

SGMF, as the leading organisation supports its members and the wider industry by providing guidance, best practices and technical information on the safe and sustainable use of marine fuels.

Drawing from our membership's collective knowledge and experience, leading publications and guidelines have been produced, including, but not limited to:

- Introduction guides for all IGF code fuels, like Ammonia, Methanol, Hydrogen and Methane
- Safety, technical and training & competence guidelines, including the proven and widely used BASiL tool
- Environmental and greenhouse gas life cycle studies
- Formal Safety Notices (FSNs)

The majority of the SGMF publications and guidelines are available to both member and non-member organisations and can be found at:

Member organisations:

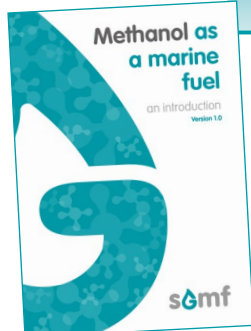
<https://www.sgmf.info/library/topic/sgmf-publications-technical-guidance-notice>

Non-member organisations:

<https://www.sgmf.info/shop>

Free resources:

<https://www.sgmf.info/resources>

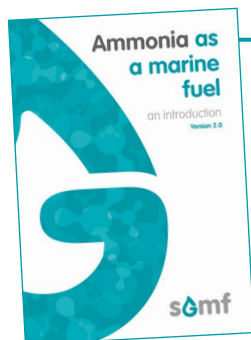


NEW!

METHANOL AS A MARINE FUEL – AN INTRODUCTION

ISBN: 978-1-7395354-3-8 (FP17-01)

Methanol as a Marine Fuel – An Introduction explains what methanol is and provides fundamental knowledge about its chemical composition and properties. While this Guide offers a high-level overview, its primary objective is to provide key information that will aid the emerging methanol-fuelled shipping industry in its development and adoption of this alternative marine fuel.



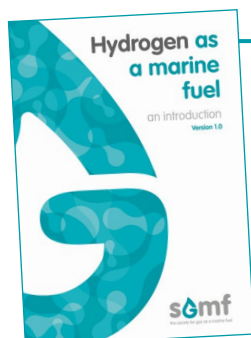
AMMONIA AS A MARINE FUEL – AN INTRODUCTION

ISBN: 978-1-7398703-6-2 (FP15-01)

Updated Version 2.0

This high-level publication sets out the key facts about ammonia (NH_3) as a marine fuel, including:

- what it is
- how it is used
- its safety and environmental profile
- NH_3 bunkering facilities and processes
- how personnel involved in handling NH_3 should be trained
- technical considerations of ships fuelled by NH_3

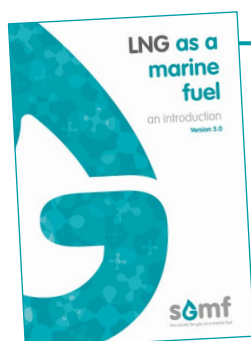


HYDROGEN AS A MARINE FUEL – AN INTRODUCTION

ISBN: 978-1-7398703-7-9 (FP16-01)

This high-level publication sets out the key facts about hydrogen (H_2) as a marine fuel, including:

- what it is
- how it is used
- its safety and environmental profile
- H_2 bunkering facilities and processes
- how personnel involved in handling H_2 should be trained
- technical considerations of ships fuelled by H_2



LNG AS A MARINE FUEL – AN INTRODUCTORY GUIDE

ISBN: 978-1-7398703-8-6 (FP00-01)

Updated Version 5.0

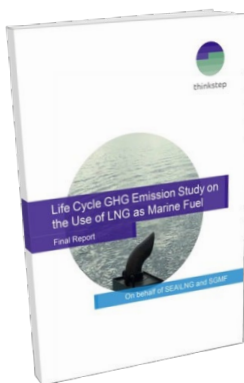
This high-level publication sets out the key facts about LNG: what it is, how it is used, its environmental and safety profile, which countries have invested in it, LNG ship design and systems, bunkering facilities and process, how it is purchased, and how personnel involved in handling LNG should be trained and familiarised.

NEW!



