



# OLT Offshore LNG Toscana Press Kit

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## 1. OLT Offshore LNG Toscana

OLT Offshore LNG Toscana S.p.A. (hereinafter OLT) is the company that developed and now owns and manages the floating regasification Terminal FSRU Toscana, permanently moored about 22 km (12 nautical miles) off the coast between Livorno and Pisa, in the Tuscany region.

The OLT Terminal represents one of the main infrastructures of national interest for the import of LNG (Liquefied Natural Gas) serving the development and autonomy of the Italian energy system.

The industrial businesses holding shares in the company are active in the energy sector at a national and international level:

**Snam**, holding the **49.07%**, is one of the world's leading energy infrastructure operators and one of the largest Italian listed companies in terms of market capitalization. The company's sustainable and technologically advanced network guarantees security of supply and promotes development in the areas in which it operates. It operates in Italy and through its international subsidiaries, Snam operates in Albania, Austria, China, France, Greece and the UK. It is also one of the main shareholders of TAP (Trans Adriatic Pipeline). The company has the most extensive transmission network among European peers and greatest natural gas storage capacity. It is also one of the main regasification operators in Europe.

**Ignio Infrastructure Partners**, holding the **48.24%**, is an experienced global asset manager with over 12 billion euros of unlisted infrastructure capital under management, having been actively investing in long life infrastructure businesses since 1994. Ignio Infrastructure Partners is an experienced owner of utility businesses across Europe and its current portfolio includes utilities in Estonia, Finland, France, Germany, Italy, Netherlands, Portugal, Sweden and the United Kingdom. Ignio's European Diversified Infrastructure Fund II (EDIF II) is a European domiciled, euro-denominated fund with a long-term buy and hold investment strategy.

**Golar LNG**, holding the **2.69%**, is an LNG shipping company specialized in the acquisition, operation and chartering of LNG carriers and FSRUs, with over 30 years of experience.



Overall Snam and Igneo Infrastructure Partners hold about 97.31% of the shares. The governance remains equal between the two main shareholders.

## **2. The history of OLT**

The regasification terminal FSRU Toscana is one of the main infrastructures of national interest for the import of LNG (Liquefied Natural Gas), serving the development and autonomy of the Italian energy system.

The project consisted in the conversion of an existing LNG carrier - the "Golar Frost" - into a floating storage and regasification terminal, which brings the LNG back to its normal gaseous state. The LNG carrier "Golar Frost" was purchased by the company Golar LNG and the conversion works were carried out at the dry dock of the Drydocks World Dubai (DDWD) shipyard.

The bow of the LNG carrier was removed and a new front part was built which includes the anchor turret. The regasification module was then installed on board the FSRU Toscana terminal. The conversion of the LNG carrier also involved the installation of 3 vaporizers for the regasification of LNG, the installation of a "Wobbe Index" module to allow the Terminal to regasify the LNG coming from almost all producing countries through the nitrogen injection, as well as the installation of loading arms on the starboard side and all the equipment necessary for the discharge of LNG from the LNG carriers.

The project started in 2002 and it underwent a long and complex authorization process.

FSRU Toscana arrived in Livorno on July 30<sup>th</sup>, 2013. Following the commissioning phase, OLT started commercial activities in December 2013.

The Ministry of Infrastructures and Transports issued the final Commissioning Authorization for the operations of the Terminal on March 17<sup>th</sup>, 2015. On 25<sup>th</sup> July 2016 the Ministry of Economic Development (now MASE) issued the final Commissioning Authorization for the operations of the Terminal and of the related connection pipeline.



From an engineering point of view, FSRU Toscana represents a case of excellence in the LNG sector, for its structure, design and for the long and complex authorization process, as well as for the certifications obtained in terms of safety and environment.

### **3. Plant**

The Terminal, permanently moored about 22 km off the Italian coast between Livorno and Pisa, in the Tuscany region, transforms the liquefied natural gas, received by LNG carriers, back to its normal gaseous state.

