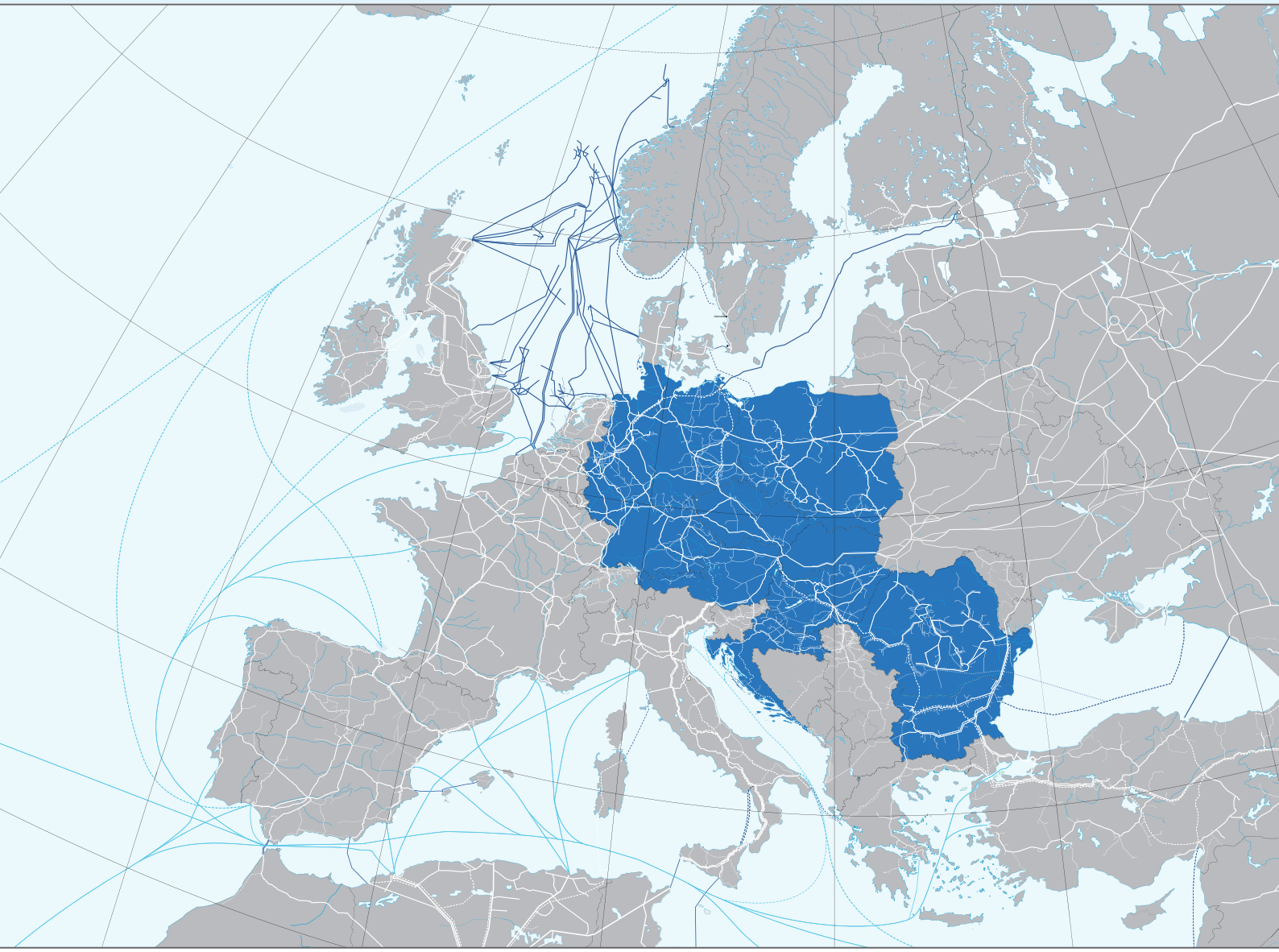

CEE GRIP

Annex B : Infrastructure Projects

January 2012

entsog
european network of transmission system operators for gas

Introduction

The following Infrastructure projects overview provide detailed information on the (potential) future gas infrastructures in each of the countries of CEE region and in the associated countries Austria and Germany. It is based on the questionnaire prepared by ENTSOG for TYNDP 2011-2020. All TSOs and other project sponsors were asked to update their information included in ENTSOG TYNDP 2011-2020. If no answer received, the data from the ENTSOG TYNDP 2011-2020 were used for respective project. Both FID and Non-FID projects are covered in this Annex. There are provided only **capacity information related to the new and/or incremental capacity**.

Please also note the following when interpreting the data provided:

- The FID status row/column gives information about the exact/expected year in which the FID was/is to be taken or only indicates the status (FID / Non-FID) where the year is not available or not known.
- The commissioning date with regards to the non-FID projects is to be understood as the best estimate for the purpose of this CEE GRIP.

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Austria


GERMANY
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AND
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LIECHT.
München
Überackern
Burghausen
Oberkappel
Veselí nad Lužnicí
Kralice
Hostim
Břeclav
Lanžhot
Baumgarten
Linz
VIENNA
Salzburg
Kiefersfelden
Innsbrück
Kittsee
BRATISLAVA
Mosonmagyarovar
BUDAP
Graz
Arnoldstein
Weitendorf
Murfeld
Klagenfurt
Tarvisio
Ceršak
Trento
Rogatec
Sempeter
LJUBLJANA
Gorizia
Venezia
ZAGREB
Lučko
Dravaszerda
NAG
MEGAL
WAG
TAG
TGL
Penta West

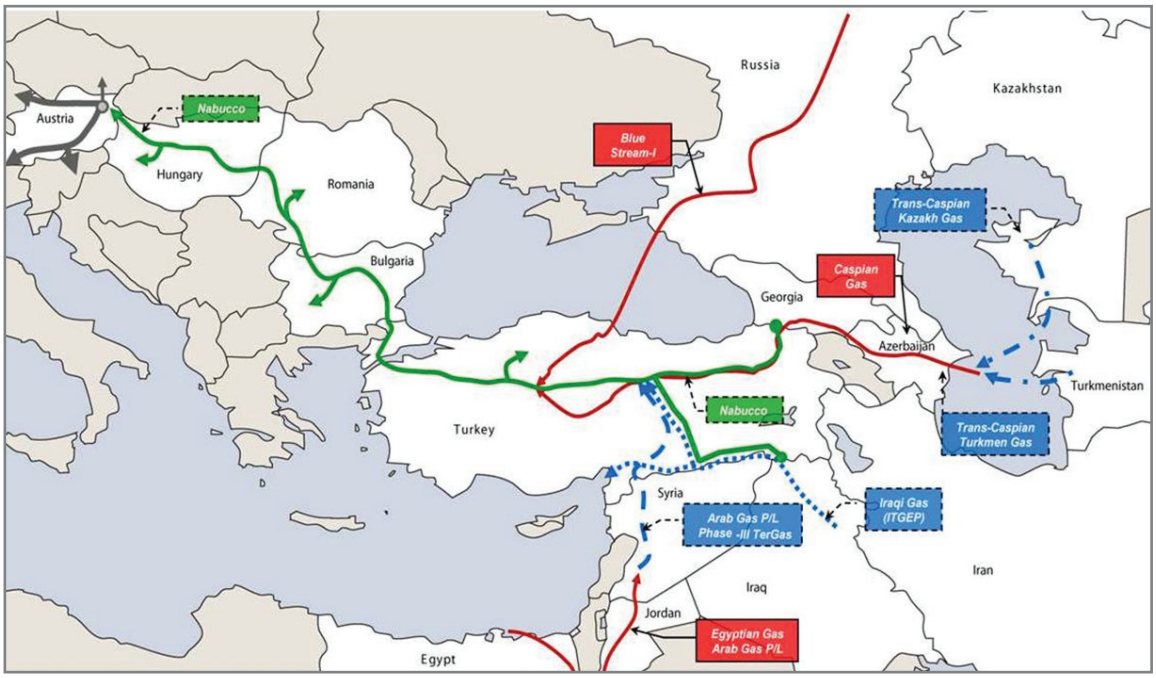
BOG - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations)
List of Projects	**Project** / **FID** / **Commissioning** / **Remarks** **Pipes**[1] WAG Expansion 3 / 2010 / 2013 /
Link to the TSO's website	www.BOG-GmbH.at
Technical Information	
Total length of new pipes (based on the above list)	63 km
Diameter range of new pipes	1,200 mm
Technical capacity	**(in 10^6 Nm³/d)** / **Remarks** **Interconnections** Baumgarten / Entry: 5.58 Exit: 5.40 / WAG Expansion 3 GCV: 11.12 kWh/Nm³ Oberkappel / Entry: 5.40 Exit: 5.58 / WAG Expansion 3 GCV: 11.12 kWh/Nm³
Expected Benefits	

- Increased SoS
- Increased link between Net Connect Germany and CEGH and further on to Italy
- Increase of Transit Capacity in E-W as well as W-E Direction
- Market Integration (increase of competition)

[1] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

Nabucco Gas Pipeline Project



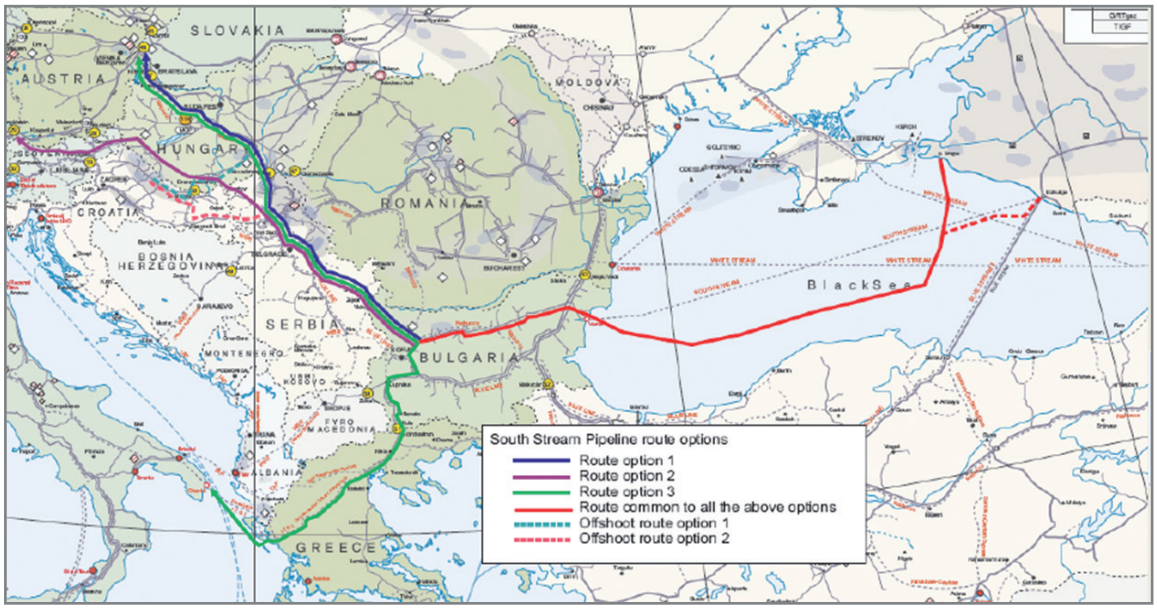
General Information	
Name of project	Nabucco Gas Pipeline project
Types of project	Pipeline (incl. compressor stations)
Name of the sponsors and their shares	• OMV Gas and Power GmbH • RWE Supply and Trading GmbH • FGSZ Natural Gas Transmission Ltd. • S.N.T.G.N.Transgaz S.A. • Bulgarian Energy Holding EAD • BOTAS Boru Hatlari Ile Petrol Tasima AS each of them holding the same shares
Link to the TSO's website	www.nabucco-pipeline.com
Technical Information	
Length of the pipe	Approx. 4,000 km
Diameter	1,420 – 1,220 mm
Technical capacity	31 (in 109 Nm^3/y)
Expected load factor	0.9
Power of the CS(s)	Approx. 730 MW (absorbed power)
Interconnections with other gas infrastructures	Nabucco pipeline will have off-take points along the whole route in all countries crossed by the pipeline and thus will be connected with all existing national gas pipeline infrastructures as well as with storage facilities. The exact location of all off-take points is currently assessed within the ongoing detailed engineering design study.

Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: 2015 FID: Q_4 2011 End of permitting: MID 2011
Project development phase reached	Design & Permitting phase in advanced stage
IGA, Mandate Letter, LLI Tender, FEED	• Nabucco Consortium welcomes ratification of Intergovernmental Agreement by the Turkish Parliament - 5 March 2010 • Nabucco Gas Pipeline International confirms Nabucco Timeline - 25 March 2010 • Nabucco paves the way for construction - 23 April 2010 • Nabucco starts prequalification tender for long lead items including line pipes, valves and bends. • Nabucco is on track - 26 May 2010 • Press statement in response to the Azerbaijani-Turkish agreement on the transportation of gas - 8 June 2010 • Turkey: Nabucco opens dialogue with communities - 19 July 2010 • Nabucco: Modification of feeder line concept - 23 August 2010 • EBRD, EIB and IFC start appraisal of Nabucco pipeline - 6 September 2010 • All press releases can be found in detail on the Nabucco website.
TEN-E Project Information	
Is the project part of TEN-E?	Yes
If the project is part of TEN-E, specify the project category.	Priority Project
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	Date of request: 1. 28.04.2003 2. 20.06.2005 3. 24.04.2009 Year in which funding was received: 1. 2004 2. 2007 advance payment 3. no payment so far
Expected Benefits	
What is/are the expected benefit(s) of the project?	The projects' benefits are unique for many reasons: • Interconnectivity: No other project will connect European and Turkish Markets and the South East European national grids. Turkey, Bulgaria, Romania, Hungary, Austria and via the Central European Gas hub all other countries of Europe will receive Nabucco gas. • Third Party Access: No other project in the region offers 16 bcm/y transport capacity to third parties • Stability by Treaty: No other project provides a predictable, long term concept over 50 years backed by an Intergovernmental Agreement for gas transit via Turkey which is compatible with European Energy Law • Supply Security: No other project will provide a gas transport volume of 31 bcm/y to gas producers from Central Asian and Middle East from alternative sources directly into the centre of the European markets Market Liquidity/ Competition: No other project will reach such a high number of shippers, industrial users, wholesalers at competitive conditions in the European market • Market recovery: No other project promoter will spend [such an amount] to construct an infrastructure project with a transparent procurement regime.

TPA regime	
Have you applied for an exemption from Third Party Access?	Yes , granted by all National Regulators and the EC
(Expected) Gas Sourcing	
Gas Sourcing (Expected)	The major expected gas sources are from: • Azerbaijan • Turkmenistan • Iraq • Egypt
Inter-governmental Agreements	
Inter-governmental agreements	The Intergovernmental Agreement was signed in form of a Treaty among the Nabucco transit countries, Austria, Hungary, Romania, Bulgaria and Turkey in Ankara on July 13, 2009 and provides a stable legal framework for the entire project. Furthermore: • it guarantees full political support and is valid for 50 years, • it ensures equal legal conditions for gas transit throughout the entire Nabucco pipeline system, • it lays down transport tariff methodology and rules for network access, • it defines a "one stop shop" concept for the whole length of the Nabucco pipeline system, • Up to three "feeder" lines are covered, • it defines a volume of 16 bcm/y for Third Party Access, • it establishes political committee comprising representatives of all signatory countries to support development of the project.
Financing Structure	
Expected or obtained share of public financing	The Nabucco project is eligible for 200 million Euro grant funds under the European Economic Programme for Recovery (EEPR). Sovereign guarantees shall be provided by means of export credit agency (ECA) covers based on the procurement of material supplies from specific countries.
Expected or obtained share of private financing	Private financing shall be provided by commercial banks.
Expected or obtained share of multilateral financing	A substantial share of the overall financing shall be provided by International Finance Institutions (IFIs), in particular the EBRD, EIB and IFC. The contributions of the individual financing sources listed in this table shall depend on the further structuring of the project.

South Stream Pipeline Project

South Stream
Europe's Energy Security



General Information	
Name of project	South Stream Gas Pipeline Project* **South Stream Project is considered as being comprised of the offshore section and the onshore section*
Types of project	Pipeline (incl. compressor stations)
Name of the sponsors and their shares	South Stream Project, Offshore Section[2] : 1. OAO Gazprom - 50 % 2. ENI S.p.A. - 50 % South Stream Project, Onshore Section: 1. Bulgaria: OAO Gazprom - 50 % Bulgarian Energy Holding EAD - 50 % 2. Serbia: OAO Gazprom - 51 % JP Srbijagas - 49 % 3. Hungary: OAO Gazprom - 50 % Hungarian Development Bank PLC (MFB Ltd.) - 50 % 4. Slovenia: OAO Gazprom - 50 % Geoplin plinovodi d.o.o. - 50 % 5. Austria: OAO Gazprom - 50 % OMV Gas & Power GmbH - 50 % 6. Croatia: OAO Gazprom - 50 % Plinacro d.o.o. - 50 % 7. Greece: OAO Gazprom - 50 % Hellenic Gas Transmission System Operator S.A. (DESFA S.A.) - 50 %
Link to the TSO's website	http://south-stream.info/?L=1 http://gazprom.com/production/projects/pipelines/south-stream/

[2] Électricité de France S.A. is expected to become the third Sponsor by the end of 2010 through decrease in the share of Eni S.p.A.

Technical Information	
Length of the pipe	Offshore: Approx. 940[3] (in km) Onshore: Varies from 1,975 km to 2,775 km in total at present depending on a route alternative[4] : 1. Bulgaria: from 500 to 920 The upper range limit (920 km) embraces the length of the Bulgarian/Greek gas pipeline section, which is currently being negotiated with the Bulgarian partner. 2. Serbia: from 390 to 450 3. Hungary: from 230 to 380 4. Slovenia: from 250 to 300 5. Austria: from 35 to 55 6. Croatia: The parameters are currently being specified 7. Italy: from 10 to 20 8. Greece: from 390 to 440 9. the Ionian Sea: from 170 to 210
Diameter	Offshore: 812,8[5] (in mm) Onshore:[6] 1. Bulgaria: 1,420 and/or 720 The lower value (720 mm) implies the diameter of the Bulgarian/Greek gas pipeline section, which is currently being negotiated with the Bulgarian partner 2. Serbia: 1,420 and/or 1,220 3. Hungary: 1,420 and/or 1,220 4. Slovenia: 1,220 and/or 1,020 5. Austria: 1220 6. Croatia: the parameters are currently being specified 7. Italy: 1,220 and/or 1,020 8. Greece: 720 and/or 630 9. the Ionian Sea: 356

[3] 4 lines are assumed to be laid on the Black Sea bed

[4] For the route options involving the territories in question

[5] Nominal outside diameter

[6] For the route options involving the territories in question

Technical capacity	Offshore: 58.7 in 10^9 Nm^3/y Onshore: The technical entry capacity of the gas pipeline (on the Bulgarian Black Sea coast): 58.7 in 10^9 Nm3/y The technical exit capacity of the gas pipeline (in Tarvisio or Baumgarten and / or Otranto) varies depending on the route alternatives: from 18.8 to 20 in 10^9 Nm^3/y
Expected load factor	Offshore: 0.9 Onshore: 0.9
Power of the CS(s)	Offshore: Approx. 450 (in MW) Onshore[7] : 1. Bulgaria: from 390 to 540 The upper range limit (540 MW) embraces the Bulgarian/Greek gas pipeline section, which is currently being negotiated with the Bulgarian partner 2. Serbia: from 140 to 200 3. Hungary: from 55 to 75 4. Slovenia: from 55 to 110 5. Austria: n/a 6. Croatia: n/a - the parameters are currently being specified 7. Italy: n/a 8. Greece: from 8 to 20 9. the Ionian Sea: n/a
Interconnections with other gas infrastructures	Offshore: The Offshore section of the South Stream Project is assumed to be interconnected with the Unified Gas Supply System of the Russian Federation, which operator is OAO Gazprom. The interconnections with the UGSS will be located in Krasnodarsky krai (Russia) on the Russian Black Sea coast. Onshore: The onshore section of the South Stream Project is assumed to have internal interconnections with the existing national gas transportation systems of each European country involved in the project through the offtake points. The precise location of the interconnections with the existing national gas transportation systems will be determined upon completion of the consolidated (for the whole project) feasibility study. Feasibility of utilizing existing gas transport capacities for the purpose of the onshore section of the South Stream Project is also being examined at present within the consolidated feasibility study. The results of this study will enable a decision on such interconnections with the onshore section of the South Stream Project with their precise location and operator.

[7] For the route options involving the territories in question

Time Schedule	
Probable date of commissioning and the main milestones	Offshore: Date of commissioning: end of 2015[8] FID: 2012 Onshore: Date of commissioning: end of 2015[9] FID: 2012
Project development phase reached	Offshore: Planned / Under consideration
IGA, Mandate Letter, LLI Tender, FEED	"The Gazprom headquarters hosted today a meeting dedicated to the South Stream project execution. The meeting was held by Alexey Miller, Chairman of the Company's Management Committee. The meeting participants discussed the progress with the South Stream project execution and noted that the following tangible results had been achieved on schedule as a result of Gazprom's efforts: engineering and reconnaissance surveys had been carried out in the Black Sea and a feasibility study for the pipeline's offshore section had been completed". On meeting dedicated to South Stream project execution dated June 09, 2010 Onshore: OAO Gazprom, as the South Stream initiator, is compiling a comprehensive feasibility study to summarize data on separate sections of the gas trunkline". Press release dated June 09, 2010 "On meeting dedicated to South Stream project execution".
TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS: South Stream Project is aimed at mitigating transit risks by providing extra transport capacities for the gas volumes under the gas sales and purchase agreements in force combined with the new volumes of Russian natural gas so as to prevent potential ruptures of the free flow of Russian gas to Europe. • Other: satisfying rising natural gas demand in Europe South Stream Project is set to secure additional volumes of gas deliveries to each European country involved in the project.
TPA regime	
Have you applied for an exemption from Third Party Access?	No

[8] 1st line of the gas pipeline to be commissioned at the end of 2015 with the rest 3 lines to be commissioned subsequently each per year

[9] The gas pipeline to be commissioned at the end of 2015 with uniform increase to the full capacity of the gas pipeline in each subsequent year till the end of 2018.

[10] As of August 31, 2010

(Expected) Gas Sourcing	
Gas Sourcing (Expected)	Gas portfolio of OAO Gazprom: the Unified Gas Supply System (UGSS) of the Russian Federation sourced predominantly from the Russian natural gas fields.
Inter-governmental Agreements	
Inter-governmental agreements	Offshore: Protocol between the Government of the Russian Federation and the Government of the Republic of Turkey on cooperation in the gas sphere. Onshore: 1. Agreement between the Government of the Republic of Bulgaria and the Government of the Russian Federation on cooperation in construction of the gas pipeline for transit of gas via the territory of the Republic of Bulgaria dated January 18, 2008; 2. Agreement between the Government of the Republic of Serbia and the Government of the Russian Federation on cooperation in oil and gas sector dated January 25, 2008; 3. Agreement between the Government of the Republic of Hungary and the Government of the Russian Federation on cooperation in construction of the gas pipeline for transit of gas via the territory of the Republic of Hungary dated February 28, 2008; 4. Agreement between the Government of the Hellenic Republic and the Government of the Russian Federation on cooperation in construction and operation of the gas pipeline on the territory of the Hellenic Republic dated April 29, 2008; 5. Agreement between the Government of the Republic of Slovenia and the Government of the Russian Federation on cooperation in construction and operation of the gas pipeline on the territory of the Republic of Slovenia dated November 14, 2009; 6. Agreement between the Government of the Republic of Austria and the Government of the Russian Federation on cooperation in the construction and operation of a natural gas pipeline on the territory of the Republic of Austria dated April 24, 2010. 7. Agreement between the Government of the Republic of Croatia and the Government of the Russian Federation on cooperation in construction and operation of the gas pipeline on the territory of the Republic of Croatia dated March 02, 2010;
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	
Additional Remarks	

In the pre-investment phase of the Project, different options of pipeline routes on the Romanian territory were analysed. The decision on gas transmission pipeline route and the investment within this project shall be based on a consolidated feasibility study.

For the Romanian section of South Stream Project, the following elements were taken into account:

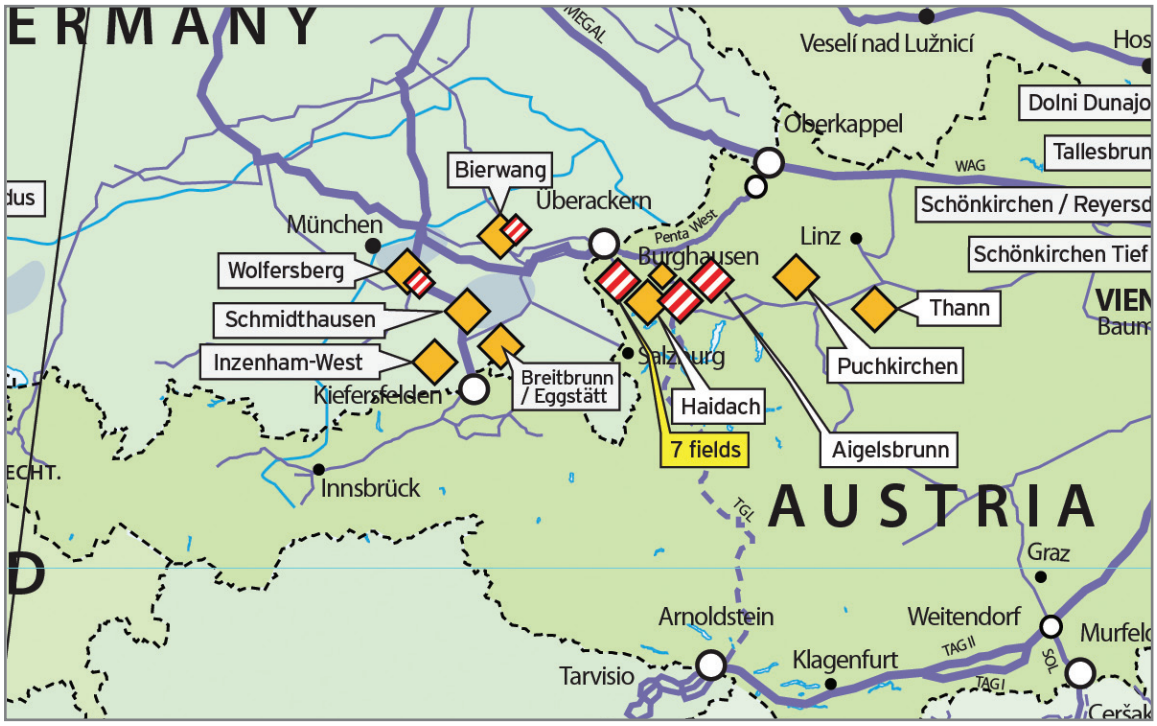
- length of the pipe: 518 km
- diameter:
  - option 1: 1400 mm; 2 compressor station with total power 164 MW; technical capacity: 31,5 bcm/year;
  - option 2: 1400 mm; 3 compressor station with total power 392 MW; technical capacity: 63 bcm/year.
- Date of commissioning: 2015.

