

Prospects for the Establishment of Gas Trading Hubs in SE Europe



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Gas Trading Hubs: Physical or Virtual?



At virtual hubs all gas which has paid a fee for access into the network (zone) can be traded.



At physical hubs, only gas physically passing at a precise physical location can be traded and this entails higher risks.

- A virtual hub can also serve as a location for operating a balancing market.
- The European experience to date has proven that virtual hubs present more rapid development than the physical hubs.

European Gas Hubs and Exchanges



Hub Pricing is Expanding in Europe

GOG: gas-on-gas competition
OPE: oil price escalation

Figure 6.3 Europe Price Formation 2018

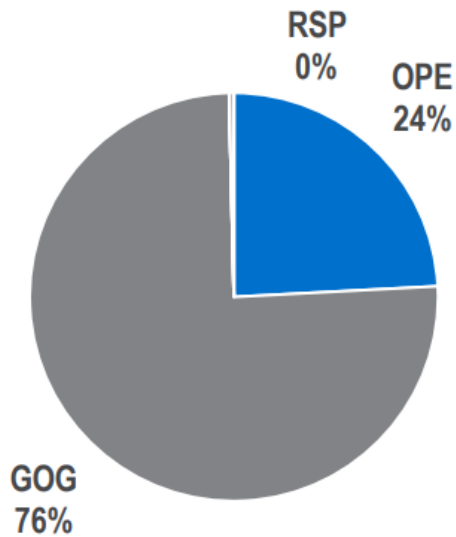
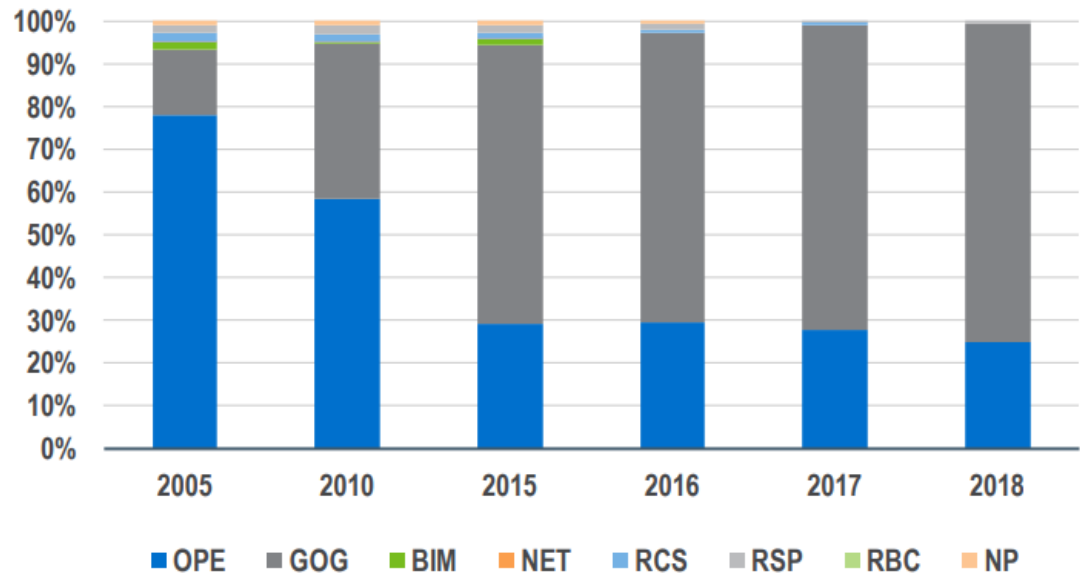
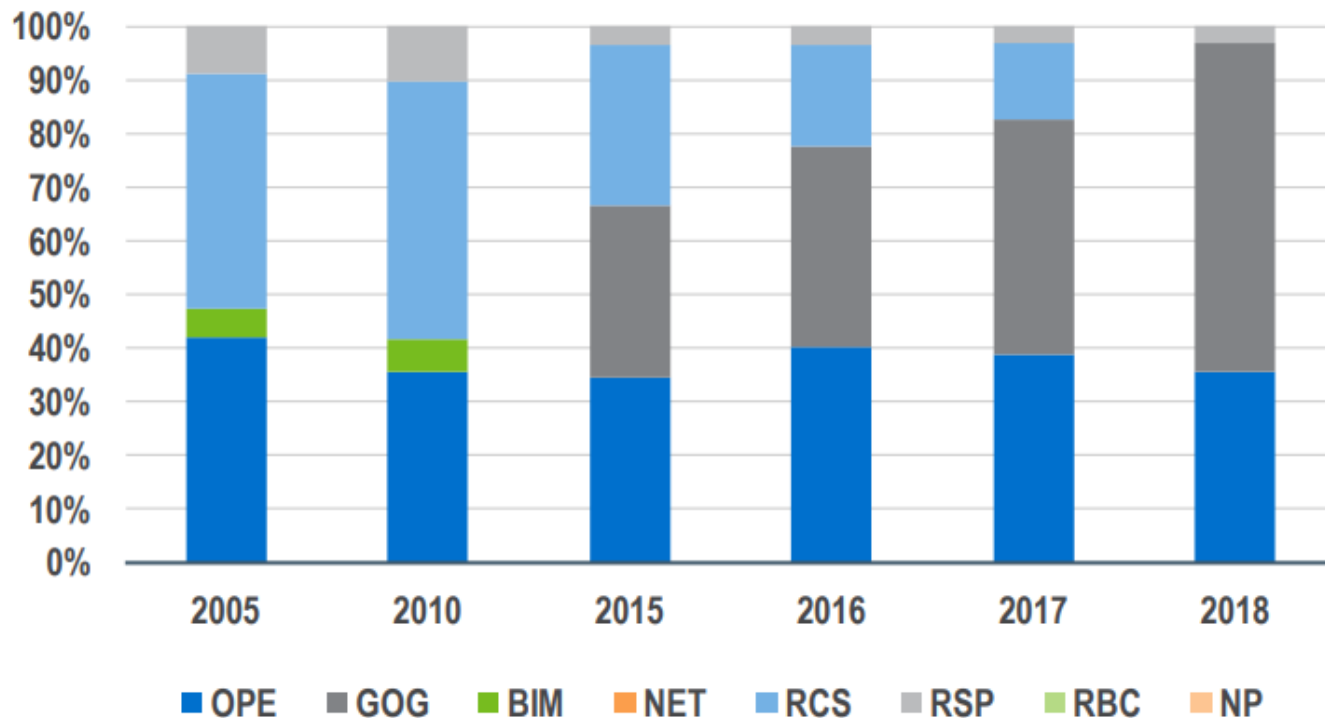


