

“The South Corridor” Latest Developments

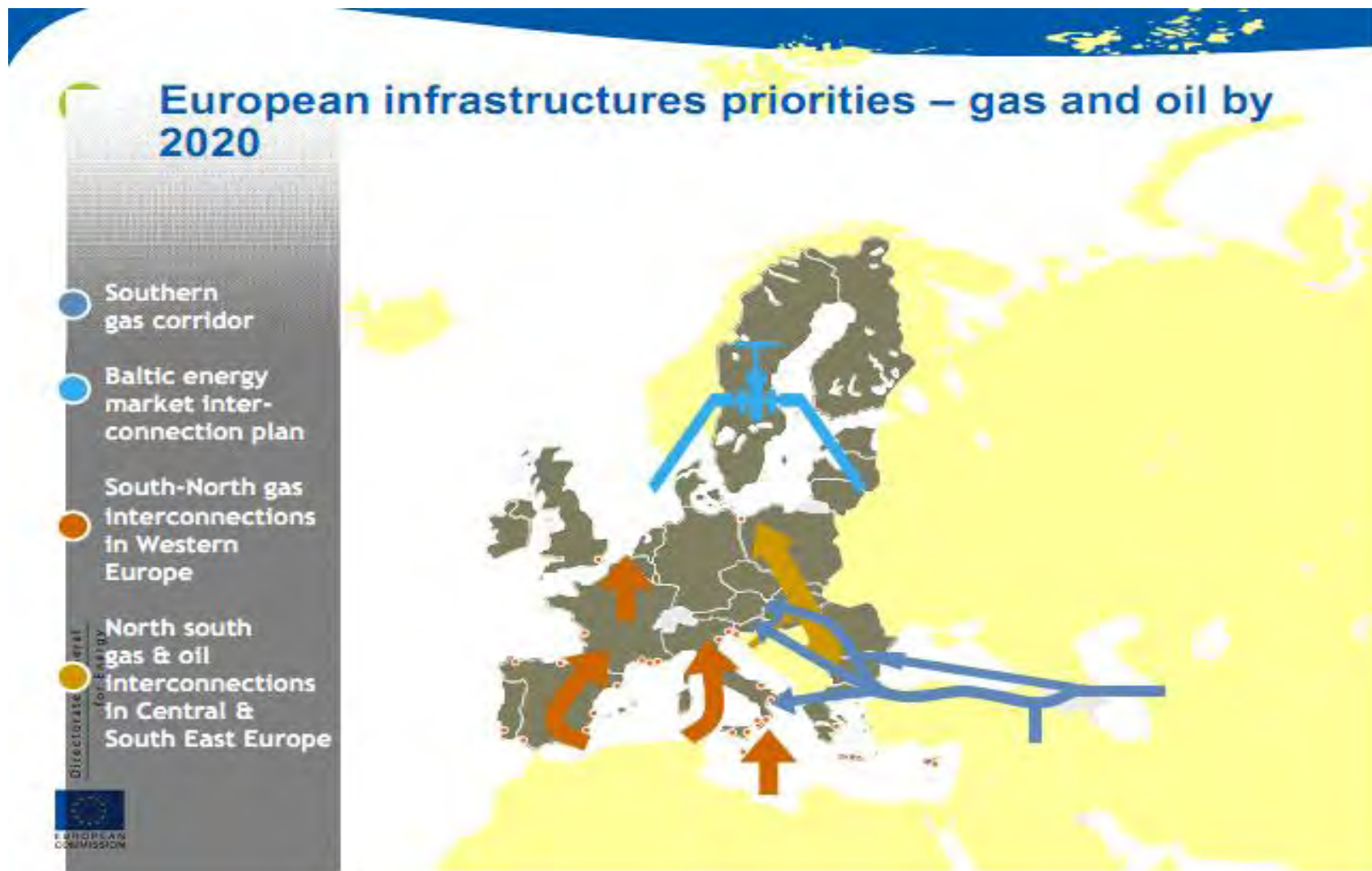
**“Energy & Development, 2012”
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A Presentation by Nicholas Sofianos, (Msc Economic
Development, Glasgow, Scotland),
Scientific Projects Coordinator
Institute of Energy for S.E. Europe (IENE), Athens

Presentation Outline

- ❑ Europe's Gas Priorities and Policies
- ❑ Region's Energy Dependency on Russian Gas
- ❑ Alternative Gas Routes I
 - Nabucco West
 - TAP
 - TANAP
 - South Stream
 - SEEP
 - AGRI
 - White Stream
- ❑ Alternative Gas Routes II
 - IGI Posidon
 - LNG
 - The East Med Gas Corridor

European infrastructures priorities – gas and oil by 2020



A map of Europe illustrating various energy infrastructure corridors and interconnections. The map is overlaid with several dashed lines forming overlapping loops, each representing a different energy project or network. The labels for these corridors are:



- North Seas Offshore Grid** (Blue dashed line)
- BEMIP Electricity & Gas** (Green dashed line)
- Central / South Eastern Electricity Connections** (Blue dashed line)
- North-South Gas Corridor in Western Europe** (Red dashed line)
- South Western Electricity Interconnections** (Blue dashed line)
- North-South Gas Interconnections & Oil Supply** (Purple dashed line)
- Southern Gas Corridor** (Red dashed line)

The map also shows the outlines of various European countries, with some labeled with their three-letter codes (e.g., UK, DE, FR, NL, PT, ES, IT, GR, TR, etc.).

