5th Regional Energy Conference
„Regional Energy Development and Energy Security"
October 28-29, 2014, Sofia

Bulgartransgaz EAD: The national gas interconnector program and its cohesion with "Connected Europe"

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General overview

Bulgartransgaz EAD is the Bulgarian combined gas operator of gas transmission system. The company holds long-standing experience in gas transmission and storage since 1973.

The company is the owner and operator of:

- National gas transmission network with main function natural gas transmission to gas distribution companies and industrial gas consumers in Bulgaria
- Gas network with main function natural gas cross-border transmission between Bulgaria and Romania, Turkey, Greece and Macedonia
- Underground gas storage facility in Chiren (Chiren UGS)

Bulgartransgaz EAD is currently undergoing a process of certification as an independent gas transmission operator according to EU legislation.

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Gas infrastructure on the territory of Bulgaria

- National gas transmission network:

- Gas pipelines total length: 1 700 km
- 3 compressor stations with total power of 49 MW
- Technical capacity of the grid - 7,4 bcm/y
- 115 exit points (AGRS/GRS/GMS)
- Main entry point - GMS Negru voda 1

- Gas transmission network for transit transmission:

- Gas pipelines length: 945 km
- 6 compressor stations with total power of 214 MW
- Technical capacity of the grid - 18,7 bcm/y
- 3 cross border exit points (Sidirokastro; Malkoclar, Jidilovo)
- Main entry point: GMS Negru voda 2, 3

Since the beginning of 2014 both networks are interconnected at GMS Intiman

Underground Gas Storage Chiren /UGS/

- 22 exploitation wells
- Above ground technological installations, including one compressor station of 10 MW power
- Working capacity: 550 mcm
- Deliverability: 4.2 mcm/d

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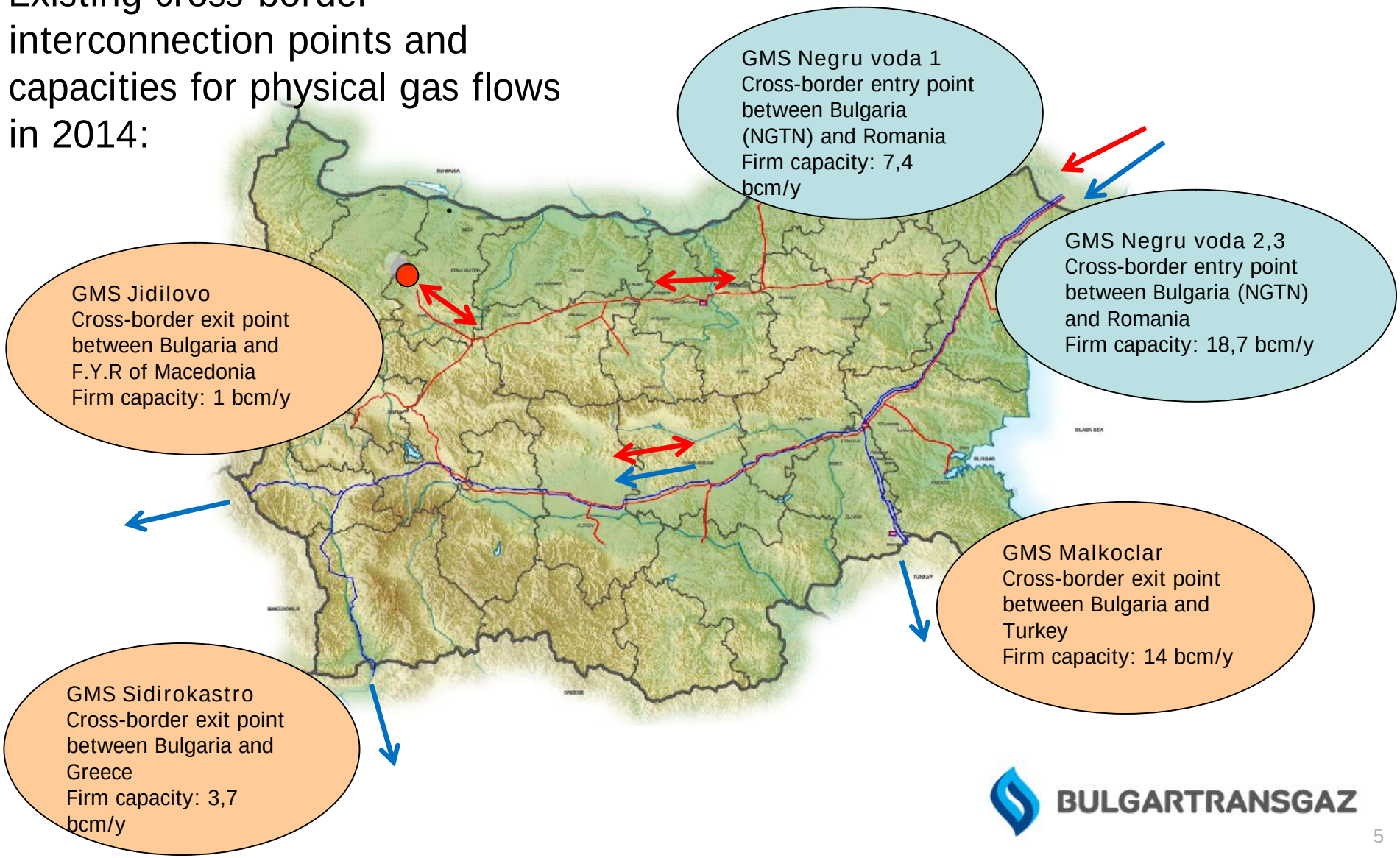
Gas infrastructure on the territory of Bulgaria

