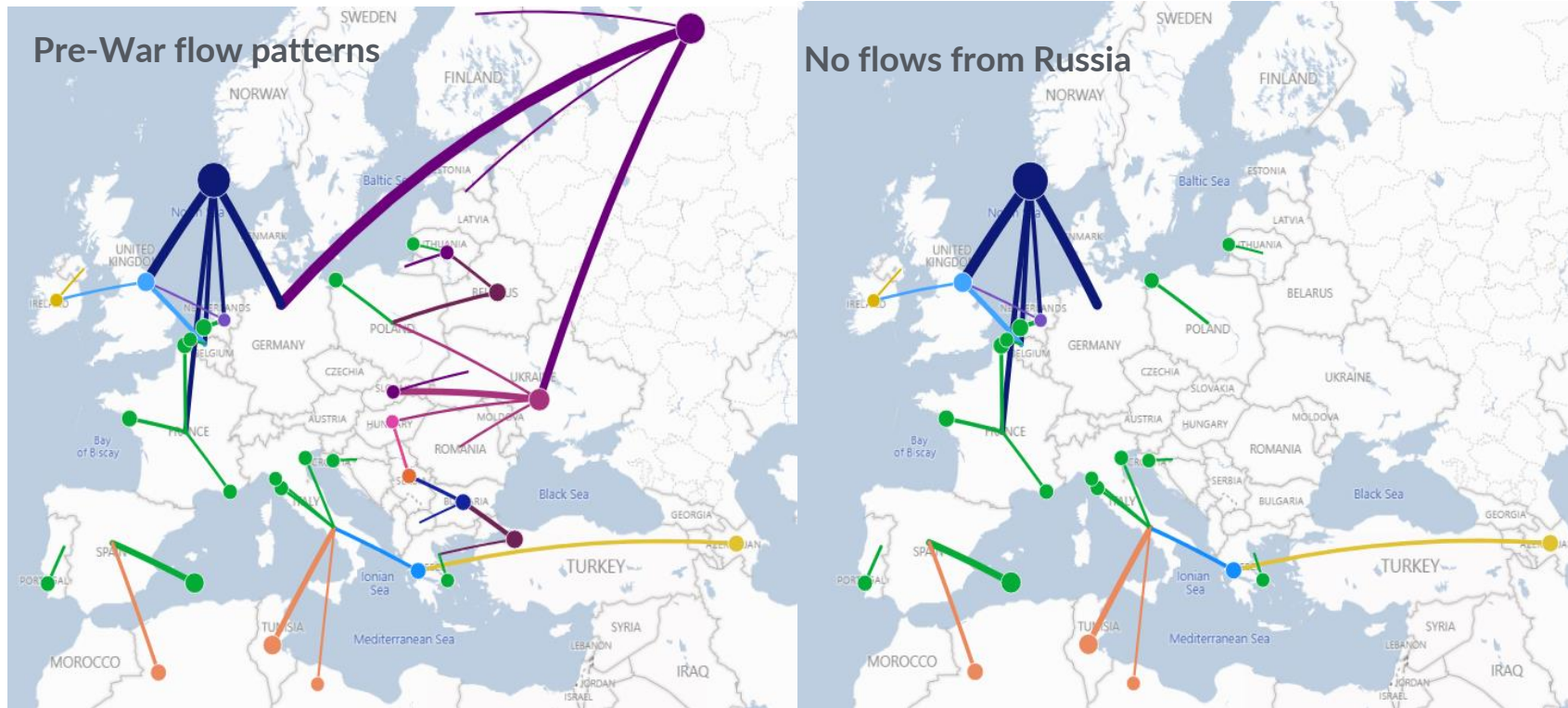


# Η Ελλάδα στο σταυροδρόμι των ενεργειακών εξελίξεων στην ΕΕ

5ο Forum «Ενέργεια και Γεωπολιτική»  
Τρίτη 21 Μαρτίου 2023

Δρ. Μιχάλης Θωμαδάκης

# Russian gas supply disruption challenge in EU

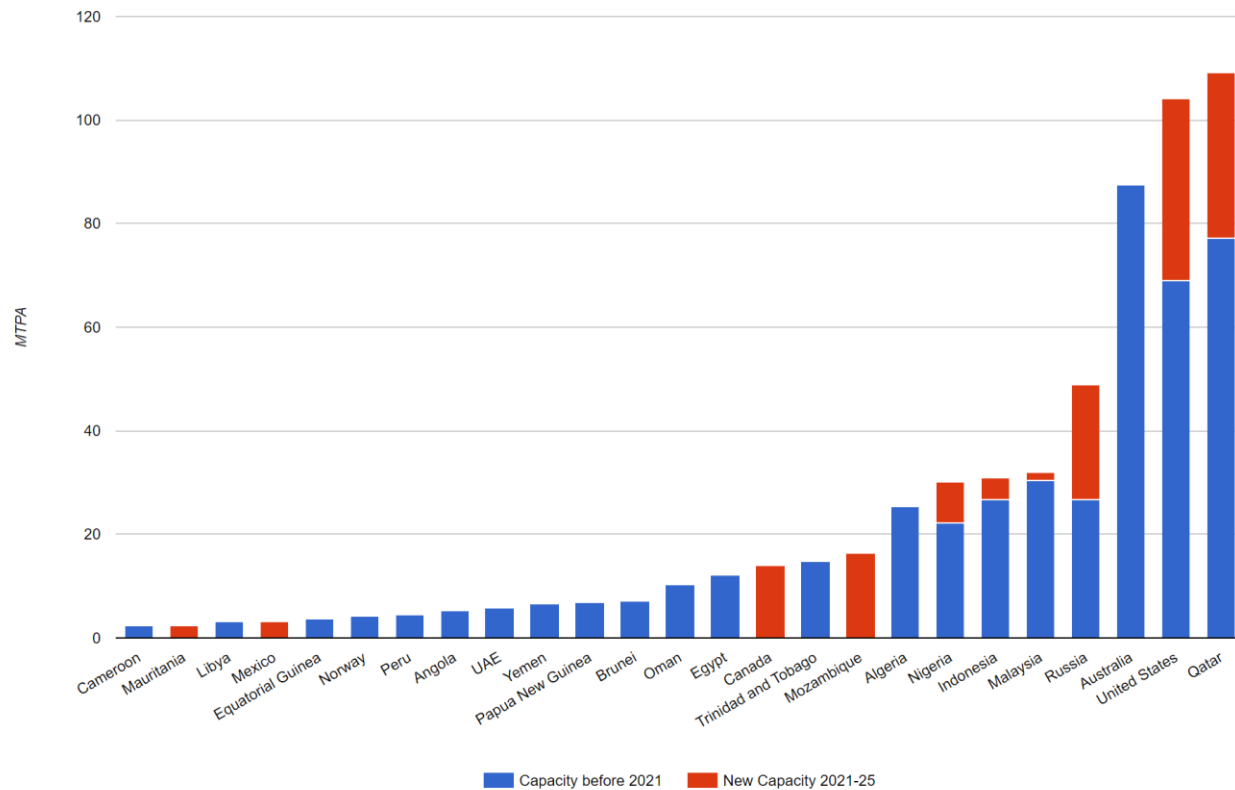


- EU imported about **160 bcm** of Russian gas in 2021 (140 bcm by pipelines)
- In 2021 worldwide LNG production was **513 bcm**
- **375 bcm LNG** go to Asia (i.e. 138 bcm available for others)
- **EU Regas capacity ca. 200 bcma**

