

LNG Overview of regulations

Background

This note contains an overview of the issues to be considered in connection with applications for LNG bunker operations and the establishment of LNG bunker installations in Denmark. The issues include, inter alia, the following: **Safety, the environment, security, occupational health and construction work**. The note is aimed at both applicants and the authorities involved.

So far, not much practical experience has been gained with the approval of LNG bunker operations in Denmark. As of early 2014, only Fjordline has been granted an approval for bunker operations in Hirtshals. This case as well as the cooperation with, inter alia, the Nordic countries form the basis of the consideration of LNG bunker permits in a Danish context.

On the basis of local, geographical or installation-related differences, it is not possible to draw up guidelines as such on LNG bunker operations and the establishment of LNG bunker installations. Therefore, this note is to be considered as an overview of current regulations, the relevant authorities, etc. It must, however, be stressed that locally conditions may prevail that necessitate further consideration that have not been included in this overview. Consequently, the overview is merely intended as a guidance note and it is, thus, recommended to engage in a dialogue with the relevant parties early in the process.

Relevant authorities

In connection with the consideration of applications for LNG bunker operations in Denmark, applicants must in general contact two authorities:

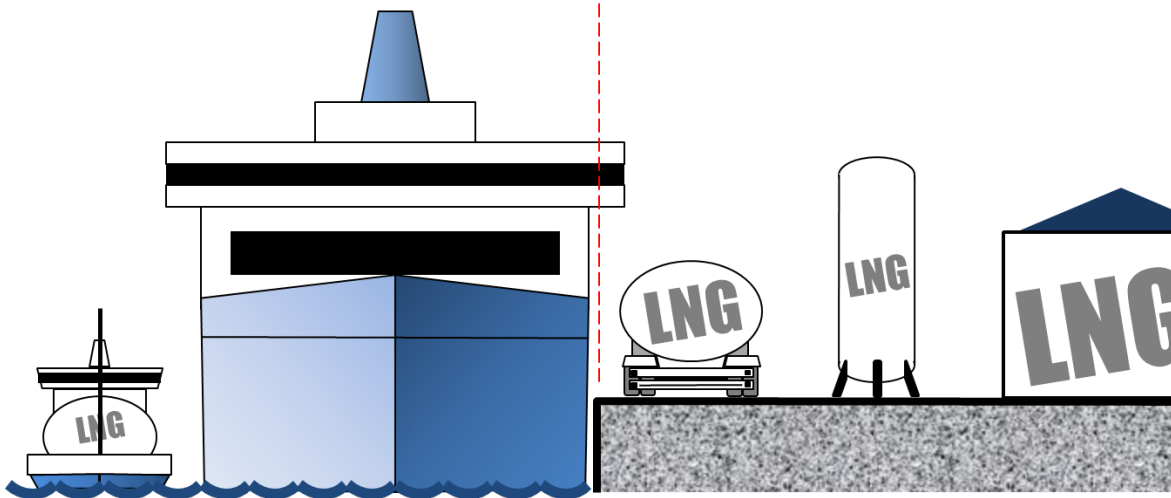
The Danish Maritime Authority, which will consider issues related to the ship, including ship-to-ship bunker operations.

The municipality, which will consider issues related to bunker operations and facilities ashore, including any cooperation with other authorities.

The drawing below illustrates which issues are under the authority of the municipality and of the Danish Maritime Authority, respectively:

SØFARTS STYRELSEN KOMMUNEN m.fl.

nødvendig koordination



[Billedtekst: Danish Maritime Authority / The municipality et al. / necessary coordination]

Cases of this nature may influence, for example, the environmental or business policy of the municipality, and may also necessitate political consideration of the case. This will subsequently affect the case consideration, the consideration procedure as well as the time spent considering the case.