SGMF WHITE PAPER – NAVIGATING GREEN SEAS: ADDRESSING EMISSIONS FROM LOW AND ZERO CARBON MARINE FUELS

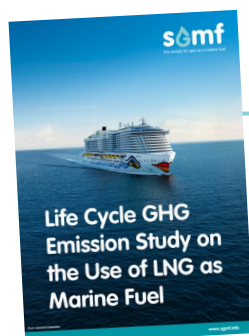
Navigating Green Seas - Addressing emissions from low and zero carbon fuels is intended to align maritime practices with global emission reduction targets, integrating an emission reduction culture into ship design and operations, whilst also addressing the challenges presented by low and zero carbon marine fuels and their emissions. In addition, it provides a high-level summary of the principal greenhouse gases (GHG) and pollutants linked to the use of methane/liquefied natural gas (LNG), methanol, ammonia, and hydrogen, discussing their implications for both the environment and human health.



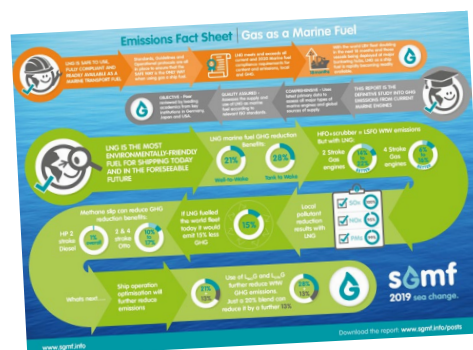
LIFE CYCLE GHG EMISSION STUDY ON THE USE OF LNG AS MARINE FUEL

This publication sets out the results of the *Well-to-Wake (WtW) Greenhouse Gas (GHG) Emissions Lifecycle Research Study* on the use of LNG as a marine fuel. The study, which was commissioned by SGMF and SEA\LNG, was conducted by the independent specialist consultants thinkstep and reviewed by a panel of academic experts. The fact that it was carried out on a complete WtW basis makes it the most accurate study of the life cycle GHG emissions and local pollutants from LNG as a marine fuel, as compared with current and post-2020 conventional marine fuels.

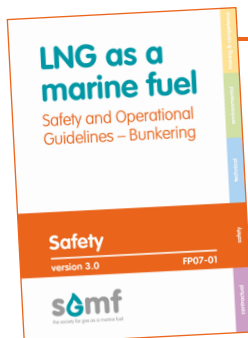
<https://www.sgmf.info/posts/launched-advanced-greenhouse-gas-ghg-emissions-lifecycle-research-study>



Download the summary [here](#)



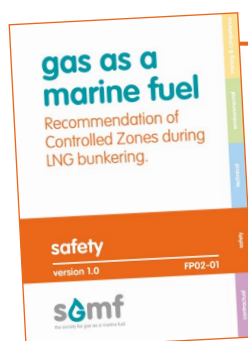
Download the infographic [here](#)



LNG AS A MARINE FUEL - SAFETY AND OPERATIONAL GUIDELINES - BUNKERING (VERSION 3.0)

ISBN: 978-1-9996669-7-2 (FP07-01)

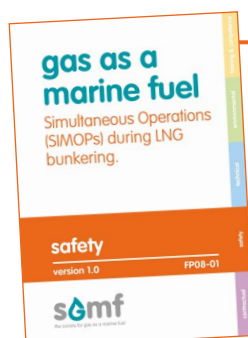
This 2021 edition applies a new and holistic approach to LNG bunkering. The reader is taken on a journey starting from the design stage of the vessel and the supply bunkering facility, via the planning and preparation stages of the bunkering location, to the operations to be completed during the bunkering by a vessel fuelled with LNG. For each stage, recommendations are made to all the stakeholders involved in the bunkering of LNG-fuelled ships with the focus on ensuring that they are bunkered safely, reliably and efficiently, and that undesirable fugitive gas emissions do not take place during operations.



RECOMMENDATION OF CONTROLLED ZONES DURING LNG BUNKERING

ISBN: 978-0-9933164-8-7 (FP02-01)

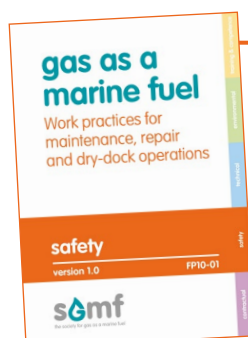
This key publication sets out how to effectively determine the location and size of so-called controlled zones around the bunkering infrastructure of an LNG supplier and a gas-receiving ship to facilitate the safe transfer of LNG during bunkering. It does not provide rules or definitive safety distances but the framework on which to base operational and safety procedures.