- Additional Gas Pipeline supplies can come from Algeria (+9bcm/y to Italy), Norway and Azerbaijan/Middle East via TAP doubling (+10bcm/y to Greece, Italy and Balkans). **Majority of new supplies will need to come as LNG**



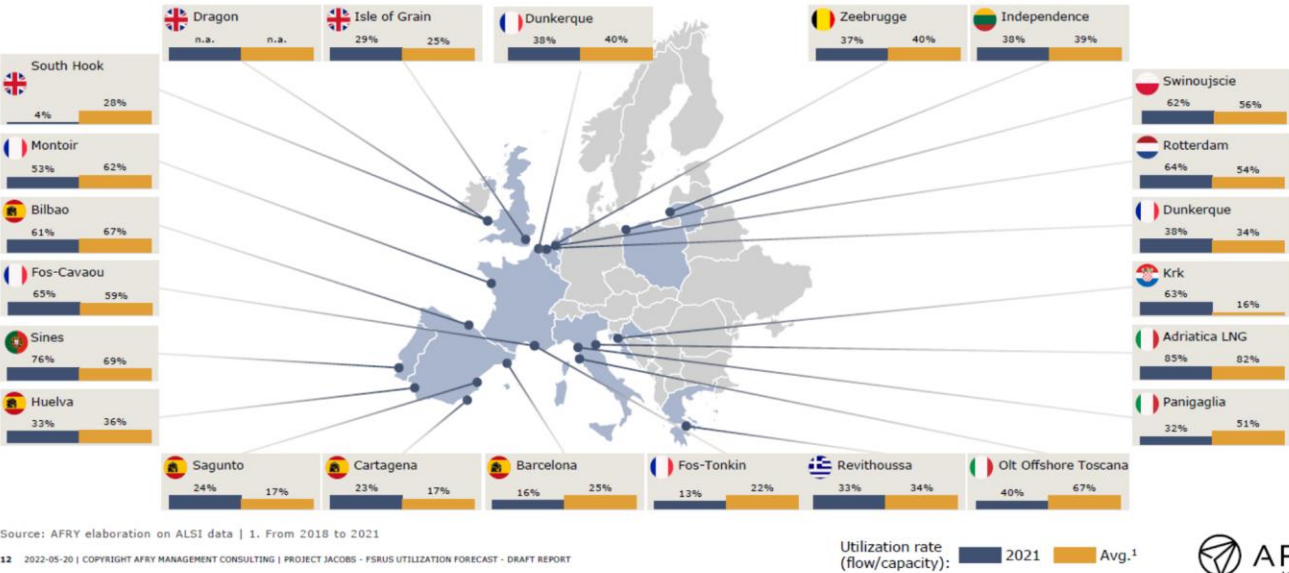
# New LNG liquefaction capacity will be put in operation by 2026 but large-scale LNG terminals are Capital Intensive and have a long Lead Time (5 to 7 yrs from FID) Until then gas prices will remain high also due to competition between EU and Asia