- Gas
- Electricity
- Electricity and gas
- Oil and gas

Smart Grids for Electricity in the EU

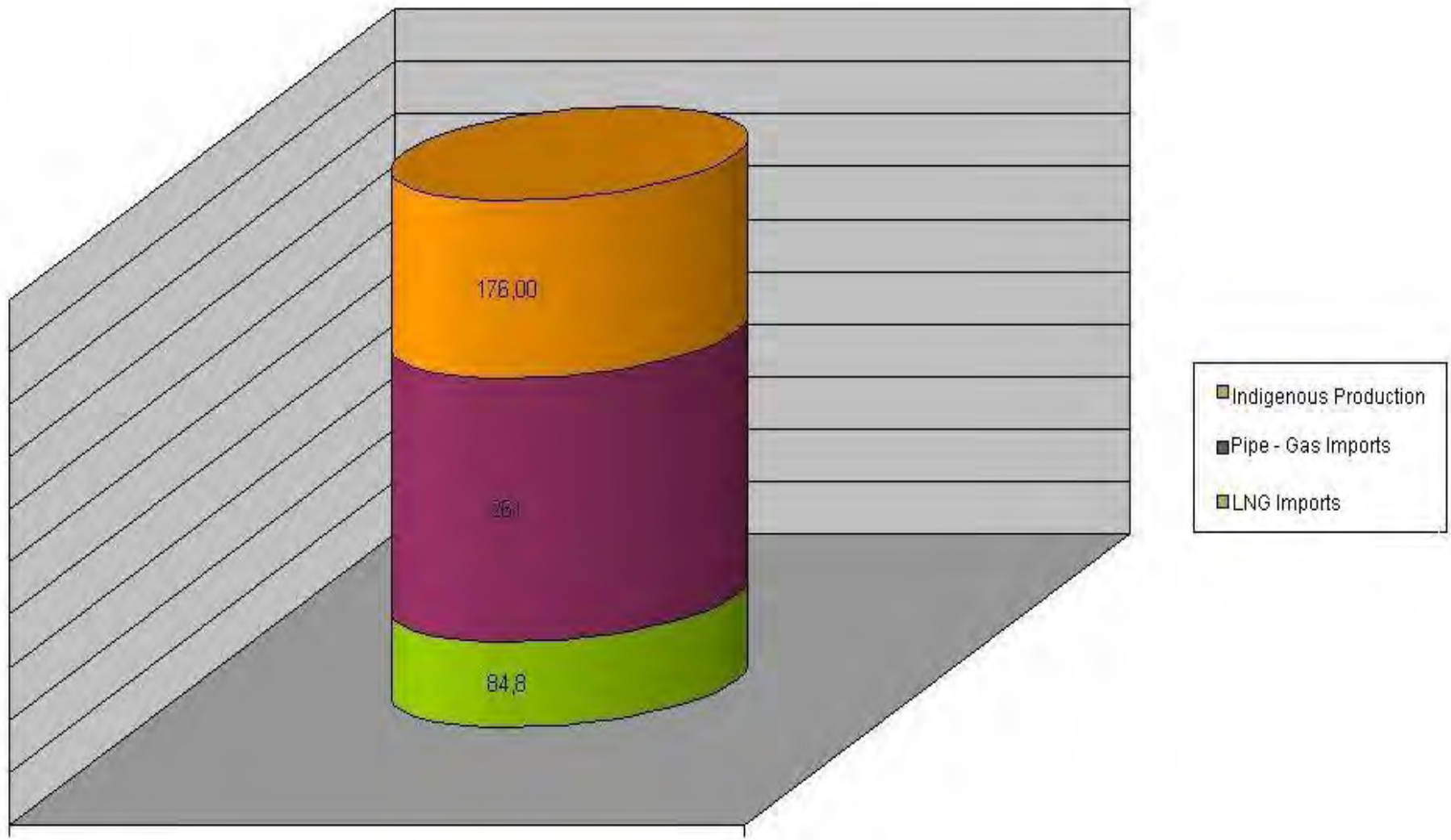
Traditional and New Suppliers

 Traditional strategic suppliers
 New strategic suppliers