The municipality and the Danish Maritime Authority must to coordinate their work, inter alia, to create consistency and coherence, for example, in connection with bunker operations, shielding and evacuation possibilities ashore. Finally, there may be other authorities that must be consulted and/or grant permits for bunker operations. They include, for example, the Danish Emergency Management Agency, the Danish Working Environment Authority (occupational safety) and the police (terror assessment and terror safety).

Process and coordination

In order to facilitate the application process, the involved authorities strive to make it possible for applicants to use either the municipality or the Danish Maritime Authority as “one point of contact” to the authorities. Either the municipality or the Danish Maritime Authority can act as the coordinator. The municipality has many fields of authority that must be included, whereas the Danish Maritime Authority may be the first authority that is in contact with the ship owner when the process approving the ship is initiated.

Already from the start (i.e. before applications, etc. are drawn up), it may be a good idea to hold a meeting with all the parties concerned, such as the ship owner/yard, gas suppliers, ports, the municipality (inter alia environmental and emergency personnel) and the Danish Maritime Authority. In case it is impossible to gather all the relevant parties, a meeting should as a minimum be held between the municipality and the Danish Maritime Authority. At such a meeting, the future process will be agreed on as well as the order of the case consideration, the coordination and the interface between the authorities, etc. It may also be a good idea to discuss any requirements for, for example, risk assessments and evacuation plans in order to avoid overlapping analyses. Furthermore, it may be a good idea to discuss – already from the start – what the specific application is to con-

tain. Thus, it is possible to create the necessary basis for a final approval already early in the process.

The application

Changes may occur during the process. Therefore, it is of the utmost importance that the changes are documented and described in such a manner that the basis for granting a permit is unambiguous.

The material contained in the application may involve several authorities. Consequently, it is recommended that contents, drawing up and approval requirements are coordinated in the following fields:

- Risk analysis.
- Passenger accommodation and movements during bunker operations.
- Evacuation plan.
- Communication equipment for on-board and shore-based operators.

Regulations/legislation, etc.

On the following pages, you will find a schematic presentation of the issues related to bunker operations, the regulations applicable in this field and the responsible authorities.

Overview of the consideration by the authorities in connection with the establishment of LNG bunker installations

Activity		Authority							
		Municipality. Planning unit	Municipality. Environmental unit	Municipality. Emergency preparedness	Municipality. Construction unit	Danish Working Environment Authority	Danish Emergency Management Agency	Danish Energy Agency	Danish Maritime Authority
Safety	Installations below 10 tons			X					
	Installations above 10 tons			X			X		
VVM ¹⁾ screening	Installations above 50 tons and below 200 tons		X						
VVM ¹⁾ report	Installations above 200 tons	X	X						
Addition to municipal development plan		X							
Local development plan		X							
Environmental approval			X						
Risk approval			X	X		X			
Legislation on emergency preparedness				X			X		
Ferry									X
License for LNG activities								X	
Construction license				X	X				

1) VVM stands for "Vurdering af Virkninger på Miljøet", i.e. Environmental Impact Assessment.

