Developing gas trading opportunities in SE Europe

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INSTITUTE OF ENERGY
FOR SOUTH EAST EUROPE

Presentation Outline

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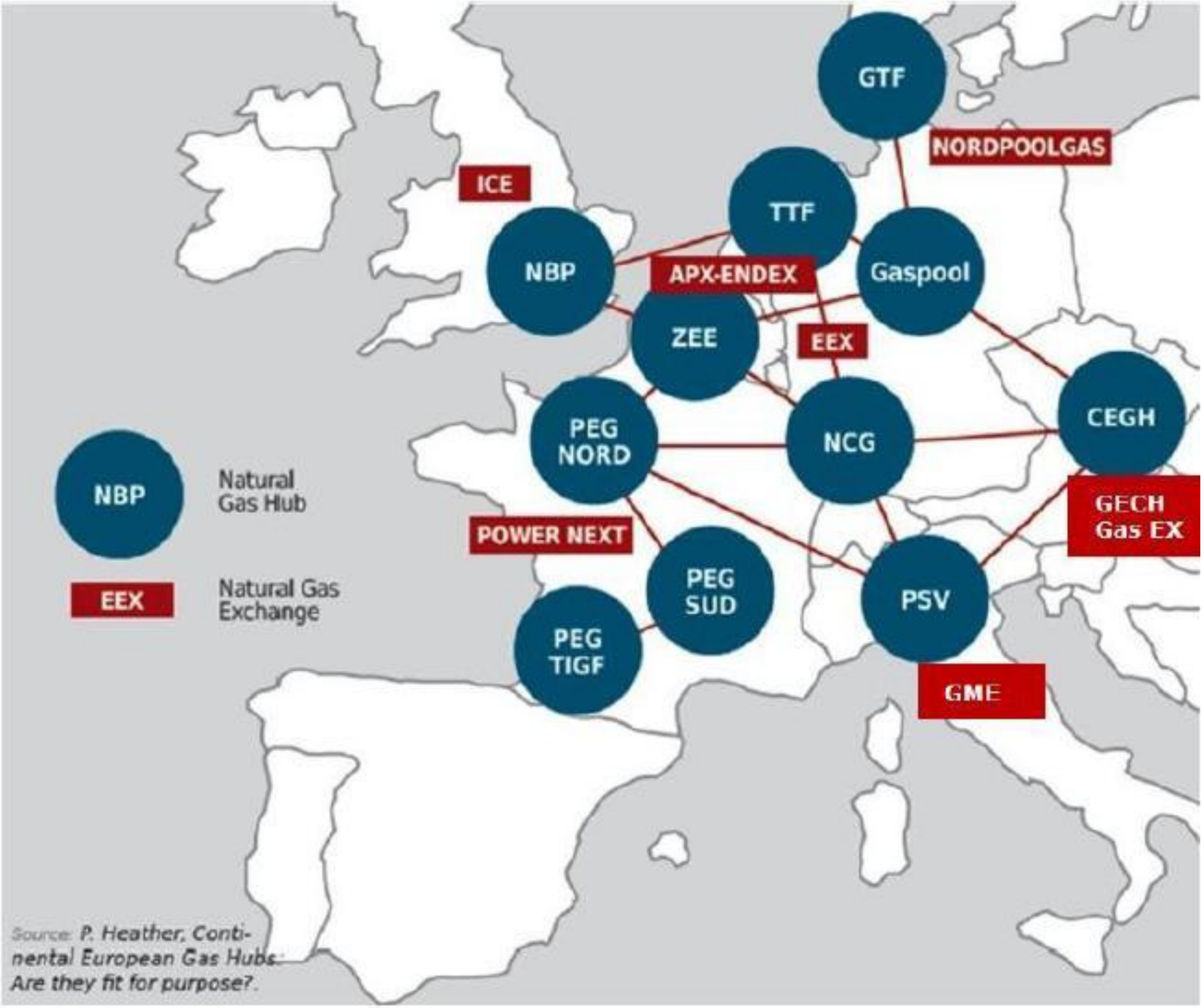
European Gas Hubs and Exchanges