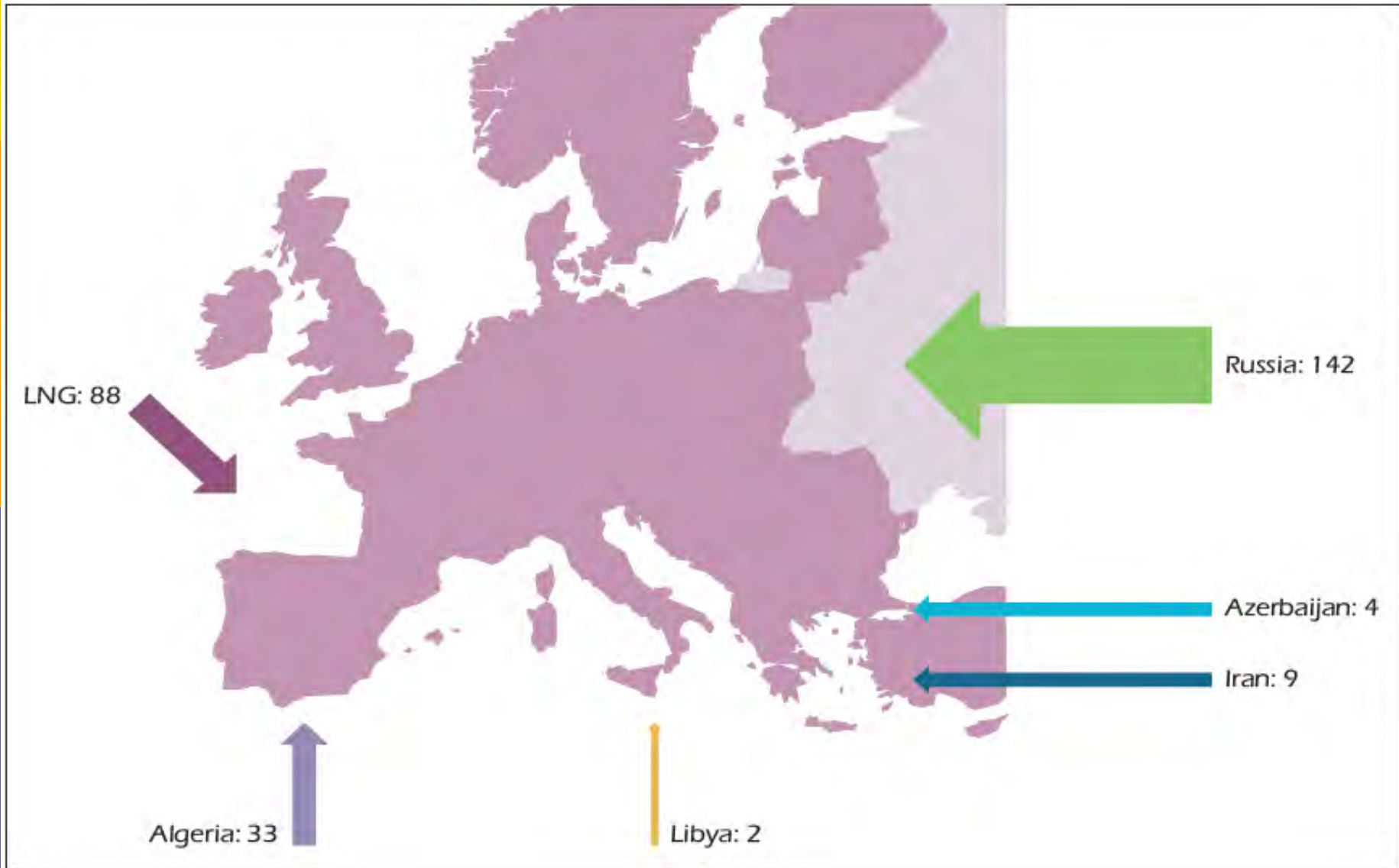


* LNG: Liquefied natural gas (Qatar, Algeria, Nigeria, etc.)

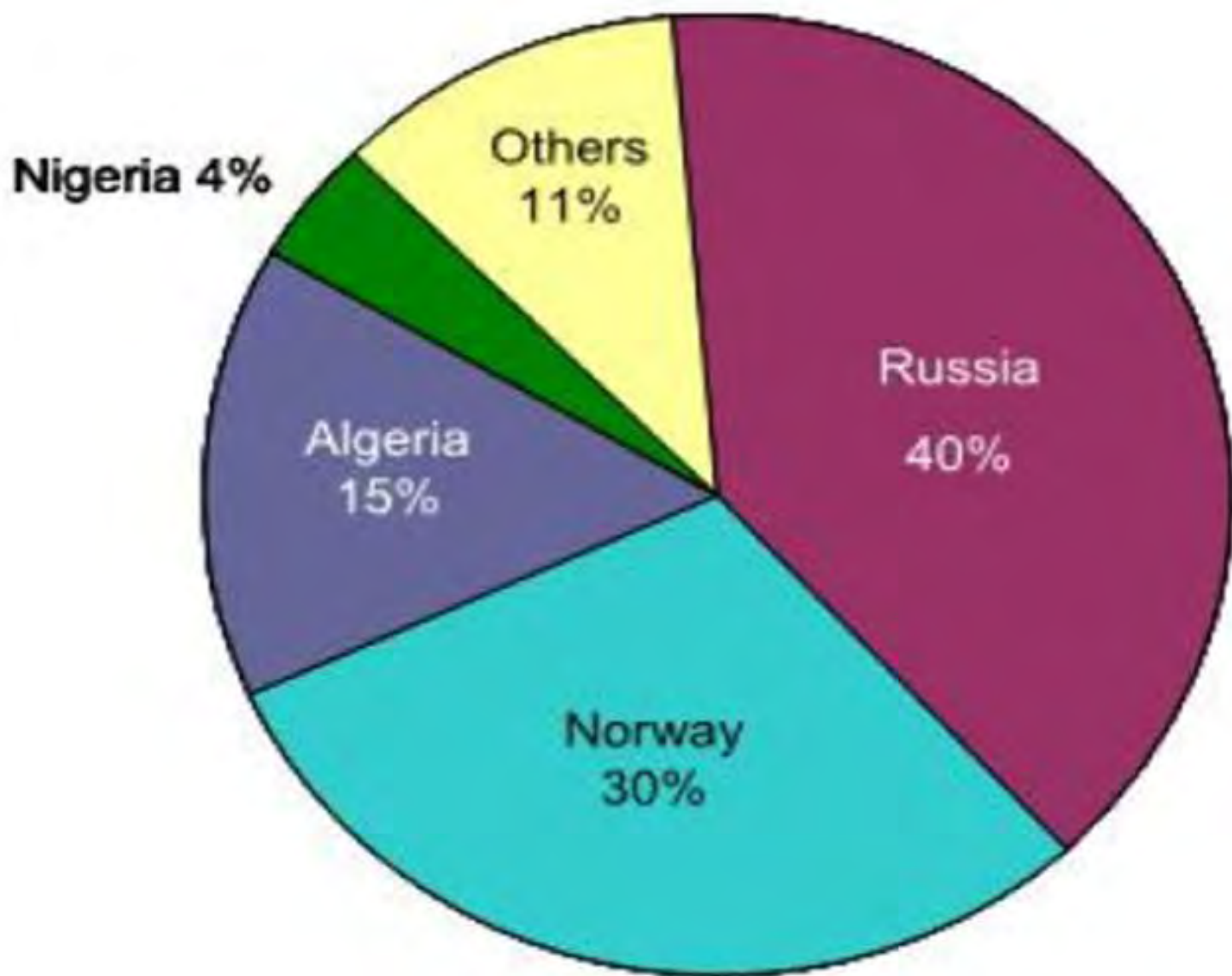
Total European Gas Consumption, 522 Bcm (2010)



Gas Trade in Europe, 2011 (bcm)