- By 2026, liquefaction capacity is expected to increase only by about 13 mmtpa since during pandemic many projects FID have been postponed/delayed
- **New supplies of LNG will be a crucial part of the solution to replace Russian Gas but will take time and EU will face competition**
- **Europe will have to compete with Asia for the marginal LNG molecule to satisfy demand**
- **Prices will come down** compared to current levels as and when the war in Ukraine eventually de-escalates, reducing the risk premium associated with Russian supply disruption

**However, competition between Europe and Asia for limited LNG will be intense until a new supply wave arrives after 2026. Prices will inevitably remain elevated until then**

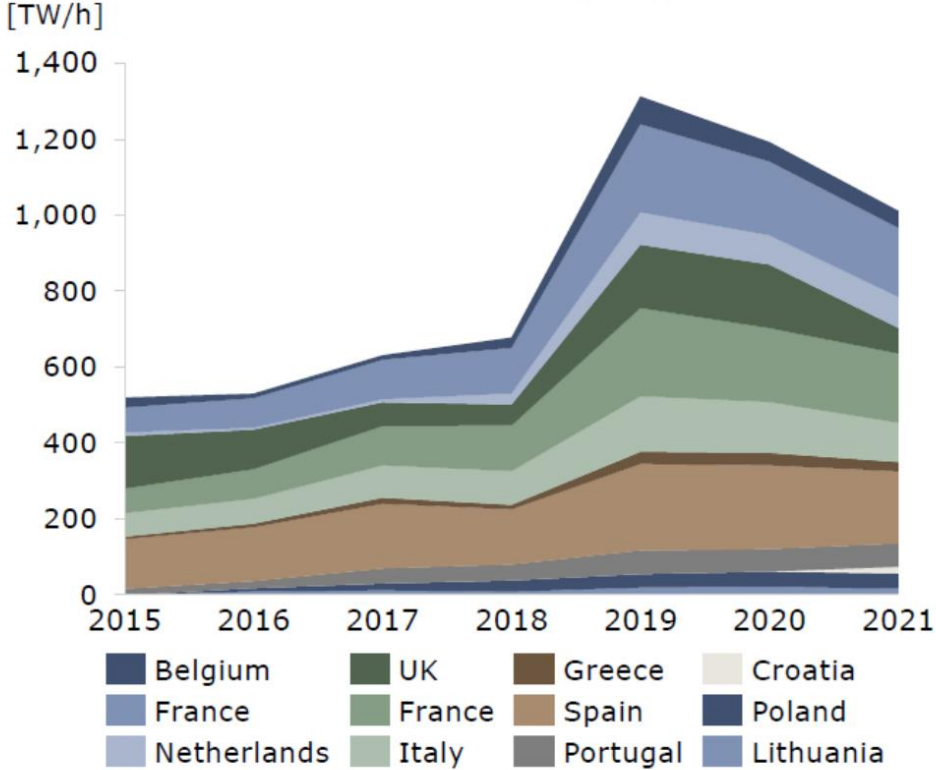
# EU LNG terminal capacity utilization has significantly increased over the last years



Source: AFRY elaboration on ALSI data | 1. From 2018 to 2021  
 12 2022-05-20 | COPYRIGHT AFRY MANAGEMENT CONSULTING | PROJECT JACOBS - PSRUS UTILIZATION FORECAST - DRAFT REPORT



EUROPEAN HISTORICAL LNG SEND-OUT (TWH)



Source: AFRY elaboration on ALSI data

- LNG Terminals Send Out has improved in particular in South Europe thanks to LNG supply increase and more services offered (storage, SSLNG, Short term products)
- Continental interconnectors are not enough to provide access to LNG Terminals: Central EU (excl. Poland) and South East EU (Excl. Greece and Croatia) countries have no LNG import terminals in place