Existing cross-border interconnection points and capacities for physical gas flows in 2014:



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Planned gas infrastructure development as an integrated part of “Connected Europe”

➢Development of new interconnections with the neighbouring countries:

- Romania, Greece, Turkey, Serbia

➢Other projects contributing to the realization of the objectives of “Connected Europe”:

- Expansion, modernization and rehabilitation of the existing gas transmission network
- Interconnections between the national and the transit gas transmission networks
- Increase of natural gas storage capacity in the context of the regional infrastructure development

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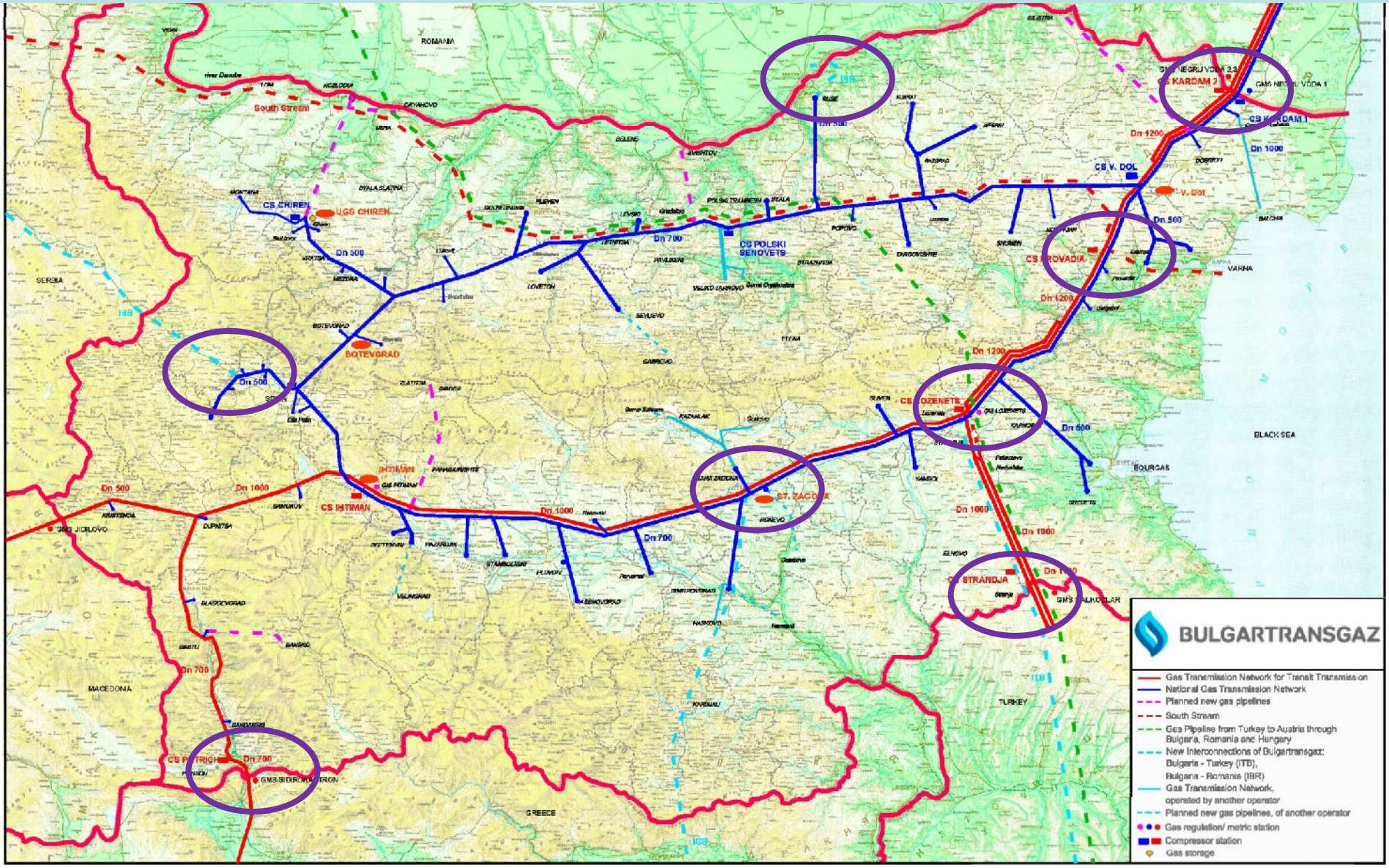
Planned gas infrastructure development for 2014-2017 as an integrated part of “Connected Europe”



Bulgarian PCIs

Bulgaria and Greece are the first countries in Europe along the path of the gas from the Southern Gas Corridor.

Priority corridor Southern Gas Corridor

- ITB (Interconnection Turkey – Bulgaria)