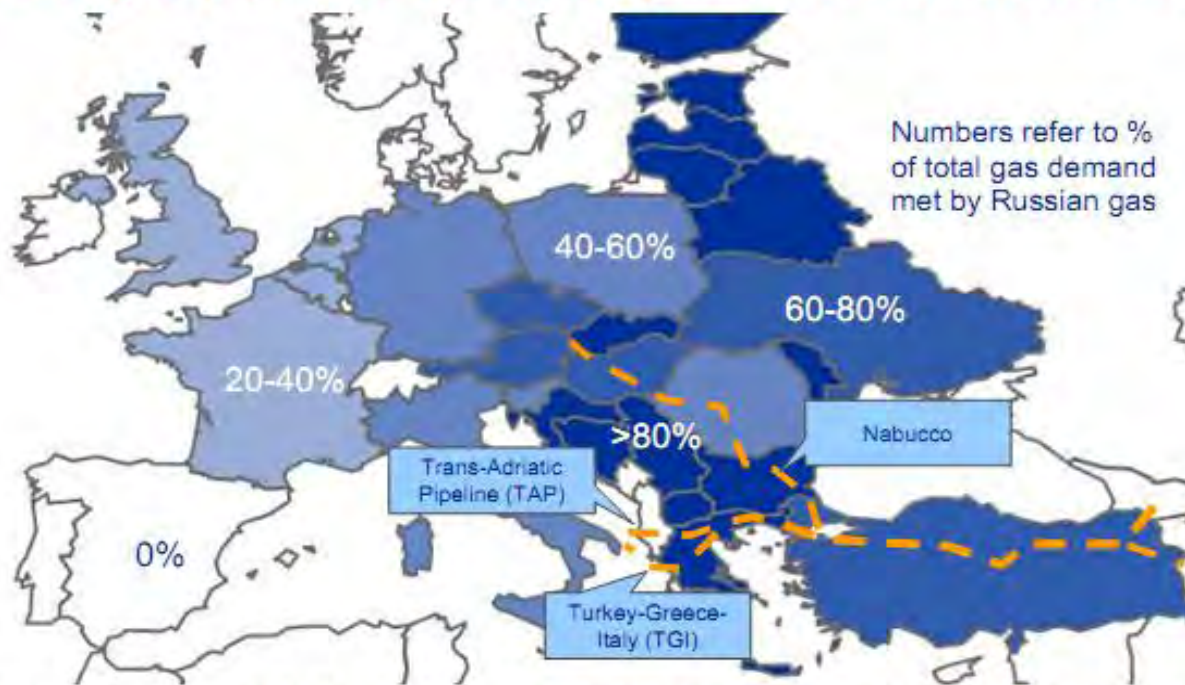


Europe's Natural Gas Imports



Europe's Dependency on Russian Gas

Currently over 80% of Europe's LNG goes to countries that are not major users of Russian gas, including Belgium, France, Portugal, Spain, UK. Countries targeted by the Nabucco gas pipeline are heavily dependent on Russian gas



Pipeline Gas Still Dominates EU-27 Supplies, with 87% of net imports as piped gas vs. 13% as LNG

SE Europe Gas Supply



South Corridor Map



Basic Characteristics of the South Corridor Natural Gas Projects – Latest Update

Project	Capacity (bcm/y)	Distance (kms)	Gas Origin	Estimated Project Cost (in Billion Euro)	Sponsors	Anticipated Start Up Date
TAP	10 - 20	791	-Shah Deniz II	1.70	EGL, STATOIL, E.ON	2017
Nabucco West	10 - 23	1.300	-Shah Deniz II -Iraq -Turkmenistan	5.5	OMV, TRANSGAZ, BEH, MOL, RWE, BOTAS	2017
South Stream	63	2.950	-Russian Fields	15.0	Gazprom, ENI, Wintershall, EDF	2016
White Stream	8 - 32	1.440	-Azerbaijan -Turkmenistan -Iraq	N.A	Not Disclosed	2016
AGRI	5 - 8		Azerbaijan	4 - 6	SOCAR GOGC ROMGAZ MVM	2016
SEEP	10	~1.000	-Shah Deniz II	1.0 – 1.5	BP	2017

The Nabucco pipeline project



Project	Sponsors	Distance	Cost Euro	Start -Up	Capacity
Nabucco	BEH TRANGAZ MOL OMV RWE BOTAS (each with a share of 16.67%)	3.300 kms	7,9 billion (to expand to 14-15Bln for a maximum capacity)	2017	31 bcm/y

Nabucco West



Nabucco West	10 - 23	1.300	-Shah Deniz II -Iraq -Turkmenistan	5.5	OMV, TRANSGAZ, BEH, MOL, RWE, BOTAS	2017
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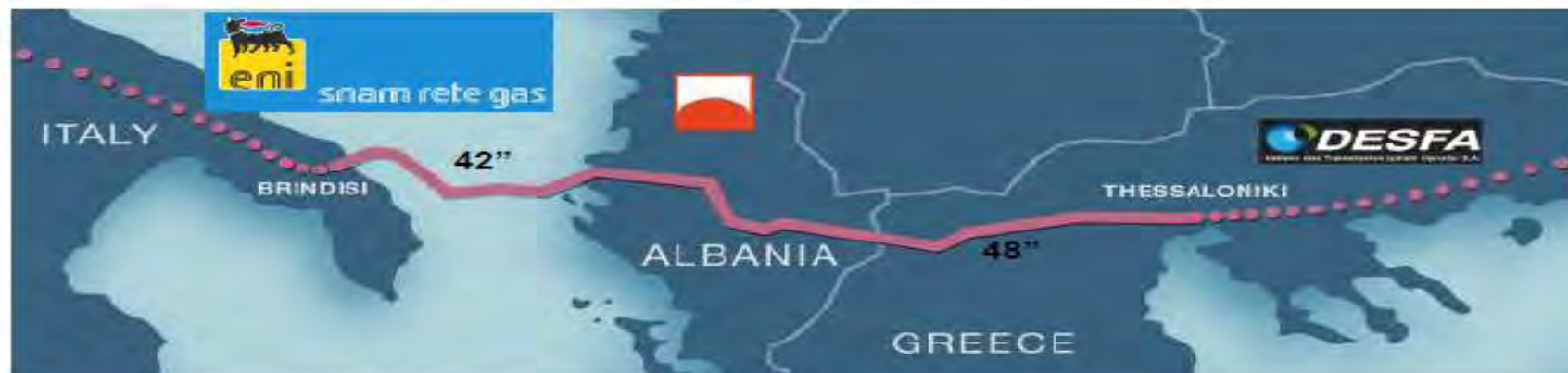
Nabucco West – Latest Developments