Tauerngasleitung Gas Pipeline Project

General Information	
Name of project	Tauerngasleitung (TGL)
Types of project	Pipeline (incl. compressor stations)
Name of the sponsors and their shares	• 48.05% - E.ON Ruhrgas AG, • 9.81% - Rohöl-Aufsuchungs Aktiengesellschaft, • 16.90% - Energie AG Oberösterreich, • 16.90% - Salzburg AG für Energie, Verkehr und Telekommunikation, • 4.55% - KELAG-Kärntner Elektrizitäts-Aktiengesellschaft, • 3.79% - TIGAS-Erdgas Tirol GmbH. Share percentages are rounded
Link to the TSO's website	www.tauerngasleitung.eu
Technical Information	
Length of the pipe	Approx. 290 km
Diameter	900 mm
Technical capacity	max. 11.4 (in 10^9 Nm^3/y)
Expected load factor	N/A
Power of the CS(s)	Approx. 66 MW
Interconnections with other gas infrastructures	• Connection with the Austrian-Bavarian-Gasline near the German-Austrian border at the IP Haiming/Burghausen, • Possible Connection to the Czech Transmission System via the existing IP Oberkappel, • Connection to the distribution gas grids of Upper Austria, Salzburg and Carinthia, • Possible connection to the Slovenian Transmission System and to the Trans Austria Gasleitung at Arnoldstein, • Connection to the Italian gas grid at the IP Arnoldstein/Tarvisio.

Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: 2017 FID: 2012 End of permitting: 2013
Project development phase reached	Design & Permitting
IGA, Mandate Letter, LLI Tender, FEED	
TEN-E Project Information	
Is the project part of TEN-E?	Yes
If the project is part of TEN-E, specify the project category.	Project of common interest
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	Funds requested in 2006 (approved 2007) and 2010 (approved 2011)
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS: Investments will be necessary, especially in cross-border gas transmission capacity, with a view to diversifying sources of supply, and gas transmission systems in general, especially where capacities may be needed in an emergency to supply areas with capacity shortfalls. The TGL is in line with these objectives, which focus mainly on security of supplies. • Market Integration (Increase of competition): By linking the Central European with the South-East European natural gas market, the TGL increases interoperability between gas markets in Europe which are still separate, develop new natural gas sources for these markets and therefore significantly improve competition within a European single market for natural gas. • Diversification of European natural gas supplies: By creating the infrastructure required for a functioning North- South/South-North system to develop the North African and Arab supply region, including LNG for the Mediterranean region, the TGL will reduce dependence on individual suppliers in the North and East.
TPA regime	
Have you applied for an exemption from Third Party Access?	Not yet.
(Expected) Gas Sourcing	
Gas Sourcing (Expected)	N/A
Inter-governmental Agreements	
Inter-governmental agreements	N/A
Financing Structure	
Expected or obtained share of public financing	0%
Expected or obtained share of private financing	Own financing 30% Loans 70% of which 70-80% from commercial banks and the rest from multilateral financing
Expected or obtained share of multilateral financing	20-30% of 70% of the overall external financing needs

7 Fields Storage Project



General Information	
Name of project	7 Fields
Types of project	Storage facility (Porous rock storage facility)
Name of the sponsors and their shares	E.ON Gas Storage
Link to the project website	www.eon-gas-storage.com
Technical Information	
Working gas volume	1,608 mcm
Deliverability	20 mcm/d by 01 April 2014
Interconnections with other gas infrastructures	TSOs: Open Grid Europe, Bayernets (DE); GAS CONNECT AUSTRIA, Oberösterreichische Ferngas (AT)
Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: 2011-2014 Capacity expansions starting on the following dates: 01 April 2011 – 01 April 2014: 1,155 mcm By 01 April 2014: 1,608 mcm
Project development phase reached	FID taken (under construction)

TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	
Expected Benefits	
What is/are the expected benefit(s) of the project?	• Market Integration (Increase of competition):
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

Bulgaria


BELGRADE
Mehadinti
Horezu
BUCHAREST
Negru Voda
Silistra
Bor
Kragujevac
Zaječar
Vidin
RBIA
Niš
Kosovska Mitrovica
Leskovac
SOFIA
BULGARIA
Obilic
Pristina
UNMI KOSOVO
Bujanovac
Dupnitsa
Malkoclar
Zidilovo
Tetovo
SKOPJE
Bansko
Kula
FYRO MACEDONIA
Sidirokastron
Xanthi
Komotini
Kipi
Drama
Kilkis
Alexandroupoli
Istanbul
Tekirdag
Marmara Ereglisi

Bulgartransgaz - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations) ✓ Storage facility (indicate the type of storage) ✓ CNG ✓ Rehabilitation, Modernization and Expansion of the existing infrastructure
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[11]			
BG-RS interconnection (Dimitrovgrad-Sofia)	Non - FID	2014	Implementation status of Bulgarian part of the gas pipeline – process of selection of contractor for Feasibility study
BG-RO interconnection	FID 23.11.2010	2012	EEPR project
Dobrich-Silistra	FID	2013	75% financing from the KIDSF
Kozloduy-Oryahovo	FID	2014	70% financing from KIDSF
Interconnection Turkey-Bulgaria (ITB)	Non-FID	2013 I. phase 2017 II. phase	70% financing from KIDSF
Interconnection Greece - Bulgaria (IGB)	FID	2013	ICGB AD is responsible for the development, design, financing, construction, commissioning, operation and maintenance of the new gas interconnection. Bulgarian Energy Holding EAD (50%) and IGI Poseidon SA (50%) are the company shareholders.
Increase the Transmission Capacity of the Existing Pipelines to Greece	Non-FID	2016	Provision of additional 5 bcm/y gas flows to Greece through the territory of Bulgaria
Construction of gas pipeline branches of the presently existing national gas transmission network	Non-FID	2013 – 2016	Construction of five gas pipeline branches, which are planned to be commissioned during the period 2013-2016: 1. Gas pipeline and AGRS Bansko – Razlog 2. Gas pipeline and AGRS Gabrovo – Triavna – Drianovo 3. Gas pipeline and AGRS Vidin 4. Gas pipeline and AGRS Panagiurishte – Pirdop 5. Gas pipeline and AGRS Nikopol – Svishtov - Belene
Storage facilities			
UGS Chiren	Non-FID	2017	
Construction of new gas storage facility	Non-FID	2018	Type: Depleted gas offshore field or aquifer
CNG			
Varna CNG import terminal	Non-FID	2014-2017	CNG project will be developed in 3 phase
Rehabilitation, Modernization and Expansion of the existing infrastructure			
Rehabilitation, Modernization and Expansion of the National Transmission System		2017	Project includes modernization and rehabilitation of compressor stations, intelligent pig inspections, expansion and replacement of some sections of the existing transmission system

Link to the TSO's website	www.bulgartransgaz.bg

[11] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

Technical Information	
Total length of new pipes (based on the above list)	Approx. 517 km – on Bulgarian territory (The new gas pipeline branches of the presently existing national gas transmission network are not included)
Diameter range of new pipes	300-700 mm
Technical capacity	

Interconnections	**(in 10^6 Nm³/d)**	**Remarks**
BG-RS interconnection	Entry / Exit: 1.8-5	
BG-RO interconnection	Entry / Exit: 0.5-1.5	
Bulgaria-Turkey interconnection	I. phase 3 bcm/y II. phase 5.5 - 9 bcm/y	
Interconnection Greece - Bulgaria IGB	I. phase up to 1.4bcm/y II. phase up to 3bcm/y III. phase up to 5bcm/y	
Increase the Transmission Capacity of the Existing Pipelines to Greece	up to 5 bcm/y	Provision of additional 5 bcm/y gas flows to Greece through the territory of Bulgaria.
Construction of gas pipeline branches of the presently existing national gas transmission network		1. Gas pipeline and AGRS Bansko – Razlog 2. Gas pipeline and AGRS Gabrovo – Triavna – Drianovo 3. Gas pipeline and AGRS Vidin 4. Gas pipeline and AGRS Panagiurishte – Pirdop 5. Gas pipeline and AGRS Nikopol – Svishtov - Belene
CNG	**Annual capacity (in 10^9 Nm³/y)**	**Daily Send-out (in 10^6 Nm³/d)**
Varna CNG import terminal	I. phase (up to 2015) 0.85 bcm/y II. phase (up to 2016) 1.67 bcm/y III. phase (up to 2017) 2.5 bcm/y	
Storage facilities	**Deliverability (in 10^6 Nm³/d)**	**Working Gas Volume (in 10^6 Nm³)**
UGS Chiren	Current 4.3 Projected up to 10	Current 450 mcm Projected up to 1 bcm
Construction of new gas storage facility	9mcm/d	600 mcm

Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS • Market Integration (Increase of competition)

The projects listed above should enhance the system flexibility and contribute to the security of supply within the region (increased interconnection between Bulgaria and Serbia, Turkey, Romania, Greece).

Increase the Transmission Capacity of the Existing Pipelines to Greece: The project will enable the provision of additional 5 bcm/y gas flows to Greece through the territory of Bulgaria. It will improve the supply reliability and ensure security of gas supplies.

ITB: The project is extremely important for the fulfilment of the requirements of Regulation 994/2010 for security of gas supply, especially the implementation of the "Standard for Infrastructure N-1".
The ITB project provides access to Turkish national grid which has six existing and two future entry points from different sources.
The link will establish competition between suppliers in the country and the SEE Region (gas-to-gas competition) and real liberalisation of the national and regional gas market.
ITB will be a new route for gas supply to Bulgaria and SEE and CE Region. ITB will provide Caspian, Middle East and LNG gas flows through the Bulgarian national gas transmission system, which will be rehabilitated, modernized and extended, to SEE countries and EU.

Expected Benefits (continued)
Construction of new gas storage facility: Construction of new gas storage facility is very important in order to enhance the level of the security of gas supply and to fulfil the requirements of Regulation 994/2010 especially N-1 Standard of Infrastructure. Increasing gas storage capacity related to the construction of the new gas interconnections with neighbouring countries (IBR, IGB, IBS, ITB) as well as Nabucco and South Stream and development of the SEE regional gas markets. **Rehabilitation, Modernization and Expansion of the National Transmission System:** The main reason for upgrading the national transmission system is the implementation of planned interconnections with neighbouring countries and new pipelines which will provide gas flows from alternatives sources. In order to enforce the system and secure the transmission Bulgartransgaz is planning to implement projects for rehabilitation, modernization and expansion of the existing national transmission system including modernization and rehabilitation of compressor stations, intelligent pig inspections, expansion and replacement of some sections of the existing transmission system. **Interconnection Greece – Bulgaria IGB:** The interconnector IGB is a project of strategic importance for Greece and Bulgaria, since it reinforces the security and provides diversification of supply in Southeastern Europe. The realization of IGB together with the development of the Turkey-Greece-Italy (ITGI) gas supply corridor will enable the delivery of Caspian and Central Asian gas to Southern-East Europe from as early as 2013. The Interconnector will provide also the opportunity to supply liquefied natural gas from LNG terminals in Greece and Turkey. **Varna CNG import terminal:** Black Sea CNG will be a new route for gas supply to Bulgaria and SEE and CE Region. CNG project will ensure security and diversification of gas supply from Azerbaijan for Romania, Serbia, FYR of Macedonia and other countries in SEE and CE Region. The development of the project depends on the possibilities and the conditions for onshore transit of Azeri natural gas through Turkey for Bulgaria, SEE and CEE Region.