# Greece is very well placed to act as an important source of LNG for Europe but is facing strong competition in the potential supply routes for gas in SEE



## CROATIA

- ✓ Closer to the main lines that bring gas to Central Europe & Ukraine
- ✓ Has a newly built FSRU - **Krk LNG**
- ✓ The Croatian **government is financially supporting the de-bottlenecking of the national network** to accommodate transit flows
- Challenges related to expansion of transit capacity

## Greece

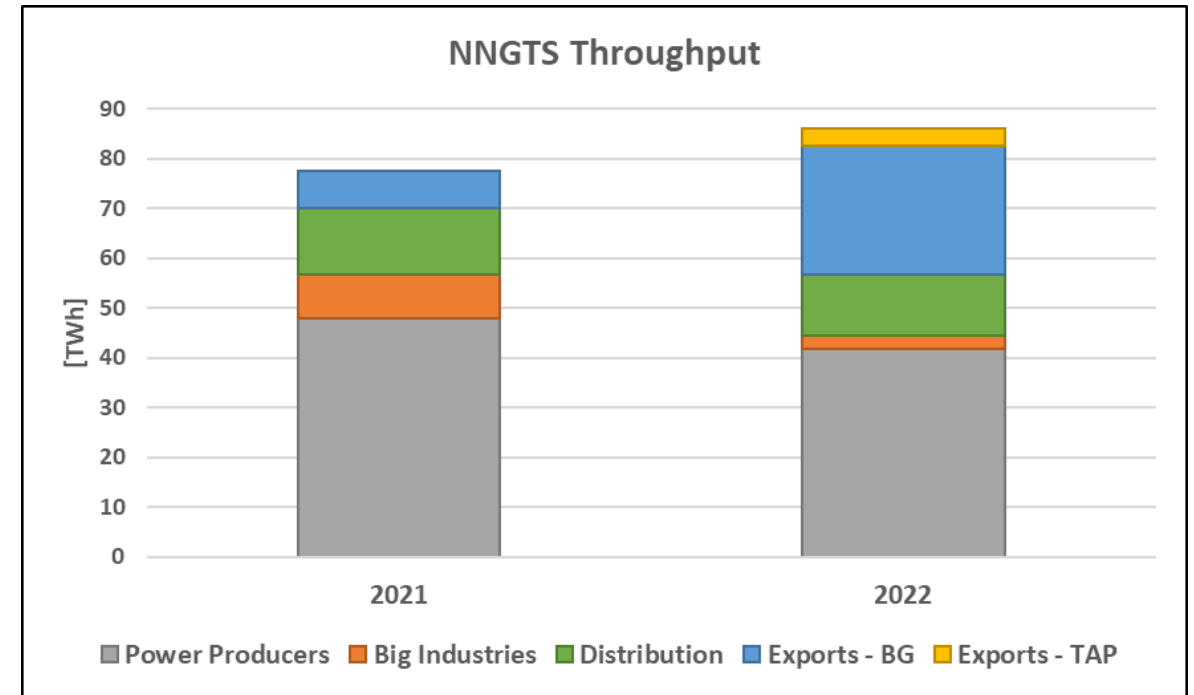
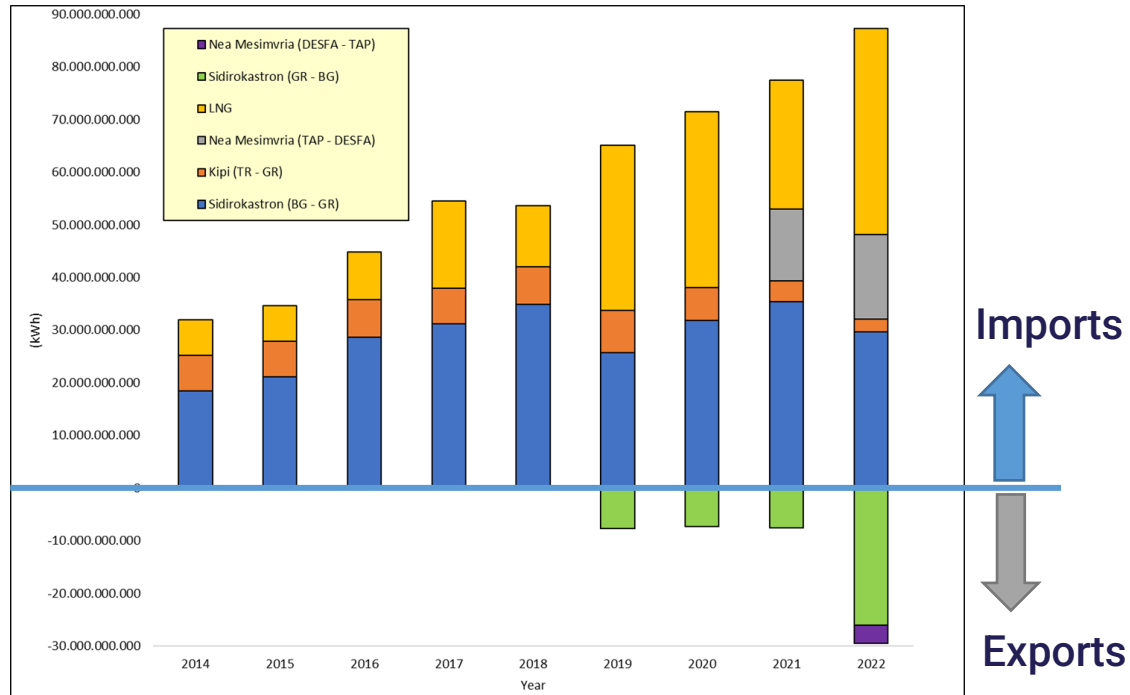
- ✓ Very well placed, with one large LNG import Terminal
- ✓ One FSRU under construction and a 2<sup>nd</sup> in planning phase
- ✓ Two connections to Bulgaria which grant access to Trans Balkan pipeline
- Congested national gas network & large **investments needed for the upgrade for LNG Transit**
- No “free money” any longer for natural gas but only for H2