- ❑ A short-cut version of Nabucco project (1300-km pipeline – 16 May)
- ❑ More firms will join the project (Bayern Gas, Shah Deniz)
- ❑ Cooperation with TANAP (interconnection point agreement at Bulgarian – Turkish borders)
- ❑ Ratified intergovernmental agreement (10/12)
- ❑ Bulgaria Could Start Building Nabucco West in January 2013

TAP's Key Features

Shortest pipeline length – 520 km

- Connects to existing networks in Greece and Italy
- Designed to expand from 10 to 20 bcm per year
- Option to develop gas storage facility in Albania
- TAP will be project financed – including in Greece



Project	Sponsors	Distance	Cost Euro	Start- Up	Capacity
TransAdriatic (TAP) (Connect Albania to Italy)	EGL (42,5%) StatoilHydro (42,5%) E.ON (Ruhrgas 15,0%)	686 kms onshore (478 Gr, 204 Alb, 4 It) 105 kms offshore	1,70 billion	2017	10-20 bcm/y

TAP – Latest Development

- ❑ Shah Deniz II consortium agreed to fund early preparation of the project (21 September)
- ❑ MoU between Italy – Greece – Albania (October 2012)
- ❑ Third Party Access exception (November 2012)

TANAP Pipeline

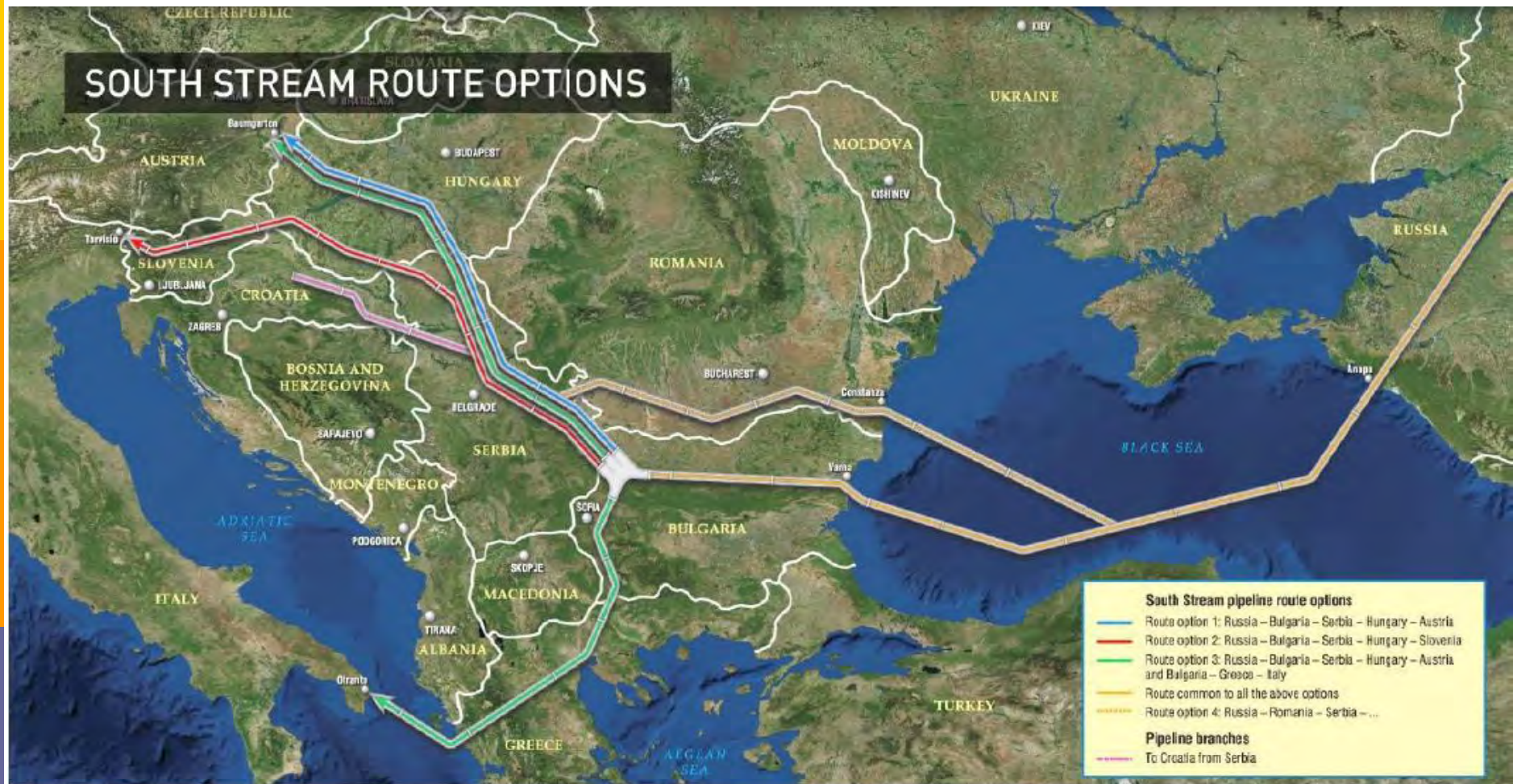


- ❑ Initial capacity of TANAP is 16bn cubic metres (It's planned to increase it by 32bn ? cubic metres)
- ❑ Construction will start in 2013 and to be completed by the beginning of 2018
- ❑ 20% owned by Botas, 80% by SOCAR (Agreement signed on June 26)
- ❑ OMV will invest up to 5 billion \$ in the project
- ❑ Ukraine's request to be part of the project