Creating A Natural Gas Trading Hub in SE Europe (I)

- Today, there is not a single gas trading hub east and south east of Vienna whose CEGH could act as a pivot for organizing gas trading in this region.
- As gas volumes increase in SE Europe attracting more market players, there is a need for the establishment of a gas trading hub. This will facilitate **gas supply and demand to meet in a marketplace** by providing a platform for physical and/or financial transaction.
- It will **enable competitive markets to function**, even though it will probably have an administrative role in the beginning of its operation.
- Although it is difficult, at this stage, to predict market behaviour and impact on spot prices, once the hub enters full operation, based on European hub operation experience, one could safely assume that **spot prices determined through hub trading will be lower than oil-indexed ones**.
- Once the interconnections are in place and an effective gas exchange mechanism exists, traders would be willing to buy available gas, which will become available from main gas importers, by placing bids through the “hub” for both physical quantities and gas futures. Such trading activity will inevitably lead to the **formation of a new climate of competitive prices**, exerting pressure on traditional suppliers to revise their contract prices.

Creating A Natural Gas Trading Hub in SE Europe (II)

- The operation of a proposed South East European Gas Trading Hub is anticipated to have a positive effect on wholesale markets by **channeling needed gas volumes at competitive market rates**.

- The attraction of sizeable tradable gas volumes and the trading activity arising from such a hub will help to reassure markets in terms of **gas availability and security of supply**.

- A SWOT analysis has revealed far **more strengths and opportunities** than weaknesses and threats.

- IENE has carried out a detailed study (2014) for the establishment of a gas trading hub in SE Europe. The findings indicate that there is scope for the operation of such hubs in Greece and Turkey to be linked with existing and planned Energy Exchanges in the region.

- Initial traded gas volumes could vary between 1.5 to 15 bcm per year.

- The answer to the question as to where to locate such a hub or hubs will depend on where eventually balancing points will be established.

What Makes A Good Gas Hub?

Underlying conditions for trade:

- Multiple buyers and sellers
- Access to capacity to bring gas to the hub
- Multiplicity of gas supplies / sinks – including storage
- Counterparties with imbalances to trade at the hub (customer churn, new supply contracts, LNG, gas release)
- Market-based balancing

Good hub design:

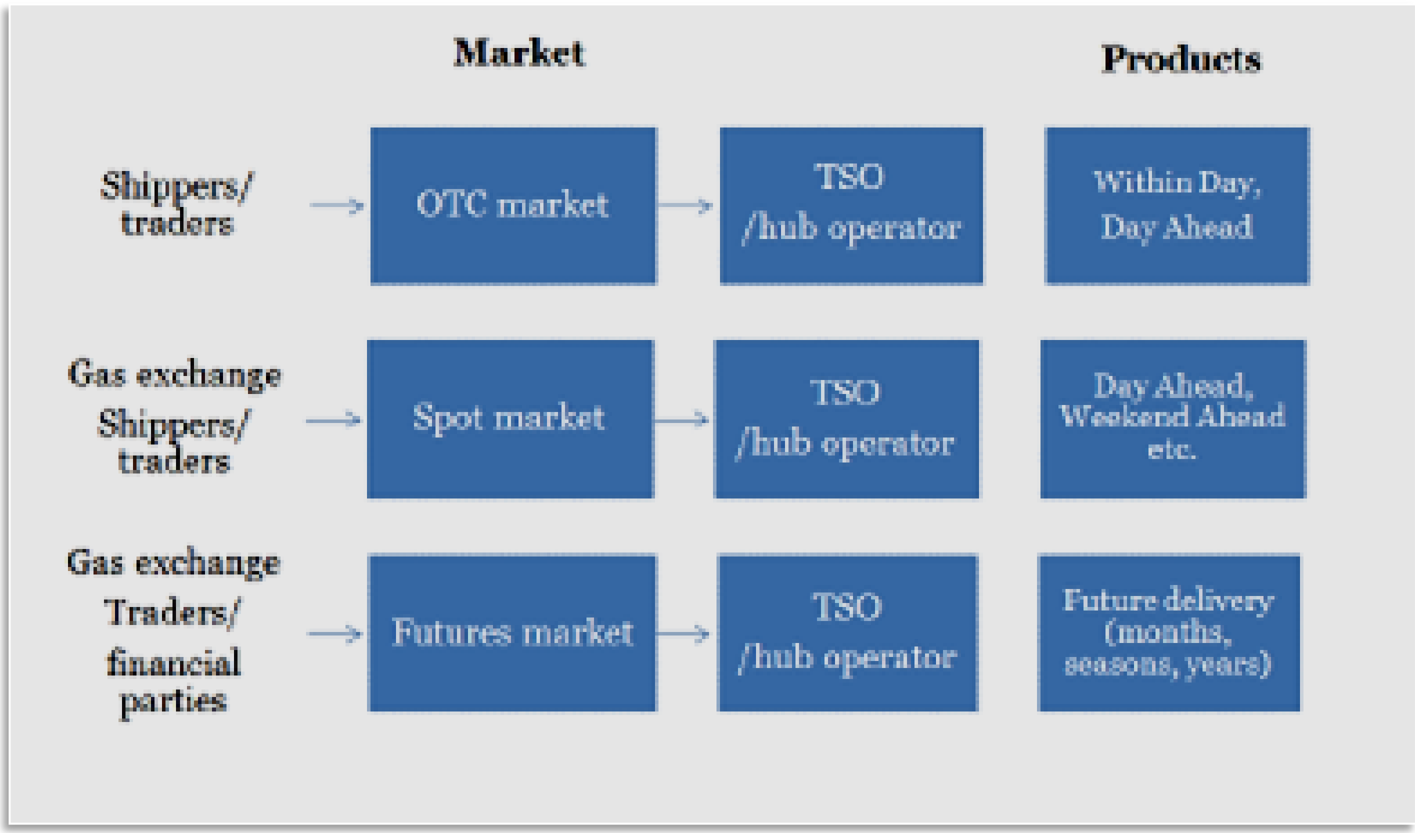
- Title transfer
- Backup/backdown to ensure firmness
- Clearly defined role of incumbent to support trading
- Price disclosure
- Standardised terms and conditions
- Well-designed, transparent network access terms, harmonised with interconnected systems

Enabling legislation: customer eligibility, fair network access (unbundling), stability through transparency & governance, lack of cross-subsidisation between monopoly and competitive businesses.

Network access terms: title transfer point(s), secondary capacity markets, reasonable balancing terms, reasonable credit terms, emergency procedures, clear definition of *Force Majeure*

Source: European Federation of Energy Traders (EFET), 11th Gas Forum, Ljubljana, September 2016