## Turkey

- ✓ Most diversified gas supply portfolio in the region & Important transit country, largest connection to the Transbalkan pipeline
- ✓ 4 LNG Terminals in operation and a 5<sup>th</sup> in planning phase
- ✓ Large consumer with modern Energy Exchange in operation
- ✓ EU is hoping for gas from Turkey;
- Large domestic needs, especially in the European part of the country
- National grid needs reinforcement for exports to EU
- Non EU member with protectionism for national champions – no TPA
- Ambiguous relations with Russia on gas issues



# The gas landscape is changing - Greece is becoming an exporting country



- ✓ Annual throughput has been steadily increasing during the last nine years (from 32 TWh in 2014 to 87 TWh 2022)
- ✓ Exports increased by appr. 300% in 2022 compared to the average of the preceding three years period
- ✓ Domestic demand was decreased by 19% in 2022, compared to the previous year
- ✓ LNG imports hit a max in 2022 (more than 39 TWh)

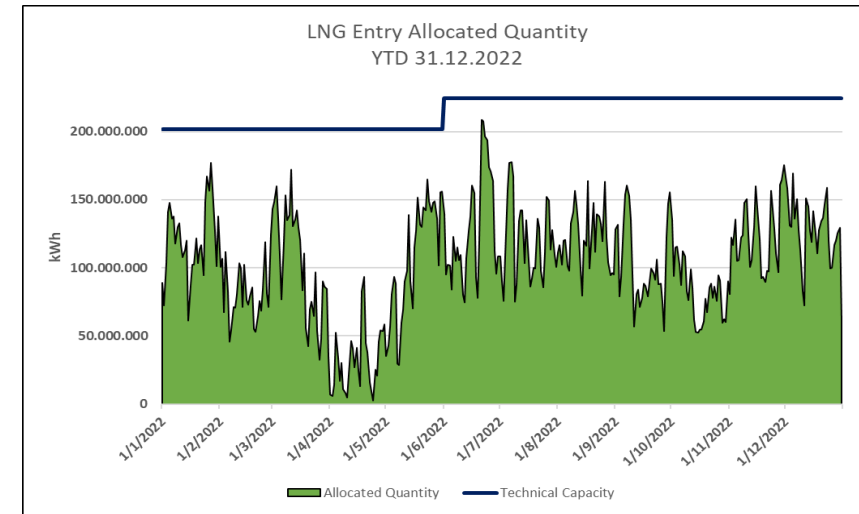
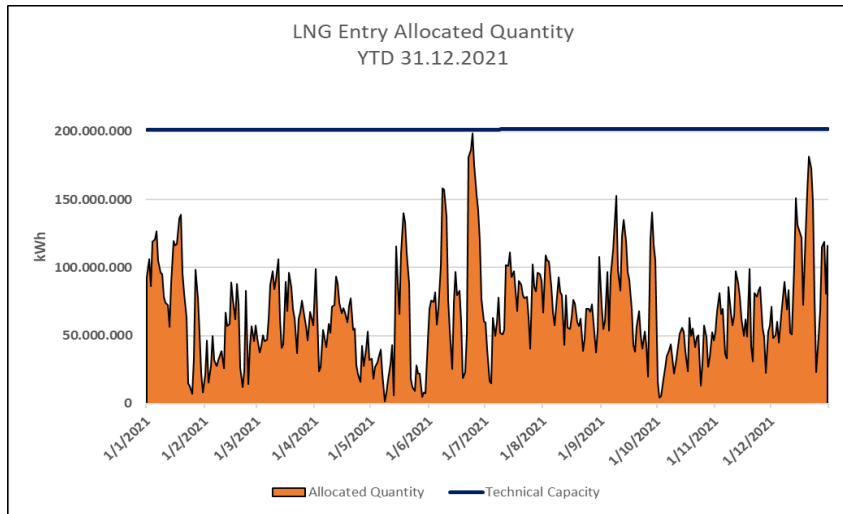
# Revithoussa filled-up the gap of missing Russian gas in Greece and the east Balkans

