts. Approval of the final draft is planned for GPC 92 in April 2026 and publishing will follow.

Reliquefaction Systems on Gas Carriers

This working group has extensive knowledge of the design and operation of LNG and liquefied petroleum gas (LPG) carriers. It is made up of system designers, shipowners and representatives from classification societies. The main focus is on providing guidance on IGC Code Chapter 7 and other safety aspects such as cargo machinery room design, cargo quality, and loading of subcooled cargoes. It also introduces environmental considerations associated with these systems.

Fuel Gas Supply and Ancillary Systems on Gas Carriers

The liquefied gas shipping industry is evolving, largely driven by the IMO's greenhouse gas (GHG) strategy. This working group consists of system designers, ship operators and representatives from classification societies. Building on the principles described in SIGTTO's (2024) Gas as Fuel on Gas Carriers, the working group is preparing recommendations for gas carriers using LNG, ethane, LPG and ammonia as fuel. It aims to provide recommendations on IGC Code Chapter 16 and the new interim guidelines for ammonia cargo as fuel, on the fuel gas supply systems and ancillary systems for using new fuels, and on existing experience with ships fuelled by LNG, ethane or LPG.



Fuel Gas Supply & Ancillary Systems Working Group

Critical Equipment, Spare Parts and Special Tools in Gas Carriers

As part of ongoing work by the Fuel Gas Supply Systems working group, this team is developing guidelines to assist shipowners in identifying critical equipment and determining the requirements for spare parts and specialised tools. The publication will supplement Recommendations 26 to 30 of the International Association of Classification Societies, which are generic to all type of ships and not fully applicable to gas carriers, which have very specific and different propulsion systems and equipment, allowing the use of cargo as fuel.

A risk-based approach for the identification of the safety-critical equipment is currently under discussion. Drawing on the experience of the group members, the publication may also include a list of equipment and components for readers to consider during their assessments.

LCO₂ Pressure Relief Systems

This working group brings together experts in the shipping of liquefied carbon dioxide (LCO₂), including system designers, pressure relief valve (PRV) manufacturers, shipowners and classification societies. The group is producing recommendations that consider the unique thermodynamic properties of LCO₂ and how gas carriers are designed and operated. More specifically, cargo containment options, such as



Critical Equipment, Spare Parts and Special Tools Working Group

temperature and pressure, content of impurities, and phase behaviour of CO₂, and their impact on pressure relief systems are discussed. The recommendations consider the unique thermodynamic properties of LCO₂ and how gas carriers are designed and operated.

Following IGC Code Chapter 8, a pressure relief system should prevent overpressure in the cargo system, and the publication will include additional aspects specific to LCO₂ systems, such as elimination of the risk of 3-phase flow at PRV discharge, prevention of solid formation at the PRV outlet, safe release in the cargo area, and prevention of uncontrolled pressure loss in the cargo system. The group's findings highlight that advanced engineering solutions will be required to manage the unique challenges posed by the LCO₂ shipping trade.

Manifold Guidelines for LPG, Ammonia and CO₂ Carriers

In relation to current trends in the industry, SIGTTO's (2018) Recommendations for Liquefied Gas Carrier Manifolds does not fully address large LPG and ammonia carriers and the LCO₂ trade. An appendix is under development to include large LPG and ammonia carriers, and a new size category will be added for CO₂ carriers to tackle the expected ship sizes and cargo transfer systems.