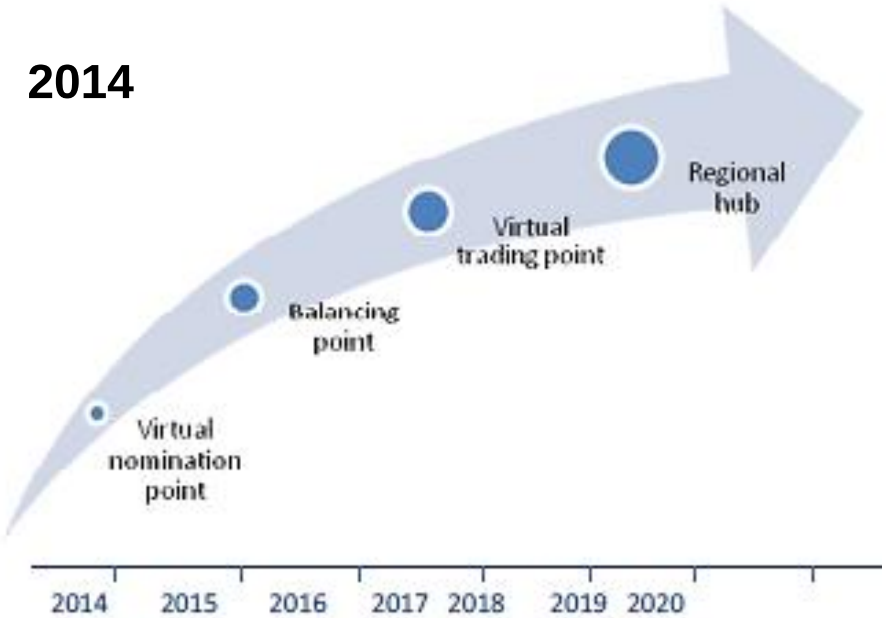
Proposed Hub Design



Source: IENE study, “The Outlook For a Natural Gas Trading Hub in SE Europe”, (M19), Athens, September 2014

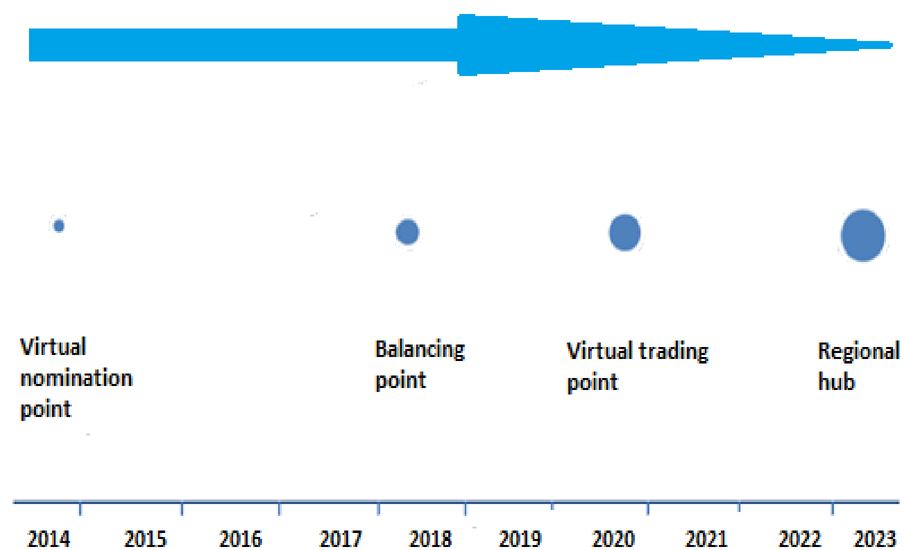
Proposed Road Map for the Development of a Natural Gas Hub Based in Greece

2014



Source: IENE study, "The Outlook For a Natural Gas Trading Hub in SE Europe", (M19), Athens, September 2014

