

SIGTTO NEWSLETTER

Issue 54

Spring 2026

Message from the General Manager



The ongoing disruption of navigational waters in parts of the Middle East is greatly affecting the liquefied gas industry. Our thoughts are with the many thousands of seafarers operating under uncertainty, and with those affected in ports and terminals. Many member companies have strengthened communication and welfare support, with particular focus on managing stress, workload, fatigue and crew wellbeing.

SIGTTO is also considering recent incident information of relevance to the liquefied gas industry and whether any broader lessons may emerge that could help inform future guidance.

In doing so, we are mindful of how current understanding compares with earlier large spill hazard and risk work, including the Sandia reports, which helped shape risk-based approaches, modelling assumptions, and consequence mitigation in support of site-specific decisions.

Within the SIGTTO Secretariat, we have recently strengthened our team by adding an Operations Manager. Natalie Crosby-Jones brings a wealth of experience within membership organisations. She will help to improve office processes and member communications, allowing the technical team to focus on technical outputs and regulatory engagement.

In line with our revised strategy, we are expanding member engagement through numerous individual meetings and audio-visual initiatives. We held SIGTTO's first public webinar, on ammonia as a fuel for gas carriers, with the support of several of our members with early operational experience. Attendance was strong, indicating broad interest in such initiatives.

We plan more video and webinar productions, focused on safety-, technical- and process-oriented contributions. I invite members to contact the Secretariat if you would like an individual meeting to discuss SIGTTO's current activities and the most practical ways to engage.

I encourage all members and industry stakeholders to share any incidents and lessons learnt with the Secretariat.

As mentioned previously, we will handle any information confidentially. We strongly believe that the entire industry benefits when we avoid having to repeatedly learn the same lessons, when the only barrier is that the right information does not reach the right people in time.

Upcoming Meetings

7 October, London

General Purposes Committee 93

8 October, London

Regional Panel

11 November, Singapore

Autumn Board Meeting

12 November, Singapore

Regional Panel

19 November, Online

Annual General Meeting



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Board Meeting

The SIGTTO Spring Board Meeting was held in London on 20 May 2026 and hosted by Shell. The Board reviewed progress on strategy implementation and confirmed a number of decisions intended to strengthen the Society's governance, technical work and member engagement.

A significant part of the discussion focused on governance and committee effectiveness. The Board approved the Board Terms of Reference and Board Induction Document, as well as the new General Purposes Committee Terms of Reference and Induction Document. Revised Terms of Reference were also approved for the Environmental Advisory Group, Human Factors Focus Group and Regulatory Focus Group.

Together, these documents provide a clearer framework for how key groups operate and are intended to help participants better understand their role, the contribution expected, and the way these groups support SIGTTO's work. The Board noted that the Board documents would help new Directors understand the expectations and workings of the Board, while the GPC induction material is intended to provide an executive-level overview of the GPC's role, boundaries, expectations and ways of working.

The Board also reviewed wider activity across



Board of Directors at the Spring Board Meeting at Shell

communications, membership, partnerships and finances. It endorsed the approach of making future SIGTTO webinars publicly accessible during the live session, while keeping recordings available to members only afterwards. The meeting also reinforced the value of productive partnerships in support of SIGTTO's technical output and wider industry relevance.

Financially, the Society remains in a healthy position, with forecast reserves for 2026 of around £2.4 million and only a slight deficit currently forecast.

It concluded with a clear set of follow-up actions covering webinars, partnerships, event planning, incidents and lessons learnt, and member communication.



Board of Directors at the Spring Board Meeting in London, May 2026

SIGTTO Events



Delegates at the Regional Panel in Houston, April 2026

Houston Regional Panel

The well-attended Houston Regional Panel held on 16 April 2026 brought members together from the liquefied natural gas (LNG) and liquefied petroleum gas (LPG) sectors for a full day of technical and safety updates and industry innovations, as well as an update on SIGTTO activities.

Morning sessions included a mooring incident analysis and an update on PIANC Report 153, tank safety valves, IGC Code updates, LNG marine terminal operations, and an introduction to ammonia dispersion modelling.

During the afternoon sessions, topics covered included greenhouse gas (GHG) inventories and life-cycle assessments (LCAs) in the natural gas supply chain, onboard carbon capture, powering nearshore floating LNG installations from an external source, sea and gas trials on liquefied carbon dioxide (LCO₂) or LPG carriers, LNG heavy hydrocarbons and how they affect rotating equipment, and electric marine terminal loading arms.