Inter-governmental Agreements	
Inter-governmental agreements	• Memorandum of Understanding signed between Bulgaria and Serbia in 2005 • Joint statement signed by Bulgaria and Serbia in 2010 • Memorandum of Understanding signed between Bulgaria and Turkey 29 January 2010

Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

Croatia


HUNGARY
SOUTH STREAM
Ceršak
Rogatec
33
Sempeter
32
Gorizia
LJUBLJANA
SLOVENIA
ZAGREB
Zaule
Trieste offshore
Venezia
from Algeria
Lučko
Kiskundorozsma
49
Dravaszerdahely
59
D.Miholac
Sombor
Porto Levante
Umag
Rijeka
Karlovac
CROATIA
Osijek
SOUTH STREAM
68
Porto Viro
from Qatar
Omisalj
Adria LNG
Vodnjan
Krk
Slavonski Brod
Novi Sad
WBR
Pula
Ravenna
Atlas LNG offshore
Banja Luka
Gospič
BOSNIA
HERZEGOVINA
Zvornik
Loznica
50
Zenica
Zadar
Knin
Benkovac
Ancona
Porto Recanati
offshore
SARAJEVO
Split
Perugia
Mostar
WBR
(Western Balkan Ring)
SE
Ploče
Crna Gora
IAP
MONTENEGRO
L'Aquila
PODGORICA
IAP
ROME

Plinacro - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations) ✓ Storage facility (indicate the type of storage) ✓ LNG terminal (REGASIFICATION VESSEL)
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[12]			
Regional Project Ionian Adriatic Pipeline (IAP)	Planned and preparatory works in progress.		Bosiljevo to Split – under construction by Plinacro via EIB loan. (The size of this pipeline may be a constraint on IAP, and will be assessed during the FS) Split to Ploce – Extension of the Plinacro (Croatian) transmission network – hydraulic studies are complete, the exact construction size will depending on the IAP FS. The EIA and Basic Design are finalised, and the Location permit is due to be obtained at the beginning of 2011. Ploce to Dobrec (Border with Montenegro) – the Routing study, Mapping, Spatial Planning Documentation and Geological survey have been completed. The Hydrology survey and the EIA are underway. Plinacro intends to contract for Basic Designs by the end of 2011, and the Location Permit should be obtained by the end of 2012. During the execution of the FS, the possible route through the territory of Bosnia and Herzegovina, or the optimal connection of the IAP to the BiH gas system will be determined. The sections in Montenegro and Albania have had preliminary routing identified during the PFS stage.
Main Transit Gas Pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica	Planned		
LNG Evacuation Gas Pipelines Omišalj-Zlobin-Rupa (Slovenia)	Design and Permitting		
Storage facilities			
UGS Beničanci	Planned, pre-feasibility study	2017 (I phase)	
LNG terminals			
LNGRV	Planned project, preparatory works in progress		

Total expected costs	**LNG Evacuation Gas Pipelines Omišalj-Zlobin-Rupa (Slovenia):** 600 10^6 € **LNGRV:** 750 M€
Link to the TSO's website	www.plinacro.hr

[12] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

Technical Information	
Total length of new pipes (based on the above list)	880 km
Diameter range of new pipes	DN 1000, DN 1000/100
Technical capacity	

Interconnections	**(in 10^6 Nm³/d)**	**Remarks**
Regional Project Ionian Adriatic Pipeline (IAP)	5 bcm/y	For Albania 1 bcm/y, for Montenegro 0.5 bcm/y, for Bosnia and Herzegovina 1 bcm/y and for Croatia 2.5 bcm/y
Main Transit Gas Pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica	Zlobin- Bosiljevo 10 bcm/y Bosiljevo – Sisak 10 bcm/y Sisak – Kozarac 10 bcm/y Kozarac – Slobodnica: I phase 3.5 bcm/y (using existing pipeline) II phase 10 bcm/y (new pipeline)	
LNG Evacuation Gas Pipelines Omišalj-Zlobin-Rupa (Slovenia)	15 bcm/y	For both pipelines
Storage facilities	**Deliverability (in 10^6 Nm³/d)**	**Working Gas Volume (in 10^6 Nm³)**
UGS Beničanci	8.256 Peak withdrawal capacity 344,000 m³/h	510
LNG terminals	**Daily send-out capacity (in 10^6 Nm3/d)**	**Annual capacity**
LNGRV	19.53 (for EXMAR ships)	I phase – 1-2 bcm II phase – 2-4 bcm III phase – 4-6 bcm

Interconnections with other gas infrastructures	**IAP:** Covering the countries of Albania, Montenegro, Bosnia and Herzegovina and Croatia. The pipeline will cross the territory along the Adriatic coast from Fieri in Albania to Split in Croatia and will be linked to the existing Croatian gas transmission system (main direction Bosiljevo – Split). The Ionian-Adriatic Pipeline Project is to interconnect the existing and planned gas transmission system of the Republic of Croatia with the Trans Adriatic Pipeline (TAP) or a similar project (Interconnector Turkey – Greece – Italy (ITGI) or the Albania - Greece gas transmission interconnector). The project aims to establish a new supply route for natural gas from the Middle East and Caspian region, northwards along the Adriatic coast. The IAP project however is planned as bi-directional pipeline, so the possible supply direction could also be north – south, from the strategically planned LNG terminal in Croatia, or other sources. **Main Transit Gas Pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica:** This proposed main transit gas pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica will connect several, in the future exceptionally important, points of the Croatian gas transmission system. This main transit gas pipeline is the future strategic gas transmission connector of great significance and is an integral part of the North – South European Corridor designated the North-South (Baltic – Adriatic) Gas Connection. Its purpose is the linking the Polish and Croatian LNG solutions. **LNG Evacuation Gas Pipelines Omišalj-Zlobin-Rupa (Slovenia):** The pipeline will cross the territory from the LNG solution in Omišalj on the island of Krk to Rupa in Slovenia and will be linked to the Slovenian gas transmission system. **UGS Beničanci:** Connection point to the gas network on existing gas pipeline Donji Miholjac - Slobodnica. **LNGRV:** It is Plinacro's project and Plinacro will be an operator. LNGRV project will be at island Krk, and Plinacro plan to build evacuation pipelines Omišalj-Zlobin; Zlobin-Rupa, Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica connection to SI and HU pipeline systems.

Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS • Market Integration (Increase of competition) • Significant economic development incentive to the transited countries • Supporting the regional South European Gas Ring • Diversified supply

IAP:
The construction of this transmission pipeline would enable the gasification of Albania and Montenegro, southern Croatia and Bosnia and Herzegovina, providing a diversified and reliable natural gas supply.

Main Transit Gas Pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica:
The main transit gas pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica:

- is a continuation of the existing Hungarian - Croatian interconnection gas pipeline Varosföld- Dravaszerdehely-Donji Miholjac-Slobodnica
- will be connected to the future Ionian Adriatic Pipeline
- will be connected to the future LNG solution in Omišalj.

LNG Evacuation Gas Pipelines Omišalj-Zlobin-Rupa (Slovenia):
The implementation of the entire project of LNG evacuation gas pipeline Omišalj-Zlobin-Rupa provides natural gas transmission from the future LNG in Omišalj on the island of Krk towards the European market and towards domestic consumers and fits in the idea of a potential ADRIATIC GAS RING.

UGS Beničanci:
UGS Beničanci can provide Hungarian side access (close to existing pipeline interconnection) and third party access. Also it can serve gas markets of neighbouring countries :Hungary, Slovenia, Bosnia and Herzegovina and Serbia

LNGVR:
LNGRV will be connected with evacuation pipelines to Slovenian and Hungarian pipeline systems.

(Expected) Gas Sourcing	
Gas Sourcing (Expected)	LNG or IAP Project (for Main Transit Gas Pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica), LNG (for LNG Evacuation Gas Pipelines Omišalj-Zlobin-Rupa (Slovenia))

Inter-governmental Agreements	
Inter-governmental agreements	**IAP:** On 25 September 2007, in Zagreb, a Ministerial declaration was signed by the Ministries of Energy of Albania, Montenegro and Croatia (subsequently, in December 2008, Bosnia and Herzegovina has joined). The Memorandum of Understanding between the Swiss EGL, the then lead of the TAP project, and the Croatian gas transmission system operator PLINACRO Ltd was also signed. In November 2010 an Interstate Committee for support and implementation of the project was established within the frame of the Energy Community, with the support and under the coordination of the Energy Community Secretariat. TAP and Plinacro have signed the Memorandum of Understanding and Cooperation (MOUC) on 25 February 2011 in Brussels. The three-year agreement will enable both organisations to coordinate their activities and exchange technical information.

Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	**LNG Evacuation Gas Pipelines Omišalj-Zlobin-Rupa (Slovenia):** EIB loan, Plinacro's own funds, WBIF **LNGVR:** Company own resources, WBIF (for developing phase), Structural funds (SF), Bank loans
Expected or obtained share of multilateral financing	

Czech Republic

NET4GAS - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations)
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[13]			
GAZELLE pipeline	2012	2013	TPA exemption
Connection to power plant Počerady (Bečov)	2009	2012	
Moravia pipeline	Non-FID	2017	partly under TEN-E
LBL (CZ-AT interconnection)	Non-FID	2017--2019	
Stork II (extension of CZ-PL interconnection)	Non-FID	2017	partly under TEN-E
Connection to Oberkappel	Non-FID	2018	
Storage facilities			
UGS Tvrdonice connection	2009	2013	EEPR project (Expansion of storage capacity)
UGS Břeclav connection	Non-FID	2016	

Link to the TSO's website	www.net4gas.cz

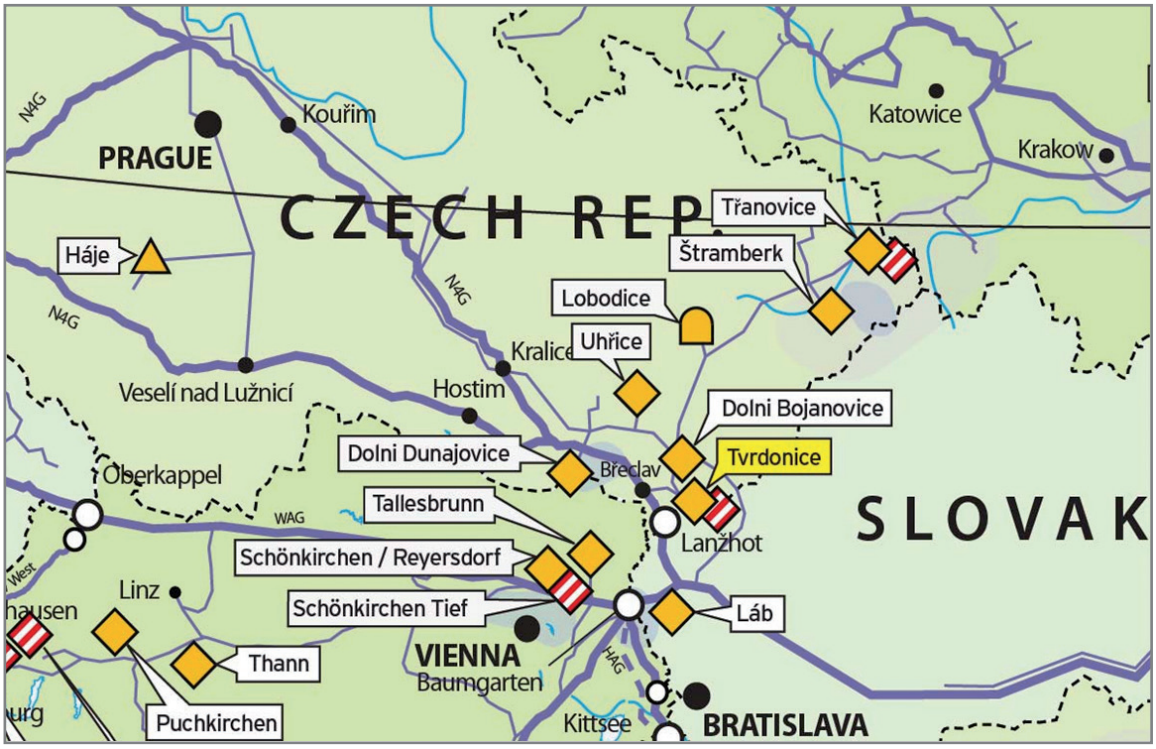
Technical Information	
Total length of new pipes (based on the above list)	440 km (without Stork II)
Diameter range of new pipes	300 – 1400 mm
Technical capacity	

Interconnections	(in 10^6 Nm³/d)	Remarks
Brandov	Entry: 33.9	GAZELLE pipeline
CZ/PL border	Exit: 13.7 Entry: 13.7	Stork II
Moravia to UGS	Exit: 9 – 12 Entry: 7	
CZ/AT border	Exit: 22.9 Entry: 18.6	LBL
Power plant Bečov	Exit: 4.3	
Connection to Oberkappel	Entry: tbc Exit: tbc	
Storage facilities	**Deliverability (in 10^6 Nm³/d)**	**Working Gas Volume (in 10^6 Nm³)**
UGS Tvrdonice connection	Exit: 2.3 Entry: 0.6	795
UGS Břeclav connection	Exit: 0.87 Entry: 0.87	350

