



DESFA

Cultivating the regional energy transition

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Chief S&D Officer

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AGENDA

Delivering an ambitious TYDP

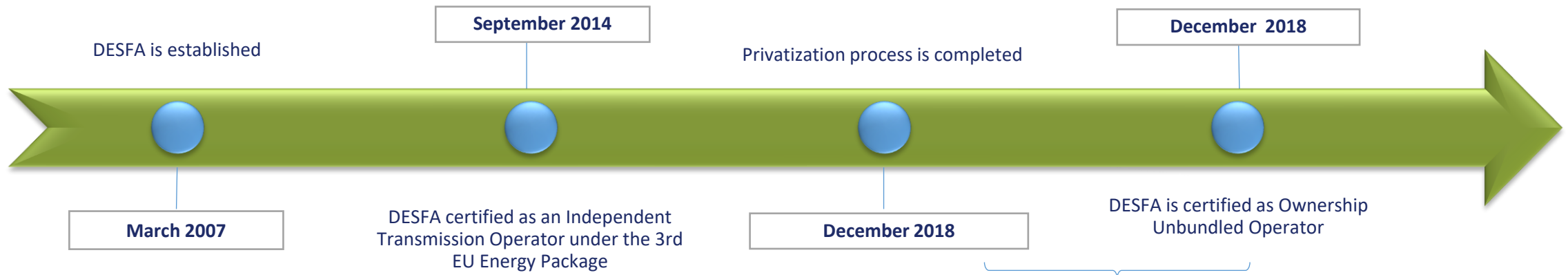
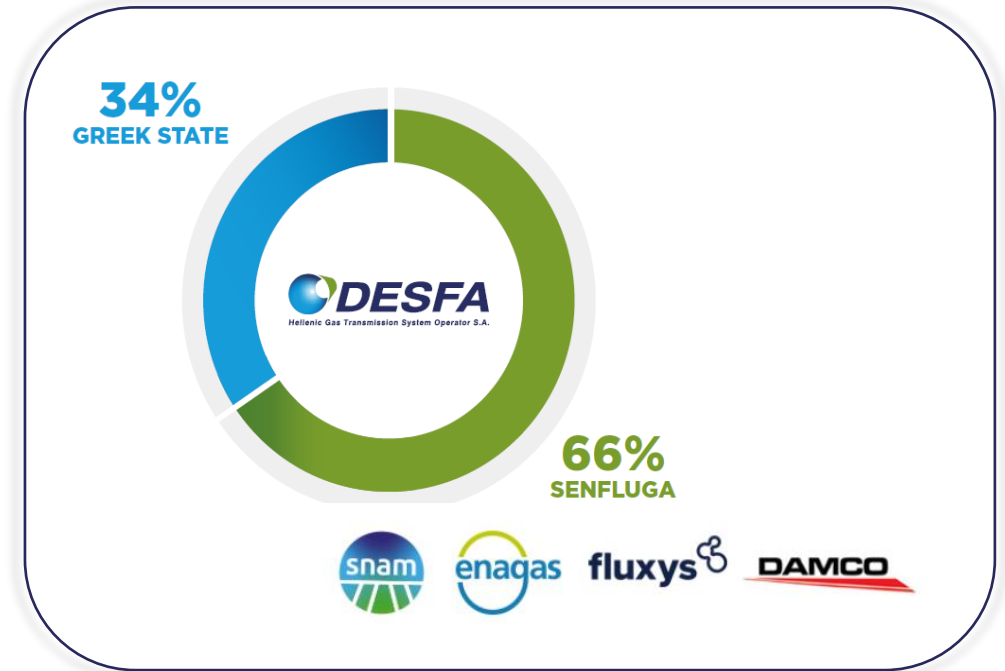
Regional Cooperation

Tackling with Energy Transition

Challenges ahead

The Hellenic Gas Transmission System Operator (DESFA) counts 17 years of successful operation