We thank all of our speakers for their contributions and all members who attended.

Webinar: Ammonia as a Fuel for Gas Carriers

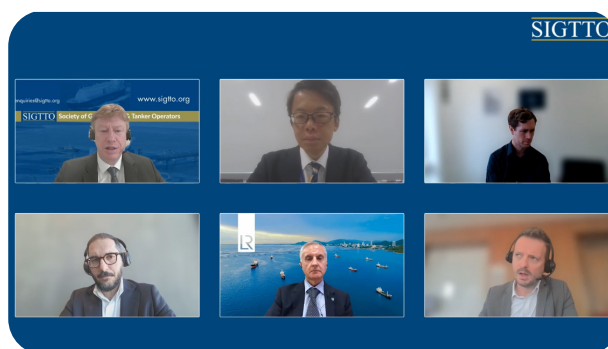
SIGTTO hosted its first public webinar on 27 April 2026 on ammonia as a fuel for gas carriers. Industry experts from shipping, engine design, gas technology, and classification examined the readiness of ammonia as a fuel for gas carriers.

The webinar covered safety fundamentals, technical maturity, and operational considerations, alongside the evolving regulatory framework and forthcoming rule changes relevant to ammonia use on gas carriers.

The presenters gave insightful contributions on the topic, generating many questions from an engaged audience for a Q&A session at the end.

If you were unable to join the webinar, a recording is available exclusively for SIGTTO members. Please log into the [Members Area](#) and find the webinar event listing in the Past Events section.

The webinar was well attended by SIGTTO members and non-members with an interest in the readiness of ammonia as a fuel for gas carriers. This is the first of a regular programme of webinars that we are introducing as part of the revised strategy for member engagement. We aim to increase the opportunities for members to engage with SIGTTO and our activities, as well as broaden the visibility of the Society within the industry.



SIGTTO General Manager Hans Weverburgh with the webinar presenters, April 2026

Oslo Regional Forum

Hosted by Yara Clean Ammonia on 4 June 2026, SIGTTO's Regional Forum attracted registrations from Scandinavia and beyond for a full day of discussion on safety, innovation and the energy transition. The forum concluded with a cocktail reception kindly hosted by Höegh EVI and BW LNG.

The morning programme focused on safety and operational experience. A strong opening session on incident sharing, led by Gard under the title "Sharing experiences – incidents of few, learnings for many", was followed by presentations on goal-based terminal towage tendering, jetty-less solutions for floating storage in congested areas, and reliable LNG moorings with HMPE. Together, these sessions highlighted the value of sharing lessons from high-stakes events and of continuously strengthening operational safety across the liquefied gas sector. Participants gained valuable insights into the causes and consequences of significant events, helping to reinforce practical learning across the industry.

The afternoon sessions reflected the growing relevance of energy transition and CO₂-related developments in the region. Presentations covered Project Yara Eyde, environmental transition in fuels, an update from the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, CO₂ composition in shipping, LCO₂ transportation and innovation in improving the value chain of



Yara Clean Ammonia CEO, Hans Olav Raen addressing the SIGTTO Regional Forum in Oslo, June 2026

CO₂ capture and storage, and INEOS Energy's Greensand Future - Carbon Destroyer 1. This emphasis on CO₂ was well aligned with wider northern European developments, where cross-border CO₂ transport and storage are becoming an increasingly active part of industrial decarbonisation.

The forum also reflected SIGTTO's broader effort to expand regional engagement beyond the meetings held in Houston, London and Singapore over the last few years. As part of the revised strategy for membership engagement, SIGTTO is developing a globally rotating fourth forum to reach members who do not typically attend the core regional events, broaden opportunities for direct interaction, and strengthen engagement across different parts of the world.

We thank the speakers, participants and supporting organisations for their contribution to the event.



Delegates at the SIGTTO Regional Forum in Oslo, June 2026



Gard presenting to the SIGTTO Regional Forum in Oslo, June 2026

GPC Update

In Houston, on 15 April 2026, the SIGTTO General Purposes Committee (GPC) held its 92nd meeting, chaired by Eleni Lazaratou (Maran Gas Maritime Inc.) with Vaibhav Kumar (BW LNG) as Vice-Chair. The Committee focused on enhancing industry safety through its active working groups and projects, addressing emerging risks, new fuels, and evolving operational practices and reviewing incidents shared by members and the public.