[13] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS • Market Integration (Increase of competition) • Diversified supply
The NET4GAS infrastructure projects will benefit the Czech transmission system, along with proving added security of supply protection to the European gas market. The projects enhance further market integration and diversification of gas sources.	
Inter-governmental Agreements	
Inter-governmental agreements	-
Financing Structure	
Expected or obtained share of public financing	**Connection of UGS Tvrdonice: 45% EEPR** **Moravia:** 31% TEN-E programme (for EIA, Land Permit design) **Stork II:** 31% TEN-E programme (for EIA, Land Permit design)
Expected or obtained share of private financing	**Connection of UGS Tvrdonice: 55% own capital** **Moravia:** 69% own capital (for EIA, Land Permit design) **Stork II:** 69% own capital (for EIA, Land Permit design)
Expected or obtained share of multilateral financing	

Expansion of UGS Tvrdonice Project



General Information	
Name of project	Expansion of UGS Tvrdonice
Types of project	Storage facility (depleted gas reservoir)
Name of the sponsors and their shares	RWE Gas Storage (2/3), EEPR financing (1/3)
Link to the project website	www.rwe-gasstorage.cz/en/capacity-development/
Technical Information	
Working gas volume	195 (in 10^6 Nm^3)
Deliverability	1.7 (in 10^6 Nm^3/d)
Interconnections with other gas infrastructures	Czech Republic's TSO (NET4GAS)
Time Schedule	
Probable date of commissioning and the main milestones	commissioning: 2012 - 2016 FID: 2008 End of permitting phase: 2010
Project development phase reached	FID taken (under construction) http://www.rwe-gasstorage.cz/en/1802-1831/

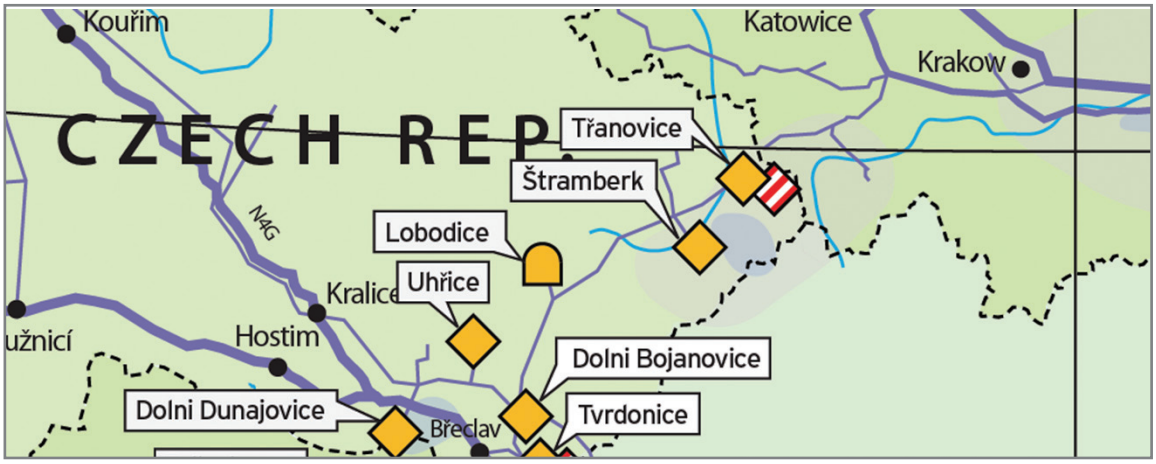
TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	
Expected Benefits	
What is/are the expected benefit(s) of the project?	• Project will Increase security of supply • Project will facilitate liberalization of the Czech gas market The new gas storage capacity will both increase the ratio between storage capacity and gas consumption in the Czech Republic, thus increasing SoS, and contribute to the gas market liberalisation by providing an additional source of flexibility.
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	
Additional remarks	
Co -financed from EEPR	

Expansion of UGS Třanovice Project

General Information	
Name of project	Expansion of UGS Třanovice
Types of project	Storage facility (Depleted gas reservoir)
Name of the sponsors and their shares	RWE Gas Storage (approx. 4/5), EEPR financing (approx. 1/5)
Link to the project website	www.rwe-gasstorage.cz/en/capacity-development/
Technical Information	
Working gas volume	290 (in 10^6 Nm^3)
Deliverability	3.9 (in 10^6 Nm^3/d)
Interconnections with other gas infrastructures	Czech Republic's TSO (NET4GAS)
Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: 2012 FID: 2008 End of permitting phase: 2010
Project development phase reached	FID taken (under construction) http://www.rwe-gasstorage.cz/en/1802-1831/

TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	
Expected Benefits	
What is/are the expected benefit(s) of the project?	• Project will Increase security of supply • Project will facilitate liberalization of the Czech gas market The new gas storage capacity will both increase the ratio between storage capacity and gas consumption in the Czech Republic, thus increasing SoS, and contribute to the gas market liberalisation by providing an additional source of flexibility.
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	
Additional remarks	
Co -financed from EEPR	

Expansion Project of Capacity of Virtual Storage



General Information	
Name of project	Expansion of the virtual storage operated by RWE Gas Storage
Types of project	Storage facility (depleted gas reservoir)
Expected costs	> EUR 100 mil.
Name of the sponsors and their shares	RWE Gas Storage
Link to the project website	www.rwe-gasstorage.cz/en/capacity-development/
Technical Information	
Working gas volume	875 (in 10^6 Nm^3)
Deliverability	18.7 (in 10^6 Nm^3/d)
Interconnections with other gas infrastructures	NET4GAS
Time Schedule	
Probable date of commissioning and the main milestones	The capacity will go online gradually as the individual projects are completed between the years 2012 and 2021; 140 mcm will become operational in 2012, the rest in following years, with the specific volumes to be determined later.
Project development phase reached	FID has been taken for 280 mcm of the planned 875 mcm of storage capacity, the remaining capacity is currently in the planning or permitting phase.

TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	
Expected Benefits	
What is/are the expected benefit(s) of the project?	• The project will Increase security of supply in the Czech Republic and the wider region. • The project will facilitate liberalization of the Czech gas market by making storage capacity available to interested third parties.
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

Germany


Ellund
Kiel
Dornum
NGT
Emden
Balgzand
Oude Statenzijl
Bunde
Bunder-Tief
Haanrade
Emsbüren
Amsterdam
TTF
Winterswijk
Zevenaar
Ochtrup
Dülmen
Hannover
Steinitz
VHP-GASPOOL-H
NETRA
BERLIN
Mallnow
Szczecin
Kienbaum
Groß Köris
EUROPOL
Werne-Stockum
Essen
Dortmund
Düsseldorf
VHP-THYSS-H
Kassel
Leipzig
Zielona Gó
Lasów
Obbicht
Dilsen
Bocholtz
Eynatten
Aachen
Verlautenheide
Broichweiden
Raeren Lichtenbusch
Reckrod
Olbernhau
Deutsch Neudorf
Hora Svaté Kateřiny
Bras
Petange
LUX.
Remich
Lampertheim
MEGAL
Medelsheim
Obergailbach
VHP NCG-H
Waidhaus
PRAGUE
VOB
Kourim
Veselí nad Lužnicí
GERMANY
Überackern
Oberkappel
München
Linz
Burghausen
Salzburg
Wallbach
Oltingue
Rodersdorf
Kiefersfelden
AUSTRIA

Open Grid Europe - Infrastructure Projects

Open Grid Europe
The Gas Wheel

General Information	
Remark	The information provided here relates to infrastructure projects relevant for the CEE-Region. The full project overview is given in the ENTSOG TYNDP 2011-2020.
Types of project	✓ Pipeline (incl. compressor stations)
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[14]			
Open Season 2008 Projects (two pipeline projects (Sannerz-Rimpar and Schwandorf-Deggendorf) as well as numerous enhancements like the Porz-Stolberg-Reversion)	under construction	2012-2013	

Link to the TSO's website	www.open-grid-europe.com

Technical Information	
Total length of new pipes (based on the above list)	137 km (FID)
Diameter range of new pipes	1,000 mm (FID)
Technical capacity	

Interconnections	(in 10^6 Nm³/d)	Remarks
Oberkappel Entry	1.1	Capacity offer based on current legal, regulatory and contractual framework.
Oberkappel Exit	10	

Expected Benefits	
What is/are the expected benefit(s) of the project?	• Security of Supply • Market Integration (Increase of competition)

Open Season 2008: The project prioritisation process has been carried out in a non-discriminatory manner based on criteria suggested by BNetzA. It takes into account the factors competition, security of supply, as well as network efficiency. Capacities were allotted to new market entrants. North-south and west-east de-bottlenecking strengthens security of supply.

[14] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

WINGAS TRANSPORT - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations)
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[15]			
Extension of the WINGAS group grid in the context of the Nord Stream (on-shore) project.	FID	2014	Part of TEN-E as part of the Nord Stream project, "axis NG 1", projects of European interest

Link to the TSO's website	www.wingas-transport.de

Technical Information	
Total length of new pipes (based on the above list)	approx. 175 km *(mainly loops to enhance capacity of existing pipelines)*
Diameter range of new pipes	600-1,000 mm
Technical capacity	

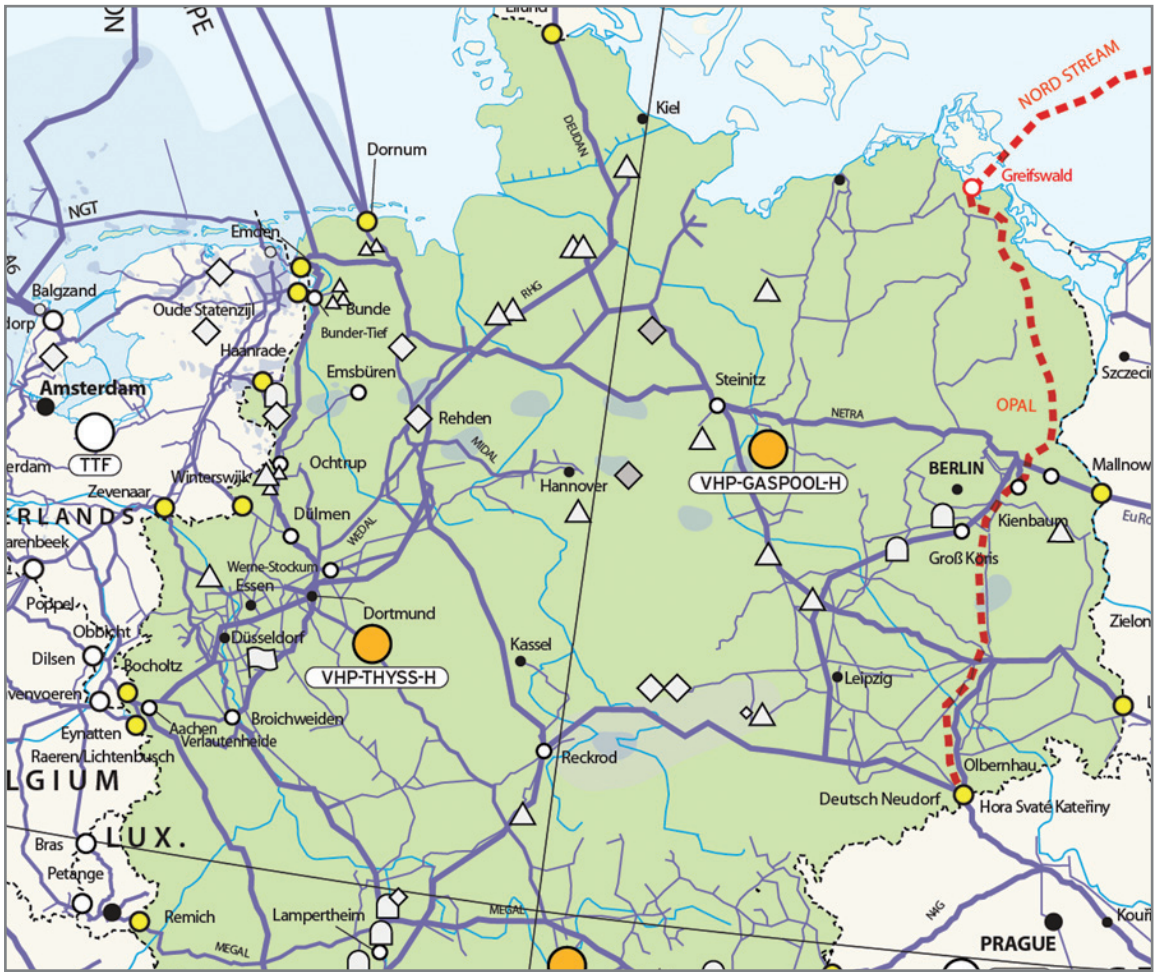
Interconnections	(in 10^6 Nm³/d)	Remarks
Bunde Exit	25	Other grid points of WINGAS TRANSPORT are affected by this project, which are not directly TYNDP relevant. We expect effects also on IP´s of other German TSOs.
Eynatten Exit	9	
Compressors	**(in MW)**	
	about 65	