Figure 1.2 Europe Price Formation 2005 to 2018



Hub Pricing is also Expanding in SE Europe

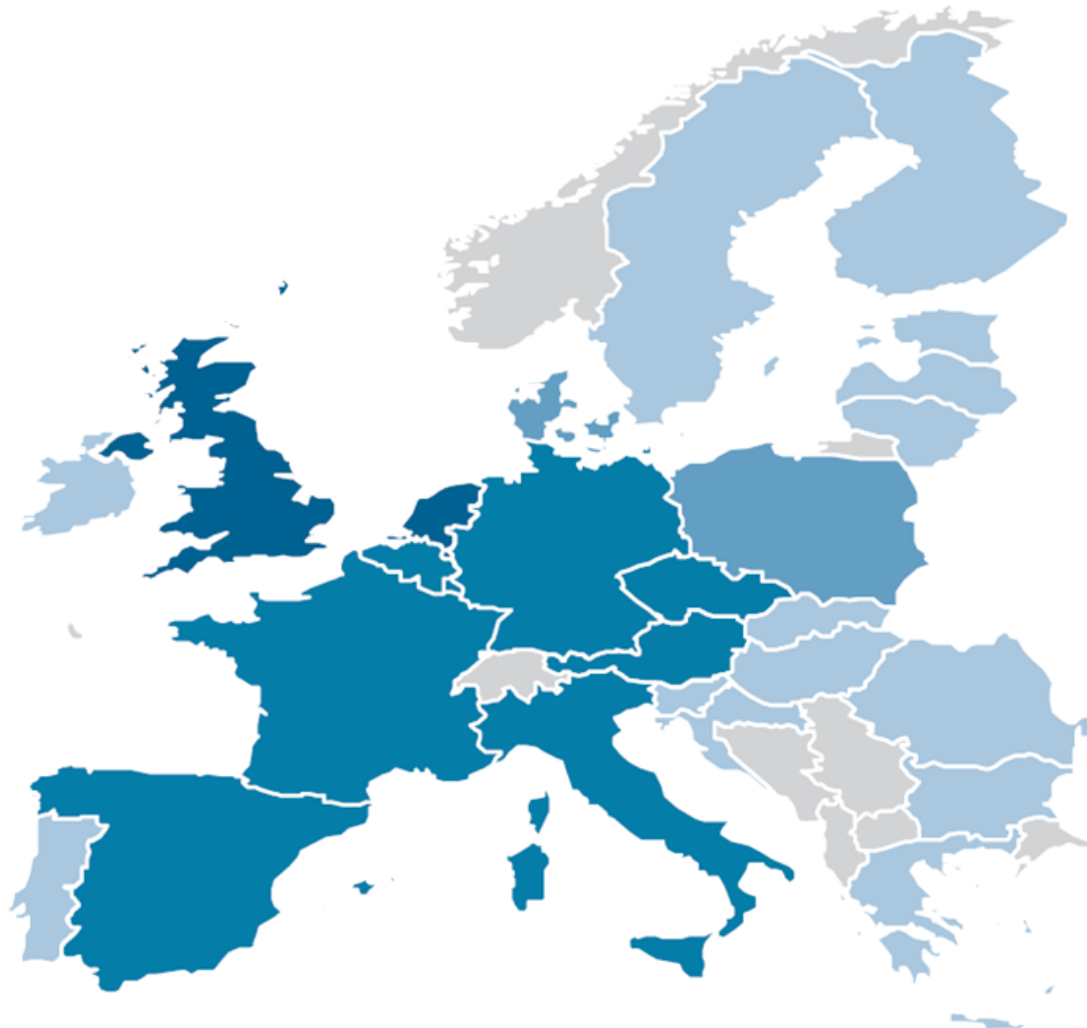
Figure 6.8 Southeast Europe Price Formation 2005 to 2018



GOG: gas-on-gas competition
 OPE: oil price escalation

Southeast Europe, as defined by IGU, includes Bosnia, Bulgaria, Croatia, North Macedonia, Romania, Serbia and Slovenia

Where Does SE Europe Stand Today?