Regional Panels



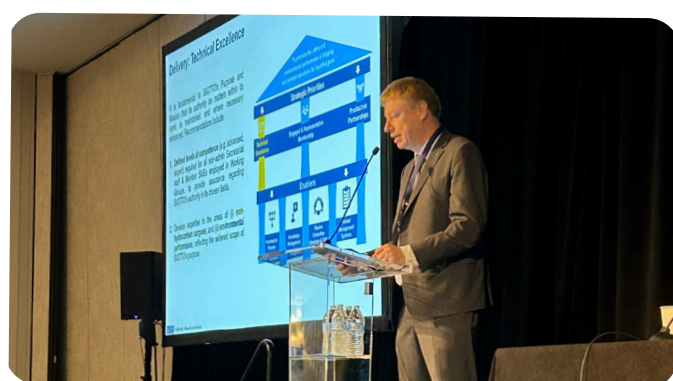
Padmini Mellacheruvu (Lloyd's Register)



Daniel Wesp (ABS)



Roel Henders (IMO)



Hans Weverbergh (SIGTTO)

London Regional Panel

The SIGTTO Regional Panel in London on 8 October 2025 gathered over 130 participants for a day of industry updates and technical discussions. The morning session, chaired by Giovanni Giorgi (OLT Offshore LNG Toscana SpA), covered SIGTTO activities, IGC Code updates, LNG carrier mooring reliability, ammonia dual-fuel ships, and hydrogen carriage regulations.

During the afternoon session, led by Vaibhav Kumar from BW LNG, the discussion focused on several key topics: strategies for reducing GHG emissions in line with IMO regulations, long-term maritime forecasts extending to 2050, approaches to achieving net zero through multi-fuel solutions, the development of ammonia port master plans, and the implications of higher nitrogen levels in LNG carrier fuel systems. The event fostered knowledge sharing on safety and environmental performance.

Houston Regional Panel

The Regional Panel in Houston on 13 November 2025 brought together members from across the LNG and LPG sectors for a full day of technical and safety updates, regulatory insights, and industry innovations. The morning sessions covered updates on SIGTTO activities, pump reliability, the U.S. gas cargo market, the ongoing IGC Code revision and alternative fuels, greenhouse gas regulatory developments, and advances in mooring line technologies.

In the afternoon, discussions turned to innovation and future projects, including floating flexible LNG transfer systems, next-generation gas carriers and innovative cargo containment technologies, US Shipbuilding capabilities for gas carriers, long-term energy outlook and industry collaboration, as well as methane abatement initiatives. SIGTTO members and industry partners are cordially invited to participate in the coming events. There are four Regional Panels and two Webinars planned in 2026.

EC Update

The SIGTTO EC meets virtually when required throughout the year and face-to-face once a year. The last meeting, EC 06, was held on 9 October 2025 in the SIGTTO London office and chaired by Olav Lyngstad of BW LNG AS (as Acting Chair).

EC has agreed to work together with other organisations where possible and, with this in mind, Marius Seteu, Managing Director of the Lloyd's Register Safetytech Accelerator and Project Director of its Methane Abatement in Maritime Innovation Initiative (MAMII), updated the Committee on the Initiative's work on methane abatement. EC will explore the possibility of working with MAMII in the future, in particular using its technology-agnostic independent data and information where appropriate.

LCA Boundary Conditions for LNG Carriers

EC has discussed the life-cycle assessment (LCA) of LNG use as fuel and agrees that a distinct fuel pathway for using cargo as fuel is required.

It is noted that a recent study by Rystad Energy, Well-to-Tank Emissions Assessment 2025 – GHG Emissions Study on the Use of LNG as a Marine Fuel, shows that ships using cargo as fuel can have a reduced well-to-wake value of around 15% compared with an IGF Code ship consuming LNG as fuel. This reduction stems from both avoided upstream transport, transfer, storage and bunkering emissions as well as improved energy integration across the supply chain. These findings support the need to include such configurations clearly in the fuel pathways listed in the IMO LCA Guidelines and provide dedicated default emission factors that reflect the unique characteristics of these pathways.

To raise this issue at the IMO, EC agreed that SIGTTO should co-sponsor an SGMF-led paper for the 20th meeting of the Intersessional Working Group on Reduction of GHG Emissions from Ships, held in October 2025. The paper proposes that the IMO follow established methodologies and standards for conducting LCAs and raises the issue of cargo as fuel in the context of both LNG carriers and LNG bunker ships.