SIMULTANEOUS OPERATIONS (SIMOPS) DURING LNG BUNKERING

ISBN: 978-0-9933164-7-0 (FP08-01)

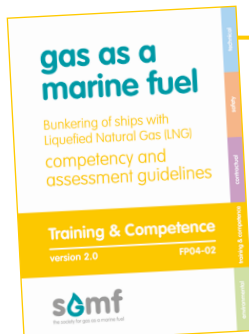
While it is imperative that safety is not compromised when transferring LNG fuel, it is also important that other operations can be undertaken in port at the same time (SIMOPS) so as to enable – and in some cases, improve – efficiencies in port. This new publication looks at the issues involved in SIMOPS, and how to manage the risks.



GAS AS A MARINE FUEL: WORK PRACTICES FOR MAINTENANCE, REPAIR AND DRY DOCK OPERATIONS

ISBN: 978-1-9996669-3-4 (FP10-01)

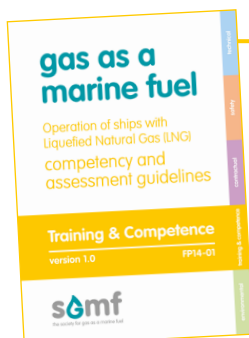
Members can download this publication from the members' library. The document provides new guidance on work practices for maintenance, repair and dry-dock operations for ships that use gas/LNG as fuel, to help ensure their safe maintenance.



BUNKERING OF SHIPS WITH LNG - COMPETENCY AND ASSESSMENT GUIDELINES VERSION 2.0

ISBN: 978-0-9933164-5-6 (FP04-02)

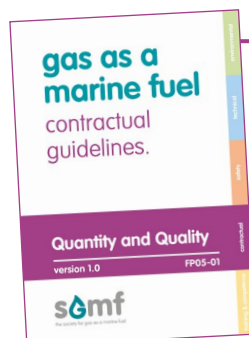
These guidelines can be used by any individual, organisation or authority on either side of the fuel transfer process to identify what knowledge, understanding and standards of competency should be expected of all those involved, either directly or indirectly, in the bunkering of ships with LNG, so that the operation can be completed safely and effectively.



OPERATION OF SHIPS WITH LIQUEFIED NATURAL GAS (LNG) - COMPETENCY AND ASSESSMENT GUIDELINES

ISBN: 978-1-9996669-5-8 (FP14-01)

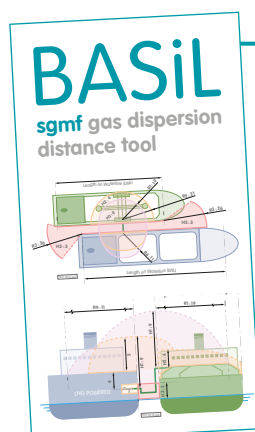
This document focuses on all the activities relating to the preparation, storage, handling and use of gas as a fuel – from the storage tank through to delivery to the consumer. It describes the full range of competencies that a skilled engineer and their supporting team need to have to be able to operate the gas fuel system through the complete voyage cycle (from dry-dock to dry-dock). It therefore goes beyond the scope of the IMO's Standards of Training, Certification and Watchkeeping (STCW) and is intended to provide guidance for the development of training courses on the storage and use of gas as fuel.



CONTRACTUAL GUIDELINES - QUANTITY AND QUALITY

ISBN: 978-0-9933164-1-8 (FP05-01)

This publication provides an overview of the custody transfer process of LNG from the supplier to marine vessels. It explains the variables that need to be measured and documented for the main marine engine types. The later sections of this guide describe the proven techniques, equipment and methods available for measuring both LNG quantity and quality, all of which provide sufficient accuracy and auditability to support the custody transfer process. Its aim is to educate and inform and not to be prescriptive any one method over another.



BASiL GAS DISPERSION TOOL

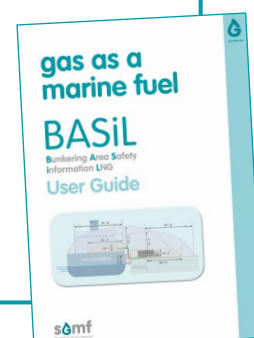
BASiL (Bunkering Area Safety information LNG) is SGMF's automated LNG gas dispersion tool. It can be used to manage bunkering consistently by defining a safety zone that depends on the type of bunkering operation being undertaken.