FSRU Toscana is permanently anchored to the seabed through an advanced mooring system, with a single point of rotation at the bow, to allow the Terminal to move around the mooring turret, adapting to sea weather conditions.

The Terminal is connected to the Snam national gas pipeline network through a pipeline of 36.5 km: 29.5 km at the sea, 5 km in the floodway, the remaining 2 km on dry land, completely underground.

The plant has a maximum authorized regasification capacity of 5 billion Sm<sup>3</sup> per year and a gross storage capacity of about 137,100 m<sup>3</sup> of LNG.

The Terminal (out of water) has the following features: length 306.49 meters, width 48 meters, max height of the vessel 26.5 meters.

The Terminal is equipped with a Wobbe Index correction system installed onboard, that enables to receive almost all the LNG produced in the world and to correct the LNG characteristics to meet the limits required by the Italian gas grid operator.

At present the Terminal is authorized to receive around the 90% of the worldwide LNGc fleet, with a cargo capacity between 65,000 m<sup>3</sup> and 180,000 m<sup>3</sup> (New Panamax class), allowing the Terminal to maximize its receiving flexibility.



Thanks to its flexibility in receiving cargoes with a wide range of capacity and LNG quality, guaranteeing at the same time very high levels of safety and environmental sustainability, the Terminal is an important guarantee for the security and diversification of the country's energy supply. FSRU Toscana can, in fact, receive LNG cargoes from countries which cannot today be connected to Italy by gas pipeline, thus reducing the geopolitical risks.

The contribution of FSRU Toscana to the diversification of supply is confirmed by the receipt of LNG cargoes arriving from the main exporting countries such as: Algeria, Cameroon, Egypt, Equatorial Guinea, Nigeria, Norway, Oman, Peru, Qatar, Russia, Trinidad and Tobago and the United States.

### **3.1 The steps of the regasification cycle**

The regasification Terminal FSRU Toscana was realized using safe and well-proven technologies. All the subsystems and components are largely used in various sectors of the oil and gas industry.

The steps of the regasification cycle are:

#### **1. Receipt and storage of LNG in the regasification Terminal's tanks**

During operation, the LNG is loaded by direct transfer, through four loading arms offshore type, from LNG carriers moored to the Terminal ("side-by-side" configuration).

#### **2. Regasification - LNG is reconverted into natural gas**

The LNG stored in the tanks is then sent to the regasification module, where it is brought back to the gaseous state through heat exchange with sea water using propane as intermediate fluid.

#### **3. Gas sendout in the national grid**

Gas is sent to a depth of 120 meters, through two risers, and it is then injected into an undersea pipeline which is part of the national grid.



## 4. The LNG

LNG is natural gas (a mixture of hydrocarbons consisting mainly of methane and in smaller percentages of ethane, propane and heavier hydrocarbons) that is a liquid at a temperature of about  $-160^{\circ}\text{C}$  (with a reduction in specific volume of about 600 times compared to standard conditions), transportable by LNG carriers equipped with cryogenic tanks.

The liquid-to-gas conversion process takes place by heat exchange with seawater, using propane as an intermediate fluid.

**LNG appears essentially as a colorless, odorless fluid and is neither toxic nor corrosive.**

### 4.1 The advantages of LNG

- Easily transportable.
- It can be used in civil and industrial sectors, in the transportation sector (maritime and road) and for supplying isolated networks.
- It allows the reduction of carbon dioxide, sulfur oxides, nitrogen oxides and particulate matter emissions.
- It contributes to the diversification of supply sources so as to ensure the security of the national Gas system.



## 5. The services offered by OLT

OLT Offshore LNG Toscana offers, through its Terminal FSRU Toscana, the following services:

- The Regasification Service of Liquefied Natural Gas (LNG)
- The Flexibility Services (i.e. Nomination and Renomination Service, Virtual Liquefaction and Extended Storage Service)
- The Small Scale LNG Service
- The services related to the country's energy security possibly requested by the Ministry of Environment and Energy Security (MASE).

