

OLT Offshore LNG Toscana S.p.A.

**Information on the Tuscany Offshore
Regasification Terminal
for starting the public tender process for
regasification capacity booking**

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INTRODUCTION

OLT Offshore LNG Toscana S.p.A. (**OLT**) has obtained authorisation to construct and operate a regasification terminal with a regasification capacity of 3.75 billion cubic metres a year off the coast of Livorno, under Ministerial Decree of 23 February 2006. OLT estimates that the works to position the regasification terminal offshore between Pisa and Livorno will be completed by August 2013. Once connection with the gas pipeline, mainly consisting of an offshore section which joins the metering station at Collesalveti area, has been completed, OLT will carry out the necessary technical inspections and, following a successful outcome, will start to provide the regasification service, currently expected to commence within the fourth quarter of 2013.

OLT’s aim with this document is to publish all available information on the regasification terminal, in order to open up the process of a public tender for regasification capacity booking to interested parties in the next few months, doing so in a transparent and non—discriminatory way and ensuring freedom of access on equal terms in compliance with the provisions set forth in Resolution 272/2013/R/gas, published by the Gas and Electric Power Authority on 25th of June 2013.

OLT reserves the right to amend or supplement the information provided below as and when it deems it necessary, and update its website with the relevant information as quickly as possible on its web site.

1. TERMINAL DESCRIPTION

The terminal, an LNG carrier converted into a floating terminal, is located 12 nautical miles offshore between Livorno and Pisa in Tuscany, Italy. The geographical coordinates of the terminal are 43°38’40”N 09° 59’20”E (Gauss Boaga Datum Roma). The depth of the sea bed is approximately 120 metres. The terminal is connected to the shore by a 32" diameter pipeline built and operated by Snam Rete Gas S.p.A..

Characteristics of the terminal

Displacement	120,000 metric tonnes
LOA	310 m
Gross Tonnage	117,916 metric tonnes
Net Tonnage	35,364 metric tones
Maximum width	49 m
Draught (ballast)	10.78 m
Draught (load)	12.30 m

LNG unloading systems

The terminal's LNG handling system has been designed to receive the LNG from LNG carriers with a transport capacity of between 65,000 and 155,000 cubic metres¹. The maximum flow rate is envisaged to be 12,000 cubic metresLiq per hour.

The LNG will be transferred to the terminal by pumps on the carrier by means of:

- ✓ 2 16" rigid LNG loading arms, consisting of a collector, emergency release system and a rapid hydraulic connection/disconnection system;
- ✓ 1 16" rigid steam loading arm, consisting of a collector, emergency release system and a rapid hydraulic connection/disconnection system;
- ✓ A fourth rigid hybrid loading arm which can be used both for LNG and for steam if one of the aforementioned loading arms is unavailable.

Storage

The terminal has four spherical Moss® LNG storage tanks. Each tank has a diameter of approximately 40 metres. The net storage capacity is estimated to be about 135,000 cubic metres.

Operating temperature: -160 °C

Operating pressure: 40-200 mbarg

Vaporizers

Tri-Ex Intermediate Fluid-Type vaporizers will be used in the regasification process. The FSRU has been designed to handle a minimum continuous LNG throughput of 100 tonnes/hour and a maximum throughput of 450 tonnes/hour, based on the nominal composition of the LNG.

Transfer of gas to the national transportation grid

Once it has been regasified, the natural gas is injected to the national transportation grid. The pipeline will connect the turret swivel of the FSRU with the national transport grid of Snam Rete Gas through two flexible risers.

2. CAPACITY

The maximum annual permitted regasification capacity of the terminal is 3.75 billion cubic metres. OLT estimates that the available capacity could reach maximum regasification capacity, bearing in mind the terminal's technical and operational limits, as well as the available capacity at the point at which it connects to the national transportation grid (Entry Point).

¹ For LNG carriers with a capacity of over 138,000 cubic metres up to 155,000 cubic metres, prior authorisation from the Regional Technical Committee will be required with regard to any aspects relevant to a major incident.

3. ACCESS OF LNG CARRIERS TO THE TERMINAL

LNG carriers requirements

The LNG carriers which will be authorised to berth and unload LNG at the terminal must have a maximum capacity of 155,000² cubic metres and a minimum capacity of 65,000 cubic metres. In order to gain access to the terminal, all LNG carriers must have OLT's prior acceptance in accordance with the relevant procedure.