Priority corridor North-South gas interconnections in Eastern and South-Eastern Europe

- Chiren UGS expansion
- Construction of new gas storage facility on the territory of Bulgaria
- IGB (Interconnection Greece – Bulgaria)
- Rehabilitation, modernization and expansion of the Bulgarian transmission system
- IBS (Interconnection Bulgaria – Serbia)

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Horezu
Mehedinti
BUCHAREST
Constanța
LUCEAFARUL
Silistra
53
Negru Voda
Kardam
WHITE STREAM
(option 1)
Giurgiu
64
Ruse
IBR
IBR
Dobrich
Zaječar
South Stream
Kozloduy
Oryahovo
Varna
SOUTH STRE
KAVARNA
GALATA
KALIAKRA
Pleven
Niš
IBS
Dimitrovgrad
SOFIA
BULGARIA
Burgas
Pristina
ITB
Stara Zagora
52
Srtandszha
Malkoclar
Dupnitsa
124
Ihtiman
Zidilovo
50
Kyustendil
Kirklareli
Edirne
ITB
South Stream
IGB
IGB
SKOPJE
Istanbul
FYROM
Petrich
Kulata
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Sidirokastron
Xanthi
Tekirdag
Drama
Marmara Ereglisi
Komotini
Kilkis
Kavala
222
Alexandroupolis
Kipi
Bursa
Aegean LNG
Alexandroupolis LNG
Gulf of Saros
TAP
Thessaloniki
Karacabey