Expected Benefits	
What is/are the expected benefit(s) of the project?	• Security of Supply • Extension of transport capacity of Russian gas to the West • Integration of Nord Stream off- and on-Shore in the European gas infrastructure

[15] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

OPAL Gas Pipeline Project

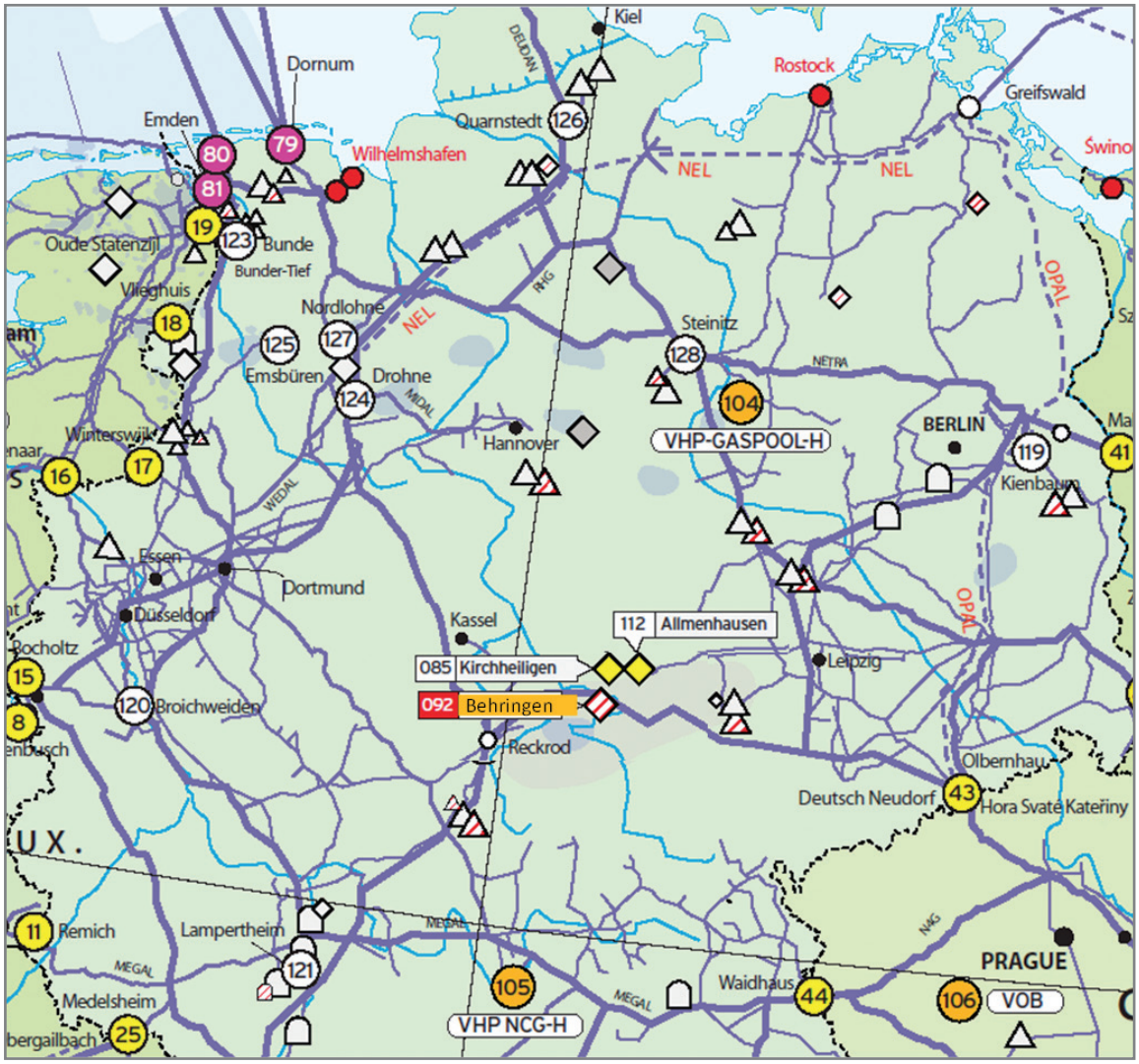
OPAL Energie für Europa



General Information	
Name of project	Ostsee Pipeline Anbindungsleitung (OPAL)
Types of project	Pipeline (incl. compressor stations)
Expected costs	1,200 (in 10^6 €)
Name of the sponsors and their shares	80% Wingas 20% E.ON Ruhrgas
Link to the TSO's website	www.opal-pipeline.com

Technical Information	
Length of the pipe	470 km
Diameter	1,400 mm
Technical capacity	Approx. 35 bcm/y
Expected load factor	N/A
Power of the CS(s)	130 MW (according to permission)
Interconnections with other gas infrastructures	• Czech transmission system (Gazelle pipeline)
Time Schedule	
Probable date of commissioning and the main milestones	October 2011
Project development phase reached	Finished
IGA, Mandate Letter, LLI Tender, FEED	
TEN-E Project Information	
Is the project part of TEN-E?	Yes
If the project is part of TEN-E, specify the project category.	Project of common interest, priority project, project of European interest
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No request
Expected Benefits	
What is/are the expected benefit(s) of the project?	• Security of supply • Market integration • Others; extension of transport capacities for Russian gas to the European internal market.
TPA regime	
Have you applied for an exemption from Third Party Access?	Yes Exemption granted for transits on OPAL with entry in DE and exit in CZ (for details see: http://www.bundesnetzagentur.de/cln_1931/DE/DieBundesnetzagentur/Beschlusskammern/BK7/Beschluesse/entscheidungen_node.html)
(Expected) Gas Sourcing	
Gas Sourcing (Expected)	Russian gas sources

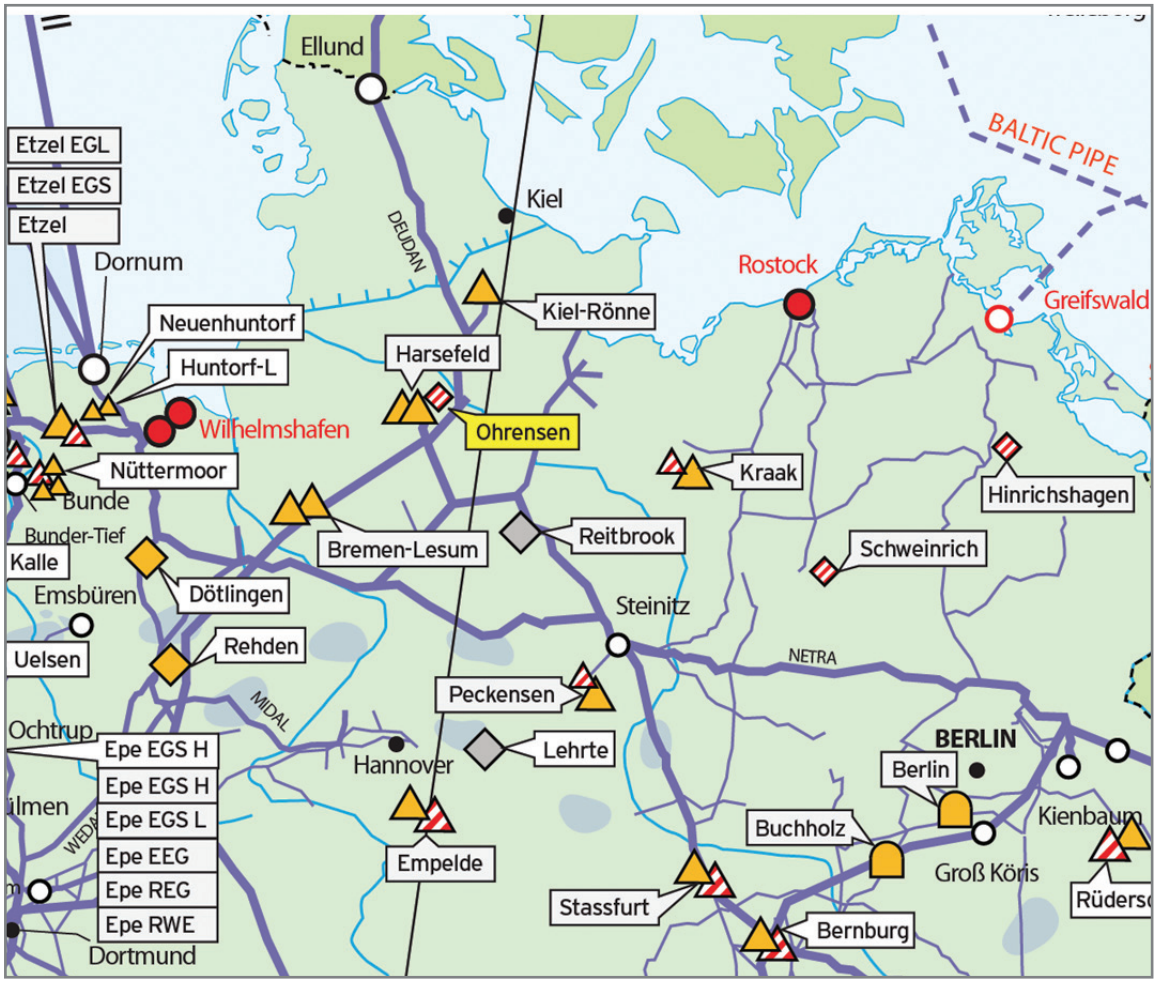
Behringen Storage Project



General Information	
Name of project	Behringen
Types of project	Storage facility (depleted field)
Name of the sponsors and their shares	Storengy Deutschland

Technical Information	
Working gas volume	1,000 (in 10^6 Nm^3)
Deliverability	14 (in 10^6 Nm^3/d)
Interconnections with other gas infrastructures	TSO: (not known yet)
Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: Beyond 2015 FID: End of permitting phase:
Project development phase reached	Planned
TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS • Market Integration (Increase of competition)
The project will contribute to the increase of security of supply in the region and will provide more flexibility to the market thus facilitating competition.	
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

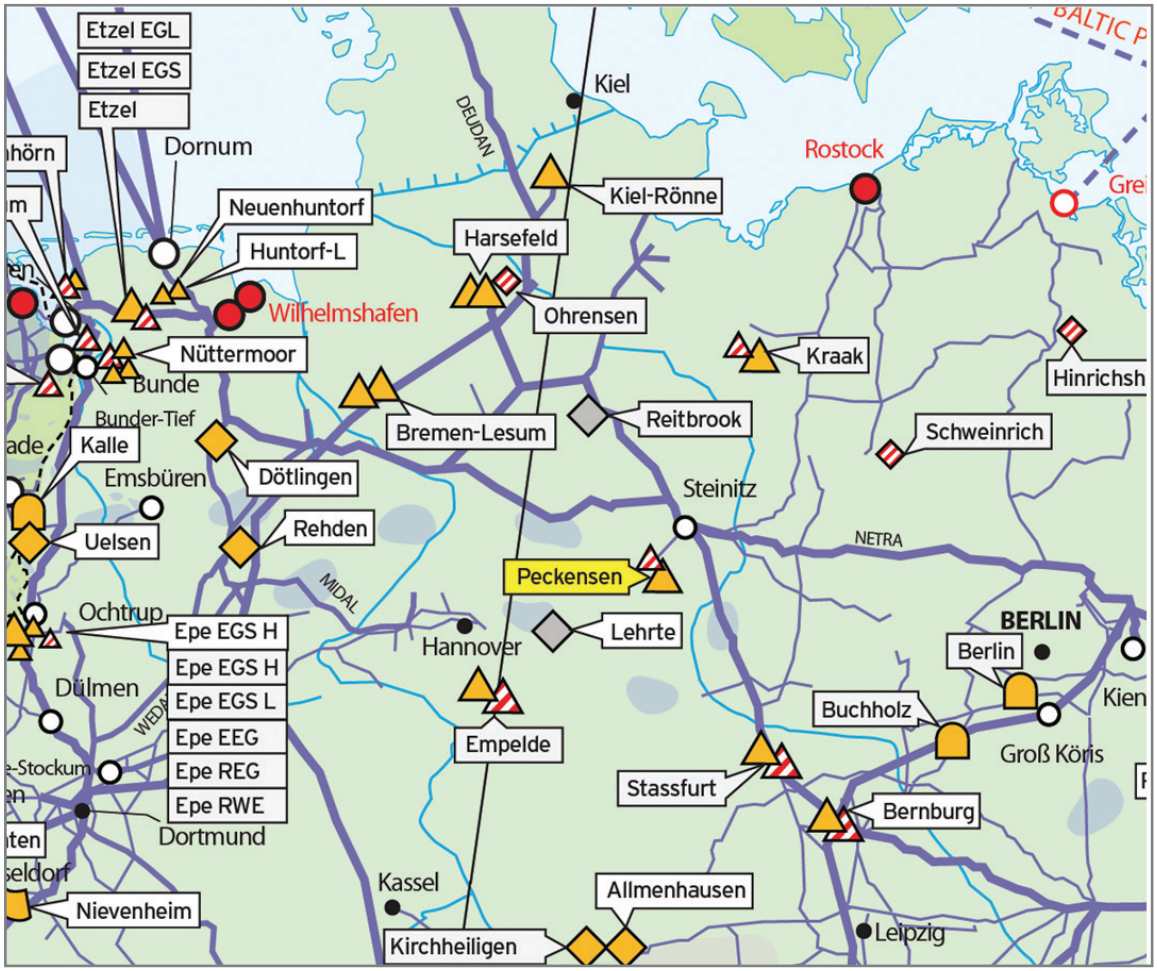
Ohrensen Storage Project



General Information	
Name of project	Ohrensen
Types of project	Storage facility (salt cavity)
Name of the sponsors and their shares	Storengy Deutschland
Technical Information	
Working gas volume	440 (in 10^6 Nm^3)
Deliverability	22 (in 10^6 Nm^3/d)
Interconnections with other gas infrastructures	Connection with transmission infrastructure; TSO: Gasunie Deutschland
Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: Beyond 2015 FID: End of permitting phase:
Project development phase reached	Planned

TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS • Market Integration (Increase of competition)
The project will contribute to the increase of security of supply in the region and will provide more flexibility to the market thus facilitating competition.	
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

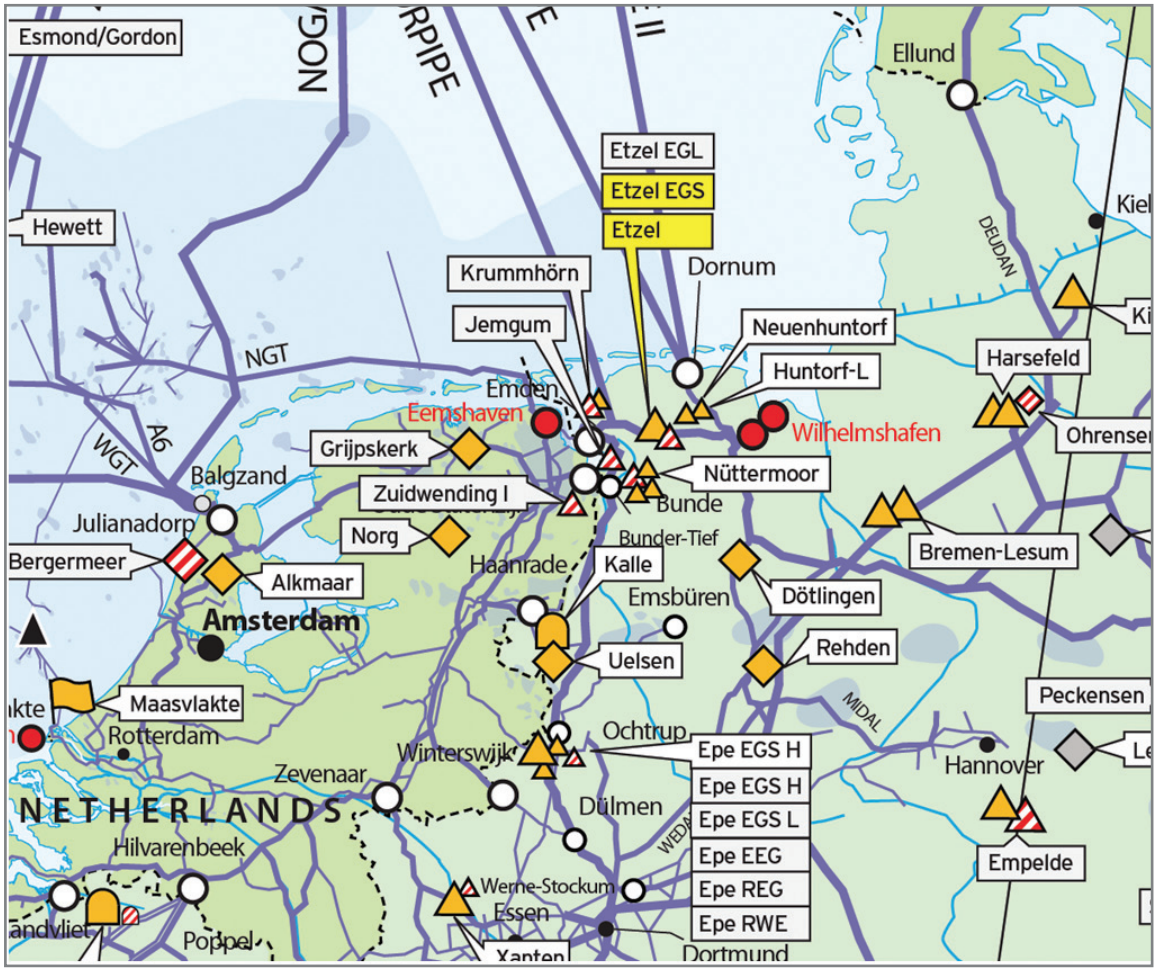
Peckensen Storage Project



General Information	
Name of project	Peckensen (Phase III)
Types of project	Storage facility (salt cavity)
Name of the sponsors and their shares	Storengy Deutschland
Technical Information	
Working gas volume	180 (in 10^6 Nm^3)
Deliverability	9 (in 10^6 Nm^3/d)
Interconnections with other gas infrastructures	Connection with transmission infrastructure; TSO: Ontras
Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: 2014 FID: End of permitting phase:
Project development phase reached	Under construction

TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS • Market Integration (Increase of competition)
The project will contribute to the increase of security of supply in the region and will provide more flexibility to the market thus facilitating competition.	
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

Etzel Storage Project



General Information	
Name of project	Etzel EGS
Types of project	Storage facility (Cavity storage facility)
Name of the sponsors and their shares	E.ON Gas Storage
Link to the project website	www.eon-gas-storage.com
Technical Information	
Working gas volume	1,358 (in 10^6 Nm^3)
Deliverability	38.4 (in 2014) (in 10^6 Nm^3/d)
Interconnections with other gas infrastructures	TSOs: Open Gas Europe, Gasunie Deutschland (DE); GTS (NL)

Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: 2012-2014 Capacity expansions starting on the following dates: 01 April 2012 WGV: 453 mcm 01 April 2013 WGV: 905 mcm 01 April 2014 WGV: 1,358 mcm
Project development phase reached	FID taken (under construction)
TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	
Expected Benefits	
What is/are the expected benefit(s) of the project?	• Market Integration (Increase of competition)
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

Hungary


SLOVAKIA
HUNGARY
CROATIA
VIENNA
Baumgarten
BRATISLAVA
BUDAPEST
ZAGREB
Graz
Murfeld
Ceršak
Rogatec
Lučko
Karlovac
Kittsee
Mosonmagyaróvár
Bratislava
Dravaszerdahely
D.Miholac
Osijek
Sombor
Kiskundorozsma
Csanadpalota
Satu Mare
Velké Kapušany
Uzhgorod
Beregdaróc
Beregovo
Nabucco
SOUTH STREAM
MGP
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130
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33
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96
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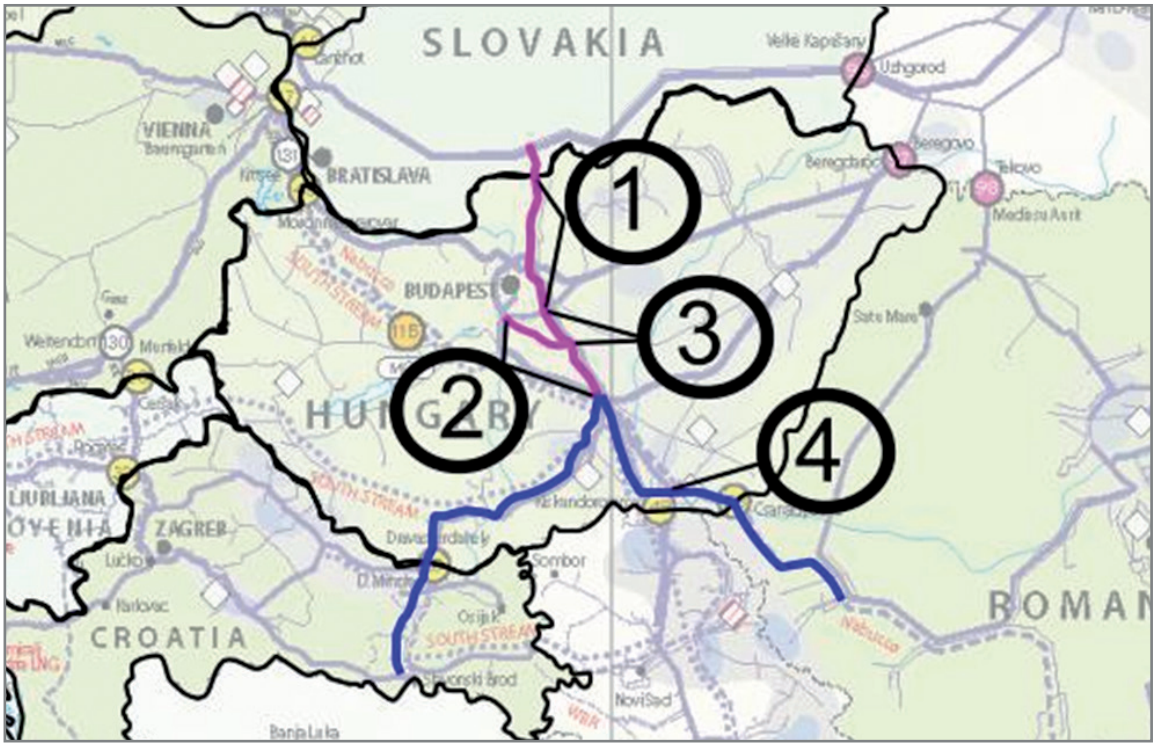
98

FGSZ - Infrastructure Projects

NATURAL GAS TRANSMISSION
MEMBER OF THE MOL GROUP



General Information	
Types of project	✓ Pipeline (incl. compressor stations)
List of Projects	

Project	FID	Commissioning	Remarks
Pipes			
1. Vecsés-Balassagyarmat pipeline	4th Q of 2011	1st Q of 2015	EERP European Energy Plan for Recovery Part of the Hungarian TYNDP. The implementation of the project is conditional on the decision of OVIT.
2. Városföld-Pusztavacs-Százhalombatta pipeline	2nd Q of 2012	2stQ of 2014 and 2stQ of 2015	Part of the Hungarian TYNDP. The implementation of the project is conditional on the decision of Hungarian Energy Office on TYNDP.
3. Vecsés-Pusztavacs pipeline		1st 2ndQ of 2017	The implementation of the project is conditional on the decision of Hungarian Energy Office on TYNDP and the EU Commission on North-South Corridor.
4. Reverse flow on the Hungarian-Romanian interconnection pipeline	4th Q of 2012	2015	Compressor station at Algyő node

Total expected costs	280 – 320 (in 10^6 €)
Name of the sponsors and their shares	**Vecsés-Balassagyarmat pipeline:** OVIT Ltd. 100% **Városföld-Pusztavacs-Százhalombatta pipeline, Vecsés-Pusztavacs pipeline and Algyő compressor station:** FGSZ Ltd. 100%
Link to the TSO's website	http://fgsz.hu/

Technical Information	
Total length of new pipes (based on the above list)	230 km
Diameter range of new pipes	800 – 1,000 mm
Technical capacity	

Interconnections	(in 10^9 Nm^3/d)	Power of the compressor station(s) (in MW)
Vecsés-Balassagyarmat pipeline	1.7 - 5.2	7.0 - 28
Városföld-Pusztavacs-Százhalombatta pipeline	7-11	26.7-45.7
Vecsés-Pusztavacs pipeline	5	
Compressor station at Algyő node	1.7	3.2

Interconnections with other gas infrastructures	The projects interacts with three more planned projects in the region: • Adria LNG project • Nabucco project • South Stream project

Expected Benefits	
What is/are the expected benefit(s) of the project?	• Security of Supply • Market Integration (Increase of competition)

Vecsés-Balassagyarmat pipeline and Vecsés-Pusztavacs pipeline: The pipelines are parts of the EU Commission supported North-South Corridor

Városföld-Pusztavacs-Százhalombatta and Vecsés-Pusztavacs pipelines: Supply of new power plants and security of supply of western Hungary

Reverse flow on the Hungarian-Romanian interconnection pipeline: The main objectives of the project are: availability of a reverse flow capacity on the existing interconnector between HU and RO, diversification of natural gas supply sources for HU, increase of competition, increasing the security of natural gas supply and fulfilling the provisions of Regulation (EU) No. 994/2010.

