



FSRU TOSCANA

Commercial Services



2015

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1 Introduction

1.1 PREMISES

OLT Offshore LNG Toscana S.p.A. ("OLT") is the company that owns and operates FSRU Toscana terminal. OLT was set up by some of the major industrial companies in the national and international energy sector, that hold the shares of the company: IREN Group (49.07%), E.ON Group (48.24%) and Golar LNG (2.69%).

OLT has drawn up an Access Code (i.e. a code establishing the access rules and procedures), the Inter User Agreement, the Capacity Agreements related to the regasification services offered by FSRU Toscana and the FSRU Toscana Commercial Services (the present document). The Access Code, the Inter User Agreement and the Capacity Agreements prevail on the provision made in the FSRU Toscana Commercial Services.

The present document describes the regasification services offered by FSRU Toscana outlining the access rules and the operating regime. In the event that changes to the Access Code and/or to the Inter User Agreement and/or to the Capacity Agreements have an impact on this document, the latter will be amended to take these changes into account.

Access Code, Inter User Agreement, Capacity Agreements and FSRU Toscana Commercial Services, the regulated regasification tariffs and other information about FSRU Toscana are available on our website: www.oltoffshore.it.

1.2 FSRU TOSCANA

The floating storage and regasification unit named "FRSU Toscana" is in operation since 2013. It is located 12 nautical miles offshore between Livorno and Pisa with a single point of rotation at the bow in order to allow the ship to move around the anchorage turret, so adapting to sea weather conditions. The FSRU Toscana is then connected to the shore by a 32" diameter pipeline built and operated by Snam Rete Gas S.p.A..

LNG handling system has been designed to receive the LNG from LNG carriers with a transport capacity of between 65,000 m³ and 155,000 m³ and to discharge the LNG at the maximum flow rate equal to 12,000 m³/h. In order to proceed with the discharge operations, the FRSU Toscana is equipped with four 16" LNG unloading arms: two LNG unloading arms, one vapour unloading arm and the fourth hybrid unloading arm which can be used both for LNG and for vapour if one of the aforementioned unloading arms is unavailable.

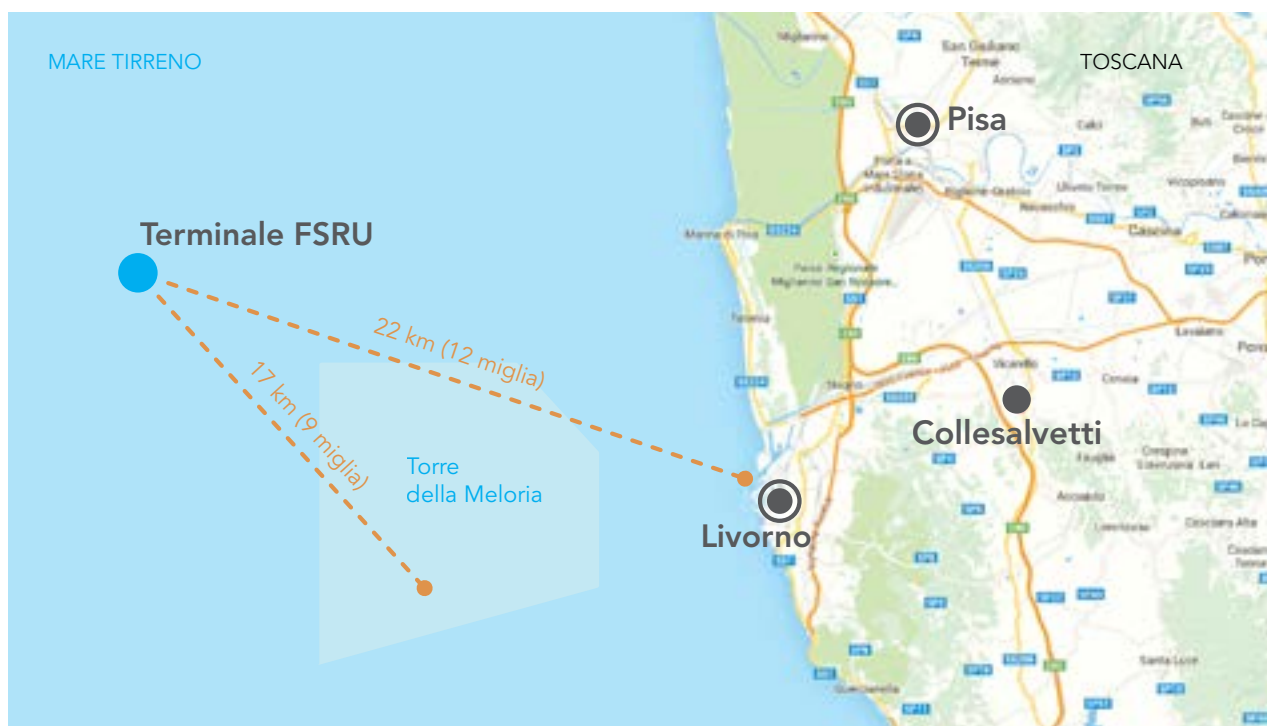


Figure 1-1 FSRU Toscana

The terminal has four spherical Moss® LNG storage tanks. Each tank has a diameter of approximately 40 meters. The net storage capacity is estimated to be about 135,000 m³.