Publications

EC approved two publications, Reduction of Gas Carrier CO₂ Emissions and Reduction of LNG Carrier Methane Emissions. See the Upcoming Publications section for more information.

IMO Activities



Arsenio Dominguez (IMO Secretary General) with Hans Weverbergh and Ian Harrison (SIGTTO)

Review of the IGC Code

It was anticipated that adoption of the amendments to the IGC Code would occur at the 110th session of the Maritime Safety Committee (MSC 110) in June 2025. However, because of the raising of several technical issues it was decided to refer some of the text back to CCC 11 for technical review in September 2025. With this review now complete, the final text is due for approval at MSC 111 and adoption at MSC 112, both in 2026. The revised IGC Code will then enter into force in July 2028. There are over 80 amendments, including clarifications and substantive changes, covering areas such as emergency shutdown requirements, CO₂ carriage, PRV isolation, use of LPG as fuel, toxic cargoes as fuel, and filling limits. SIGTTO has contributed to the revision of the IGC Code with a total of 15 papers submitted during the last four years.

LPG Cargo as Fuel

Alongside its work on the IGC Code, the CCC Sub-Committee developed draft guidelines for the use of LPG cargo as fuel. These were approved by the MSC and published as MSC.1/Circ.1679 (2024). It was then decided to use the guidelines as a basis for amendments

to the IGC Code itself, and requirements for LPG (and ethane) as fuel were incorporated within Chapter 16.

Ammonia Cargo as Fuel

During the review of the IGC Code, to permit the use of ammonia cargo as fuel, the prohibition of the use of toxic cargo as fuel was amended in Chapter 16. This change was fast-tracked through the approval process with MSC 108 approving the amendments and MSC 109 adopting them. These specific amendments will enter into force on 1 July 2026. In addition, the Committee approved an MSC Circular on Voluntary Early Implementation of the Amendments to Chapter 16 of the IGC Code, inviting member states to implement the amendments before the entry-into-force date.

To support this change, it was agreed to develop guidelines for the use of ammonia as fuel through a correspondence group that reported to CCC 11 (September 2025), where the guidelines were finalised. They will now be approved at MSC 111 in spring 2026. SIGTTO's work in this area (LPG and ammonia as fuel) was guided by the principles laid out in SIGTTO's (2024) Gas as Fuel on Gas Carriers. SIGTTO made

extensive comments throughout the correspondence group and later at CCC 11 to ensure the guidelines were aligned with the safety philosophy of gas carriers.

Application of the IGF Code to Gas Carriers – the One Ship, One Code Policy

During the development of the 2014 IGC Code, the IGF Code was also being developed; the application of the IGF Code to gas carriers was suggested and dismissed, thereby establishing the policy of one ship, one code at MSC 95 in 2015.

During the review of the IGC Code this issue was raised again. It was discussed by both the CCC and MSC. The arguments made by SIGTTO in support of the one ship, one code policy can be found in MSC 110/6/9. MSC 110 reiterated the one ship, one code policy and, on the use of alternative fuels on gas carriers, agreed that the CCC should develop guidance specifically applicable to ships covered by the IGC Code. The next step, in September 2026, will be to start discussions on guidance applicable to ships covered by the IGC Code using gaseous products or low-flashpoint fuels other than products listed in Chapter 19 of the IGC Code.

GHG Reduction – Net-Zero Framework

During the 83rd session of the IMO's Marine Environment Protection Committee (MEPC 83) (April 2025), regulatory text was approved for the new IMO Net-Zero Framework. The framework consists of technical and economic measures based on a GHG Fuel Intensity metric, considering well-to-wake GHG emissions per unit of energy used on board a ship. It establishes ambitious objectives to align maritime transport with climate targets set out in the 2023 IMO GHG strategy.

An extraordinary session of the MEPC (MEPC/ES.2) met in October 2025 to adopt the new measure as a new Chapter 5 of MARPOL Annex VI. The meeting did not conclude its deliberations and was suspended before any final decision or adoption. The meeting will reconvene in a year's time. Intersessional work supporting guidelines continues.