- ❑ DESFA owns & operates the Greek **National Natural Gas System (NNGS)**, which consists of the **National Natural Gas Transmission System** & the **LNG Terminal** in the islet of Revithoussa.
- ❑ After the completion of a privatization process on December 20th of 2018, DESFA was certified as an **Ownership Unbundled Operator** under the 3rd EU Energy Package
- ❑ DESFA operates, maintains & develops the National Natural Gas System in a safe, reliable and economically efficient way, offering:
 - **(a) regulated Third Party Access services** in a transparent and non-discriminatory way &
 - **(b) a range of non-regulated services** to a number of national and international clients



The NGTS is only 28 years old; still expanding to new areas nationally and regionally

All new pipelines are H2-ready; ongoing investments of €1,23 bln



DESFA's 10YDP - €500 M within the next 5-year period

1 HP Pipeline to Western Macedonia
Investment: €110 M
Shareholders: DESFA

2 HP Pipeline to Western Greece
Investment: €85 M
Shareholders: DESFA

3 Interconnector Greece – North Macedonia
Investment: €51.4 M
Shareholders: DESFA

4 SSLNG & Truck Loading Station
SSLNG Jetty: €20.4 M
Truck Loading: €6.5 M

5 FSRU Alexandroupolis:
Shareholders: Gastrade

6 HEnEx (Hellenic Energy Exchange)
Shareholders: DESFA 7%

7 Interconnector Greece – Bulgaria (IGB):
Shareholders: DEPA, Edison, BEH

8 Trans Adriatic Pipeline (TAP)
Investment: €4,500 M (Completed)
Shareholders: BP, Socar, Snam, Fluxys, Enagás, Axpo

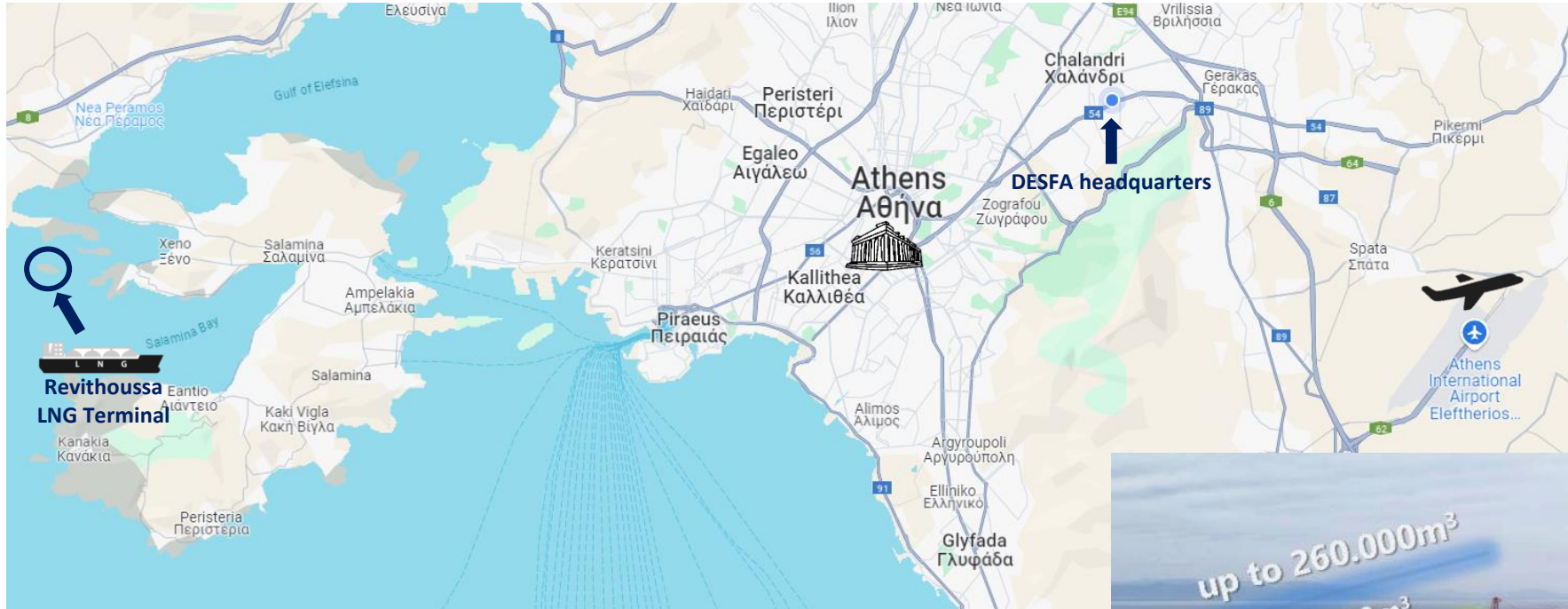
9 UGS South Kavala
Expression of interest to participate in the tender