On the FSRU Toscana three Tri-Ex Intermediate Fluid-Type vaporizers are installed and used in the regasification process. The FSRU Toscana has been designed to handle a minimum continuous LNG throughput of 10 tons/hour and a maximum throughput of 450 tons/hour, based on the nominal composition of the LNG, that means approximately a send-out between 0.3 and 15 millions of m³/day of natural gas injected into the national transportation grid. Two flexible risers connect the turret swivel of the FSRU with the national transport grid own and operated by Snam Rete Gas S.p.A..

The maximum annual permitted regasification capacity of the terminal is 3.75 billion m³ of natural gas.

2 Terminalling Model

The whole terminalling process provides LNG transfer, LNG storage and regasification and natural gas redelivery at the national transportation grid through the Entry Point named "GNL OLT Livorno".

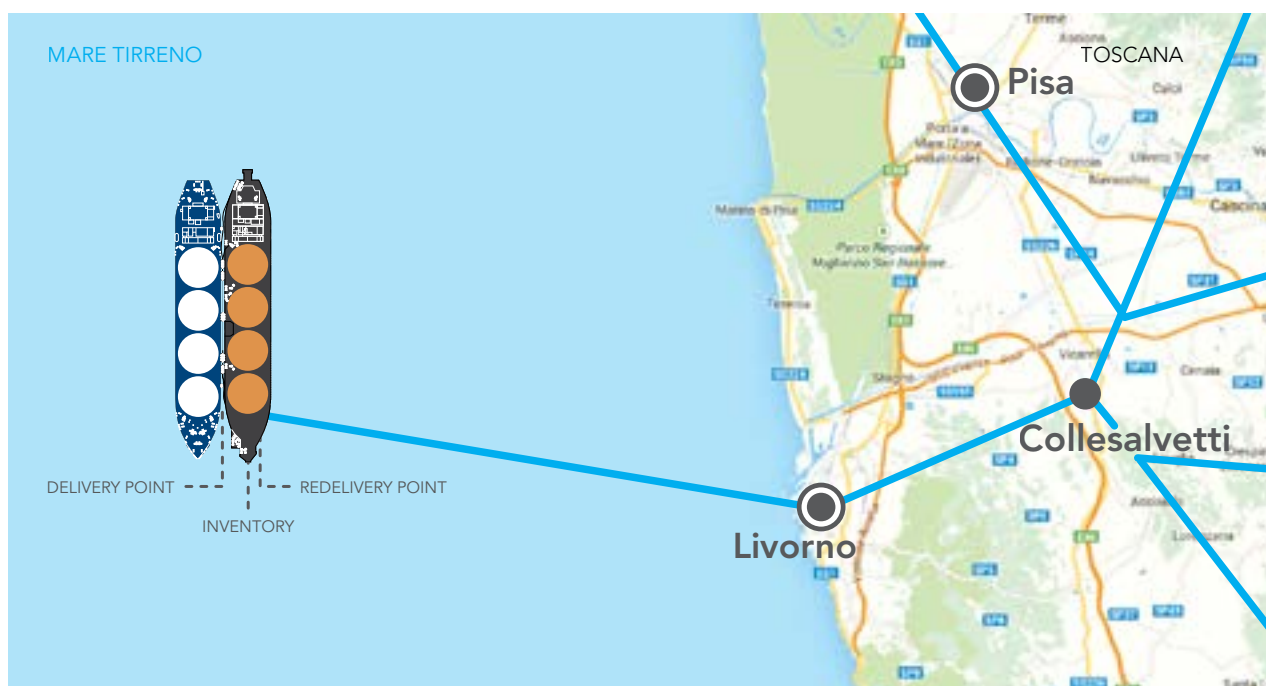


Figure 2-1 Terminalling model

Delivery Slot means the scheduled arrival window and the associated allowed LNG Carrier lay-time allotted or to be allotted to the customer in an Annual Unloading Schedule as being the time during which the customer's LNG carrier is scheduled to arrive at the pilot boarding station, transit to the terminal, receive and install the spool pieces, moor, unload, depart from the terminal and transit two nautical miles off from the terminal.

Delivery Point means the terminal flange located at the connection point between the terminal's loading arms and the spool pieces.

Customer's LNG means, subject to any in tank title transfer by the users, LNG which has been delivered to the terminal by or on behalf of the customer.

Customer's Inventory means the availability of LNG customers have stored into the terminal, taking into consideration the start of day inventory, the quantity of LNG

delivered and/or transferred, fuel gas consumption, any corrections thereof.

Redelivery Point is the gas pipeline flange located on the seabed after SSIV (sub-sea isolation valve) station connecting the terminal to the national transportation grid.