Development of interconnections with the neighbouring countries

- Interconnection Bulgaria-Romania (IBR)
- Interconnection Turkey-Bulgaria (ITB)
- Interconnection Greece-Bulgaria (IGB)
- Interconnection Bulgaria-Serbia (IBS)

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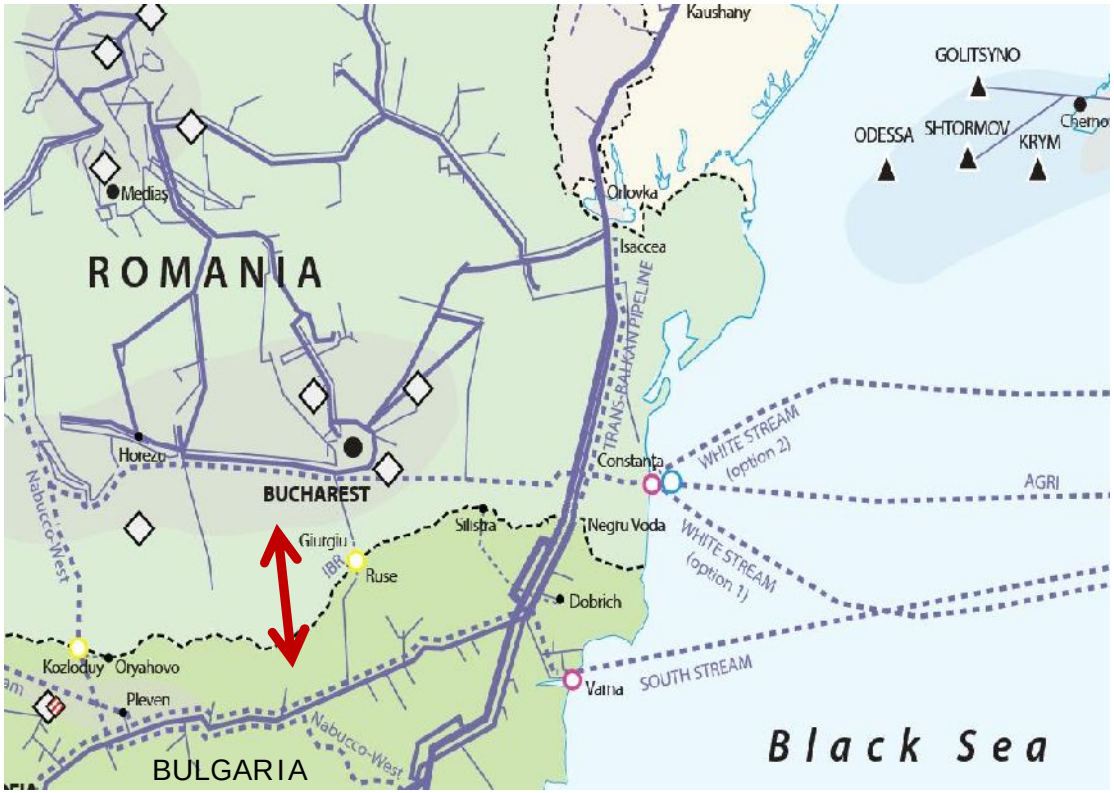
Interconnection Bulgaria-Romania (IBR)

- Pipeline route: Ruse – Giurgiu
- Diameter: Dn 500
- Length: ~25 km (15 km Bulgarian section)
- Capacity: 0,5 - 1,5 bcm/y
- Status: final phase of construction
- Planned commissioning: beginning of 2015
- Developed by Bulgartransgaz EAD and Transgaz S.A.