Other developers

Possible H₂

The Revithoussa LNG terminal



- The Terminal is located on the islet of Revithoussa, in the gulf of Pahi at Megara, 45 km west of Athens.
- Upon the completion of the 2nd upgrade of the LNG facility at the end of 2018, the total storage capacity of the Terminal equals to 225.000 m³, the regasification rate equals to 1.400 m³ per hour and the docking of LNG cargoes up to 260.000m³ (Qmax) is possible.



Capacity booked through 15-ya auctions; Strong interest for the near future



2024



2025



2026



2027



2028



2029



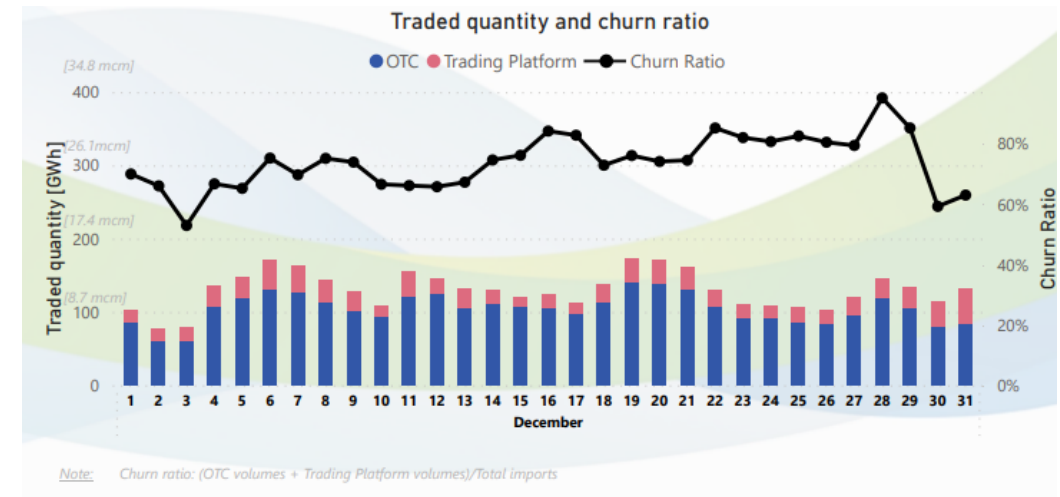
DESFA's Participation in the Hellenic Energy Exchange

Exploring synergies



DESFA is participating as a shareholder (7%) in the Hellenic Energy Exchange, established on June 18th 2018

- Through its participation, DESFA will have the opportunity to:
 - ✓ **Exploit economies of scale & promote efficiency** by sharing infrastructure & avoiding the duplication of efforts;
 - ✓ **Make use of the expertise of the rest of the current & prospective shareholders** in organized markets & their **commitment in delivering a well-functioning market not only for Greece, but also for the whole region**