DANISH MARITIME AUTHORITY

	Issue	Regulations	Authority
Technical solutions	LNG operation of ships	<p>Consolidated act no. 72 of 17 January 2014 on safety at sea.</p> <p>Passenger ships: International voyages: Notice B from the Danish Maritime Authority. Domestic voyages: Notice D from the Danish Maritime Authority.</p> <p>Cargo ships with a length of or above 15 metres: Notice B from the Danish Maritime Authority.</p> <p>All installations where LNG is used as fuel, except for LNG tankers: Resolution IMO MSC.285(86), "Interim guidelines for natural gas-fuelled engine installations in ships".</p> <p>LNG tankers: International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code).</p>	Danish Maritime Authority Division: Ship Survey and Certification
	Standard procedures and communication	<p>Approval of gas installations in accordance with Res. MSC.285(86):</p> <p>Drawing approval, approval of general risk assessment, cf. section 2.-1. The approval of the gas installation must be made by the ship's classification society, except on passenger ships where the Danish Maritime Authority is the approving authority:</p> <ul style="list-style-type: none"> - Fire safety, cf. section 3. - Section 8 on operational and training requirements. - Bunker procedures, including emergency procedures. 	<p>Ship's classification society</p> <p>Danish Maritime Authority Division: Ship Survey and Certification</p>
Procedures	Bunker installations	<p>Bunker installations must be fitted with:</p> <p>A defect detection system with two stop/fast closing valves located on the ship and the bunker station, respectively, as close to the coupling as possible, which will automatically close in a maximum of 5 seconds in case of a defect (an Emergency Shutdown System (ESD)). Gas detectors on the manifold connected to the ESD. Manual emergency stop from bunker station, engine control room and the LNG supplier (vehicle tank or bunker ship), all connected to the ESD. The break-away function on the hose between the ship and the LNG supplier manifold is located so as to create as little spillage as possible in case of a leak. The use of quick couplings making it possible to separate hoses, etc. during LNG flow.</p>	<p>Ship's classification society</p> <p>Danish Maritime Authority Division: Ship Survey and Certification</p>

Risk assessment	Bunker operations on passenger ships with passengers on board	<p>If it is intended to perform LNG bunker operations on passenger ships while there are passengers on board, a special risk analysis must be made, showing that the operations can be performed in a manner that is at least as safe as ordinary bunker operations.</p> <p>This risk analysis is an addition to the general analysis and must include the safety conditions on board the ship and on the quay, evacuation of the ship and port areas, etc.</p>	<p>Danish Maritime Authority</p> <p>Division: Ship Survey and Certification</p>
Bunker operations on cargo ships and passenger ships without passengers on board	Bunker operations on cargo ships and passenger ships without passengers on board	LNG bunker operations on passenger ships without passengers on board and on cargo ships must be performed in accordance with the above-mentioned procedures; the bunker operation as such does not require any special approval by the Danish Maritime Authority.	
Training	Training of ships' crews	<p>Res. MSC.285(86) stipulates the special training requirements for crews on board LNG fuelled ships based on the individual crew member's function on board.</p> <p>The Danish Maritime Authority approves these courses.</p>	<p>Danish Maritime Authority</p> <p>Division: Ship Survey and Certification and Maritime Regulation and Manning</p>

THE MUNICIPALITY

	Issue		Regulations	Authority
Safety	Shore-based LNG installations require a fire technical permit	Installation size <10 tons	Order no. 1444 of 15 December 2010 on technical regulations on gases issued by the Danish Emergency Management Agency (annex 1).	Municipality. Emergency preparedness
		Installation size >10 tons	Order no. 1444 of 15 December 2010 on technical regulations on gases issued by the Danish Emergency Management Agency (annex 1).	Municipality. Emergency preparedness in accordance with the conditions of the Danish Emergency Management Agency
	Bunker operations from a truck	Irrespective of size	Order no. 660 of 10 June 2006 on promulgation of the emergency preparedness act issued by the Ministry of Defence (section 34(2)).	Municipality. Emergency preparedness
	LNG is a dangerous substance and therefore a risk assessment and accident prevention are required. Before granting an approval, inter alia a risk assessment must be drawn up.		Order no. 1666 of 14 December 2006 on control of the risk of major accidents with dangerous substances issued by the Ministry of the Environment.	Municipality. Environmental unit The municipality is to consider the application in relation to the order. Police The local police and the municipal emergency preparedness may consider developing emergency plans for companies though this is not required by law.
The environment	The impact of the installation on the environment must be assessed.		Order no. 1654 of 27 December 2013 on assessment of the impact of certain public and private installations on the environment (VVM ¹⁾) pursuant to the act on planning. The act on environmental protection, no. 879 of 26 June 2010.	Municipality. Environmental unit However, the size, etc. of the installation may necessitate the development of a VVM ¹⁾ screening and of a VVM ¹⁾ report, if relevant. If so, the VVM report will be initiated by the municipality.