## Additional export capacity towards Bulgaria is required

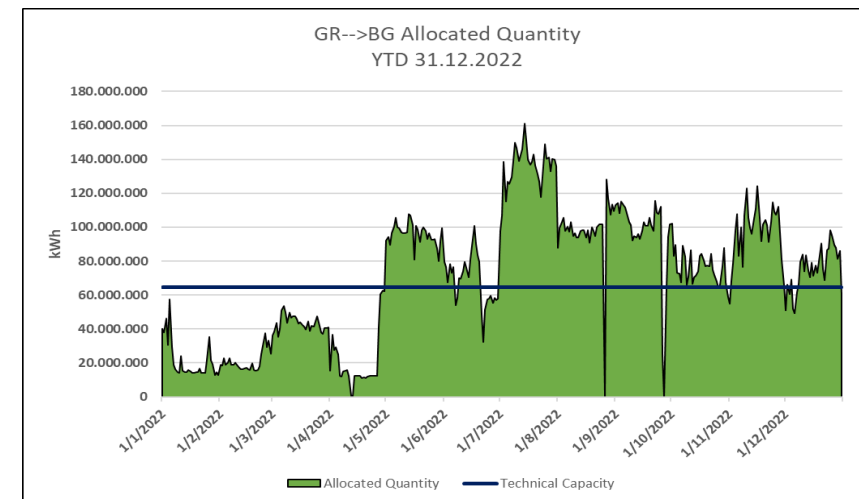
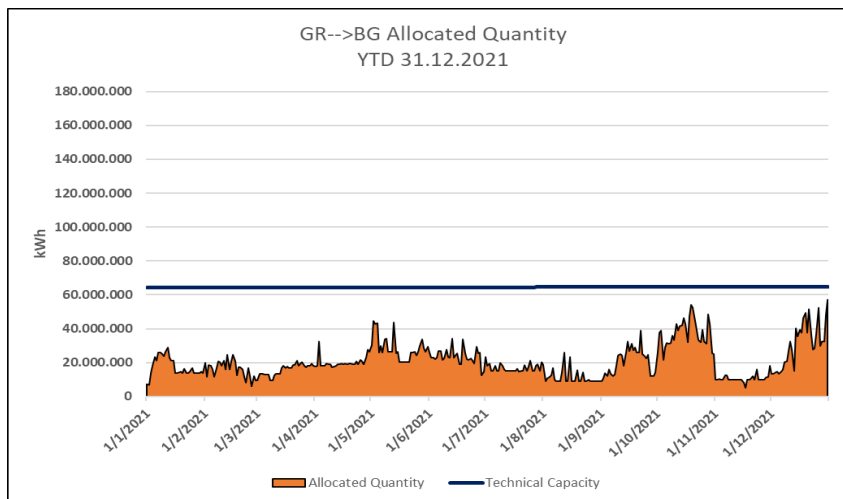
2021