Gas Trading Platform/Gas Exchange is operational since 2021

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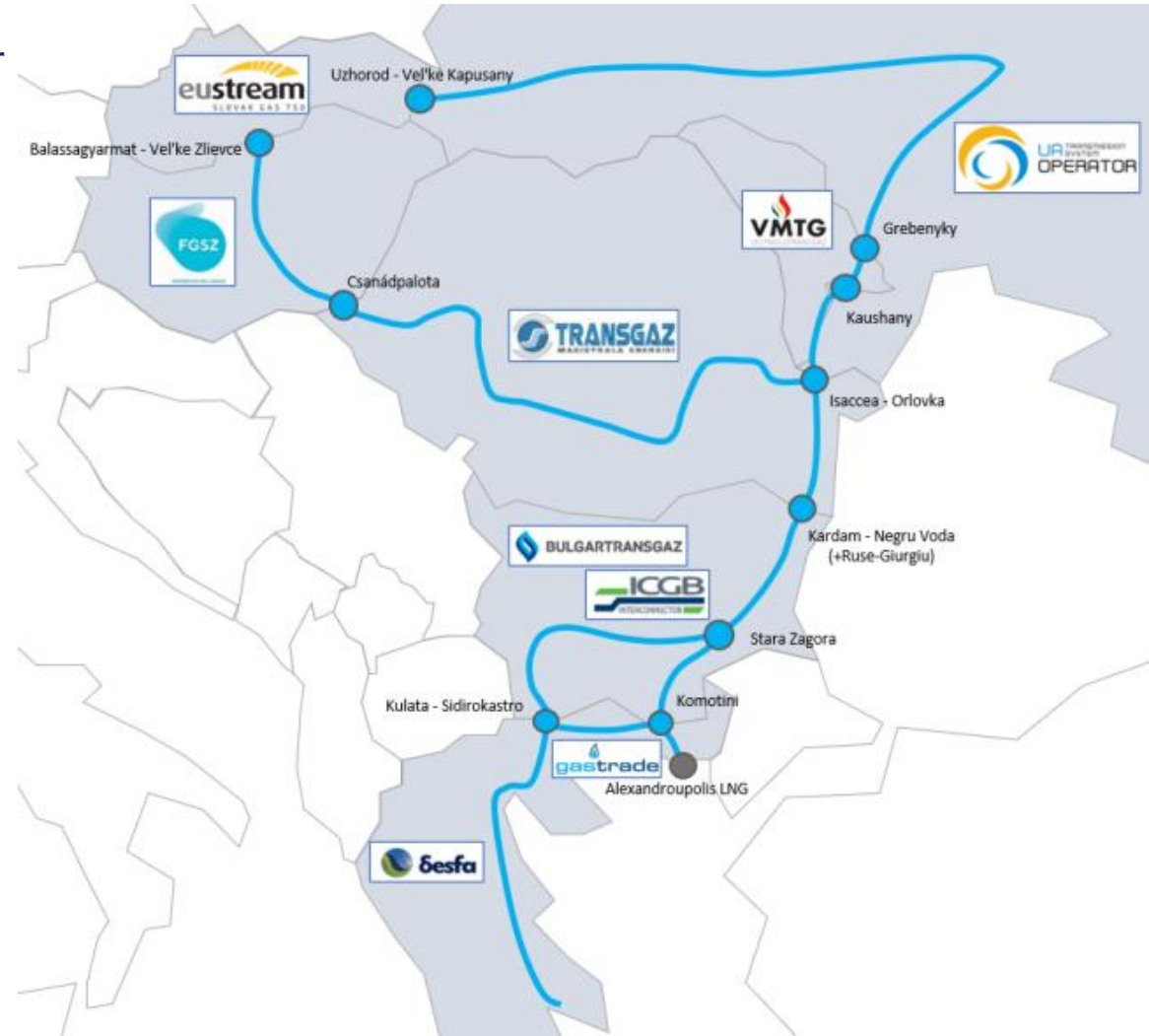
Tackling with Energy Transition

Challenges ahead

The Vertical Corridor initiative streamlines the efforts of all TSOs in the region...



- The Vertical Corridor TSOs have been in close cooperation for the design of expansion projects.
- The binding phase of DESFA's Market Test will be synchronized with the 2023 incremental capacity process of CAM NC as one single process.
- Capacity will be offered simultaneously at all IPs across the route.
- The **launch of the binding phase** is expected at early **May 2024** and the **binding bids window will open in July 2024**
- The process is expected to have been finalized with the signing of the GTAs by the end of **September 2024**.