LNG carriers acceptance

OLT will allow to deliver LNG to the terminal only those LNG carriers which comply with standards and practices from time to time in force, applicable to the design, equipment, operation or maintenance of the LNG carriers as laid down by the rules of the IACS classification society. The LNG carriers must also comply with the conventions, rules, guidelines and regulations established by the International Maritime Organization (IMO), the Oil Companies International Marine Forum (OCIMF), the International Group of Liquefied Natural Gas Importers (GIIGNL), the Society of International Gas Carriers and Terminal Operators (SIGTTO) and by any other internationally recognised agency or organization and holding a valid SIRE certificate.

LNG carriers acceptance procedure

In order to be allowed to unload LNG at the terminal, each LNG carrier must undergo a compatibility and quality assurance process. The various stages are listed below:

- ✓ Preliminary exchange of information: sending to OLT all the documentation required in order to carry out a compatibility study, including, but not limited to, the SIGTTO Ship/shore questionnaire, description of the CTS system, classification certificates and inspection reports;
- ✓ OLT itself or through a third party will carry out a compatibility analysis in order to establish the carrier's technical suitability for acceptance at the terminal, in line with (but not limited to) technical compatibility criteria and to nautical and safety considerations.
- ✓ Ship final safety inspection: OLT will request an LNG carrier final acceptance visit prior to the berthing. This final inspection will take place according to the OCIMF guidelines;
- ✓ Following the successful outcome of the compatibility process and the final inspection, the LNG carrier will be deemed to be technically acceptable, for a single unloading, which will constitute the unloading test.
Following the successful outcome of the unloading test, the LNG carrier will receive approval from the terminal.

Each party will be responsible for their respective costs and expenses in relation to the acceptance procedure. OLT will keep a list of the LNG carriers considered to be allowed for unloading at the terminal and will promptly update this list as and when LNG carriers are added or removed.

² For LNG carriers with a capacity of over 138,000 cubic metres up to 155,000 cubic metres, prior authorisation from the Regional Technical Committee will be required with regard to any aspects relevant to a major incident.

Berthing at the terminal

- ✓ The maximum meteorological conditions for berthing at the terminal are as follows:

Maximum wind speed	Maximum sea state	Maximum surface current
m/s	Hs (m)	m/s
7.50	1.50	0.50

- ✓ The maximum conditions, beyond which cargo transfer operations will be suspended, are as follows:

Maximum wind speed	Maximum sea state	Maximum surface current
m/s	Hs (m)	m/s
15.00	2.50	0.50

The meteorological thresholds shown above are understood as being the simultaneous result of the given meteorological parameters.

During the initial stages of the terminal's operation, only the berthing operations are restricted to daylight hours.

4. LNG – QUALITY SPECIFICATIONS

The user must inform OLT about the LNG composition, including its physical properties, such as the Wobbe Index, gross calorific value, density at the loading port and expected density upon arrival at the terminal. The data should also include the actual composition and level of pollutants (sulphur, oxygen, etc.) in order to enable OLT to determine whether the vaporized LNG meets the quality specifications of the Snam Rete Gas Network Code.

LNG quality specifications

The quality specifications of the LNG that may be unloaded at the terminal are as follows:

Property		Specification	Unit of Measurement
Wobbe Index	Minimum	47.31	MJ/Sm ³
	Maximum	53.00	MJ/Sm ³
Gross Calorific Value	Minimum	*	MJ/Sm ³
	Maximum	*	MJ/Sm ³
Nitrogen (N2)	Minimum	-	Mole-%
	Maximum	1.2	Mole-%

Methane (CH ₄)	Minimum	80.0	Mole-%
	Maximum	-	Mole-%
Ethane(C ₂ H ₆)	Minimum	-	Mole-%
	Maximum	14.0	Mole-%
Propane (C ₃ H ₈)	Minimum	-	Mole-%
	Maximum	4.0	Mole-%
C ₄ + Fraction	Minimum	-	Mole-%
	Maximum	2.5	Mole-%
H ₂ S + COS (as Sulphur)	Maximum	5.0	mg/Sm ³
Mercaptans (as Sulphur)	Maximum	2.20	mg/Sm ³
Total Sulphur	Maximum	28.44	mg/Sm ³
Mercury (Hg)	Maximum	50.0	nano g/Sm ³
Hydrocarbon Dew Point (Cricondentherm)	Maximum	- 3.0	°C (1 - 70 bara)
Water (H ₂ O)	Maximum	0.1	ppm (vol)
Oxygen (O ₂)	Maximum	10	ppm (vol)
Carbon Dioxide (CO ₂)	Maximum	100	ppm (vol)
Solids		No deposits on ASTM 60 mesh strainers	