Learning from Incidents

Renewed efforts on learning from incidents

Effective learning from incidents is recognised as a key pillar of safety within high-hazard industries. SIGTTO uses incident information to guide the work of the Society, and it recognises that this is an area for continuous improvement particularly due to the increasing size and diversity of the liquefied gas industry. Lessons learned in the LNG and LPG industries can be used to help emerging trades such as CO₂ shipping and large-scale Ammonia shipping.

This article introduces SIGTTO's new initiative to raise awareness on the importance of learning from incidents. The system is designed to provide continuous updates to the industry on incidents and related improvements to regulations, standards and industry best practice. The term Safety Case is used to refer to the grouping of all the regulations, standards and industry best practice that are relevant to the safety of liquefied gas transportation by sea. SIGTTO's main activity centres on the prevention of 5 major accident events, namely: Loss of Containment, Loss of Position, Collision, Grounding and Fire and Explosion (non-cargo related).

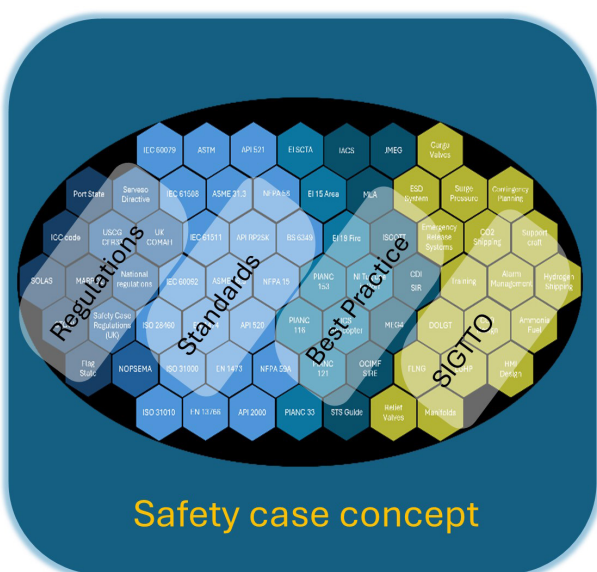
Currently SIGTTO members report incident information directly to the Secretariat in a variety of formats. The Secretariat also receives information from the wider industry, such as Flag States, manufacturers and system designers etc. This incident information is used to improve the effectiveness of SIGTTO's best practice

guidance. Safety improvements cover aspects of design, operations and human factors. Safety improvements are not limited to SIGTTO guidance and the lessons learned help to improve general industry guidance and regulations. SIGTTO periodically proposes updates to IMO IGC Code based on recently developed best practice guidance. The current process is shown as a Safety Improvement Cycle and has proven to have a significant impact on the safety of the industry over many years.



The new initiative is to create continuous updates on incidents and the relevant impact on the safety case to maintain the focus on the value of incident sharing. All SIGTTO meetings and events will have a permanent agenda item for sharing incident information. This will be supported by regular bulletins to the industry via email and other media channels. The aim is to provide a constant reminder on the benefits of incident reporting to encourage enhanced discussion and knowledge sharing. It is also important to ensure that the older lessons learned from previous incidents and the impact on the safety case are not forgotten by gathering information at one place. A dedicated site on the SIGTTO website will be created in the new year and this will be used to host the bulletins and provide links to other resources on incident sharing.

Similar to SIGTTO's newsletter, anyone can sign up for the incident bulletins by signing up for the emails



on the website. In due course other media channels will be developed to share information. Learning from incidents is an area where it is especially beneficial to collaborate with other organisations. Initial conversations with industry partners have been carried out and further meetings will be organised to create a structured approach on further collaboration. All progress will be shared regularly with the industry, and this process will be subject to continuous improvement.

and operational phases of major petrochemical developments.

Ibrahim moved to the UK's Grain LNG terminal in 2017, initially as Commercial Analyst, where he managed the terminal's Annual Unloading Plan, balancing ship scheduling against contractual obligations and operational constraints. During this time, he became increasingly aware of SIGTTO's role in shaping best practice for ship-shore interface management and LNG cargo operations.