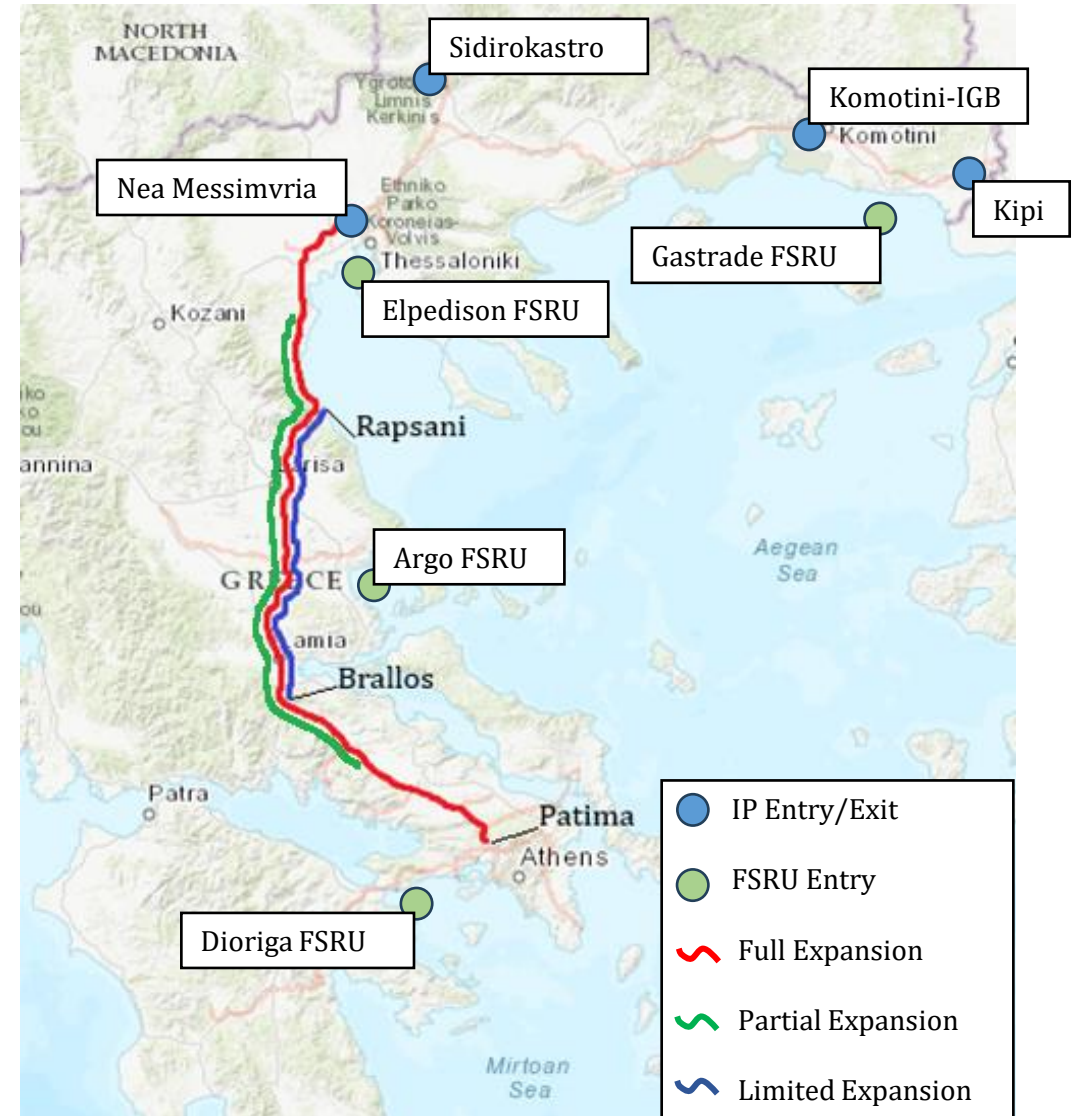
Through the Market Test process, DESFA will offer capacity at 9 entry/exit points...