The **Wobbe Index correction system** allows the delivery of the LNG that wouldn't meet the requirements of the national transport grid by means of nitrogen injection: producing up to 10,400 Sm³/hr of nitrogen. In fact, 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 S.p.A..

3 Terminal Services

3.1 FIRM SERVICES

The main firm services that the terminal provides to customers are:

- number of berthing slots set forth in customer's Capacity Agreement to enable the customer to moor the LNG carrier and deliver LNG at the FSRU Toscana;
- allowing mooring access alongside the FSRU Toscana to receive and unload LNG carriers;
- providing the FSRU Toscana crew hook the LNG carrier mooring lines to the FSRU Toscana hooks only;
- receipt of an unloaded cargo from an LNG carrier during a Delivery Slot;
- storage of the customer's LNG in the Terminal only to the extent permitted in the Capacity Agreement;
- providing firm redelivery services, including nomination of gas into the national transportation grid and at the Redelivery Point;
- redelivery of natural gas to the Redelivery Point: such quantities will be made available to and taken in charge by Snam Rete Gas S.p.A. for the purpose of transportation service to the transportation grid users;
- providing nitrogen injection for correction of the Wobbe Index;
- metering, measurement and analysis of LNG and gas.

3.2 INTERRUPTIBLE SERVICES

On each gas day OLT may make available to the users, on interruptible basis, any unused firm redelivery services of any users and/or available capacity in excess of the regasification capacity required to provide firm redelivery services.

3.3 ADDITIONAL SERVICES

The additional services provided by the terminal are:

- Transfer of LNG in storage between users;
- Exchange of regasification capacity between users;
- Voluntary slot transfer;
- Capacity slot release;
- Nomination process;
- Commercial data publication on OLT website;
- Ship approval process.

3.4 MARITIME SERVICES


The customer shall procure tug, mooring lines and pilots services to service each LNG carrier by entering into contract with the tug, mooring lines and pilots service providers nominated from time to time by OLT.



4 How to become a customer

Access to terminal services is granted in an impartial manner and on equal terms to all parties provided that they meet the service conditions.

The applicant shall:



Be an user of national transportation grid or otherwise shall specify one or more user of national transportation grid to whom the natural gas will be allocated

Maintain the required credit support and the customer's insurance

Sign the Inter User Agreement within 3 business day since the relevant capacity agreement has been signed or continues to be, as the case may be, party of the Inter User Agreement and in full compliance with the Inter User Agreement

Have one or more LNG contract(s) consistent with the regasification capacity requested and fulfil all the necessary obligations towards Ministry for Economic Development (MSE) and Italian Regulatory Authority for Electricity Gas and Water (AEEGSI)

Have availability of LNG carriers to transport to the terminal the quantities of LNG correspondent to the regasification capacity requested and such LNG carriers are in compliance with Technical Manuals

Possess all other authorisations necessary to the performance of all activities under and or connected to the capacity agreements

If any customer ceases to satisfy or maintain one or more of the services condition, the customer shall notify OLT immediately after becoming aware of such event or circumstance.

5 Capacity allocation

5.1 FOUNDATION CAPACITY

The foundation capacity (FC) is allocated by OLT to foundation capacity users (FCUs) for a period of one or more gas year. Each party which is the holder of one or more valid LNG supply contracts can request capacity, expressed in m³liq/year, for a maximum period of 5 gas years and in any case no longer than the duration of the supply contract. In the event of multiyear allocation process, the foundation capacity included in the request can be equal to zero for one or more of the gas year but at least one gas year must be requested for capacity.

May 10 th	<ul style="list-style-type: none"> FCU is entitled to release total or part of its FC on an annual and/or multiyear basis
May 15 th	<ul style="list-style-type: none"> OLT publishes annual and multiyear capacity
June 01 st	<ul style="list-style-type: none"> Applicants submit their annual and/or multiyear request Applicants provide a bank guarantee for an amount equal to the 20% of the annual fees associated with the requested Foundation Capacity
June 15 th	<ul style="list-style-type: none"> OLT allocates the foundation capacity to the Applicant(s)
July 01 st	<ul style="list-style-type: none"> Applicant(s) sign the relevant capacity agreement Applicants provide a bank guarantee or an affiliate bank guarantee for an amount equal to one third of the annual amounts and covering a rolling period of three months.