In 2019, Ibrahim transitioned to Senior Process Engineer within Grain LNG's asset management team, leading initiatives to improve process safety and reliability. His work included failure mode and criticality analysis of emergency shutdown systems, reliability-centred maintenance upgrades, and the integration of digital diagnostic tools for condition-based monitoring. He also troubleshooted performance constraints across the LNG terminal during both cargo receiving and gas export operations, optimising plant performance and safety.

A certified Functional Safety Engineer, Ibrahim brings with him a strong technical foundation spanning process design, operational risk management, and data-driven reliability improvement. He looks forward to contributing to SIGTTO's technical programme and supporting the Society's mission to promote safe and sustainable gas shipping and terminal operations.

Secretariat Update

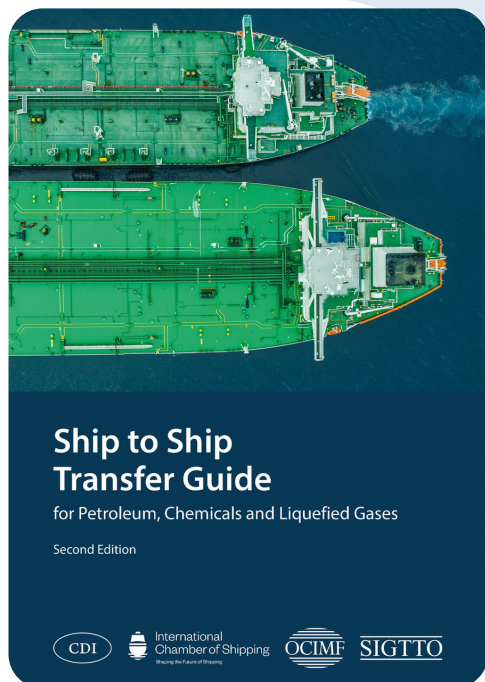
New Technical Adviser appointed



Ibrahim Hassan-Adde has joined SIGTTO as Technical Adviser following more than a decade in process engineering and liquefied natural gas (LNG) terminal operations.

Beginning his career in process design and commissioning with Technip Energies, Ibrahim worked on the design of ethylene crackers and balance-of-plant systems for international clients, including Borealis, ADNOC and QAPCO, before assisting with the commissioning of ethylene plant modifications at INEOS. He was later seconded to Technip's Lyon office for the Shell Franklin high-density polyethylene project, gaining broad engineering, procurement and construction experience across both design

Recent Publications



Ship to Ship Transfer Guide for Petroleum, Chemicals and Liquefied Gas

The second edition of this publication is a comprehensive industry reference jointly developed by the Chemical Distribution Institute, International Chamber of Shipping, OCIMF and SIGTTO. The guide provides recommendations for safe and efficient ship to ship (STS) cargo transfer operations at sea and in port areas.

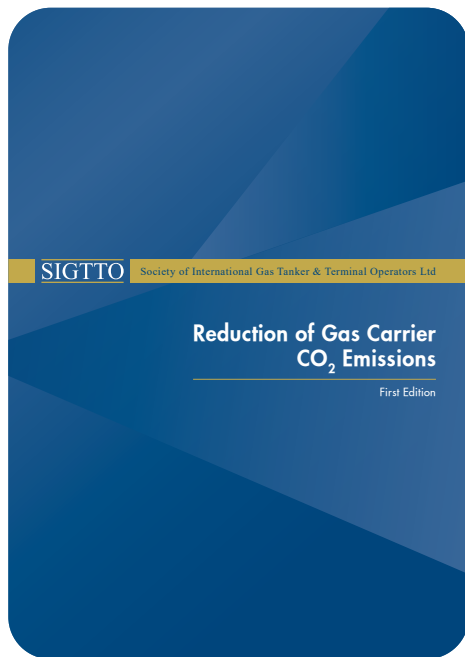
It addresses all aspects of STS operations, including risk assessment, operational planning, human factors, equipment selection, mooring, cargo transfer procedures, and emergency response. The guide introduces updated terminology, has an improved focus on human factors, and has expanded sections on equipment, checklists and compatibility assessments. It also includes guidance for personnel transfer, communications and environmental considerations and is structured to be applicable across cargo types, with cargo-specific procedures for oil, chemicals, LPG and LNG in dedicated chapters.