Capacity will be offered at the following entry/exit points:

- **Sidirokastro** (as entry point)
- **Nea Messimvria** (as entry and exit point)
- **Kipi** (as entry point)
- **Komotini** (as exit point)
- **ARGO FSRU** (as entry point)
- **ELPEDISON FSRU** (as entry point)
- **GASTRADE FSRU** (as entry point)
- **DIORYGA GAS FSRU** (as entry point)

DESFA has examined 3 expansion projects, all in the main pipeline of the System:

Expansion Project	Duplicated section	Length (km)
Full	Patima – Nea Messimvria	410
Partial	Katerini - Livadia	250
Limited	Rapsani - Brallos	160





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Challenges ahead

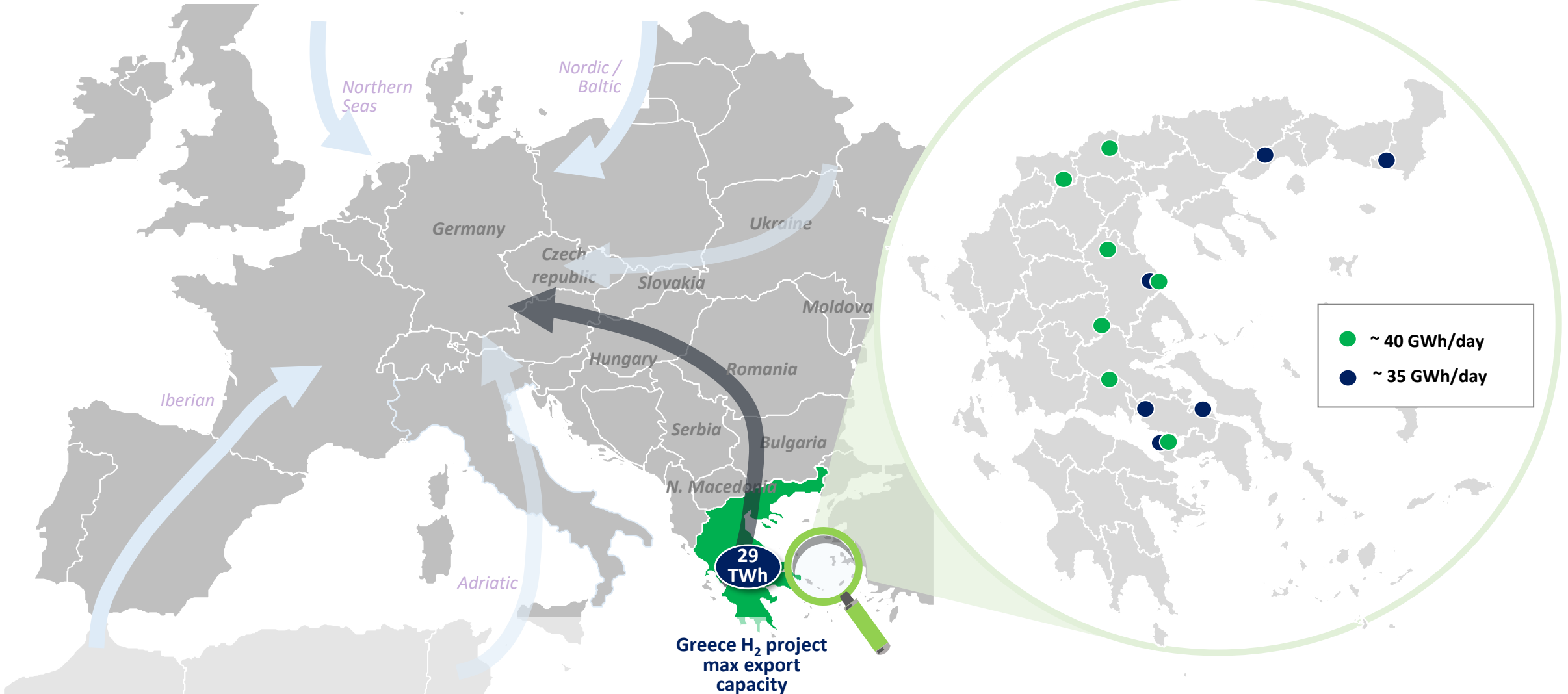
DESFA focuses on energy transition, trying to accommodate both domestic H2 market needs as well as exports towards SEE/CEE countries and EU