The regasification capacity made available by OLT as foundation capacity, takes into account:

- Capacity available following the previous multiyear allocation processes;
- Capacity released by FCUs on annual and/or multiyear basis;
- Capacity made available due to Use It Or Lose It criteria;

5.2 CAPACITY ALLOCATION DURING THE GAS YEAR

The regasification capacity different from foundation capacity can be awarded when gas year is already commenced as follows:

- slot capacity release process, during the annual and ninety day unloading schedule when the user can release part or all of the allocated delivery slots;
- voluntary slot transfer during the gas year in respect of all or part of the transferor's delivery slots;
- exchange of regasification capacity between users;

M-1 +3bd

- OLT publishes released and available slots for month M and the remaining gas year

M-1 +7bd

- By 12:00 hrs any applicant may apply for all or any such released and/or available slots (or part of any released and/or available slots in month M only)

M-1 +9bd

- OLT awards released and/or available slots which have been applied for and the applicant has to sign the Capacity Agreement providing the relevant bank guarantee. OLT publishes the preliminary Ninety days Unloading Schedule and the amended Annual Unloading Schedule

M-1 +11bd

- Users can unanimously propose limited adjustments about month M

M-1 +12bd

- OLT publishes the Annual Unloading Schedule and the Ninety Day Unloading Schedule

If there is more than one applicant which has applied for the same released or available slot, such slot shall be awarded on the basis of the following priority:

- Firstly to the applicant which, with reference to such delivery slot, has applied for the bigger volume (even bigger than the volumes associated with the released or available slots);
- Secondly to the applicant which has applied for the largest aggregate quantity;
- Thirdly, among such applicants, on a first-come, first-served basis; and
- Fourthly, among such applicants by drawing lots.

5.3 CAPACITY CONTRACTS AND GUARANTEES

- The Inter User Agreement is signed by all the customers and rules the obligations each user has towards the other users;
- The Foundation Capacity Agreements and Slot Capacity Agreements are signed between the users and OLT as the case may be;
- Bank guarantee of 20% of the annual fees associated with the requested capacity shall be provided by the FCUs submitting the request for foundation capacity;
- Bank guarantee/affiliate guarantee for an amount equal to one third of the annual amounts and covering a rolling period of three months shall be provided by FCUs signing the capacity agreement;
- Bank guarantee/affiliate guarantee for 100% of all the amounts due in a rolling period of three months shall be provided by users other than FCUs signing the capacity slot agreement;
- Inter User Bank guarantee/ Inter User affiliate guarantee shall be provided by all user in order to cover the effects on all the other users where a user doesn't bring a confirmed scheduled cargo;

	Foundation capacity users	Other capacity users
Inter user agreement	●	●
Inter user agreement bank guarantee or affiliate guarantee	●	
Foundation capacity agreement	●	
Slot capacity agreement		●
Bank guarantee 20%	●	
Bank guarantee or affiliate guarantee of 1/3	●	
Bank guarantee or affiliate guarantee of 100%		●

6 Scheduling

6.1 ANNUAL UNLOADING SCHEDULE

Here below the annual unloading schedule (AUS) process:

Jun 15 th	<ul style="list-style-type: none">• Maintenance program is published
Jul 15 th	<ul style="list-style-type: none">• Umbrella member submit an AUS proposal
Jul 18 th	<ul style="list-style-type: none">• OLT publishes preliminary AUS highlighting any possible conflict
Jul 29 th	<ul style="list-style-type: none">• OLT publishes AUS
Aug 01 st	<ul style="list-style-type: none">• Delivery Slots release deadline
Aug 04 th	<ul style="list-style-type: none">• OLT publishes released and available Delivery Slots
Aug 16 th	<ul style="list-style-type: none">• Delivery Slots requests to be provided
Aug 19 th	<ul style="list-style-type: none">• OLT assigns the released slot and publishes the final AUS



6.2 NINETY DAYS UNLOADING SCHEDULE

After the AUS is published, every month is defined the unloading schedule for the following three months. During the Ninety Days Unloading Schedule (NDUS) the users can apply both for delivery slots released by other users and Available Slot, i.e. slots which has not been allocated at the beginning of each gas year to foundation capacity users. Hours are CET including DST.

M-2 -14wd	<ul style="list-style-type: none"> Capacity transfer request for a delivery slot is submitted: within 10 working days following receipt by OLT, OLT notifies transferor and transferee its approval
M-2 -3wd	<ul style="list-style-type: none"> By 12.00 customer gives OLT a proposed nomination schedule for months M, M+1 M+2
M-2 -2wd	<ul style="list-style-type: none"> OLT publishes the preliminary Ninety Days Unloading Schedule (NDUS)
M-2 -1wd	<ul style="list-style-type: none"> By 12.00 customers shall notify OLT of any ninety days release slots in months M, M+1 and M+2
M-1 +3wd	<ul style="list-style-type: none"> OLT publishes the released slots available and the Available Slots at the time for the entire remaining gas year and the applicable slot price
M-1 +7wd	<ul style="list-style-type: none"> By 12.00 interested user shall apply for any released or Available Slots
M-1 +9wd	<ul style="list-style-type: none"> OLT awards released and Available Slots and publishes the amended AUD and NDUS
M-1 +11wd	<ul style="list-style-type: none"> Users scheduling cargoes in month M may notify the OLT of their unanimous proposal to adjust the NDUS
M-1 +12wd	<ul style="list-style-type: none"> NDUS is finally published and the cargoes scheduled in month M are deemed to be confirmed

7 Regasification Program

7.1 BORROWING AND LENDING PRINCIPLE

OLT provisionally allocates on forward-looking basis the energy of each cargo scheduled to be unloaded during the months the NDUS is referred to, basing on the percentage shared of each user with entitlements on these three months. Each user hence shares inventory and LNG with each other users so giving users the flexibility to redeliver its cargo in a longer period than the one strictly necessary to discharge and regasify its own cargo.