OLT yearly provides a regasification capacity equal to 6,356,250 liquid m<sup>3</sup> which is offered, on an auction basis, in the multi-year, annual and infra-annual allocation processes, as described and set out in the Regasification Code.

Every year the Ministry of Environment and Energy Security (MASE) establishes – in the context of the Emergency Plan – the most suitable measures to be adopted to tackle unfavourable situations for the national gas system.

The Peak Shaving Service is one of the emergency measures possibly requested to the regasification terminals that, during the winter period, can regasify and send into the grid, at short notice, the LNG previously unloaded and stored in the terminals' tanks, tackling the peak demand for a limited period of time.

OLT made available part of its regasification capacity for the national gas system for six consecutive gas years, from 2013/2014 to 2018/2019, continuing, at the same time, to offer the regasification service on a multiyear, annual and infra-annual basis, in accordance with the provisions of current regulations.

For further information: <https://www.oltoffshore.it/en/terminal/services/>

### 5.1 The Small Scale LNG service

LNG is playing an increasingly central and strategic role especially in heavy road and maritime transport sector.





In this scenario, FSRU Toscana can have a key role for Italy opening the Small Scale LNG market, due to the flexibility and strategic position of the plant, and will be the first terminal in Italy to offer this service.

The SSLNG provides that small LNG carriers can load LNG directly at a regasification and storage terminal, to refuel LNG ships or to deliver it to coastal deposits, within Mediterranean ports, completing the Italian supply chain of LNG, an essential source for the energy transition.

In order to be able to provide the service, OLT made a specific preliminary feasibility study - co-financed by the European Union – in 2015, which supplied positive results, confirming the possibility for the Terminal, after marginal plant engineering modifications, to discharge the LNG onto small LNG carriers. OLT went ahead with the verification path, giving the go ahead for several detailed engineering studies preparatory to obtaining the necessary authorisation. Some of these studies were partially financed by participating in the Connecting Europe Facilities (CEF) Tender: a tender called by the European Commission with the aim of developing the trans-European networks and infrastructures in the transport, telecommunications and energy sectors. Finally, the company started the authorisation procedure to offer the new SSLNG service in 2019 and in October 2020, with a decree issued by the Ministry of Economic Development, in liaison with the Ministry of Infrastructures and Transport and the Tuscany Region, it was authorised to make the necessary modifications to the Terminal to offer the Small Scale LNG service. Furthermore, OLT has decided to increase the flexibility and efficiency of the Terminal by undertaking a new authorisation path to allow the berthing of up to 122 small LNG carriers a year.

The decree of May 26, 2023 also approved the increase in the number of berths for the SSLNG service to a maximum of 122 per year.

The terminal modification works are completed. Soon the commissioning will be finalized which will be followed by the offering of SSLNG service.



## **6. Safety aspects**

The prevention and safety measures adopted by the FSRU Toscana regasification terminal are highlighted in the Final Safety Report approved by CTR, the Regional Technical Tuscany Committee.

The design and construction criteria of the equipment and the systems are essentially aimed at eliminating the possibility of off-site releases.

The prevention of major accidents on board the Terminal is mainly based on a Safety and Management System, which has been developed by integrating marine aspects and the process ones.

Particular attention is dedicated to the monitoring of process systems, to the control of the navigation in the area surrounding the Terminal, to the implementation of the adequate inspection and maintenance policy envisaged, to the behaviour to be followed in the event of an emergency – in compliance with the internal emergency plan and the related procedures, to mitigate the evolution of any accident, both in environmental and safety terms.

Moreover, in the Safety Report it was highlighted that the effects of possible major accidents do not affect the population or any vulnerable site. This result guarantees a significantly higher level of safety than an onshore terminal.

For further information, please refer to the Safety section of the OLT website: [www.oltoffshore.it](http://www.oltoffshore.it).