Dedicated H₂ Pipeline project

H₂ Supply & Demand from 2030 onwards

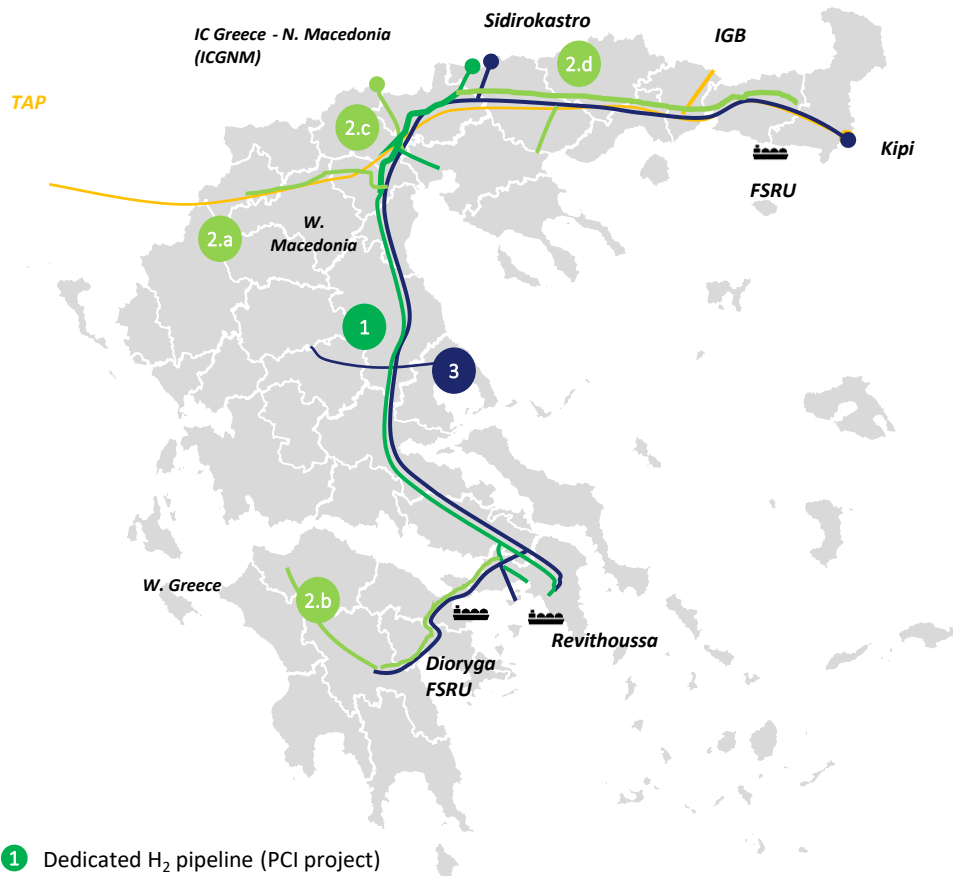
● H₂ Supply ● H₂ Demand



Greece's H2 backbone project is officially part of the 1st PCI list of EC, which is fully aligned with EU energy policy; In addition, all new DESFA's pipelines are 100% H2 ready



Dedicated H₂ Pipeline project



- 1 Dedicated H₂ pipeline (PCI project)
- 2 Projects under development: (a) W. Macedonia HPP, (b) Patras HPP, (c) ICGNM and (d) Karperi-Komotini branches: currently part of NGTS, **100% H₂ ready transmission Pipelines; will be connected to the Dedicated H₂ pipeline when market conditions require**
- 3 Existing pipeline of NGTS

Project description

The project regards the construction of a new 540km long pipeline exclusively for the transport of pure H₂ of a total budget ~€1bn by 2030

The pipeline is expected to start from Southern part of Greece and will reach the interconnection point of NNGS with Bulgaria allowing not only the connection of demand and supply centers in Greece but also export of excess H₂ produced and injected in Greek network (e.g, by offshore wind and/or imported in Greece from Africa/ Middle-East/ North Africa)