Figure 7-1A
Borrowing and
lending model

Without borrowing & lending
Each user has a flat redelivery profile calculated so to clear the storage before the next cargo arrives

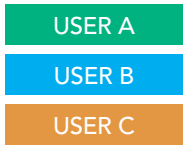
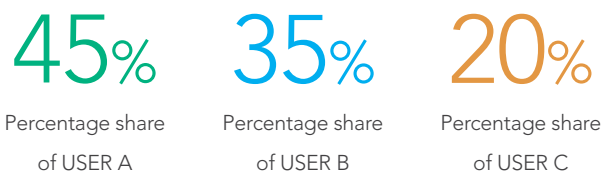


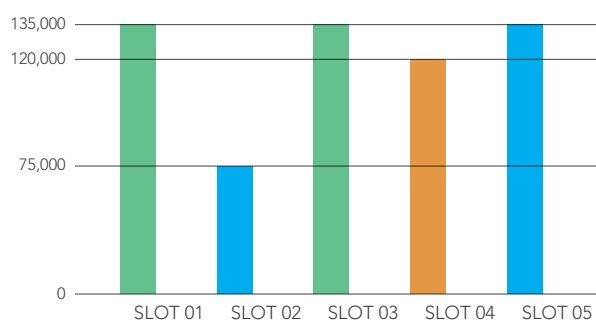
Figure 7-1B
Borrowing and
lending model

With borrowing & lending

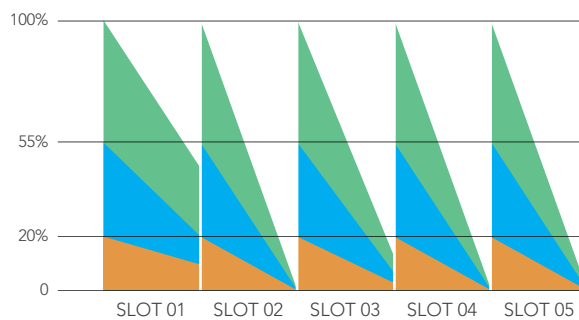
Each user shares part of its inventory and of its LNG with the other users regulating its own send-out during all the redelivery period



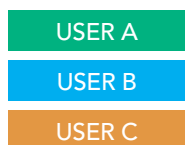
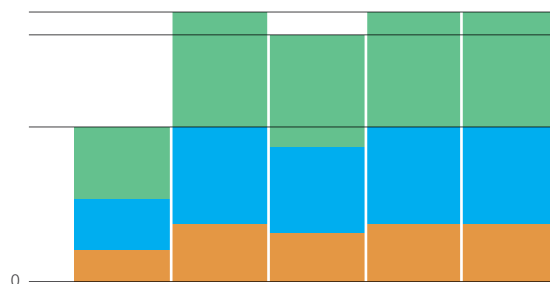
Confirmed Cargo



