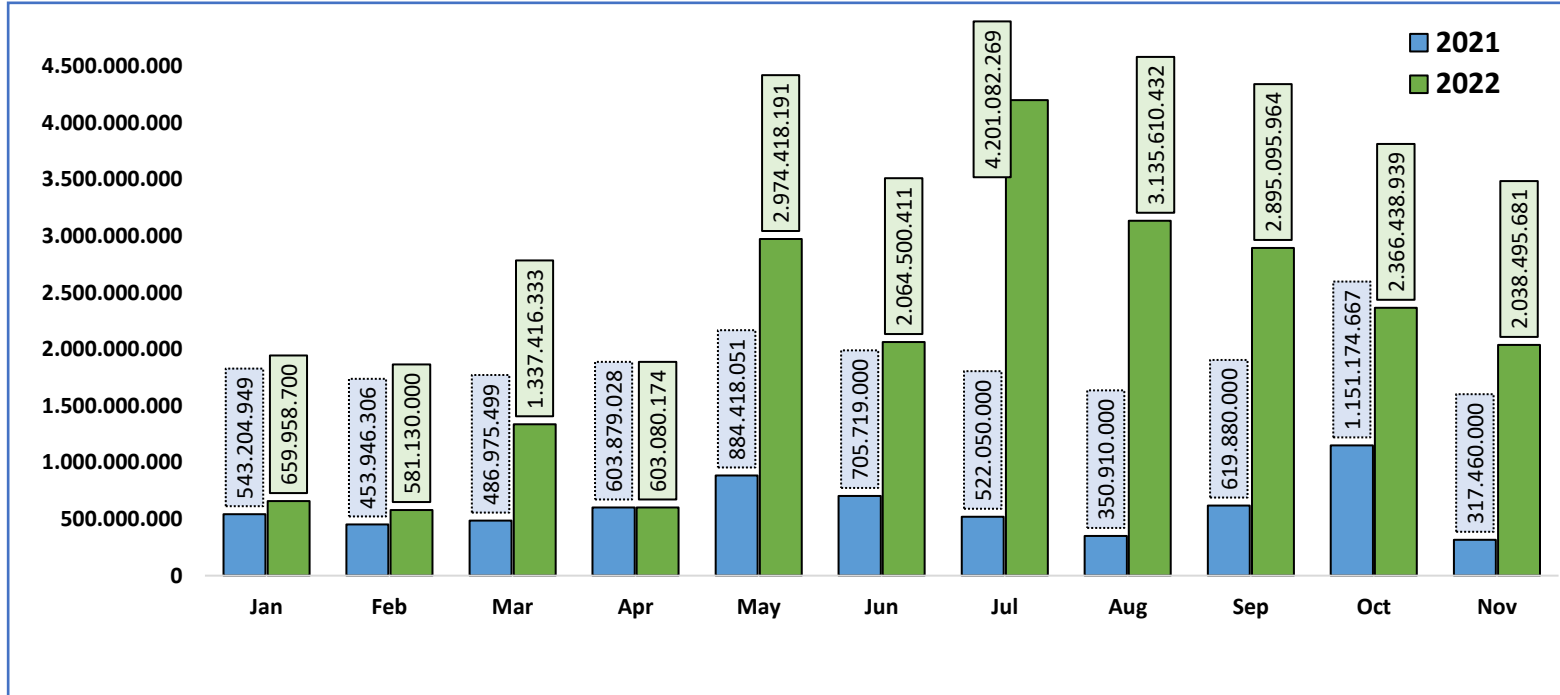


desfa

Η συνδρομή του στην ασφάλεια εφοδιασμού και την ενεργειακή μετάβαση

Δρ. Μιχάλης Θωμαδάκης
Δ/ντης Στρατηγικής & Ανάπτυξης

Short Term: Significant Increase in Exports to BG (via Sidirokastro & IGB)



- Exports to Bulgaria have more than tripled YTD 2022 [**22,9 TWh**] vs the respective 2021 period [**6,6 TWh**]
- Significant NG Quantities [**1,8 TWh**] have also been shipped to Bulgaria via IGB since the beginning of commercial operation in October 2022