Potential Gas Pipelines to Europe from Azerbaijan and Russia through Greece

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South Stream	Gazprom (50%) Eni (20%) Wintershall (15%) EDF (15%)	1200 kms onshore (Varna-Baumgarten) 850 kms onshore approximately (Varna-Igoumenitsa) 900 kms offshore (Black Sea)	15,0 billion	2016	63 bcm/y

South Stream



Project	Sponsors	Distance	Cost Euro	Start-Up	Capacity
South Stream	Gazprom (50%) Eni (20%) Wintershall (15%) EDF (15%)	1200 kms onshore (Varna-Baumgarten) 900 kms offshore (Black Sea)	15,0 billion	2016	63 bcm/y

South Stream – Latest Developments

- Agreement between Russia and Bulgaria in November 2012
- Croatia ? Hungary ?
- Serbia: October 29 2012, agreement on investment decision. Construction to start December 2012
- Slovenia: Proposal for an International Conference in support of South Stream

The proposed SEEP pipeline project



Project	Sponsors	Distance	Cost Euro	Start-Up	Capacity
South East European Pipeline (SEEP)	BP	Approximately 1.000 kms	1.0-1.05 billion	2017	10 bcm/y

SEEP – Latest Developments

- ❑ Compared to the old Nabucco proposal, SEEP would be cheaper, less risky and smaller, with an option to expand its capacity from the initial capacity at 10bcm/year, if other sources of gas appear.
- ❑ BP as part of the consortium leading development the Shah Deniz II field, has officially dropped its own South East Europe Pipeline(SEEP) in order to back the Nabucco West pipeline.

AGRI Pipeline Project



Project	Sponsors	Distance	Cost Euro	Start- Up	Capacity
AGRI	SOCAR GOGC ROMGAZ MVM (each with a share of 25%)	Liquefied natural gas from a Georgia based liquefaction plant will be transported by LNG tankers to an LNG Constanta terminal	4 - 6 billion	2016	8 bcm/y

AGRI – Latest Developments

- ❑ A feasibility study for AGRI has recently been awarded to UK consultancy Penspen, paving the way for the project's eventual implementation in 2016.
- ❑ Agreement between the Romanian Foreign Minister Titus Corlatean and his Georgian counterpart Grigol Vashadze (27/9/12)
- ❑ Bulgaria and Ukraine have also expressed their interest in AGRI
- ❑ Ukraine is already moving ahead with plans to build an LNG terminal at Odessa.
- ❑ Hungary: “Nabucco is not interested to us any more. We are interested in alternatives such as LNG from Georgia

The white stream pipeline project

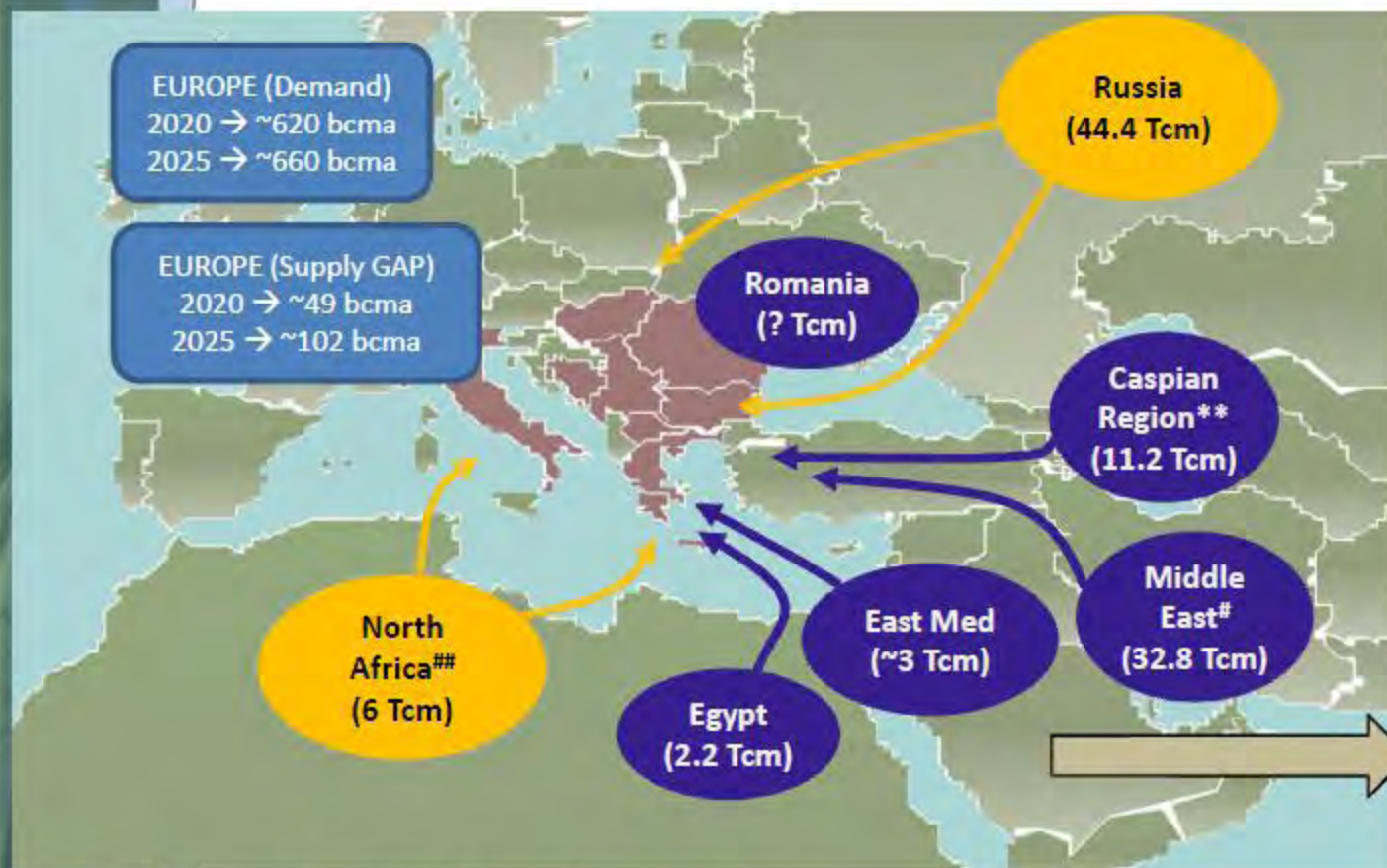


Project	Sponsors	Distance	Cost Euro	Start- Up	Capacity
White Stream	The composition of the consortium is not disclosed	415 kms onshore 1025 kms offshore (Black Sea)	NA	2016	8 - 32 bcm/y