1) VVM stands for "Vurdering af Virkninger på Miljøet", i.e. Environmental Impact Assessment.

Installations	Extension of port area	<p>Section 2 of the consolidated act on ports (no. 457 of 23 May 2012) (the port act) stipulates that the Minister for Transport must approve any extension of an existing port. If the bunker installation is to be established in a new port area, this provision is of relevance.</p> <p>Extensions within the existing works of the port can be made without a permit from the Minister for Transport unless the extension requires an assessment of the environmental impact of the installation, cf. section 2(2) of the port act.</p> <p>Section 14a of the port act stipulates that the Minister for Transport can lay down regulations on the security of port facilities and ports. These activities are also covered by the term "maritime security". The establishment of LNG bunker installations may mean that the port must secure the area pursuant to the provisions on maritime security.</p>	<p>Municipality</p> <p>Danish Transport Authority (Ministry of Transport). Any extension of an existing port must be approved by the Danish Transport Authority (Ministry of Transport).</p> <p>Danish Transport Authority (Ministry of Transport). The Danish Transport Authority is the relevant authority as regards the provisions on maritime security.</p> <p>Ministry of the Environment. The Ministry of the Environment is the relevant authority for assessing the environmental impact.</p>
Installations	Construction works	Consolidated act no. 937 of 24 September 2009, promulgation of the act on planning (the planning act), Construction regulation, 1 January 2013.	<p>Municipality</p> <p>All construction works ashore are covered by the planning act and the construction regulation.</p>

Others (often through the municipality)

	Issue	Regulations	Authority
Security	Terror protection of port facilities	<p>Order no. 414 of 8 May 2012 on port facility security.</p> <p>Order no. 896 of 9 July 2012 port security.</p> <p>ISPS, "International Ship and Port Facility Security".</p>	<p>The Danish Transport Authority (Ministry of Transport)</p> <p>The Danish Transport Authority is the relevant authority in connection with the provisions on the security of ports and port facilities (maritime security).</p> <p>It is the obligation of the local port administration to meet the regulations.</p>
Occupational health	LNG must be handled in compliance with the provisions on occupational health – in this connection special requirements are made for personal protective equipment.	<p>Order no. 100 of 31 January 2007 on the use of pressurized equipment.</p> <p>Order no. 99 of 31 January 2007 on the arrangement, alteration and repair of pressurized equipment.</p> <p>AT guidance B.4 of 6 April 2007 Legal basis for the arrangement, alteration and repair of pressurized equipment.</p> <p>AT guidance B.4. of 11 November 2009 The arrangement and arrangement control of pressurized equipment and units.</p>	<p>The Danish Working Environment Authority (AT) has, to a great extent, delegated the provisions to suppliers and special institutes. The AT provides guidance and performs control.</p> <p>Gas users and gas suppliers must themselves arrange for training, equipment and protective equipment, etc.</p>
Safety	Carriage of LNG	<p>ADR 2013 European Agreement Concerning the International Carriage of Dangerous Goods by Road applicable from 1 January 2013.</p> <p>Order no. 818 of 28 June 2011 on the carriage of dangerous goods by road.</p> <p>RID (Carriage of Dangerous Goods by Rail).</p> <p>The Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) are legally valid in the EU Member States and in other countries that have acceded to the Convention Concerning the International Carriage by Rail (COTIF).</p> <p>The RID regulations, as amended, are only promulgated on the webpage of the Danish Transport Authority and not in the Danish Gazette, which follows from section 16 of order no. 893 of 29 August 2012 on the tasks and powers of the Danish Transport Authority, right of appeal and promulgation of certain regulations issued by the Danish Transport Authority.</p>	<p>The local police In case of compulsory routes, these must be used. If there are no compulsory routes, all roads can be used. It is recommended to contact the local chief constable and fire brigade officer with a view to considering compulsory routes.</p> <p>Municipality emergency preparedness</p> <p>Danish Transport Authority</p>