The Greek Dedicated H₂ Pipeline (10.3.1 Internal hydrogen infrastructure in Greece towards the Bulgarian border) was recently included in the announced 6th PCI list of EC (1st PCI list under the new TEN-E), which stresses its importance also for the EU

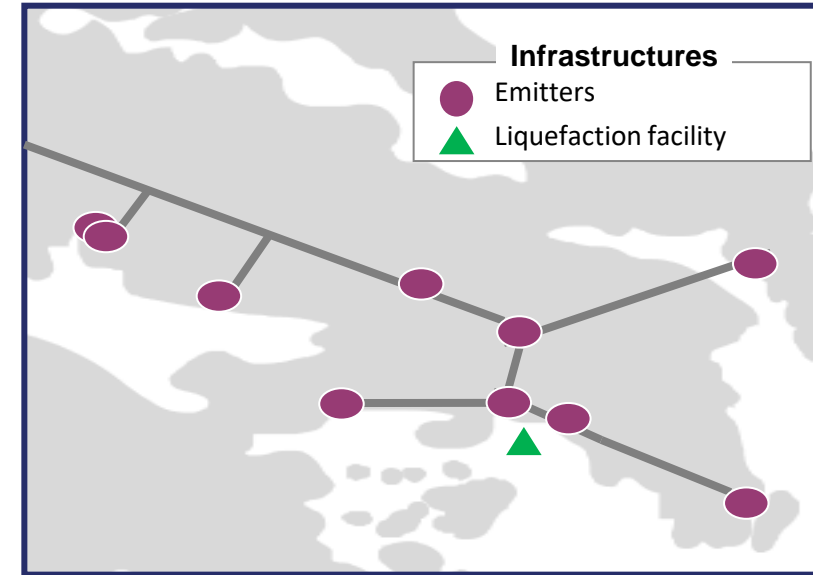
The project will connect to Bulgartransgaz's dedicated H₂ pipeline (10.3.2 Internal hydrogen infrastructure in Bulgaria towards the Greece border), which also qualified and is included in the 1st PCI list of EC under the new TEN-E regulation, which is fully aligned with EU Green Deal

There is also the **SEEHy initiative**, for the extension of the specific H₂ backbone to Germany. All relevant TSOs have entered into an MoU for the development of this extended backbone, which will formulate part of the EU TYDP soon

Prinos CCS project is part of the latest PCI list; it comprises the aggregation hub, to be developed by DESFA and the Prinos CO₂ storage facility to be developed by Energean



Prinos CCS



Key Highlights

- The “Prinos CO₂” project submitted by Energean and DESFA within the framework of the last PCI’s list of the European Commission also successfully passed the technical evaluation and has been included in the new PCI list of EC
- It is envisaged Prinos CO₂ Storage Project to be among the first **CO₂ storage hubs at industrial/commercial scale in the Mediterranean**. The project aims to collect, transport and sequesterate CO₂ produced by national and regional hard-to-abate EU emitters
- **DESFA’s** project includes the construction of a **dedicated CO₂ pipeline** collecting CO₂ from emitters in two phases (see next slide), a **liquefaction terminal on Revythoussa island**, from where it will be loaded to **CO₂ carriers that will transport it by sea** to Prinos Storage facility, **but also to future storage facilities to be developed in the wider European neighborhood**



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Challenges ahead

Lack of clarity on energy transition and diversification policies are the biggest challenges we face

National

- Ill designed deployment of RES creates uncertainty on gas assets and puts long-term perspective at risk
- Lack of sufficient energy storage
- Energy transition policies are critical: need to recognize the role of molecules

Regional

- There is strong need for clarity regarding EU policy on diversification of gas supplies, especially in the SEE region
- Energy Interconnections and access to them remain crucial

Turkey and Greece

- The Greek-Turkish gas IP remains idle: we need to change this; it is a big opportunity for both countries and needs to be further exploited
- TAP can operate in (virtual) reverse mode, connecting Turkey to Italy and Greece (even on a spot basis)

Thank you for your attention

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