2017



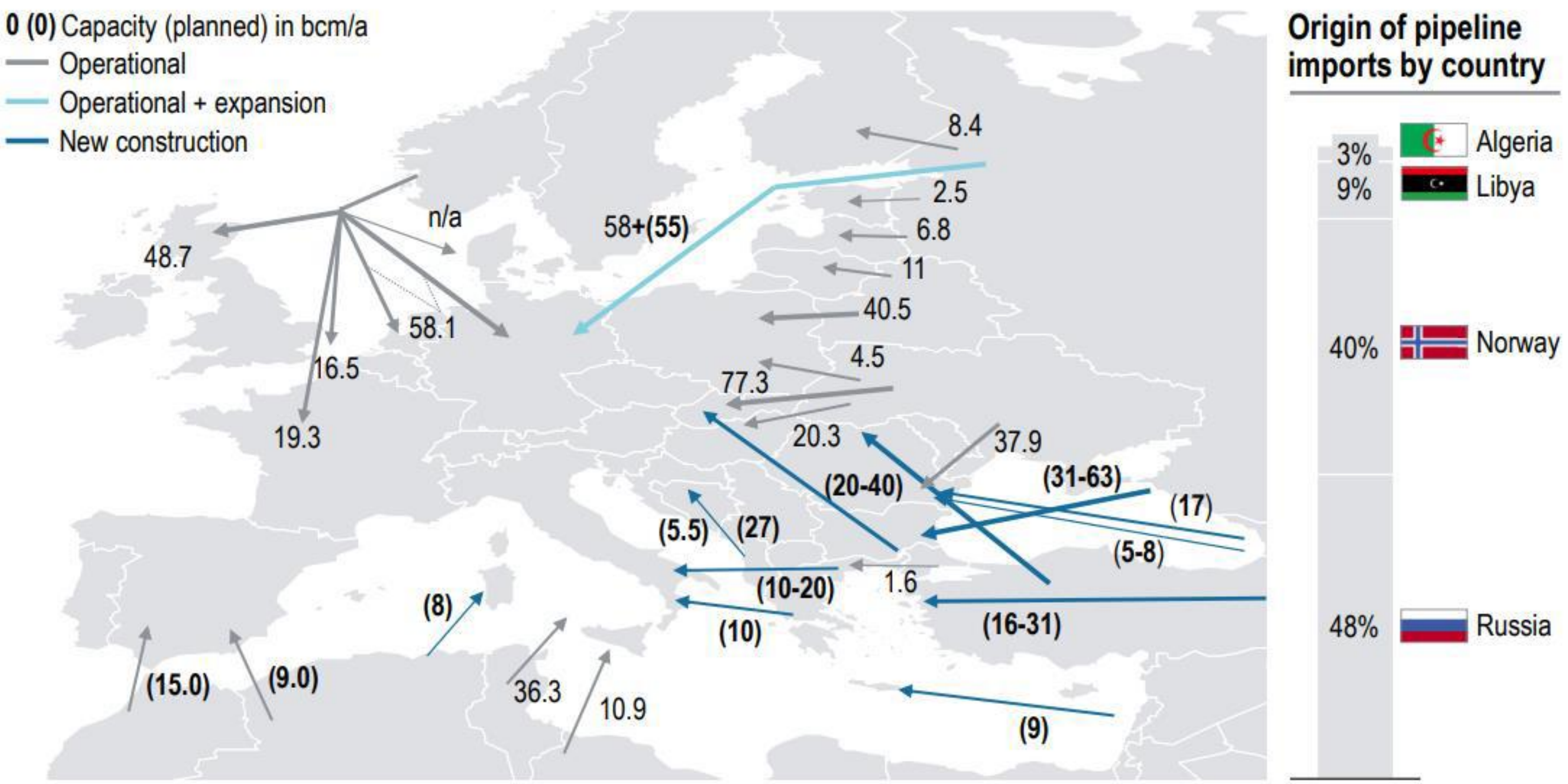
Source: IENE study, "Gas Supply in SE Europe and the Key Role of LNG", (M46), Athens, December 2017

An Expanded Southern Gas Corridor

NB.: The TANAP and TAP gas pipelines as well as Turkish Stream are under construction, with IGB at an advanced planning stage with FID already taken. The IAP, the IGI Poseidon in connection with East Med pipeline and the Vertical Corridor are still in the study phase.

Source: IENE study “South East Europe Energy Outlook 2016/2017”, Athens, 2017

Existing and Planned Import Pipelines to Europe



Sources: European Commission, IEA, ENTSOG, BP

Cost of Major Planned Gas Infrastructure Projects in SE Europe*

Natural gas project	Cost (€mn)
IGB	220
TANAP	805 (with TANAP's cost corresponding only to Turkey's European ground route)
TAP	4,500
South Kavala UGS	400
Alexandroupolis FSRU	370
Total	**6,295**

Source: IENE study, "Gas Supply in SE Europe and the Key Role of LNG", (M46), Athens, December 2017

*Does not include Turkish Stream infrastructure in European part of Turkey.