The specified gas pipeline capacity is design capacity. The actual capability of transmission in each direction depends on the technical parameters of the networks of the upstream and downstream TSOs and their level of load.



By realization of the project will be achieved diversification of the routes and performance of natural gas transmission to/from Romania.

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Interconnection Turkey-Bulgaria (ITB)

Preliminary data:

•Route in Bulgaria: Lozenetz – Malkochlar

•Diameter: Dn 700 - 1000

•Length: ~ 75 km Bulgarian section

~ 130 km Turkish section

•Gas pipeline capacity: ~ 3 bcm/y

•Status: Pre-Feasibility Study;

The gas pipeline Lozenets – Nedyalsko (20 km) is considered as a first stage of the project and is planned to be commissioned by the end of 2015

•Scheduled commissioning of ITB: end of 2017

ITB would enable connection to the Southern gas corridor producers – Caspian region, Middle East etc. Bulgaria will also have the opportunity to import LNG from the international market.

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Interconnection Greece-Bulgaria (IGB)

- Pipeline route: Komotini – Haskovo – St. Zagora
- Length: 182 km (~ 151 km on the territory of Bulgaria)
- Gas pipeline capacity: 3 bcm/y
- Implemented by a joint investment company ICGB with shareholders Bulgarian Energy Holding EAD and IGI Poseidon
- Scheduled commissioning: end of 2016
- Status: Design, EIA, DZP (Detailed Zoning Plan)

The specified gas pipeline capacity is design capacity. The actual capability of transmission in each direction depend son the technical parameters of the networks of the upstream and downstream TSOs and their level of load.

IGB would enable connection to the Caspian region and the Middle East (TAP and TANAP). Bulgaria will have the opportunity to import LNG from the international market using the existing Revithoussa terminal (Greece), possible new regional terminal in Northern Greece for SEE imports.

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Interconnection Bulgaria-Serbia (IBS)

- Pipeline route: Sofia – Dimitrovgrad – Nis
- Diameter: Dn 700
- Length: 150 km (62 km Bulgarian section)
- Gas pipeline capacity: 1,8 bcm/y to 3,1 bcm/y
- Implemented by Ministry of Economy and Energy, beneficiary of Investment Operational Programme Competitiveness
- Status: Pre-investment works (EIA, Routing, DZP)
- Scheduled commissioning: end of 2016

The specified gas pipeline capacity is design capacity. The actual capability of transmission in each direction depends on the technical parameters of the networks of the upstream and downstream TSOs and their level of load.

Interconnection Bulgaria-Serbia aims at connecting the national gas transmission networks of Bulgaria and Serbia

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Other projects contributing to the realization of the objectives of “Connected Europe”

- Expansion, modernization and rehabilitation of the existing gas transmission network
- Expansion of the natural gas storage capacity
- Interconnections between the national and the transit gas transmission networks

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Expansion of gas storage capacity

Increase in daily deliverability and operating gas volume in UGS Chiren – The first and fastest step to the realisation of the concept for expansion of the gas storage capacity in the region:

	Deliverability:	Operating gas volume
current	4,2 mcm/d	550 mcm
after expansion*	8-10 mcm/d	1 bcm

Status: Geological and geophysical surveys (Geomechanical simulation; 3D field seismic survey, etc.) and market surveys are planned.

Completion: 2015 – 2018 (implemented in stages)

New gas storage facility on the territory of Bulgaria:
Studies and analysis to identify the suitable geological structures for a new gas storage facility in Bulgaria are planned in 2015 and 2016.

