PORT OF GOTHENBURG

THE PORT OF SCANDINAVIA

Port of Gothenburg LNG projects

GÖTEBORGS HAMN

Energy Ports

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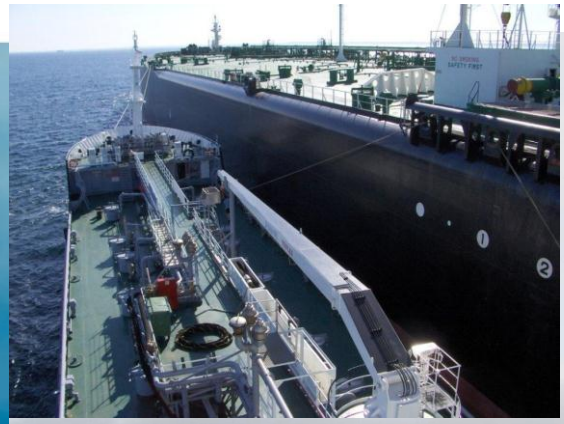

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Proposed LNG Terminal *Gothenburg*

- Operation start abt 2015
- Market defines size of terminal intermediate storage 20000 m3
- Import by 7500-15000 m3 LNG tankers
- Export to hinterland and seagoing bunkervessels
- Supply to local bunker hub
- Steady growth of demand

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Basic assumptions

The basic assumptions (*as defined by Port of Rotterdam*)

-A sailing LNG tanker is a ship with dangerous goods in maritime traffic;

-A ship with LNG propulsion is a ship in maritime traffic;

-Land based activities on a terminal are subject to an environmental permit, national and Seveso legislation ;

-The berth at a land based activity must be nautical safe accessible and at a nautical safe location;

-Water based activities in the port are subject to the Port bye-laws, Port Regulations and National regulations;

and

-LNG bunkering should be able to carry out as bunkering operations today, but with **minor** limitations considering locations and simultaneous activities

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LNG bunkering - *Gothenburg policy*

-**Receiving vessel** built to IGF specs

-**Bunkervessel** accreditation by Port of Gothenburg HMO

(IGC, vetting, seagoing, SMA regs, local regulations, class rules, crew training, inspection)

-**Terminal** regulations approved by Port of Gothenburg HMO

Complying results in a bunkering permit

Harbour Master will check and follow up interface/overlap of regulations

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LNG bunkering - *Gothenburg policy*

Why have we chosen this approach:

-excellent safety record with LNG

-successful accreditation in Gothenburg

-business should be self-regulatory by industry standards (i.e. vetting, class rules)

-Technical solutions (ESD, dry conn., ERC, ERS, electronic links etc) shall decrease the risk for larger spills and minimize the risk of human error

ESD: Emergency shut down system
ERS: Emergency release system

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Views on the GL study

EMSA study

Common safety distances should be international

Minor limitations in conditions and locations acceptable, but original standpoint should be 'the same as for oil bunkering'

Minimize the number of connect/disconnect operations (portable LNG fuel tanks should be temporary solution)

Similar paragraph in IGF concerning personnel training as in IGC, and training for IGC-crew and IGF-crew must be standardized

Training part is well covered already (good) but IGF-training is important with requirements for all crew onboard

Major risk limiters is design and training

EU baseline criteria should give sufficient guidelines for allowing simoultaneous activities during bunkering

EU baseline criteria should require member states to implement ISO TC 67 standard and act for world wide implementation

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Views on the GL study

EMSA study

Fuel/Gas quality should be defined (important) but safe sampling is part of bunkering and should be adressed by ISO TC 67

Bunkering responsibility should be equally shared, with both part 100 % responsible

EU should have risk assessment approach and risk perimeters harmonisation as requirement

The well-known 25 m safety distance rule should be evaluated and, if acceptable, made a regulation

A (loosely written) accreditation standard with distinction between seagoing and inland vessels could be EU baseline criteria. Large variation in standards occurs in Europe

Bunkering could be defined as starting when bunkervessel's Atex-zone interact with receiving ship

Weather criterias should be established by the port

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Views on the GL study

EMSA study

Additional measures such as emergency plans should not be regulated as every port and respective rescue services is responsible

Responsible authority should consider guidelines for dry cargo terminals and training of dry cargo terminal crew (potential lack of safety culture)

Applicable connections between **terminal/bunkervessel** and **bunkervessel/receiving vessel** should be the same to avoid mistakes

Minimizing methane release when handling LNG is important to increase validity and public perception for NG as a fuel

Although safety is top priority, enviromental aspects must be considered

Safe access and communication, handshake/sign off is important

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EMSA study

Port of Gothenburg view summary

EMSA/EU baseline criteria should be a recommendation or requirement for member states to follow and implement:

-Industry guidelines (IMO, OCIMF, SIGTTO)
-ISO TC 67 results
-Means to facilitate **global** standards on LNG bunkering
-Point out **technical standard and solutions** and **proper training** as means to make LNG bunkering safe (included in all vessels ISM)
-Overall purpose is to give guidance to member states in these issues and to implement this high safety standard to facilitate bunkering in a safe way.