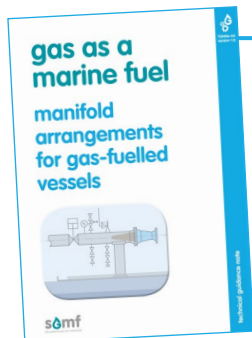
This tool is now available to non-members.

Before running any reports, the SGMF publication *Recommendation of Controlled Zones during LNG Bunkering* (ISBN: 978-0-9933164-8-7) should be read and fully understood, as well as the BASiL User Guide.

Demos of BASiL can be found at:

<https://www.sgmf.info/why-us/#basil>
<https://vimeo.com/665585386>

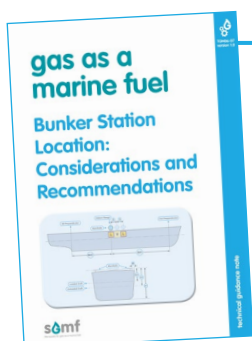




MANIFOLD ARRANGEMENTS FOR GAS-FUELLED VESSELS

ISBN: 978-1-9996669-0-3 (TGN06-04)

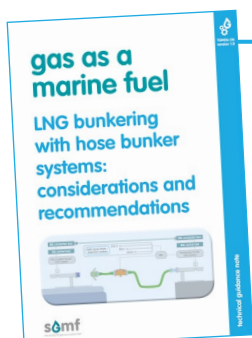
One of the factors affecting a gas-fuelled vessel's ability to interface with bunkering facilities is the manifold arrangement fitted on board the vessel. This Technical Guidance Note (TGN) is intended to facilitate focused discussion and industry alignment on manifold arrangements, with an emphasis on safety and compatibility.



BUNKER STATION LOCATION: CONSIDERATIONS AND RECOMMENDATIONS

ISBN: 978-1-9996669-4-1 (TGN06-07)

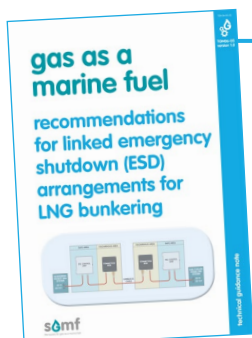
This Technical Guidance Note (TGN) addresses the industry requirement for guidelines on the location of bunkering manifolds and/or bunker stations installed on gas-fuelled vessels (GFVs) subject to the **International Code of Safety for Ships Using Gases or Other Low-flashpoint Fuels** (IGF Code). The publication was written in association with operators of LNG-fuelled vessels, naval architects, designers and classification societies, and complements the existing SGMF guidelines *Manifold Arrangements for Gas-Fuelled Vessels - TGN 06-04 Ver1.0*, published in 2019 to address the manifold layout and fitting arrangements on board GFVs.



LNG BUNKERING WITH HOSE BUNKER SYSTEMS: CONSIDERATIONS AND RECOMMENDATIONS

ISBN: 978-1-9996669-2-7 (TGN 06-06)

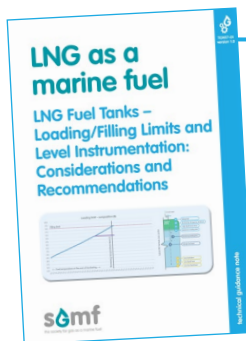
Members can download this publication from the members' library. The Technical Guidance Note (TGN) provides recommendations for the safe handling and operation of hose bunker systems that use cryogenic flexible hoses as the main means for transferring LNG. It specifically addresses hose selection and the associated handling and functional safety principles.



RECOMMENDATIONS FOR LINKED EMERGENCY SHUTDOWN (ESD) ARRANGEMENTS FOR LNG BUNKERING

ISBN: 978-1-9996669-1-0 (TGN06-05)

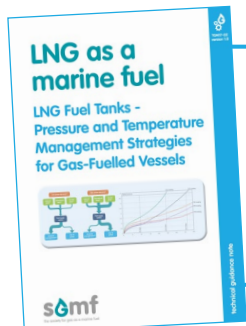
This Technical Guidance Note (TGN) provides recommendations for the emergency shutdown system (ESD) arrangements, integration, data and voice communication and interfaces for the LNG bunkering of gas-fuelled vessels. In particular, it addresses the functional safety principles of the linked ESD system to ensure a controlled shutdown of the bunkering operation in case of an emergency.