During the meeting, the Committee approved several technical publications for release, including guidance on emergency release systems, guidance on carbon dioxide (CO₂) pressure relief systems, an appendix to the manifolds publication addressing large LPG and ammonia carriers, and a briefing paper on manifolds for LCO₂ carriers. These documents will be published shortly.

Working Groups and Projects

Reliquefaction Systems on Gas Carriers

Following previous GPC agreements, this working group has produced a concept draft including reliquefaction and added subcooling systems, as well as aspects related to the effects of cargo quality (eg nitrogen and heavy hydrocarbons). This working group has therefore been renamed to Gas Carrier Cargo Systems.

The group focuses on IGC Code Chapter 7 and

alignment with other SIGTTO guidance, such as emergency shutdown philosophy, thermowells, and gas detection, and incorporates lessons learnt from incidents, including subcooled butane.

Fuel Gas Supply and Ancillary Systems on Gas Carriers

The focus of this working group is on the technical and operational challenges associated with the use of gases as fuel on gas carriers. The work addresses LNG, ethane and LPG as fuel, while also recognising the limited experience of ammonia as marine fuel.

The group examines system design, operational considerations, safety challenges, and regulatory aspects, including interfaces with engines and supporting systems. Engagement with engine manufacturers and classification societies forms part of the ongoing work. The objective is to develop practical guidance that supports the safe and effective use of gaseous fuels across different gas carrier types.

Critical Equipment, Spare Parts, and Special Tools on Gas Carriers

This working group focuses on improving guidance for the identification of safety critical equipment on gas carriers, with particular emphasis on associated spare parts and special tools. The working group



GPC 92 in Houston, April 2026



Fuel Gas Supply and Ancillary Systems on Gas Carriers Working Group, May 2026

addresses how critical equipment can be identified based on function and consequences of failure and proposes relevant spare parts.

Built on strong engagement from ship operators, equipment manufacturers, and classification societies, the aim is to improve reliability, safety and operational resilience across gas carrier fleets.

Liquefied Gas Fire Hazard Management and Contingency Planning for Ports

This project aims to consolidate and update several existing SIGTTO publications on fire hazard management and emergency response at liquefied gas ports and terminals.

The work brings together guidance on fire hazard management, contingency planning, and the role of support craft for both onshore and offshore facilities. The project does not introduce new technical concepts. Instead, it focuses on harmonising existing guidance, incorporating technical improvements, and integrating lessons learnt.

Emergency Preparedness of Gas Carriers

The focus of this working group is on strengthening the emergency preparedness of gas carriers, shifting the emphasis from salvage operations to preparedness, response planning, and coordination, with support from third parties. The group addresses emergency scenarios, availability of specialist equipment, drills, and competency requirements. The objective is to improve industry readiness through practical, experience based guidance tailored specifically to gas carriers.

Naturally Occurring Radioactive Material (NORM)

The NORM project addresses the identification and management of naturally occurring radioactive material associated with liquefied gas shipping and terminal operations.



Critical Equipment, Spare Parts, and Special Tools on Gas Carriers Working Group, May 2026

Started by the Secretariat, the work aims to provide practical guidance on awareness, risk management, and good practice, drawing on member experience and existing regulatory and industry approaches.

The project does not seek to introduce new requirements but to improve industry understanding and consistency in managing NORM-related risks.

Ammonia Masks

Ammonia masks are useful personal protective equipment for minor operational emissions onboard ammonia carriers.

Ongoing discussions are taking place with other organisations related to the safety aspects of these masks, and recommendations will be published as soon as possible.

Environmental Advisory Groups and Focus Groups

Environmental Advisory Group

As part of the refreshed SIGTTO strategy, the Environmental Committee has been reframed as the Environmental Advisory Group (EAG). The EAG continues to support SIGTTO's environmental policy and technical input on environmental matters. The GPC notes the need to oversee the EAG outputs and, because of the International Maritime Organization (IMO) time frames, that this will

require a faster pace.

Regulatory Focus Group

The Regulatory Focus Group (RFG) supports the GPC by providing technical and regulatory expertise on international regulations affecting gas carriers. Current work includes condition assessment programmes and the impact of cargo quality. Outputs from other working groups, including Gas Carrier Cargo Systems, is shared with the RFG for specialist review and feedback.

Human Factors Focus Group

The Human Factors Focus Group (HFFG) continues to provide structured input across multiple GPC initiatives. Current priorities include agreeing consistent definitions of human factors terminology, providing updates on the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, and contributing to working groups and projects. The HFFG also supports improved learning from incidents across SIGTTO activities.