■ Established hubs

- Broad liquidity
- Sizeable forward markets which contribute to supply hedging
- Price reference for other EU hubs and for long-term contracts indexation

■ Advanced hubs

- High liquidity
- More reliant comparatively on spot products
- Progress on supply hedging role but relatively lower liquidity levels of longer-term products

■ Emerging hubs

- Improving liquidity from a lower base taking advantage of enhanced interconnectivity and regulatory interventions
- High reliance on long-term contracts and bilateral deals

■ Illiquid-incipient hubs

- Embryonic liquidity at a low level and mainly focused on spot
- Core reliance on long-term contracts and bilateral deals
- Diverse group with some jurisdictions having
 - organised markets in early stage
 - to develop entry-exit systems

Conditions for a Successful Gas Trading Hub

Diversification of supply

- Attracting and establishing multiple supply options, i.e. multiple entry points
- Availability of storage and reliable transport mechanisms are also vital, along with supply optionality, for the creation of a gas trading hub

Liquidity

- At start, it is necessary that potential market participants express interest in participating in such a hub; thus, ensuring initial activity
- Series of factors affecting liquidity (number of active trading parties, volume nominated within the hub in per cent of volume traded, price volatility and price differentials between hubs, size of bid-offer spreads in the market, etc.)

Transparency

- Product price must be transparent and all participants must have access to information
- Building a regulated trading platform can contribute in creating a transparent environment which will provide reliable published prices

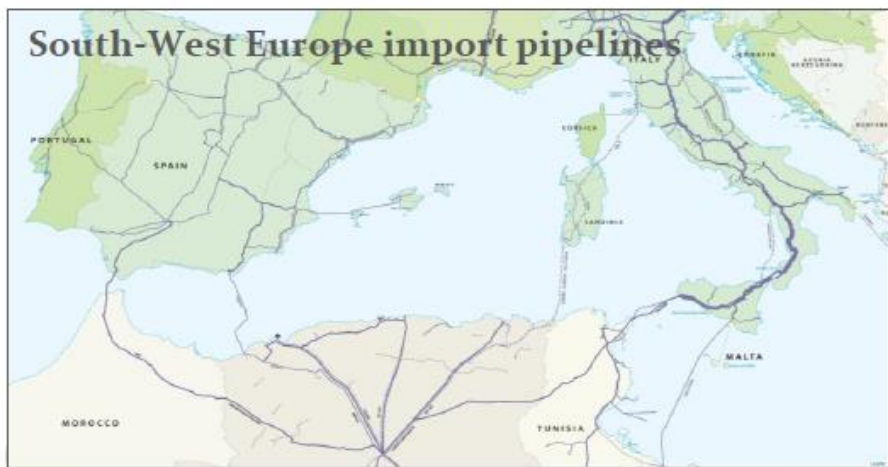
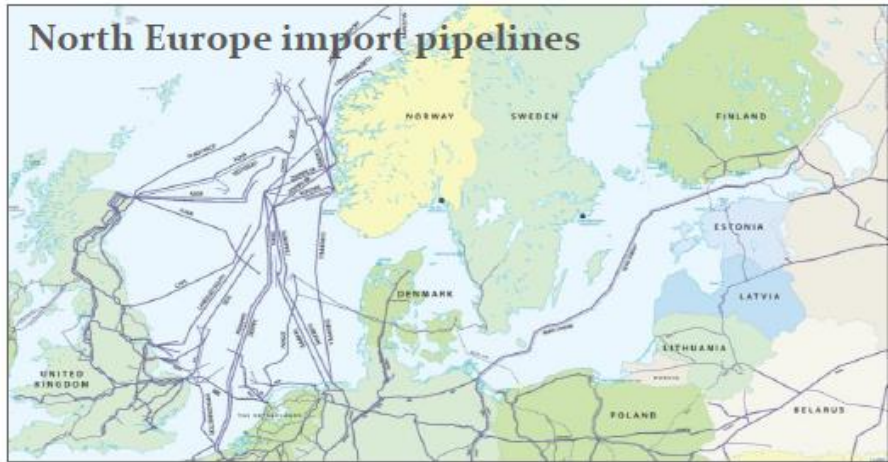
Reliable delivery mechanism

- Shippers need to have uninterrupted access to capacity
- As far as the financial players are concerned, if there is not enough volume to back up the physical delivery, the risk becomes higher for financial trading

Standardization

- Making gas a tradable commodity is essential for the ability of the hub to “pool” transactions such that they can provide net positions

European Gas Network: SEE EU Needs Additional Import Routes



The Expanded Southern Gas Corridor



NB.: The TANAP has been completed, while TAP, Turkish Stream and IGB are under construction. The IAP, the IGI Poseidon in connection with East Med pipeline and the Vertical Corridor and the IGF are still in the study phase. Blue Stream and Trans Balkan are existing pipelines.