Trans Caspian Pipeline



Supply and Demand in to Europe



Specifically for SEE gas demand will grow to 96 bcma in 2010
↓
~117 bcma in 2025.

Supply Gap in SE will be over 20 bcma in 2025.

East Med may provide another diversified source of natural gas to the EU by 2017.

Source: BP Statistical Review of World Energy 2011



Traditional external supply sources

Potential new supply sources

*Excludes Italy

** Azerbaijan, Kazakhstan, Turkmenistan

Iran, Iraq

Algeria, Libya

Eastern Mediterranean gas Reserves

Tamar, Leviathan and Block 12 are three of the top five world's largest discoveries of the decade.

Tamar	2009	Israel	257bcm
Leviathan	2010	Israel	481bcm
Block 12	2011	Cyprus	198bcm

According to the USGS (United States Geological Survey) total reserves at the Levantine basin could be three times more than what has already been discovered.

And there may be even more gas in Greece south of Crete.

Estimates are that more than 16 bcma will be exported, which necessitates exports both in LNG form and through a pipeline.



Offshore pipeline from the East Med to Greece

The future Asian LNG market will be very competitive, with players from Australia, N. America and even E. Africa.

Gas demand in SE Europe will create a supply window of over 20bcm by 2025.

A pipeline option would be more likely to secure European buyer participation through long-term contracts.

The pipeline will supply natural gas to Crete spurring development in new markets.

East Mediterranean gas will play an important role as the EU incorporates this newly found source into its energy policy.

EU funding will make the pipeline option an even more attractive solution.



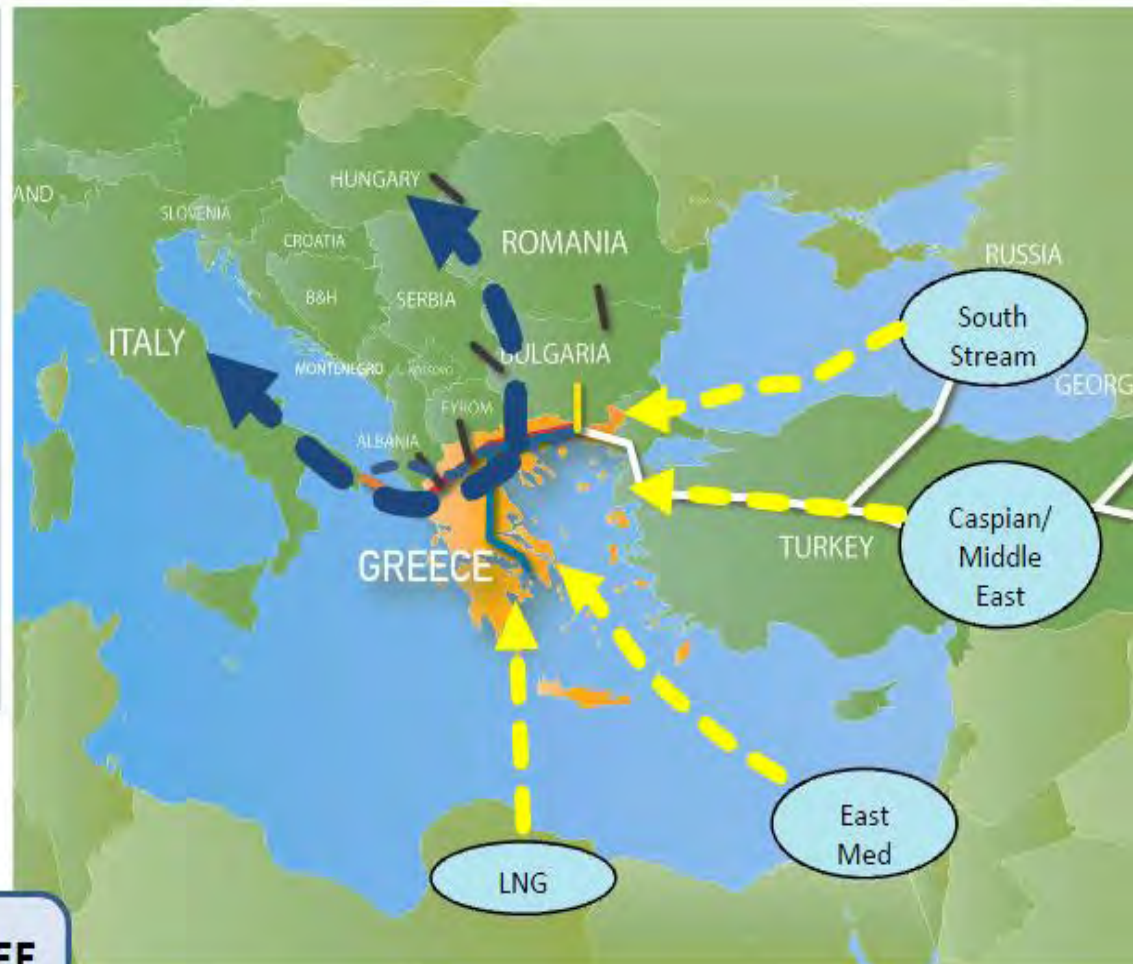
From source to market

The SEE market

The SEE market is:

- the closest market to ALL of those sources;
- a growing market with competitive prices;
- in urgent need to diversify its supply sources and increase its energy security.