LNG FUEL TANKS – LOADING/FILLING LIMITS AND LEVEL INSTRUMENTATION: CONSIDERATIONS AND RECOMMENDATIONS

ISBN: 978-1-7398703-4-8 (TGN 17-01)

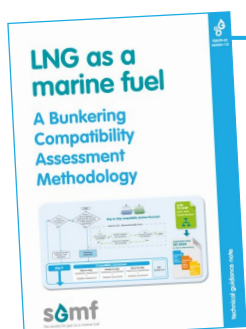
This guidance consists of key information about LNG filling and loading limits and puts forward recommendations and examples from industry on how to apply this knowledge to bunkering operations. It takes into account both the statutory requirements and the behaviour of cryogenic LNG when loaded and transported on board.



PRESSURE AND TEMPERATURE MANAGEMENT STRATEGIES FOR GAS-FUELLED VESSELS

ISBN: 978-1-7398703-9-3 (TGN 17-02)

This Technical Guidance Note (TGN) provides recommendations on boil-off gas (BOG) and fuel tank pressure and temperature management for LNG-fuelled vessels.



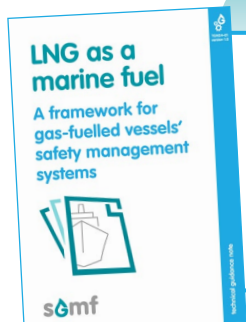
BUNKERING COMPATIBILITY ASSESSMENT

ISBN: 978-1-7395354-0-7 (TGN 19-01)

This Technical Guidance Note (TGN) aims to address compatibility challenges between the LNG supplier and receiver by providing guidance on how to assess compatibility between a bunkering facility and a gas-fuelled vessel, how to gather information for such an assessment, and what needs to be checked and reported.

The TGN proposes an industry standard approach and process to satisfy the requirements for compatibility, supported by standards forms.

NEW!

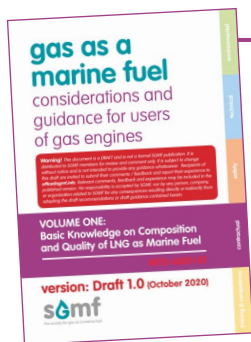


A FRAMEWORK FOR GAS-FUELLED VESSELS' SAFETY MANAGEMENT SYSTEMS

ISBN: 978-1-7395354-4-5 (TGN 24-01)

The aim of this technical guidance note (TGN) is to help organisations that operate GFVs develop or update their SMS to effectively mitigate risks. For convenience, it is divided into sections that can be reviewed independently against an existing SMS. This ensures that all aspects of each subject are thoroughly addressed in relation to new hazards.

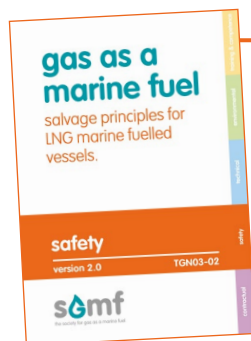
PUBLICATIONS AVAILABLE FOR SGMF'S MEMBERS ONLY



BASIC KNOWLEDGE ON COMPOSITION AND QUALITY OF LNG AS MARINE FUEL

ISBN: NA – **Members only**

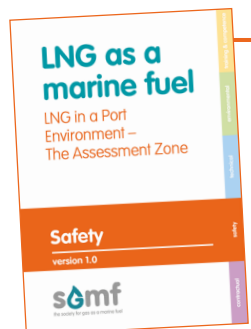
This publication provides an overview of LNG composition and quality, enabling those responsible for using LNG as marine fuel to understand the relationship between equipment/engine performance and the LNG's composition and quality. The document describes the physical properties of LNG and provides relevant background information.



SALVAGE PRINCIPLES FOR LNG MARINE FUELLED VESSELS

ISBN: NA – **Members only**

The aim of this document is to provide principles for salvage situations involving LNG-fuelled vessels. Salvage operations range from emergency response to wreck removal and everything in between. For emergency response, the guidance focuses on how to handle the situation immediately after an incident has occurred.