Overview of Underground Gas Storage Facilities in SE Europe (2018)

	Number of UGS Facilities	Working gas capacity (bcm)	Max. withdrawal rate (mcm/d)
<i>In Operation</i>			
Bulgaria	1	0.6	4
Croatia	1	0.6	7
Romania	8	3.1	32
Serbia	1	0.5	5
Turkey	2	3.4	45
Total	13	8.2	93
<i>Under Construction</i>			
Serbia	1	0.3	5
Turkey	3	6.5	110
Total	4	6.8	115
<i>Planned</i>			
Bulgaria	1	0.5	4.6
Croatia	1	-	2.4
Greece	1	0.4	4.0
Romania	4	1.2	9.3
Turkey	3	5.5	57.6
Total	10	7.6	77.9
<i>Potential</i>			
Albania	2	1.3	6.5
Bosnia and Herzegovina	1	0.1	1.9
Turkey	1	1.0	16.1
Total	4	2.4	24.5

Source: CEDIGAZ

LNG Terminals in SE Europe



Anticipated Gas Volumes Through Greece (2021-2030)

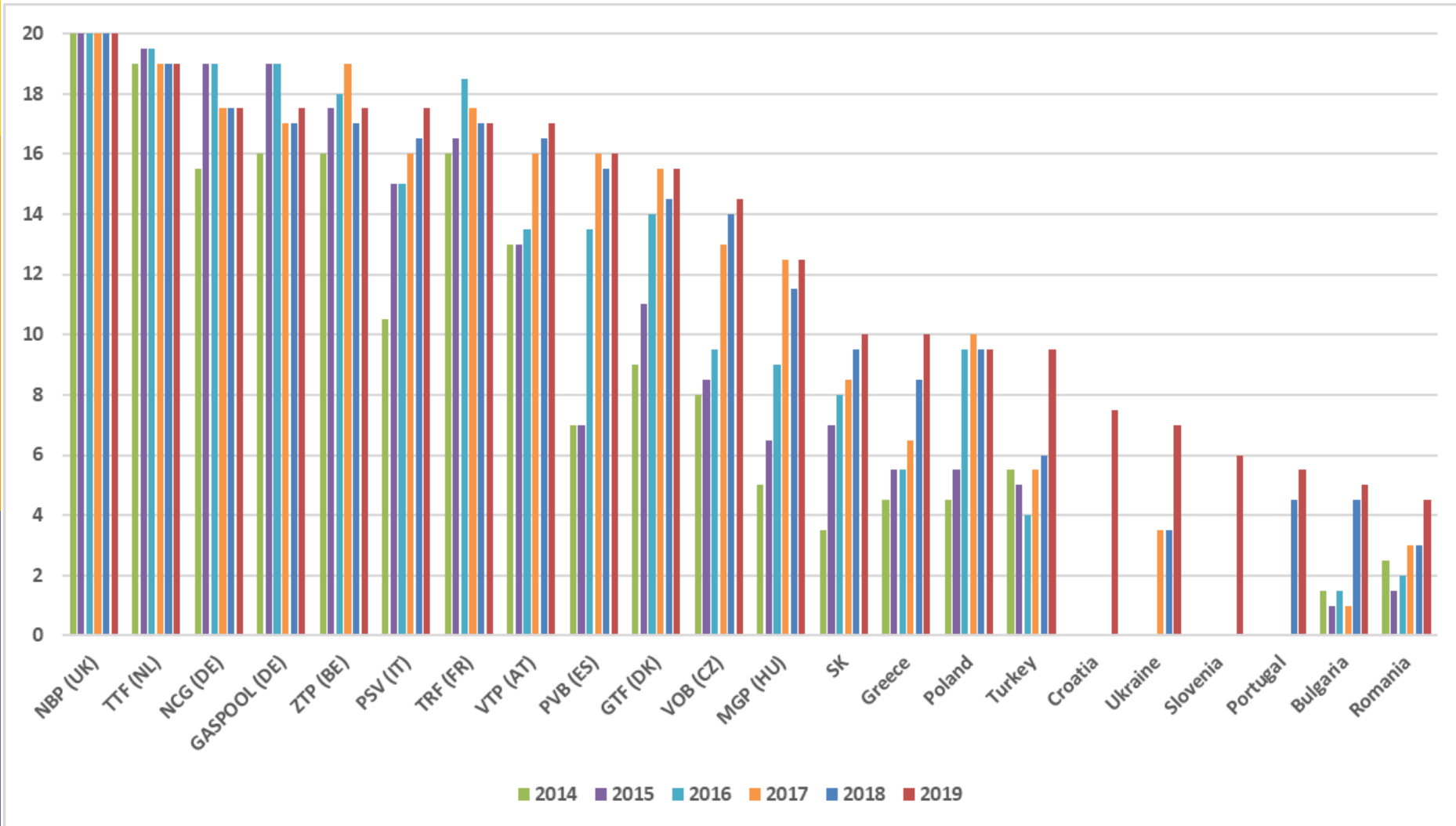
- Through **TAP** ➡ **10.0 bcm (2021)** (i.e. 1.0 bcm to Greece, 1.0 bcm to Bulgaria and 8.0 bcm to Italy), while **20.0 bcm (2030)** (i.e. 2.5 bcm to Greece, 1.5 bcm to Bulgaria and 16.0 to Italy)
- Through **IGB** ➡ **1.0 bcm (2021)** and **4.0 bcm (2030)**
- Through **IGNM** ➡ **1.0 bcm (2023)** and **1.5 bcm (2030)**
- Through the **Revithousa LNG Terminal** ➡ **1.5 bcm (2020)** growing to **3.0 bcm (2030)**
- Through **Alexandroupolis FSRU** ➡ **1.0 bcm (2022)** growing to **4.0 bcm (2030)**
- Through **East Med** ➡ **0.0 bcm (2020)** with the prospect of **10.0 bcm (2030)**