Storage



Redelivery rate on firm services

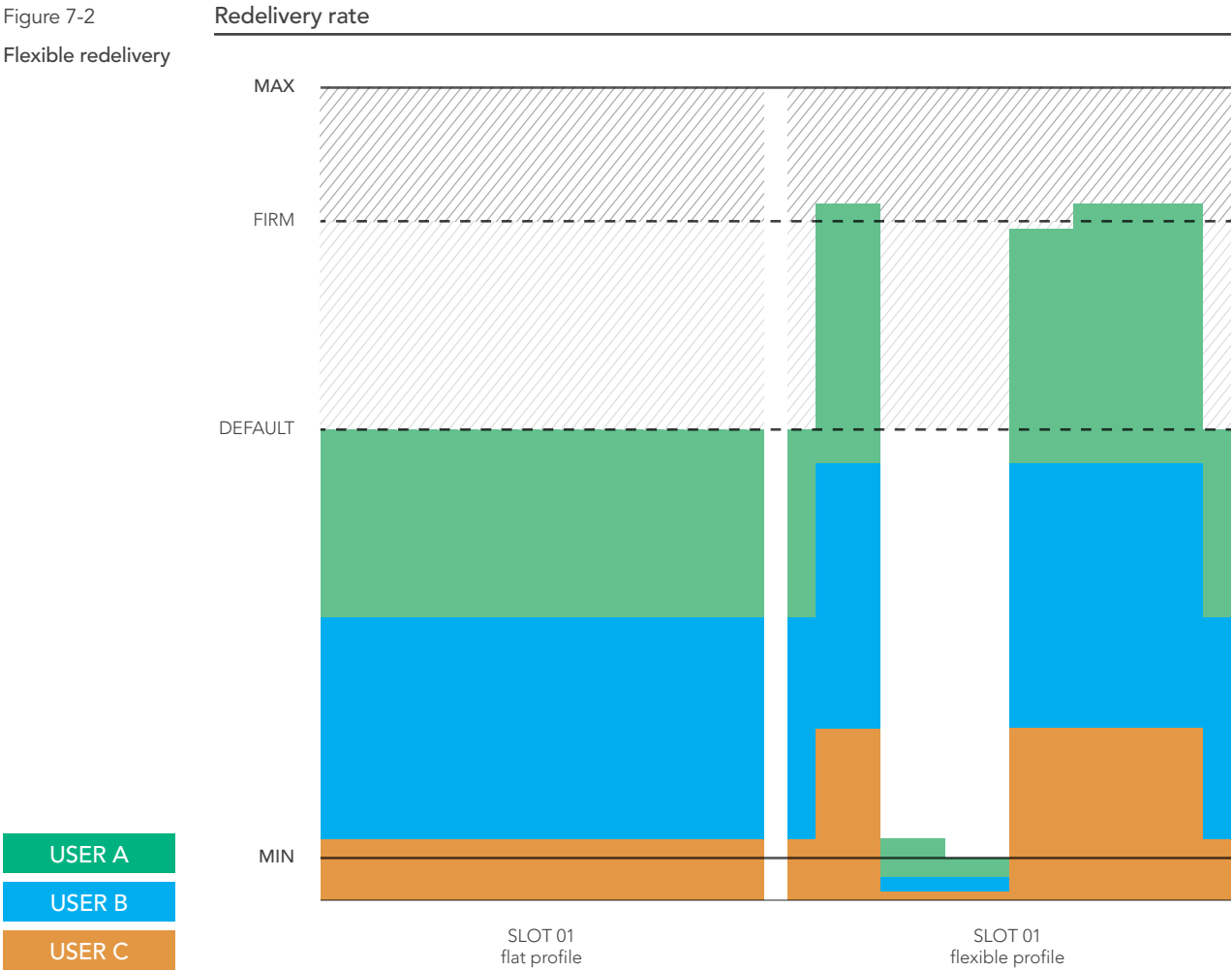


7.2

7.2.REDELIVERY PROFILE FLEXIBILITY

Users can modulate their redelivery profile within technical regasification limits (about 0.3/15.0 million of cubic meters per day interruptible services included) and their own availability of LNG: it means the users have the flexibility to define the profile with which their LNG is regasified and redelivered at the Entry Point.

Figure 7-2
Flexible redelivery



On daily basis all the terminal users can nominate in excess to its own firm capacity any available interruptible services as per article 3.2 above.

7.3 OPERATIONAL OBLIGATIONS

All users contribute to ensure the terminal full operational so guaranteeing the regasification services:

Fuel Gas Obligation: the quantity of fuel gas each terminal user shall guarantee. For all the FCUs an annual cap has been defined;

Minimum Redelivery Obligation: aggregated minimum quantity all users undertake to nominate, pro rata based on their percentage share, for redelivery at the Entry Point;

Minimum Inventory: an aggregated volume equal to 150,000 GJ each FCUs shall maintain pro rata share based on their annual capacity quantity during all the service period. In case the total inventory is lower than the Minimum Inventory OLT notifies a Mandatory LNG Delivery Notice to all the FCUs;

Operational Inventory: a volume the terminal users shall guarantee to comply with their Fuel Gas Obligations and Minimum Redelivery Obligations;