Month 2022

Imports to BG via IGB (TWh)

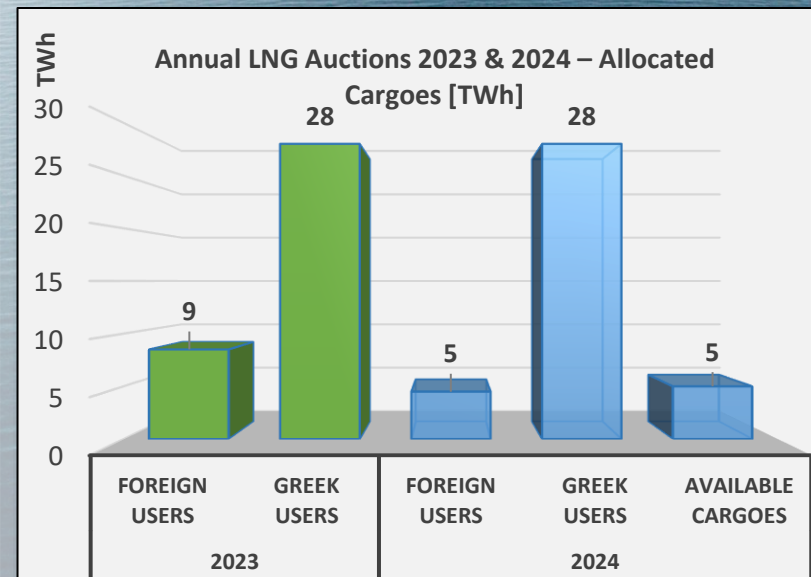
October 1,082

November (YTD 20.11.2022) 0,686

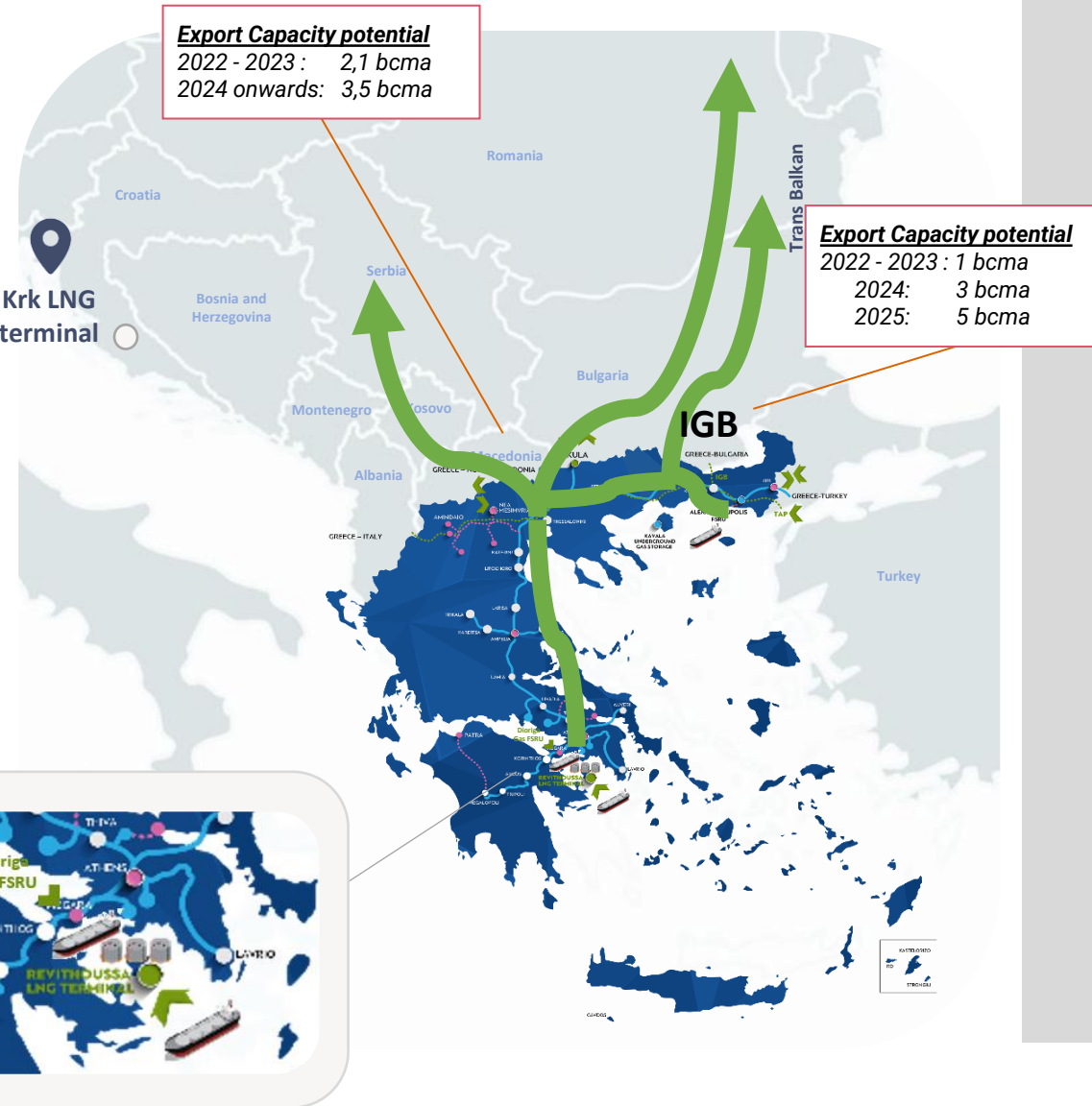
Total 1,768

Revithoussa LNG Terminal Keynotes

- The LNG unloading slots for the Years 2023 and 2024 were allocated through auctions:
 - 37 TWh were allocated for the Year 2023 (28 TWh to Greek companies and 9 TWh to foreign companies) and
 - 33 TWh were allocated for the Year 2024 (28 TWh to Greek companies and 5 TWh to foreign companies)
- DESFA has chartered an LNG vessel (“GASLOG ATHENS”) to operate as a Floating LNG Storage Unit (FSU) for a period of 1 year, with an option to extend the chartering period for 6 months (until the end of 2023).
- The FSU is considered as an integral part of Revithoussa, thus increasing its storage space by appr. 142.000m³, while it can be accessed on FCFS basis, in accordance with the rules approved by RAE.
- During the winter period 2022/2023 (i.e. 01.11.2022 - 31.03.2023) ~67,000 m³ of the FSU storage space has been made available to Power Producers who are obliged to store LNG, in accordance with the provisions of Action Δ4 of the Preventive Action Plan.
- The first loading of the FSU (STS operation) started on 31st of October 2022, in the Greek territorial waters.



Mid Term: Greece is very well placed to act as an important source of LNG for Europe ; expanding the infrastructure limits has significant advantages not only for Greece but for the whole SEE region



As is situation

January 2024

Q3 2024

2025

- One large LNG import Terminal, one FSRU under construction and a 2nd in binding market test phase
- Two connections to Bulgaria which grant access to Trans Balkan pipeline
- FSU already in Revithoussa increasing LNG storage capacity by approx 65%
- A joint process for a market test with TAP is currently in place (binding phase in Jan.2023)
- Firm import capacity is equal to 12.5bcma and firm exit capacity is equal to 2,1 bcma
- Additional firm capacity requires further investments

- A temporary solution (installation of a regulating station at Komotini) will ensure the supply of 3bcma from Alexandroupolis FSRU to IGB, from Jan.2024
- DESFA will include in the next TYDP a permanent solution for an FSU in Revithoussa

- Commercial operation of Ambelia CS increasing export capacity from Sidirokastro to 3,5 bcm
- Commercial operation of the under-construction CS in Komotini (2+1) x 8.2 MW allowing firm capacity to IGB up to 3 bcma
- Commercial operation of the H2 ready HP pipeline for the supply of West Macedonia