Gross calorific value at standard reference conditions for Wobbe Index: ISO -ISO 6976 standard: 1995 for calorific values (reference combustion temperature: +15°C, standard cubic metre +15°C @ 1.01325 bara)

Impurities

The delivered LNG shall not contain any solid or foreign contaminants which might interfere with its marketing or cause damage to or interfere with the proper management of the terminal.

If the total sulphur content is lower than five (5) mg/Sm³, it will not be necessary to analyse the sample for traces of hydrogen sulphide and mercaptans as sulphur.

In order to avoid internal problems and damage to the equipment, the delivered LNG shall not contain any fluid components (e.g. aromatics C₆H₆, CO₂, CH₃OH, etc.) in concentrations higher than fifty percent (50%) of the solubility limit in LNG of that particular fluid component in the operating pressure and operating temperature range respectively of 0 to 100 bar absolute and between -162 + 50 °C. C₆H₆: max. 1 ppm, CH₃OH: max. 0.5 ppm.

These LNG quality specifications may be subject to change at any time in order to adjust to the gas quality specifications.

5. LNG CORRECTION SERVICE AND COST

LNG correction using the "Wobbe Index Corrector" module

If the quality of the LNG does not meet the requirements of the national transport grid due to the limitations of the Wobbe Index, it will be possible to inject nitrogen. The Wobbe Index correction system at the terminal is set to produce up to 10,400 Sm³/hr of nitrogen.

The "Wobbe Index Corrector" module allows LNG with a wide range of quality to be received, with a Wobbe Index of between 47.31 MJ/Sm³ and 53.00 MJ/Sm³. Should the LNG arriving at the terminal have a Wobbe index which is higher than the specifications described, this LNG may, in any case, be accepted if OLT deems it can be adjusted to comply with the quality specifications issued by Snam Rete Gas.

6. TAXES, DUTIES AND OTHER LNG/GAS CHARGES

Responsibility for tax returns

Fiscal or administrative returns, declarations and/or obligations envisaged by the applicable regulations or by any other applicable law, rule or administrative or judicial provisions (including returns, declarations or obligations relating to the import of LNG) shall fall to and be the responsibility of each user, unless the applicable regulations or other law, rule or administrative or judicial provisions state otherwise.

Payment of duties, taxes, VAT and customs allowances

Any duty and/or tax and/or VAT due in accordance with Italian law or with the laws of any other country: (a) on the LNG of a user; (b) on the regasification service (excluding, for the purposes of greater clarity, any company tax due in relation to OLT's profits or turnover); (c) on the LNG regasified on behalf of a user; and/or (d) on the gas which has been regasified and delivered to the redelivery point, shall be paid by said user, who will exempt OLT from said duties or taxes.

Users' responsibilities

The users shall be responsible for complying with Italy's current VAT regulations with regard to their LNG/gas.

7. PORT REGULATIONS AND COSTS RELATED TO THE DELIVERY OF LNG

At present, the Maritime Authority has not issued yet the decree that authorises the operations on the Terminal, the security regulation that will rule the conditions of use of maritime services and the safety prescriptions that must be respected during the operations.

The Authority has defined the minimum characteristics that these maritime services (tug boats, pilots and mooring operators) must have: every users will have the responsibility to comply with the obligations set forth in such rules.

8. LIST OF LNG CARRIERS ACETABLE FOR THE TERMINAL

A list of the LNG carriers that have been determined to be compatible for unloading operations is not available as yet. OLT will publish the list of LNG carriers accepted on its website and will keep this list updated.

9. CONSUMPTION OF GAS FROM THE TERMINAL

Allocation of gas consumption

OLT foresees that consumption will be around 1.7-2% of the terminal's maximum regasification capacity. This percentage (that refers to standard operational conditions and whose estimation will be better defined only after the conclusion of the commissioning) will be proposed by OLT pursuant the provisions of article 14.2 of Resolution ARG/gas 92/08.