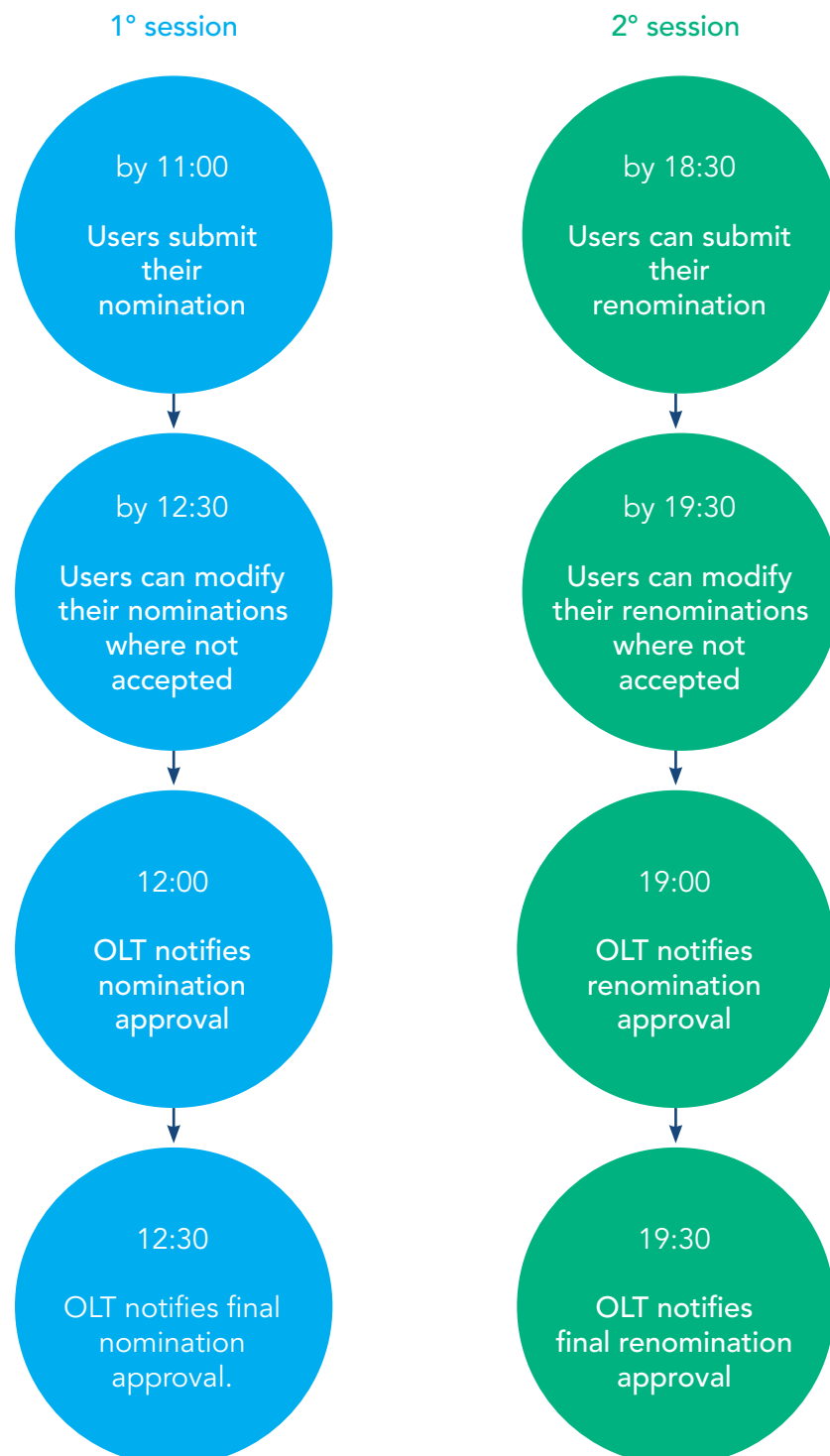
Mandatory LNG Delivery Notice: the notice with which OLT asks the FCUs a specific plan to deliver a cargo of at least 45,000 m³ of LNG.

	Foundation capacity users	Other capacity users
Fuel gas obligation	●	●
Minimum redelivery obligation	●	●
Minimum Inventory	●	
Operational Inventory	●	●
Mandatory LNG delivery notice	●	

8 Nominations

User can submit and modify its day ahead nomination in two different nomination sessions (hours are CET including DST).

Figure 8-1
Nomination
process



9 Fuel gas allocation

The fuel gas consumption is the result of three different components:

- fuel gas for terminal operational regardless of the send out rate and shared by all users based on their capacity percentage share;
- fuel gas for the redelivery of regasified LNG, hence proportional to the quantity of natural gas redelivered at the Entry Point;
- fuel gas related to the extra fuel gas consumption where Wobbe Index correction is needed and proportional to the volume of nitrogen produced;

The fuel gas consumption for each user could be preliminarily calculated on daily basis as follows:

$$\text{Fuel Gas} = 2,700\text{GJ} \cdot \text{CPS} + 0.0043 \cdot Q_G + 0.0047 \cdot V_{N_2}$$