Scenarios for Trading Activity in the Regional Gas Hub

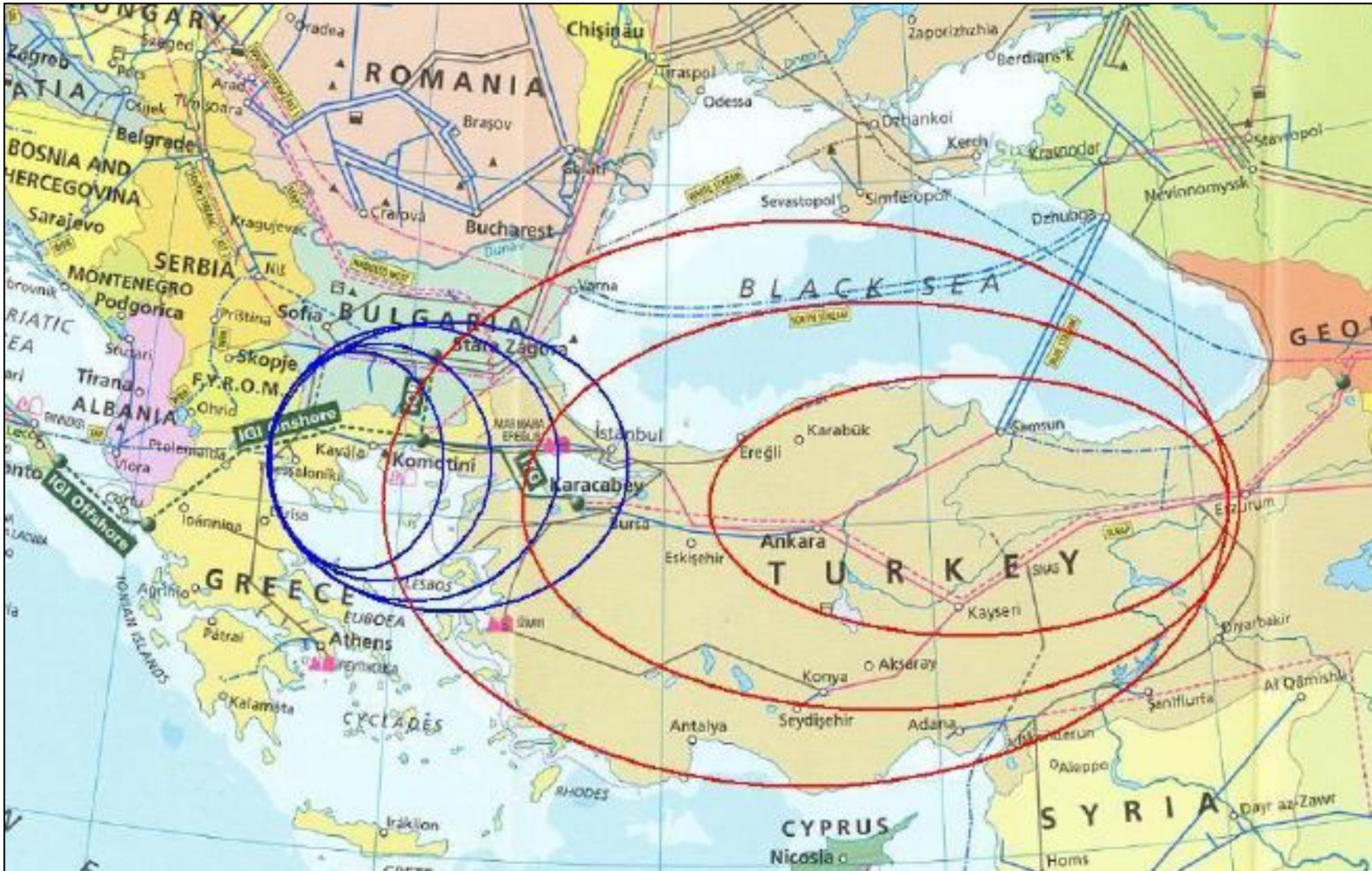
Gas volume physically delivered (bcm)	Churn Ratios	Traded gas volume (bcm)	Traded value* (in million €)
1	1,5	1,5	462
	2	2	616
	2,5	2,5	770
	3	3	925
	4	4	1.233
	5	5	1.541
2	1,5	3	925
	2	4	1.233
	2,5	5	1.541
	3	6	1.849
	4	8	2.466
	5	10	3.082
3	1,5	4,5	1.387
	2	6	1.849
	2,5	7,5	2.311
	3	9	2.774
	4	12	3.698
	5	15	4.623