- Based on the above, it is estimated that in the first phase (2021), **12.0-13.0 bcm** of additional gas volumes will be directed through Greece to various destinations, corresponding to 2.6% of European gas demand (excluding Turkey), while in 2030 these quantities may have reached **30.0 bcm**, which will correspond to approx. 6.4% of European gas demand.
- In 2030, **some 4.0-5.0 bcm of additional gas volumes** will be available locally (e.g. Greece, Bulgaria, North Macedonia) and a lot more from Turkey (more than 5.0 bcm) ➡ available for gas trading.

Gas Production and Consumption (bcm) in SE Europe (2008, 2018 and 2025)

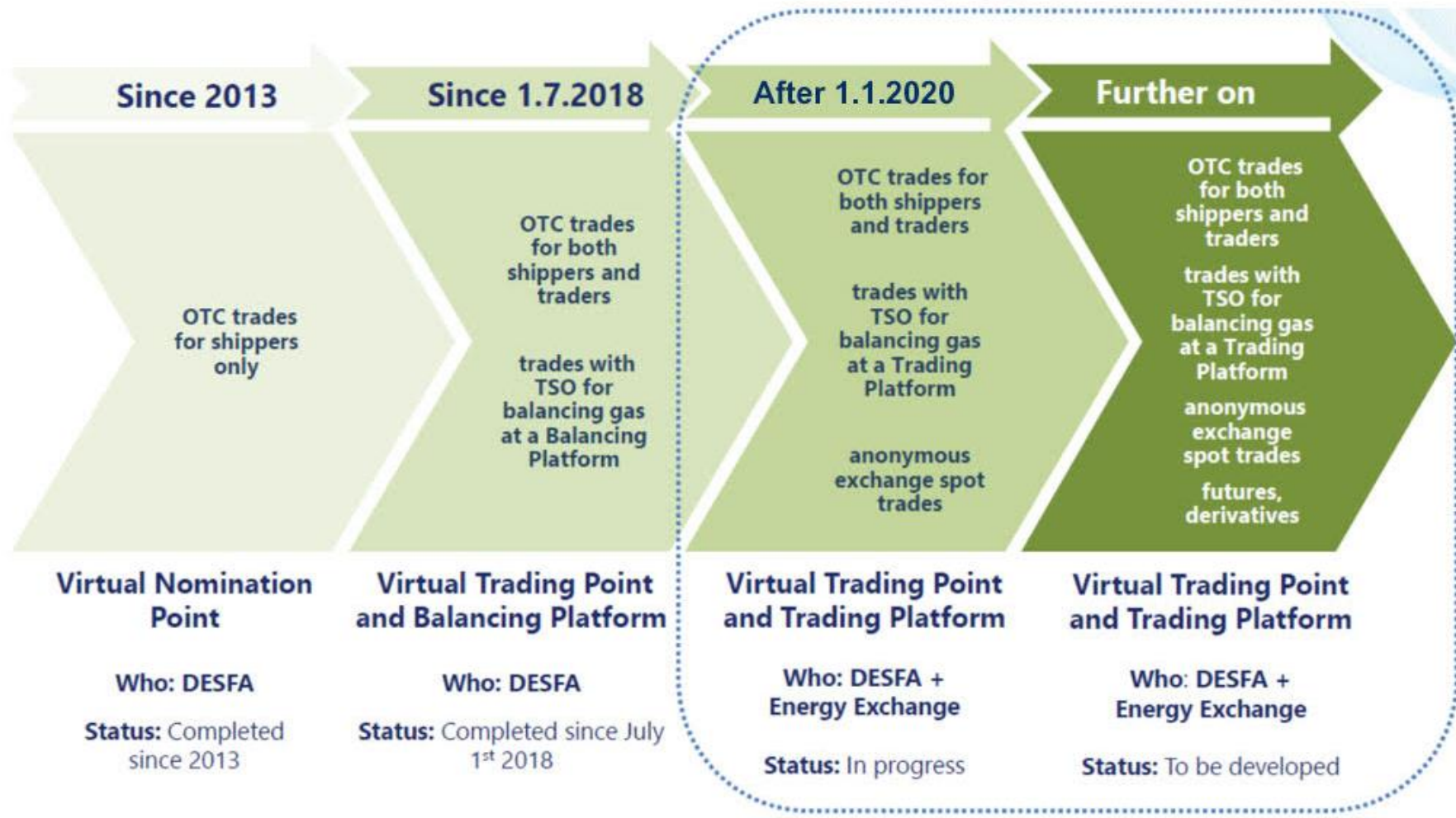
Country	2008		2018		2025	
	Gas production (bcm/y)	Gas consumption (bcm/y)	Gas production (bcm/y)	Gas consumption (bcm/y)	Gas production (bcm/y)	Gas consumption (bcm/y)
Albania	0.02	0.02	0.1	0.09	0.01	0.22
Bosnia and Herzegovina	0.0	0.31	0.0	0.24	0.0	0.45
Bulgaria	0.31	3.5	0.01	3.04	0.21	4.3
Croatia	2.03	3.1	1.28	2.84	1.52	3.3
North Macedonia	0.0	0.05	0.0	0.18	0.0	0.6
Greece	0.0	4.25	0.1	4.87	0.0	6.0
Kosovo	0.0	0.0	0.0	0.0	0.0	0.0
Montenegro	0.0	0.0	0.0	0.0	0.0	0.0
Romania	11.2	16.9	10.26	11.97	10.02	14.1
Serbia	0.25	1.92	0.45	2.93	0.51	2.8
Slovenia	0.0	0.51	0.0	0.8	0.0	1.07
Turkey	1.03	36.9	0.51	49.64	0.73	56.0
Total	14.84	67.46	12.71	76.60	13.00	88.84