Suggested Minimum Content for LNG Carriers Training Courses

Training activities play a vital role in SIGTTO's ongoing efforts to address human factors. Building on SIGTTO's (2021) LNG Shipping Suggested Competency Standards, this document provides guidance for designing a management-level training course for officers involved in LNG cargo operations.

The course framework covers the full dry-dock-to-dry-dock cycle, including loading, discharge, STS transfer, non-standard operations, emergencies and environmental considerations. Simulation-based exercises are introduced for normal operations. The document aims to support training providers and shipowners in maintaining high safety standards.

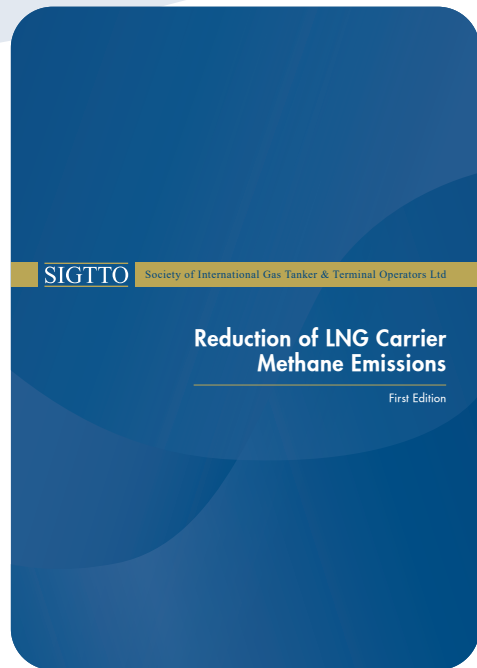


Reduction of Gas Carrier CO₂ Emissions

Expanding on SIGTTO's (2022) Measurement and Reporting of CO₂ Emissions from Gas Carriers, this document offers practical advice to shipowners aiming to lower CO₂ emissions from ships transporting liquefied gas under the IGC Code. It covers emissions linked to ship design, operational activities, and maintenance.

Key approaches include consideration of boil-off gas (BOG) management, choosing advanced cargo containment systems, refining hull and propeller configurations, and implementing state-of-the-art propulsion and power solutions. The guidance also underscores the value of operational tactics such as passage planning, speed and fostering cooperation among industry participants. Hull cleaning is also highlighted as essential for propulsion energy saving.

The recommendations consider IMO metrics such as the Energy Efficiency Design Index, Energy Efficiency Existing Ship Index and Carbon Intensity Indicator, refer to its Ship Energy Efficiency Management Plan, promote the adoption of innovative technologies and alternative fuels, and consider the potential for onboard carbon capture. Overall, the document is designed to help shipowners achieve meaningful CO₂ reductions while maintaining safety.



Reduction of LNG Carrier Methane Emissions

Building on SIGTTO's (2022) Detection and Reporting of Fugitive Methane Emissions from LNG Carriers, this document aims to assist in reducing methane emissions from LNG carriers. It addresses methane releases resulting from ship design and construction, operational practices, and unintentional leaks.

Significant recommendations involve optimising BOG management, selecting effective cargo containment systems, and minimising methane slip from engines. The document also stresses the importance of operational measures such as thorough voyage planning, minimising waiting times before discharge, and encouraging collaboration between shipowners, charterers and terminals. A dedicated section outlines the implementation of leak detection and repair programmes to systematically identify and address fugitive emissions. Overall, the document supports shipowners in achieving substantial methane emission reductions while upholding safety.