The SEE Market may yet prove to be the most important and decisive factor in how the new game is shaping up to be.



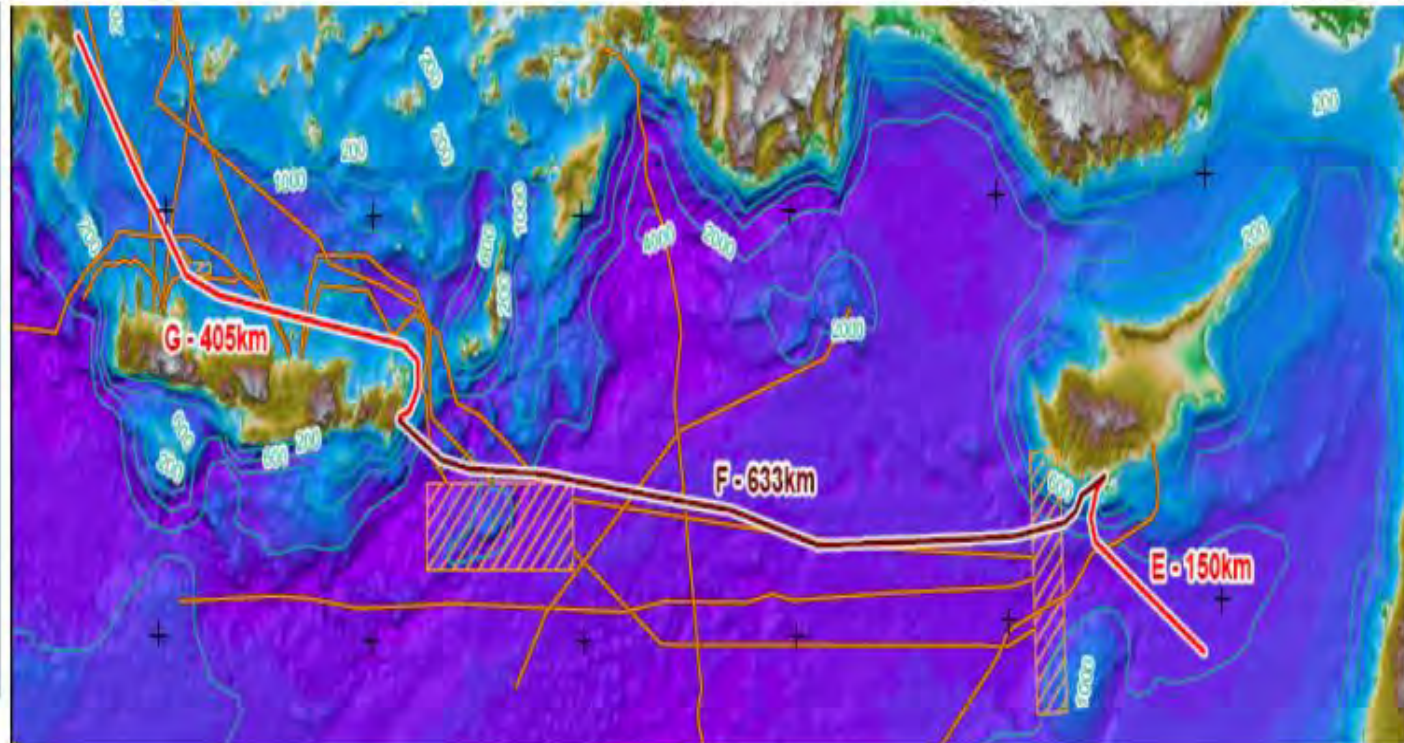
Who will be first to Italy and the SEE market?

Offshore pipeline from the East Med to Greece

Several scenarios have been considered by DEPA to carry East Med gas to Europe.

The pipeline comprises:

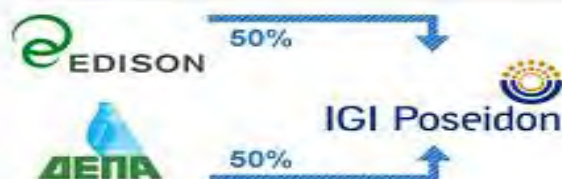
- A pipeline from the field to Cyprus;
- A pipeline connecting Cyprus with Crete;
- A pipeline from Crete to mainland Greece.



IGI POSEIDON SA

ITGI: IGI POSEIDON S.A.

- IGI Poseidon S.A. is the project company that will develop, build and operate the offshore section of the IGI Project, namely the **Poseidon Pipeline**.
- IGI Poseidon, together with Bulgarian Energy Holding, is also developing the **IGB Pipeline**, the Balkan section of ITGI project linking Greek and Bulgarian gas networks.



POSEIDON PIPELINE CAPACITY

TPA Exempted Capacity: 8 Bcm/y
of which: Edison 6,4 and Depa 1,6
 Initial Open Season Capacity: 1 Bcm/y
 Potential Capacity Upgrade: up to 3 Bcm/y

Project	Sponsors	Distance	Cost Euro	Start-Up	Capacity
Interconnector Turkey - Greece - Italy (ITGI)	DEPA, Edison (50/50 JV)	590 kms onshore 206 kms offshore (Greece)	1,74 billion	2017	10-16 bcm/y

Connecting to Europe Pipeline From East Mediterranean

The ITGI System comprises IGB and IGI, a powerful combination which provides for the needs of SEE.

The ITGI System will connect Greece's grid to Italy, Bulgaria and beyond.

IGI is the most technically mature project of its kind in the region.

Construction of IGB will provide up to 5bcm of either LNG or pipeline gas to SEE by 2014.

Expansion of existing LNG terminal in Revythousa and new FSRU to feed IGB.

A pipeline from East Med will create strong synergies with the ITGI system and will connect East Med to the European grid.





**Thank you for
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