## 7. Sustainability

OLT's mission is based on two principles: responsible management of its activities and full disclosure in reporting them. The only way of doing business on the territory is the one based on Sustainability, that means realizing and maintaining a plant with the best available technologies, ensuring the highest management standards in terms of safety and environment and creating socioeconomic synergies between the Company and the Territory which hosts the Terminal. For this reason, the Company is constantly listening and exchanging with the community and the territory that host the infrastructure.

From the beginning OLT started a path of reporting on its performance which, over the years, has led to the achievement of an important goal: the preparation of the **Sustainability Report** according to the GRI Standards ("Core" approach). The tool also takes into account, through specific references, the provisions of the 2030 Agenda for Sustainable Development of the United Nations, with the related 17 Sustainable Development Goals (SDGs), structured into 169 specific Targets.

Another key instrument of the dialogue and transparency relationship with the territory is the **Environmental Declaration**, drawn up on the basis of the EMAS Regulation; it has a three-year validity, however it is revised and checked annually.

All the aforementioned tools can be consulted in the Sustainability section of the OLT website: [www.oltoffshore.it](http://www.oltoffshore.it).



## **8. The socio-economic benefits for the territory**

OLT is fully aware of the influence of its business on the economic and social development and quality of life in the territory. The development and growth of the Company do not depend solely on operational performance but go hand-in-hand with the Company's capacity to maintain and implement socio-economic synergies with the local community. In line with this assumption, OLT is in constant dialogue with the territory and the community hosting the infrastructure.

Specifically, these benefits are concentrated on three areas of intervention:

### **1. OCCUPATION**

The Terminal provides a significant contribution to the employment in the area. Overall, 105 people are permanently employed (data as of 31 December 2022). Specifically, the workers employed directly by OLT are 25, while 80 work for ECOS, the company responsible for operating and arming the Terminal.

In addition, OLT chose to enlist the support and cooperation of the company Fratelli Neri, which provides the vessels serving the Terminal.

### **2. SOCIO-ECONOMIC OPPORTUNITIES**

From an economic point of view, the OLT industrial initiative guarantees important opportunities first of all for the Livorno area, on which the main investments are concentrated, but also for the other Municipalities that are involved. In particular, the economic impact at a local level is estimated at around **400 million euro in 20 years starting from 2013**, which is the Terminal's expected life term. This amount includes a series of specific activities: from management to maintenance of the Terminal to the surveillance system, from direct employment to additional services related to environmental protection.

### **3. ENVIRONMENTAL COMPENSATIONS**

Alongside the activities related to the operation of the Terminal, a further demonstration of the effective socio-economic cooperation between OLT



and the territory lies in a series of initiatives in favour of local communities. Most of these initiatives, planned during the plant's authorization process and partly already completed, have an environmental purpose.

As agreed with the Tuscany Region in the authorization phase, with the Municipalities of Livorno, Collesalveti and Pisa, OLT has agreed on the implementation of a series of initiatives, among which the main ones are:

- Municipality of Livorno: contribution for the implementation of the door-to-door waste collection service
- Municipality of Collesalveti: contribution for the environmental redevelopment project of the urban center of Stagno
- Municipality of Pisa: contribution for the construction of an equipped park in the public area "La Camilla" in Marina di Pisa
- Tuscany Region, Province and Municipality of Pisa: reopening of the Incile Canal

## 8.1 Local communities

OLT supports a series of initiatives to increase the value of local communities. Company's intent is to integrate itself with the territory and the community that host the infrastructure.

With aim of giving coherence to its social and economic operations on the territory, consolidating the relationship with the local communities to develop shared social projects, of interest for the territory of Livorno and Pisa and, at the same time, consistent with its company mission, at the end of 2019 OLT presented a **Corporate Social Responsibility (CSR) project entitled "L'Energia del Mare – Fare con e per il Territorio"** (The Energy of the Sea - Acting with and for the Territory), started in 2020 and that will continue in the following years. The project is divided into 5 areas of intervention, that refer to 5 areas of interest for the Territory and for OLT:

Green&Blue (responsible and targeted policies for the environment/sustainability); Open Lab Talent (research and innovation for new



generations); Gioco di Squadra (sport, culture and social), Curiamo il futuro (infancy and health) and Codice Bianco (workers' health and safety).