2022

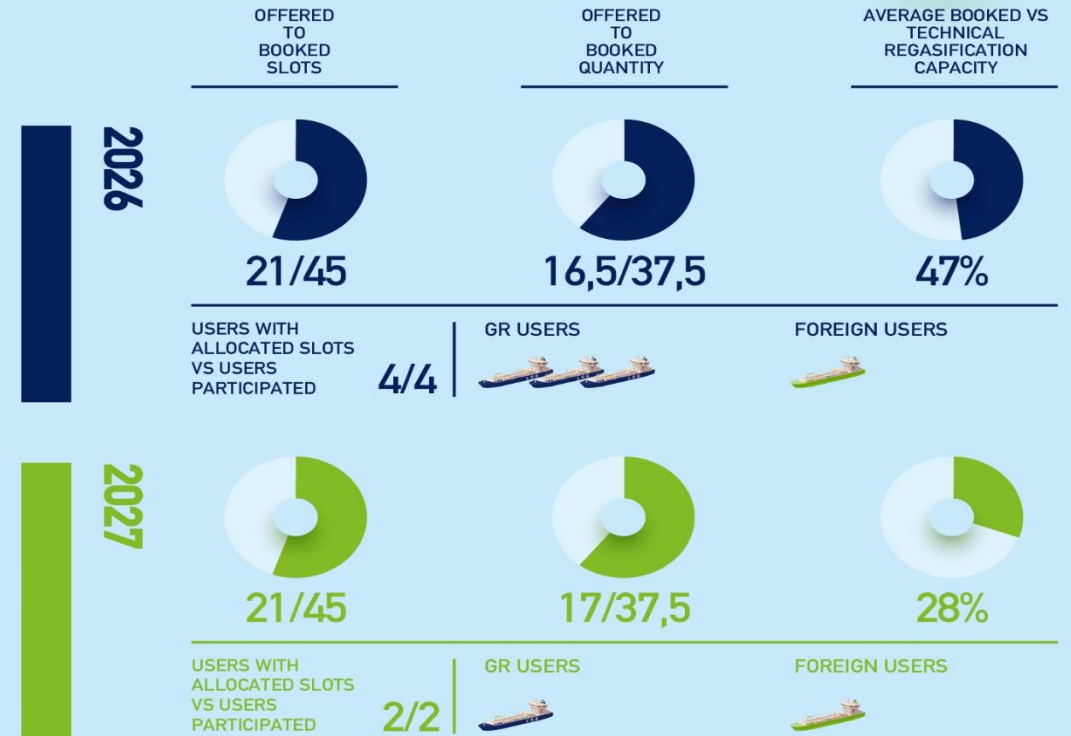
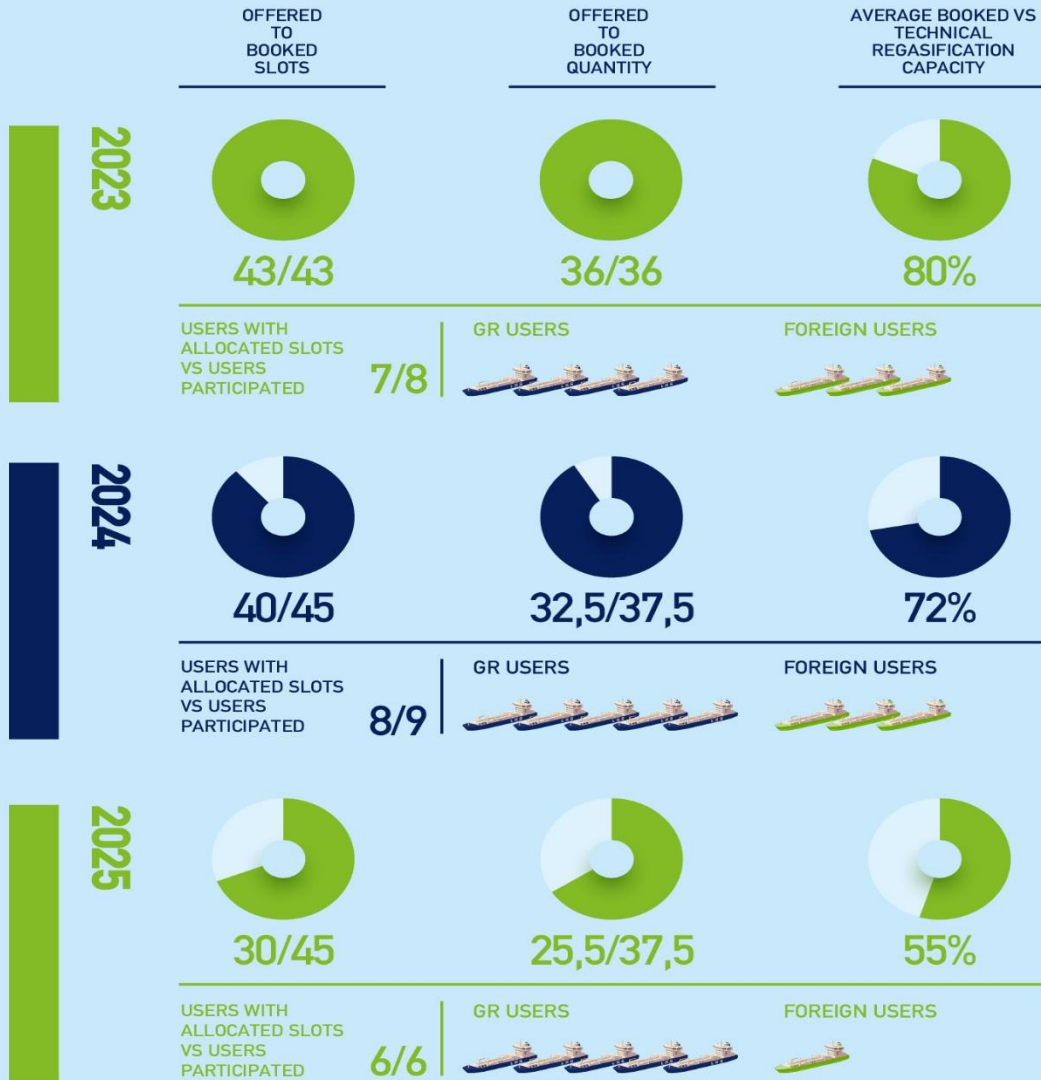
LNG Entry