- Commercial operation of the upgrade of the CS in Komotini (1) x 8.2 MW allowing firm capacity to IGB up to 5 bcma
- Commercial operation of Dioryga Gas. DESFA will include in the next TYDP a relevant project (duplication of approx 100km in the south part of the System) that will allow firm flows from Dioryga Gas
- Commercial operation of the interconnection Greece-North Macedonia (positive Market Test finalized)



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TLS | Operating overview

The station will have one loading bay for 50 m³ trucks with a loading capacity of 100 m³/h. It will also include provision for a future second bay. The project also includes:

- Measurement of LNG loaded via weighbridge
- Control of the truck loading station from the LNG Terminal Control Room and DESFA EIS and SAP system as required
- Traffic arrangements within DESFA property as well as on the access road to Revithoussa
- Expansion of the existing pier at Perama Megaridas port (3.1 miles from Revithoussa) for back up use.
- Upgrade of Almyra jetty (1.1 miles from Revithoussa) so as to be the permanent transfer port. As intermediate solution Kronos pier in Elefsina port (10 miles from Revithoussa) will be used.

The 7,5-million-euro Truck Loading project is developed with significant EU financial assistance and currently the project is ready for commercial operation.

Long Term: DESFA's hydrogen network is expected to expand in parallel to the current methane network proving a complete dual system

Gas network phased expansion

Current state: dedicated to Natural Gas

- 1 NG pipeline to serve power gen. and final consumption
- 2 LNG terminal active in Revithoussa
- 3 TAP connection for NG with other European networks



100% H2 Ready Pipeline: 0 km

Expansion of NG + H2 line

- 4 H2 pipeline for industrial sites and final consumers
- 5 UGS for Methane potentially convertible to H2
- 6 Injection of H2 from W.Macedonia
- 7 W. Macedonia (a) and W. Greece (b) NG branch (H2 ready)²
- 8 NG exit points in N. Macedonia (a) and IGB (b)
- 9 LNG Depot in Patras (a), Thessaloniki (b) and Igoumenitsa (c)
- 10 FSRU in Dioriga



Phase 1: Utilisation of the new system with NG
 Phase 2: Utilization of the new system for pure H2*
 100% H2 Ready Pipeline: 600 km

Final state: dual system in parallel

- 11 Connection for Hydrogen Export through TAP repurposing
- 12 Connection to UGS for H2 seasonal system balance
- 13 Completion of Hydrogen network
- 14 Revithoussa LNG Terminal switched from gasification to liquefaction plant



100% H2 Ready Pipeline: 2,000 km

— Methane pipeline — 100% H2 ready pipeline — Independent system

* Phase 2 will begin when H2 market becomes mature enough and relevant H2 volumes are available for transportation. In the meantime, the NG network will be ready to accept H2 blends.

DESFA is actively participating in the shaping of the hydrogen market in Greece and EU

DESFA executed an assessment of Natural Gas Transmission System in order to analyze its capability to transport Hydrogen blended with Natural gas (5% and 10% in volume), and to provide a technical description of which changes on the as-is DESFA system will be needed to transport it.

**H2 Readiness
Study already
executed**

ENTSOG's TYNDP PCI Application

The H2 Dedicated Pipeline has already been included in the ENTSOG's 2022 TYNDP, fully aligned with a "twin" project included from Bulgartranzgaz. DESFA will also apply for inclusion of the project in the 6th PCI List.

DESFA is a funding member of the EHB initiative that aims to accelerate Europe's decarbonisation journey by defining the critical role of hydrogen infrastructure – based on existing and new pipelines – in enabling the development of a competitive, liquid, pan-European renewable and low-carbon hydrogen market

**European
Hydrogen
Backbone (EHB)**

EHB SEE Corridor E East and South-East Europe



Thank you

The logo for Desfa, featuring the Greek letter delta followed by the lowercase letters 'esfa' in a bold, white, sans-serif font.