Annual Scorecard 2019 Update



Source: EFET

Proposed Road Map for the Development of a Natural Gas Hub Based in Greece



The Creation of a Natural Gas Hub Based in Turkey

- After the successful completion of a five-month testing phase, starting on April 1, 2018, the spot gas trading system in Turkey officially went online.
- On July 27, 2018, EPIAŞ began to publish gas transmission data through its online transparency platform. It also started to share transport nomination, virtual trade, capacity, reserve, actualization and stock amounts, on a daily basis.
- **EPIAŞ launched its spot gas trading system on the energy stock exchange in early September 2018.**



Summary

- Almost each country in SE Europe is planning to become a regional gas trading hub. Based on the aforementioned EFET Annual Scorecard 2019, **Greece, Turkey, Bulgaria, Ukraine, Romania, Croatia and Slovenia are set in a course of developing gas trading activity.**

- **Some of the above countries will be able to launch fully-fledged gas trading hubs by 2021-2022.**

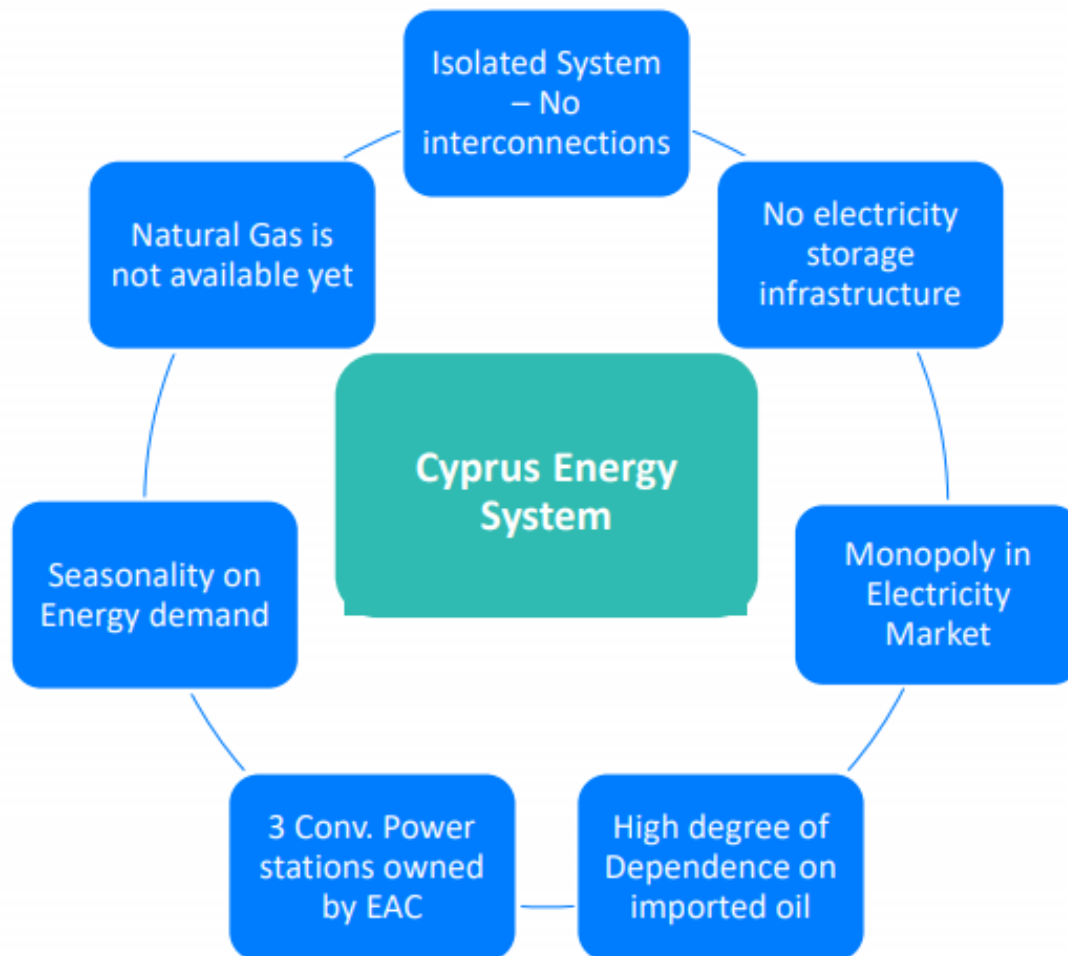
- It is not yet clear which of the above countries will come to play **a dominant role** in the region so as to be soon recognized as a regional gas hub. **Greece and Turkey appear to be frontrunners at this stage.**