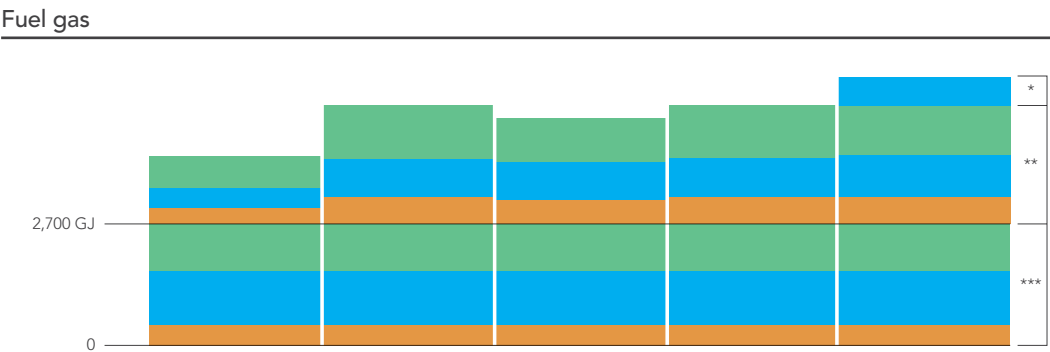
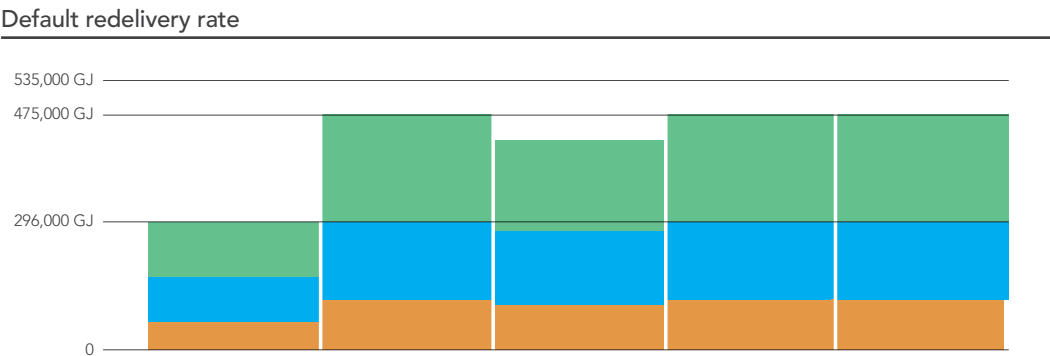
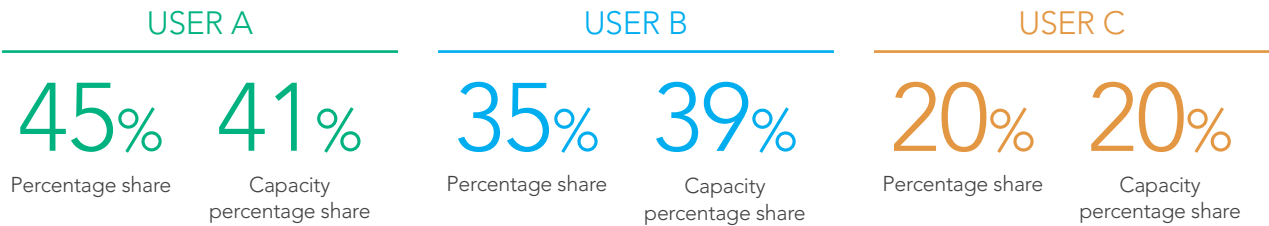
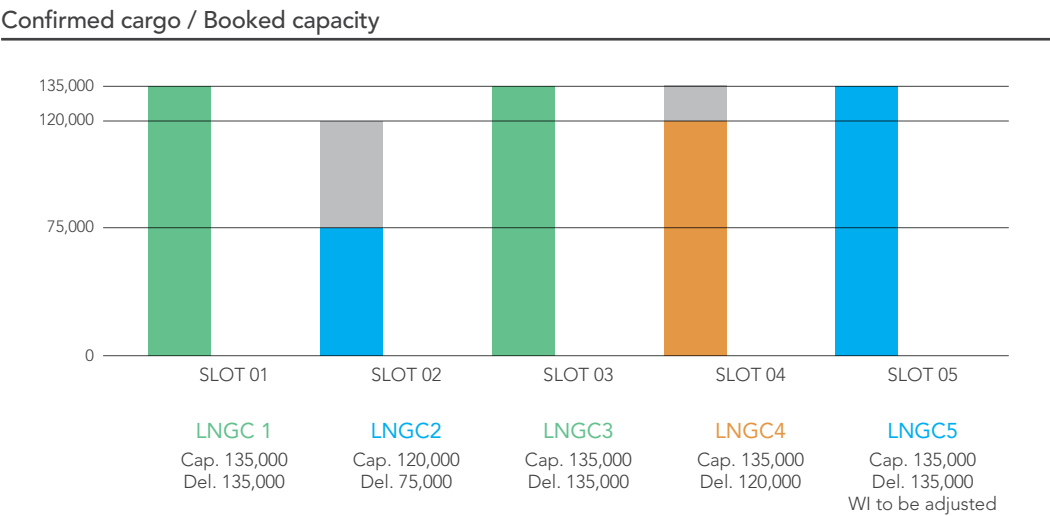
Where:

- CPS is the user capacity percentage share,
- Q_G is the quantity of gas redelivered at the Entry Point and
- V_{N_2} is the volume produced for Wobbe Index correction.

At the end of each gas day the fuel gas consumption is allocated to each user adjusting each component on the actual fuel gas measured in that gas day.

This structure allows a more realistic fuel gas allocation: the constant small base load, in fact, is shared between all users based on their booked capacity in the relevant period whilst the variable part is allocated to the user proportionally to the quantity of gas redelivered at the Entry Point and to the Nitrogen produced for the LNG correction.

Figure 9-1
Fuel gas allocation
process







Disclaimer

This document sets forth certain information regarding the regasification facilities and services offered by OLT terminal. Please note that the document can be amended from time to time pursuant to the Access Code. In each case OLT disclaims any and all responsibility for changes of the services herein described that may be as result of, *inter alia*, regulatory constraints defined by the relevant regulatory authority or may be imposed by Italian or European authorities.

The information herein contained should not be considered to give rise to any contractual relationship between OLT (or any of its affiliates entities) and any interested party.