GR → BG

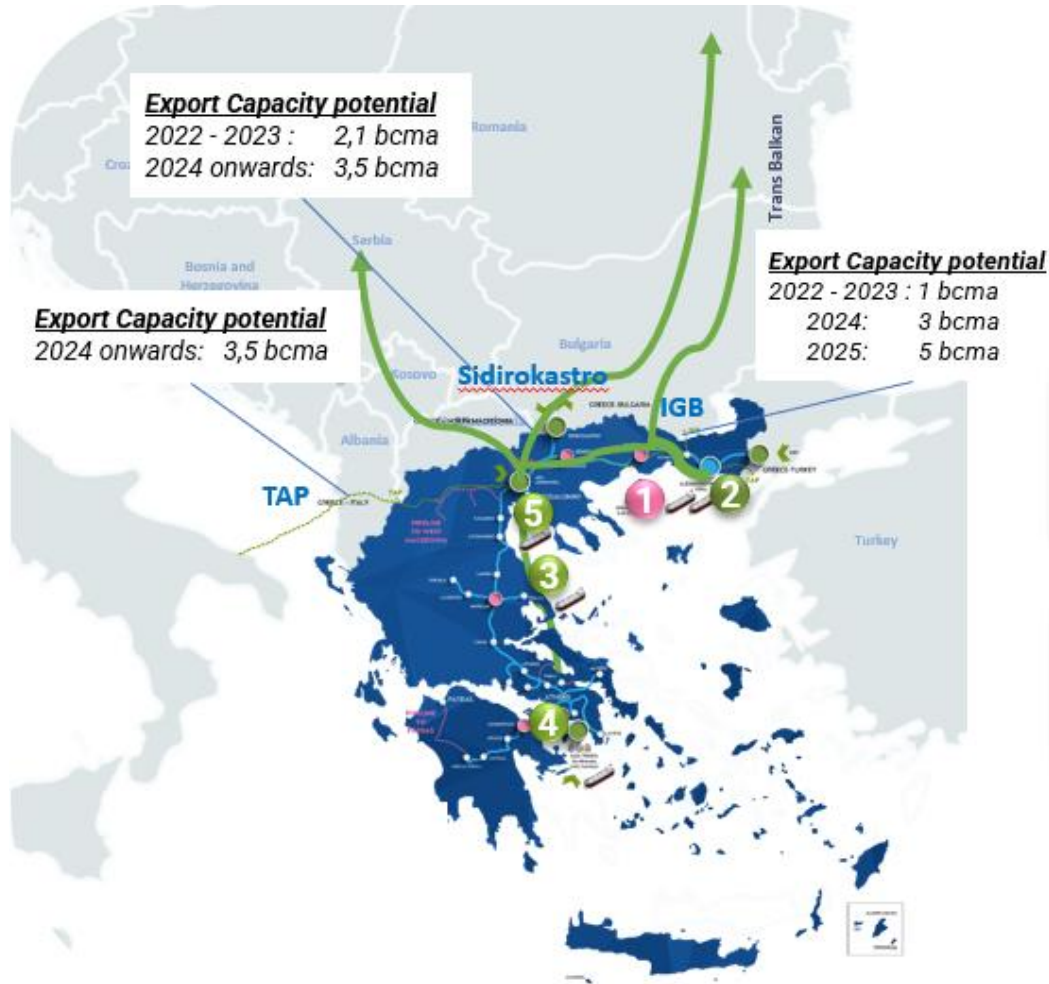


# DESFA LNG AUCTIONS





Five new FSRUs of ca. 20bcma applied for access to DESFA NGTS; only 1 under construction  
 DESFA is currently upgrading NGTS to reach export capacity of 12 bcma by 2025 (TYDP)  
 Final capacity must be reserved by the market in a binding way before FID



### Major upgrades required for transit

	<p>CAPEX: 290 million €</p> <p>Expected FID date: Jan 2025</p> <p>Operation: Jul 2027</p> <p>Entry into the system: Sep 2027</p>
	<p>CAPEX: 140 million €</p> <p>Expected FID date: Oct 2025</p> <p>Operation: Sep 2027</p> <p>Entry into the system: Oct 2027</p>
	<p>CAPEX: depending on the final configuration of the project, as this will be defined after a positive market test</p>

Market Test to be launched in March' 23



**Thank you**