Any Other Business

Several important operational topics were discussed. These include the annual maintenance and testing of relief valves, inert gas requirements on Moss LNG carriers, helicopter winching operations, rollover management, gas detection on membrane LNG newbuilds, and main engine inspections at LNG terminals. Members agreed to discuss these items more in coming meetings.

Overall, GPC 92 demonstrated continued progress across a wide range of safety, environmental and operational priorities, reinforcing SIGTTO's role in developing practical, experience-based guidance for the liquefied gas shipping and terminal industry.

IMO Activities

IGC Code Review Nears Completion

The final text of the revised IGC Code was approved at the 111th session of the Maritime Safety Committee (MSC 111) in May 2026 with a view to adoption at MSC 112 in December 2026.

The revised Code is scheduled to enter into force in 2028.

Ammonia Cargo as Fuel: Fast Tracked Progress

Amendments to Chapter 16 of the IGC Code to allow ammonia cargo to be used as fuel have been agreed. These amendments were fast-tracked, adopted at MSC 109, and will enter into force on 1 July 2026. Member states have also been invited to apply them voluntarily ahead of time.

Supporting this regulatory shift, in its 11th session the Sub-Committee on Carriage of Cargoes and Containers (CCC) finalised the *Interim Guidelines for the Use of Ammonia Cargo as Fuel* in September 2025, that were approved at MSC 111. SIGTTO played a significant role in shaping these guidelines.

Maintaining One Ship, One Code

Proposals to apply the IGF Code to IGC ships have repeatedly resurfaced, but the IMO continues to uphold the long standing one ship, one code principle.



MSC 111, Photo: IMO

SIGTTO has strongly supported this position, submitting papers to MSC 110 and collaborating with the Republic of Korea on clarifying the International Convention for the Safety of Life at Sea, submitting a joint submission to MSC 111.

MSC 111 agreed SOLAS amendments to reflect this policy.

Hydrogen and Alternative Fuel Technologies

Draft interim guidelines for the use of hydrogen as fuel were completed at CCC 11 and approved at MSC 111. Meanwhile, the IMO has launched a comprehensive work plan to develop a safety framework for new technologies and low carbon fuels.

Upcoming work includes:

- Revising guidelines for methyl/ethyl alcohol fuels
- developing guidance for low flashpoint oil fuels
- starting discussions on onboard carbon capture systems
- reviewing toxicity consistency across codes
- exploring requirements for fuel reforming and liquid organic hydrogen carrier production.

Other sub committees are also beginning work on wind assisted propulsion, batteries, and revision of the IMO Nuclear Code.

Although this work is focused on IGF Code ships, work on guidelines specifically for gas carriers may follow where deemed necessary.

Carriage of Hydrogen

Amendments to the interim recommendations for the carriage of liquefied hydrogen in bulk have been agreed and approved at MSC 111.

GHG Reduction Measures

Short Term Measures: CII Review Continues

The Marine Environment Protection Committee (MEPC) has begun a two phase review of the Carbon Intensity Indicator (CII). Phase one concluded at MEPC 83 in April 2025, setting reduction factors for 2027 to 2030 at 2.625% annually. SIGTTO has submitted two papers addressing CII's application to LNG carriers, which will be considered in phase two.

At MEPC 84 in April 2026 work started on phase two, including enhancing the Ship Energy Efficiency Management Plan framework and considering how to align the CII with the IMO Net-Zero Framework.

Consideration of potential revisions to other CII metrics will begin at MEPC 85 in November 2026 and continue through 2028.

Mid Term Measures: the Net-Zero Framework

The IMO's proposed Net-Zero Framework, combining technical and economic measures based on a GHG Fuel Intensity metric, remains under debate. An extraordinary MEPC session in October 2025 failed to reach agreement, being adjourned for what has been described as "the longest coffee break in IMO history" (for a year).

The Framework was discussed at MEPC 84 in



MEPC 84, Photo: IMO

April 2026, including additional proposals. It was agreed to continue the work at two intersessional meetings leading up to MEPC 85 (and the 2nd extraordinary session of the MEPC) in November/December 2026.

Environmental Advisory Group

SIGTTO's environmental engagement focuses on:

- Supporting members with the safe and practicable implementation of environmental regulations affecting liquefied gas carriers and terminals
- promoting and sharing best practices for managing environmental regulations for gas shipping and terminal operations
- collaborating with members and non-governmental organisations to provide technical input and support to regulatory and standard-setting bodies, including the IMO and classification societies, to ensure that new or revised environmental regulations are as safe and effective as is reasonably practicable.