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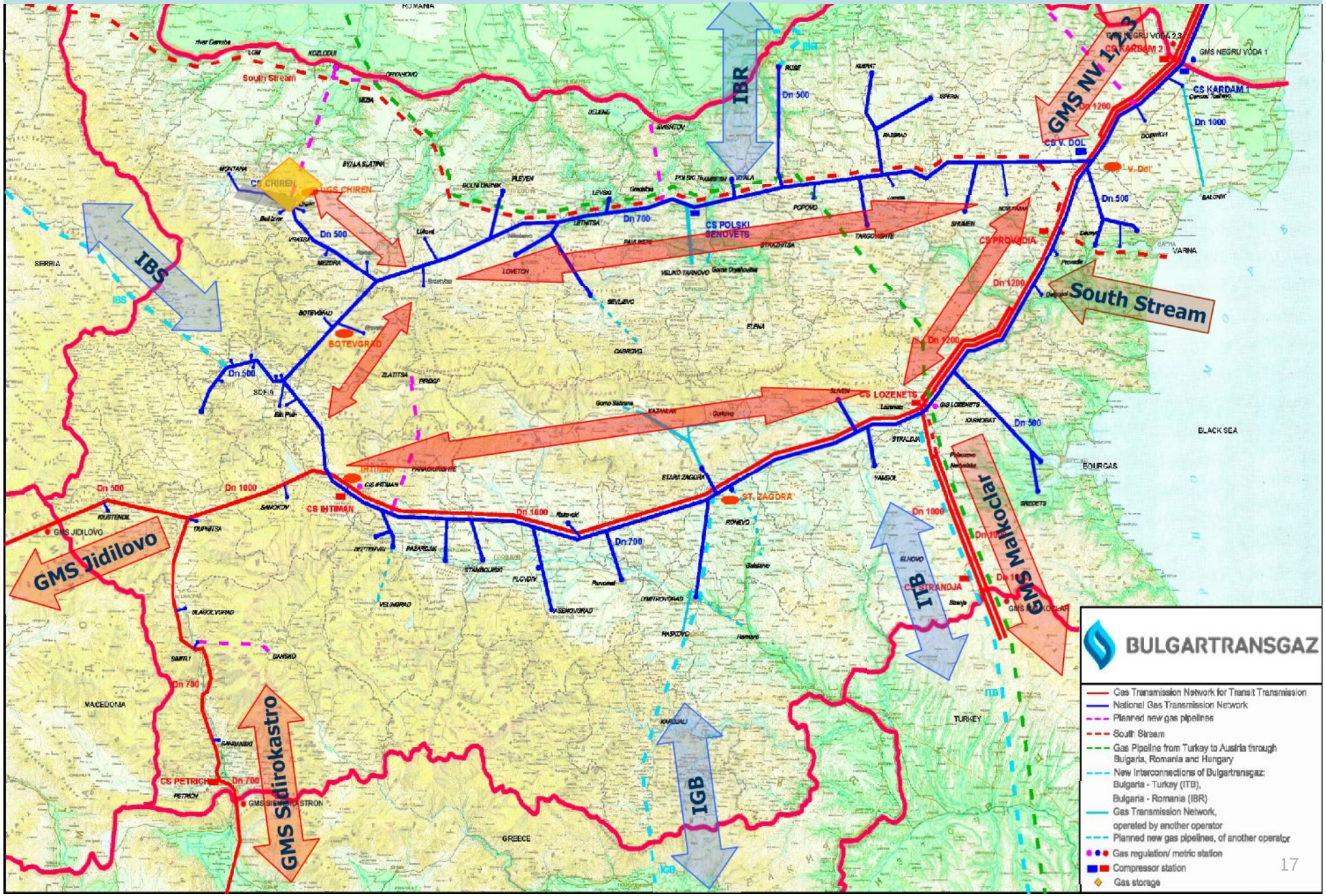
Bulgarian commitment to the development of the regional gas market and the energy security



Bulgarian contribution to EU strategic energy policy objectives

The realization of the planned projects will result in:

– Enhanced security of natural gas supplies by diversification of the routes and sources;

– Increased level of market integration and improved competitiveness;

– Improved reliability and flexibility of the gas transmission network and auxiliary equipment;

– Additional entry/ exit capacity;

– Increased storage capacity to serve both national and regional gas market.

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Thank you for your attention!
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