Source: IENE study, “The Outlook For a Natural Gas Trading Hub in SE Europe”, (M19), Athens, September 2014

The Turkish Stream Pipeline

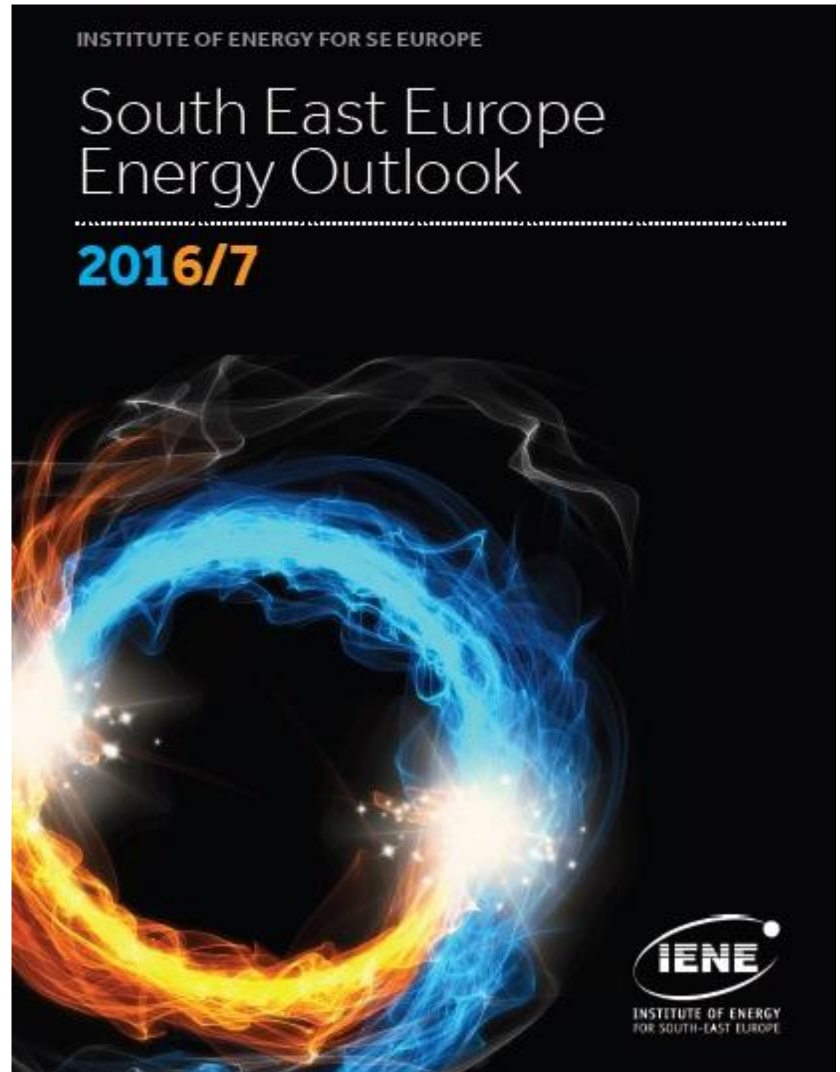
Source: Gazprom

Gas Hubs in Greece and Turkey Can Coexist



Source: IENE study, “The Outlook For a Natural Gas Trading Hub in SE Europe”, (M19), Athens, September 2014

SE Europe Energy Outlook Study



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Thank you for your attention

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