The company has created a shared and participated path that links the needs of the Livorno and Pisa areas to the company's mission, the objective was to make organic and systemic the support that OLT already gave to the territory and that over the years has enabled it to help associations and organisations in protecting the weakest groups. Other initiatives have been completed for the benefit of the entire community and in favour of children and the most disadvantaged.

In recent years, given the emergency situation that the community has had to face, OLT has decided to concentrate a good part of its resources on supporting, in particular, the health and school sectors.

### **Initiatives for environmental sustainability**

In 2020 OLT signed an agreement with the Tuscany Region and the community of Bosco del Monte Pisano Onlus for the reforestation of the areas seriously damaged by fires in 2018 and 2019 in the municipalities of Calci and Vicopisano. The aim of the project is to favour the restoration and improvement of the forest area, enhancing the eco-systemic services of the areas destroyed by fire, helping to implement the actions to protect the forest area and guaranteeing functional interventions also to the activities of use and tourist enhancement. Other projects on the theme of reforestation are underway, with interventions aimed at the creation of green areas in the municipalities of Pisa and Livorno.

For an in-depth analysis of OLT's socio-economic performance, please refer to the Sustainability Report available on the company's website: [www.oltoffshore.it](http://www.oltoffshore.it).



## 9. Numbers and timing

- FSRU Toscana main features: length overall 306.49 meters, width 48 meters, max height of the vessel 26.5 meters.
- 12 nautical miles (about 22 km): Terminal's distance from the coast.
- 5 billion Sm<sup>3</sup>: maximum authorized capacity per year.
- 36.5 km: total pipeline length part of the Italian National Grid (29.5 km at the sea, 5 km in the floodway, the remaining 2 km on dry land).
- 6 meters: onshore pipeline depth.
- LNG cargoes coming from the main exporting countries such as: Algeria, Cameroon, Egypt, Equatorial Guinea, Nigeria, Norway, Oman, Peru, Qatar, Russia, Trinidad and Tobago and the United States.
- About 850 million euro: total investment of the project, excluding financial charges.
- 400 million euro: economic impact on the local area in 20 years, starting from 2013.
- 05/02/13: launch of the Terminal FSRU Toscana in Dubai.
- 02/06/13: sail away of the Terminal FSRU Toscana from Dubai.
- 30/07/13: arrival of the FSRU Toscana at the installation site off the coast between Livorno and Pisa, after a towing activity lasting about 40 days.
- 19/12/13: conclusion of the commissioning phase of the plant.
- 20/12/13: start of commercial activities.
- 17/03/15: the Ministry of Infrastructures and Transports issued the final Commissioning Authorization for the operations of the Terminal.



- 25/07/16: the Ministry of Economic Development issued the final Commissioning Authorization for the operations of the Terminal.
- 8/10/2020: The Ministry of Economic Development, in agreement with the Ministry of Infrastructures and Transport and the Tuscany Region, issued the decree concluding the “Procedimento di autorizzazione unica” for the modifications to the Terminal FSRU Toscana necessary to provide the Small Scale LNG service.
- 26/05/2023: The Ministry of Environment and Energy Security (MASE), in consultation with the Ministry of Infrastructure and Transport (MIT) and in agreement with the Region of Tuscany, issued the Decree authorizing OLT to increase annual regasification capacity up to approximately 5 billion Standard Cubic Meters per year (previously the limit was set at 3.75 billion Standard Cubic Meters per year). The same Decree also increases the number of berths for the SSLNG service to a maximum of 122 per year.

For further information: [www.oltoffshore.it](http://www.oltoffshore.it)

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