IENE Study on Gas Trading Hubs in SE Europe

- The changing landscape in the SE European gas markets
- The role of **Central European Gas Hub (CEGH)** as a benchmark and pivot for promoting gas trading in SE Europe
- The ascendance of **Hellenic Trading Point (HTP)** in the broader Central and South East European region



Cyprus's Current Energy Market Status



CyprusGas2EU Project



Preparing the Introduction of LNG in Cyprus – The CYnergy Project

Member States involved:

Cyprus & Greece

Budget:

€7.470.000

Duration:

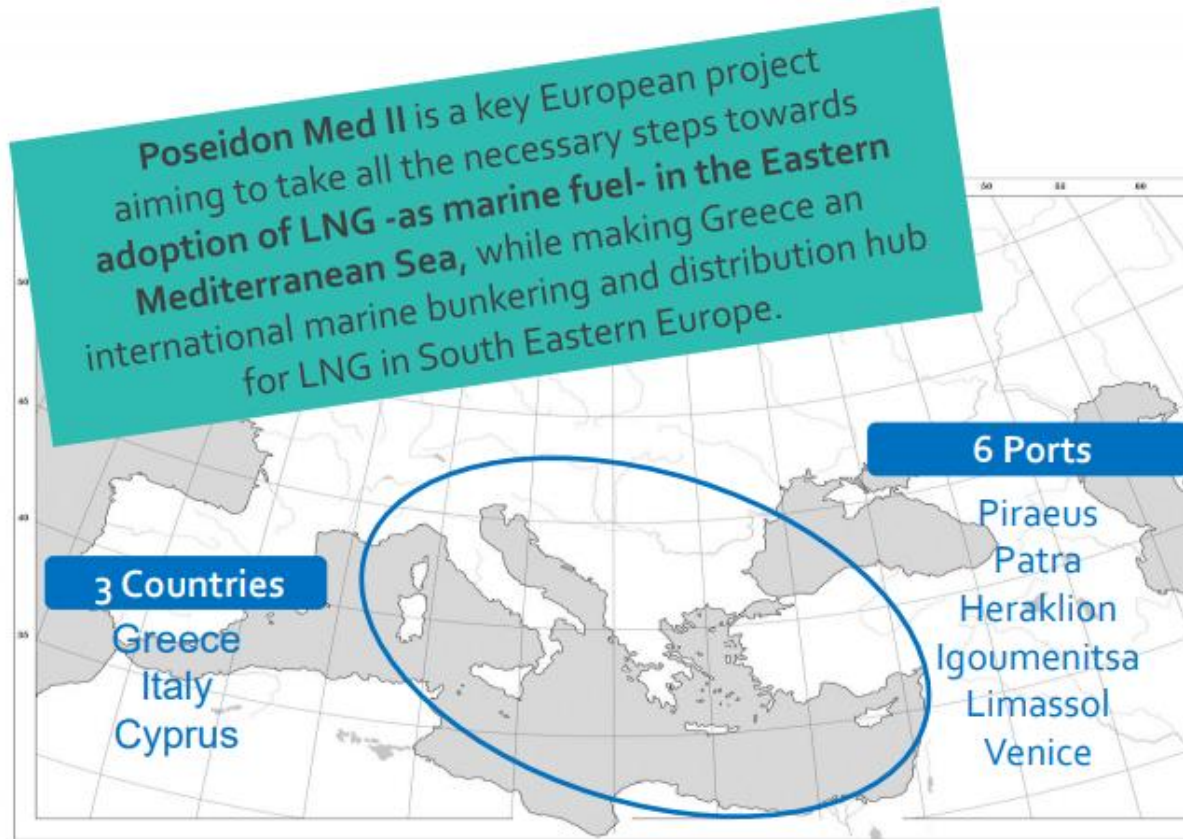
April 2017-March 2020

Co-funding secured:

€4,482,000



Poseidon Med II LNG Bunkering Project



	
Duration:	Jun.2015 – Dec.2020
Budget:	~€53M
Coordinator:	DEPA
Technical Coordinator:	DESFA
Partners:	26
Co-financed:	50% by EU - CEF Connecting Europe Facility

BlueHUBS Project

Member States

Greece and Cyprus

3 Partners

DEPA Coordinator

Duration

Feb.2019 – Dec.
2022

Budget

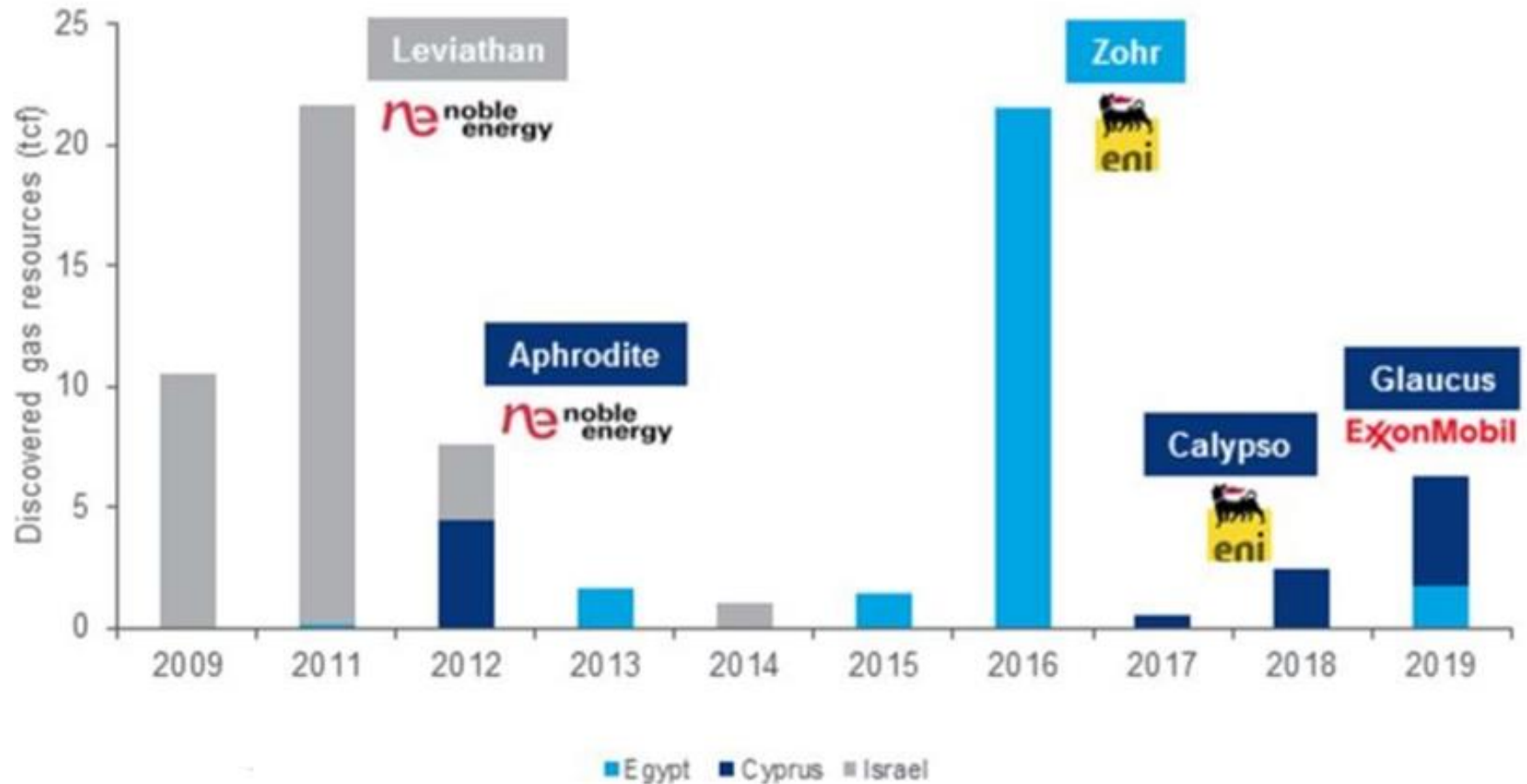
Action's Total Cost: ~€66 M

Co-Financed 30% by CEF

Construction of 2 LNG bunkering vessels
1 Port of Piraeus (DEPA) and 1 Port of
Limassol

Mobile LCNG stations and trucks for
LNG bunkering operations at the port of
Heraklion and the Port of Limassol

Gas Discoveries in the East Mediterranean



Source: Wood Mackenzie



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**Thank you for
your attention**

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