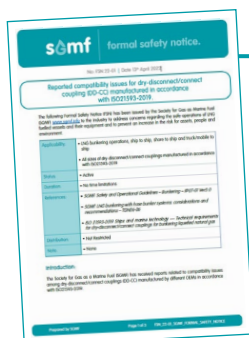


LNG IN A PORT ENVIRONMENT – THE ASSESSMENT ZONE

ISBN: NA – **Members only**

This guidance complements the SGMF publication *Recommendation of Controlled Zones during LNG Bunkering - FP02-01* and deals with all the other zones defined in FP02-01: the monitoring and security area, the marine exclusion zone and the external zone. The assessment zone directly replaces the external zone of the earlier guidance, and additional information is provided on the marine exclusion zone.

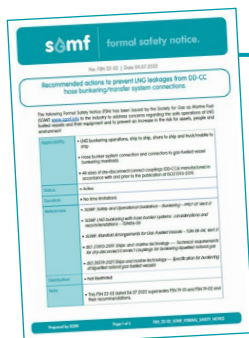
FORMAL SAFETY NOTICES



REPORTED COMPATIBILITY ISSUES FOR DRY-DISCONNECT/CONNECT COUPLING (DD-CC) MANUFACTURED IN ACCORDANCE WITH ISO21593-2019.

No. FSN 22-01 | Date 13 April 2022

<https://www.sgmf.info/resources/sgmf-formal-safety-notice>



RECOMMENDED ACTIONS TO PREVENT LNG LEAKAGES FROM DD-CC HOSE BUNKERING/TRANSFER SYSTEM CONNECTIONS.

No. FSN 22-02 | Date 4 July 2022

<https://www.sgmf.info/resources/sgmf-formal-safety-notice>

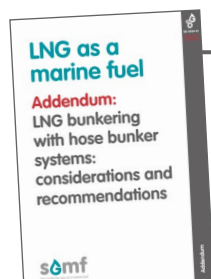
ADDENDUMS



ADDENDUM: MANIFOLD ARRANGEMENTS FOR GAS-FUELLED VESSELS

Date: July 2023

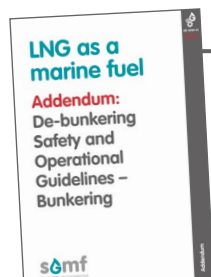
<https://www.sgmf.info/resources>



ADDENDUM: LNG BUNKERING WITH HOSE BUNKER SYSTEMS: CONSIDERATIONS AND RECOMMENDATIONS

Date: July 2023

<https://www.sgmf.info/resources>

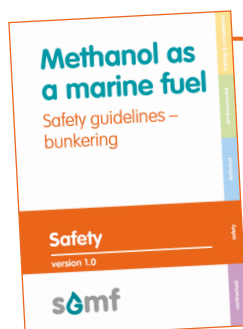


ADDENDUM: DE-BUNKERING SAFETY AND OPERATIONAL GUIDELINES – BUNKERING

Date: July 2023

<https://www.sgmf.info/resources>

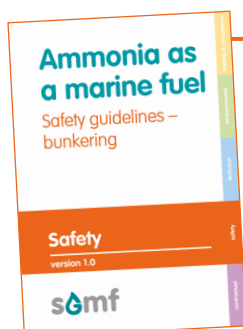
 **COMING SOON**



METHANOL AS MARINE FUEL – SAFETY GUIDELINES – BUNKERING

ISBN: release date to be confirmed (2024)

This publication sets out how to the safety and operation framework for methanol bunkering operation. The guidance will discuss items as key safety risks associated with the use of methanol as marine fuels, bunkering procedures, safety zones, equipment requirements and vessel interfaces such as bunkering safety link and manifolds arrangements.



AMMONIA AS MARINE FUEL – SAFETY GUIDELINES – BUNKERING

ISBN: release date to be confirmed (2024)

This document draws on the current experience of LNG bunkering, the wider ammonia marine transport industry and shoreside ammonia production and transportation industry experience which shows when good practice is followed by building upon existing risk-based approach, bunkering risks can be effectively controlled and mitigated. The overall aim of this guideline is therefore to ensure that ammonia-fuelled ships are bunkered safely, reliably, efficiently and in an environmentally responsible way, without any operational or fugitive emissions of ammonia.