The EAG has an initial focus on GHG reduction in liquefied gas shipping and terminal operations, including energy efficiency, methane slip, CO₂ and other relevant GHGs.

ISWG-GHG 21 and MEPC 84

In preparation for ISWG-GHG 21 and MEPC 84, the EAG reviewed technical papers of specific interest to gas carriers.

The issues considered included measurement of methane and nitrous oxide, methane slip, a potential new carbon emission conversion factor value for LPG and default emission factors for various gases.

Upcoming Publications

The following publications have been approved by the GPC and are due for release in 2026.

Emergency Release Systems (ERS)

Recognising the critical role of Emergency Release Systems (ERS) as part of terminal safety equipment, this new publication will provide comprehensive guidance for different ERS configurations and reflect advances in safety practices and technological developments.

It will focus on guiding terminals when considering the specification of the ERS specific to each terminal and their risk profile. It highlights the need to understand the failure modes of the equipment and their consequences and provide guidelines to manufacturers for the design, as well as considerations for maintenance and testing, operational practices and personnel competence.

The guidance applies to conventional onshore and floating terminals, including FSUs, FSRUs and LNG FPSOs, and the guidance is written in a way that can be used for cargoes such as LNG, LPG, ammonia, CO₂ and high-pressure natural gas transfers.

This publication will replace *LNG Emergency Release Systems – Recommendations, Guidelines and Best Practices* (2017), which will be withdrawn.

LCO₂ pressure relief systems

This publication builds on *Carbon Dioxide Cargo on Gas Carriers* (2024) and provides recommendations considering the unique thermodynamic properties of LCO₂ and how gas carriers are designed and operated. More specifically, cargo containment aspects such as temperature and pressure, impurities, and phase behaviour of CO₂, and their impact on the pressure relief systems.

Building on the IGC code Chapter 8, the recommendations ensure that the pressure relief

system prevents overpressure in the cargo system, but further adds aspects specific to CO₂ cargoes such as the risk of two-phase flow at the PRV discharge, solid formation at the PRV outlet, release in the cargo area, and risks of the uncontrolled pressure loss in the cargo system.

Briefing paper on manifolds for LCO₂ carriers

Recognising the evolving nature of the CO₂ transport sector, this document provides information focused on operational experience, design interfaces and emerging practices. It supports early project development while allowing flexibility as the trade matures. The document was developed through engagement with shipowners, terminals, manufacturers and classification societies.

Recommendations for Liquefied Gas Carrier Manifolds (2018 – Information)

In relation to the current trends in the industry, *Recommendations for Liquefied Gas Carrier Manifolds* (2018) does not fully address large LPG and ammonia carriers' trade. To address this, a paper will be published which proposes additional categories for vessel sizes and adds recommendations for the cargo transfer systems.

Membership

Since our last newsletter, we have welcomed the following company as a SIGTTO member and look forward to collaborating with them to enhance industry safety:



To become a full member of SIGTTO, a company must have an equity interest in, or operate, a gas tanker or terminal. Associate membership is available to companies that have entered into a contract to build a gas tanker or terminal, moving to full membership once operational. Associate membership is also open to harbour authorities, tug vessel providers for liquefied gas terminals, classification societies, and specialist training providers.

Our Membership Manager, Susan Humphrey, would be happy to assist with any membership enquiries. She can be reached at membership@sigtto.org

Secretariat Update

Natalie Crosby-Jones has joined SIGTTO as Operations Manager, following over a decade working in the membership sector, including senior positions at the Conservative Party and most recently at The Royal College of Radiologists.

Natalie is focused on delivering an exceptional experience to members at all points of the member life cycle and putting members at the centre of the organisation's activities. With a particular interest in member engagement, Natalie uses her marketing background to create and execute data-driven communication strategies to improve engagement and the member experience.

Natalie also has extensive experience leading cross-functional teams to successfully deliver complex organisational transformation projects of high strategic value. With a skill for process improvement and systems change, she has led several teams through changes to customer relationship management systems, including

the development of process documentation to support system adoption and consistent use across the organisation. Natalie has maximised system benefits, using data to drive process efficiencies and improvements in the member experience.

Natalie is looking forward to using her experience to support the delivery of the SIGTTO Strategy and supporting the Society in its mission to promote safe and sustainable gas shipping and terminal operations.