(Expected) Gas Sourcing	
Gas Sourcing (Expected)	
Inter-governmental Agreements	
Financing Structure	
Expected or obtained share of public financing	
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

Poland


BALTIC PIPE
Greifswald
NEL
Świnoujście
Niechorze
Gdansk
RUSSIA
57
Šakiai
Kaliningrad
VILNIUS
91
Kotlovka
Vilnius S.
OPAL
Szczecin
Olsztyn
POLAND
Bydgozcz
Bialystok
Tietierowka
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93
EuRoPoL
Kondratki
BERLIN
119
Klenbaum
Mallnow
41
Gorzów Wielkopolski
Szamotuly
Lwowek
117
Poznan
Torun
Wloclawek
118
Wysokoje
94
Kobryn
WARSAW
Zielona Góra
Lodz
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Lasów
Radom
Olbernhau
43
Hora Svaté Kateřiny
Wrodaw
Lublin
Kielce
Opole
Koufim
Katowice
Krakow
PRAGUE
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VOB
CZECH REP.
45
Cieszyn
Rzeszow
Drozdwicze
95
Drozdovychi
Lviv
Kralice
Hostim
Veseli nad Lužnici
Oberkappel
24
Ivano-Frankivsk

GAZ-SYSTEM - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations) ✓ LNG terminal
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[16]			
Gustorzyn - Odolanów	2007	2014	Project is under the OPIE (Cohesion fund)
Hermanowice MS	2009	2012	
Odolanów node	2010	2014	Project is under the OPIE (Cohesion fund)
Polkowice – Żary	2009	2014	Project under the OPIE(Cohesion fund)
Rembelszczyzna - Gustorzyn	2007	2014	Project is under the OPIE(Cohesion fund)
Rembelszczyzna node (modernisation)	2007	2014	Project is under the OPIE(Cohesion fund)
Reszki - Kosakowo	2009	2012	
Świnoujście - Szczecin	2007	2013	EEPR project (linked to the Baltic Interconnection project)
Szczecin - Gdańsk	2007	2013	Project is under the OPIE(Cohesion fund)
Szczecin - Lwówek	2007	2014	Project is under the OPIE(Cohesion fund)
Czeszów – Wierzchowice	2012	2015	Project is under the OPIE - Cohesion fund (complementary list), TEN-E (Project of common interest)
Gałów – Kiełczów	2012	2015	Project is under the OPIE - Cohesion fund (complementary list), TEN-E (Project of common interest)
Gustorzyn node	2011	2014	Project is under the OPIE (Cohesion fund)
Hermanowice – Jarosław	2015	2018	
Hermanowice – Strachocina	2013	2015	Project is under the OPIE - Cohesion fund (complementary list)
Jarosław – Rozwadów	2016	2020	
Jeleniów – Taczalin	2015	2020	
Lasów – Jeleniów	2012	2015	Project is under the OPIE - Cohesion fund (complementary list), TEN-E (Project of common interest)
Lasów MS (extension)	2012	2015	
Lwówek – Odolanów	2015	2020	
Niechorze – Płoty	2015*	2020*	TEN-E (Project of common interest
Odolanów – Tworzeń	2015	2020	
PL - DK interconnection (Baltic Pipe)	2015*	2020*	TEN-E (Project of common interest), TEN-E 2008, TEN-E 2009
PL - LT interconnection	2013*	2020*	TEN-E (Project of common interest)
Płoty node	2015*	2020*	TEN-E (Project of common interest)
Pogórska Wola – Tworzeń	2012	2016	
Rozwadów - Końskowola – Wronów	2015	2020	
Skoczów - Komorowice – Oświęcim	2013	2015	Project is under the OPIE - Cohesion fund (complementary list), TEN-E (Project of common interest)
Strachocina - Pogórska Wola	2013	2015	Project is under the OPIE - Cohesion fund (complementary list)

[16] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

PL - SK interconnection	2014*	2017*	TEN-E (Project of common interest)
Tworzeń – Oświęcim	2015	2018	
Wronów - Rembelszczyzna	2015	2020	
Wronów node extension	2016	2020	
Zdzieszowice – Wrocław	2013	2015	Project is under the OPIE - Cohesion fund (complementary list), TEN-E (Project of common interest)
Compressors			
Jeleniów CS (extension)	2012	2015	EEPR Project
Odolanów CS	2012	2016	
Rembelszczyzna CS (modernisation)	2012	2015	Project is under the OPIE (Cohesion fund)
Others			
LNG terminal in Świnoujście	2010	2014	EEPR Project, Project is under the OPIE (Cohesion fund)

Total expected costs	Approx. 4,000 10^6 €
Link to the TSO's website	www.gaz-system.pl
(*) – depending on the market interest	

Technical Information	
Total length of new pipes (based on the above list)	Approx. 3,600 km
Diameter range of new pipes	300-1,000 mm
Technical capacity	

Interconnections	**(in 10^6 Nm³/d)**	**Remarks**
PL - CZ interconnection (Cieszyn)	approx. 13.7	Periodical restriction on capacity will occur during summer due to limitation resulting from bottlenecks in the connected systems. Potential for further grow up to 13.7 mcm/d in 2017 and above this level in the future
PL - DK interconnection (Baltic Pipe)	approx. 8.2	Preparatory phase, capacity not yet decided
PL - LT interconnection	approx. 6.3	Early study phase, capacity not yet decided
PL - DE interconnection	up to 4.5	Potential for further increase
PL - SK interconnection	approx. 13.7	Preparatory phase, capacity not yet decided
Compressors	**(in MW)**	
Jeleniów Compressor Station (extension)	12	
Odolanów Compressor Station	12	
Rembelszczyzna Compressor Station (modernisation)	18.3	

Expected Benefits
The SoS and the Market Integration (Increase of competition) are expected benefits for all projects listed in the TYNDP questionnaire.

The projects under the planned North-South Corridor:

Basic routing:

- LNG Terminal in Świnoujście
- PL - DK Interconnection (Baltic Pipe)
- Niechorze - Płoty pipeline
- Płoty node
- Świnoujście - Szczecin pipeline
- Szczecin - Lwówek pipeline
- Lwówek - Odolanów pipeline
- Odolanów node
- Odolanów compressor station
- Strachocina - Pogórska Wola pipeline
- PL - SK Interconnection
- Pogórska Wola - Tworzeń pipeline
- Odolanów - Tworzeń pipeline
- Tworzeń - Oświęcim pipeline
- Skoczów - Komorowice - Oświęcim pipeline
- PL - CZ interconnection

Complementary routing:

- Szczecin - Gdańsk pipeline
- Włocławek - Gdynia pipeline
- Rembelszczyzna - Gustorzyn pipeline
- Gustorzyn node
- PL - LT Interconnection
- Rembelszczyzna node
- Wronów - Rembelszczyzna pipeline
- Rozwadów - Końskowola - Wronów pipeline
- Wronów node
- Jarosław - Rozwadów pipeline
- Jarosław node
- Hermanowice - Strachocina pipeline
- Hermanowice - Jarosław pipeline

The above-mentioned pipelines/interconnections/compressor station/nodes are a part of the North - South Gas Corridor on the Polish territory. The corridor consists of two routings – currently implemented basic one that is located in western part of Poland and the complementary routing covering the area of potential unconventional gas deposits in northern and eastern Poland.

The main idea of the North - South Gas Corridor is to develop the gas infrastructure interconnections via all V4 countries which will help to increase the liquidity and level of competition on the regional market, to enhance regional security of supply and to enable the application of the solidarity mechanism in case of crisis in practice. The gas route should interconnect the LNG terminal in Świnoujście and the Baltic Pipe, through Poland, the Czech Republic, Slovakia and Hungary, with the proposed Adria LNG terminal in Croatia and potentially also the Nabucco pipeline. The North - South Gas Interconnection Axis does not constitute one single project. On the contrary, it consists of many bilateral interconnection gas pipelines and national pipelines which already exist or are in various stages of planning or construction.

GAZ-SYSTEM is an active member of V4 Gas Energy Group (North-South Gas Corridor), established as the result of V4 countries Declaration of the Budapest V4+ signed on 24th of February 2010 in Budapest. The company is also closely involved in the work of North - South Gas Working Group that was founded in February 2010 in accordance with the European Commission Communication on Energy Infrastructure Priorities for 2020 and beyond.

The projects under the planned North-South Corridor and Baltic Interconnection:

- Świnoujście - Szczecin pipeline
- LNG Terminal in Świnoujście
- Niechorze - Płoty pipeline
- Płoty node
- PL - DK Interconnection (Baltic Pipe)
- Szczecin - Lwówek pipeline
- Szczecin - Gdańsk pipeline

The Baltic Interconnection is understood as an infrastructural set-up enabling gas flow between Baltic Sea countries in order to contribute to the security of natural gas supply to Polish, Danish and Swedish customers.

The project is part of main concept, that is to create a technical possibility of gas transfer from North Sea fields to Poland and possibly further to the CEE countries and the Baltic states. The reverse flow shall also be possible enabling gas transport to Scandinavian markets.

Thus the goals of market integration, increasing competition as well as crisis management shall inevitably be supported. It has high added value, expanding the North - South Gas Interconnections Axis to Denmark and Sweden with all benefits of this. It is very likely that creating the North - South Gas Axis in this shape will also allow to reach Norwegian gas fields. Moreover, the investments covered by the Baltic Interconnection concept contribute to the implementation of the Baltic Energy Market Interconnection Plan.

The project under **the planned Baltic Energy Market Interconnection Plan:**

- PL - LT interconnection

The project that links the Lithuanian and Polish gas transmission systems will enable the integration of the isolated Baltic States (and Finland) with Poland and wider with the European Union. Furthermore, it contributes to creation of regional gas market and thus enhancement of the security of gas supplies, reducing the dependency on a single external supplier and increasing competition on the gas markets in the region. The PL - LT interconnection has the potential to be supplied with the LNG Terminal in Świnoujście, the Baltic Pipe and other sources of gas available on the Polish market.

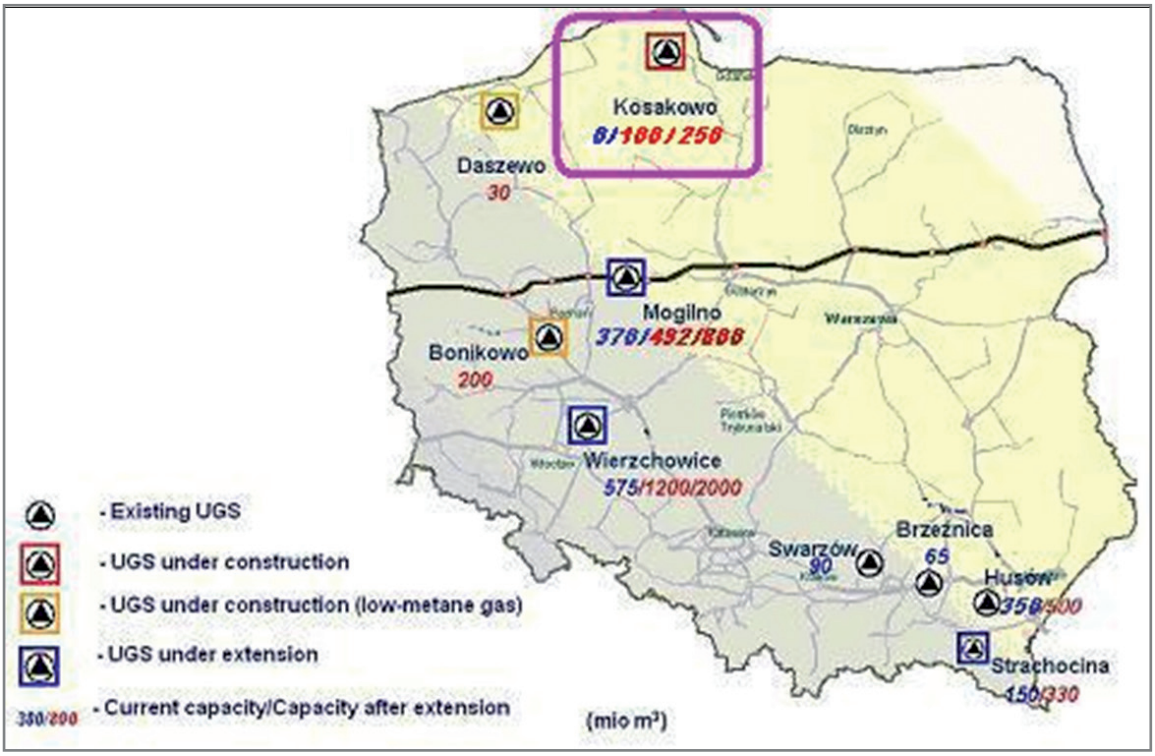
The projects related to the extension of the Polish transmission system related to the **PL-DE Interconnection:**

- Entry point Lasów
- Lasów - Jeleniów pipeline
- Jeleniów II compressor station
- Taczalin - Radakowice - Gałów pipeline
- Dziwiszów- Taczalin pipeline
- Jeleniów - Dziwiszów pipeline

The above-mentioned projects are linked with the idea of modernisation and expansion of the transmission system near the PL-DE Interconnection in Lasów which will allow for increased gas import to Poland (1.5 bcm/y as of 2012). Further increasing of gas streams from the PL-DE will require additional modernization activities and construction of the new infrastructure both on Polish and German side.

Financing Structure	
Expected or obtained share of public financing	EEPR, TEN-E, Operational Programme Infrastructure and Environment
Expected or obtained share of private financing	N/A
Expected or obtained share of multilateral financing	N/A

Kosakowo Cavity Underground Gas Storage Facility Project

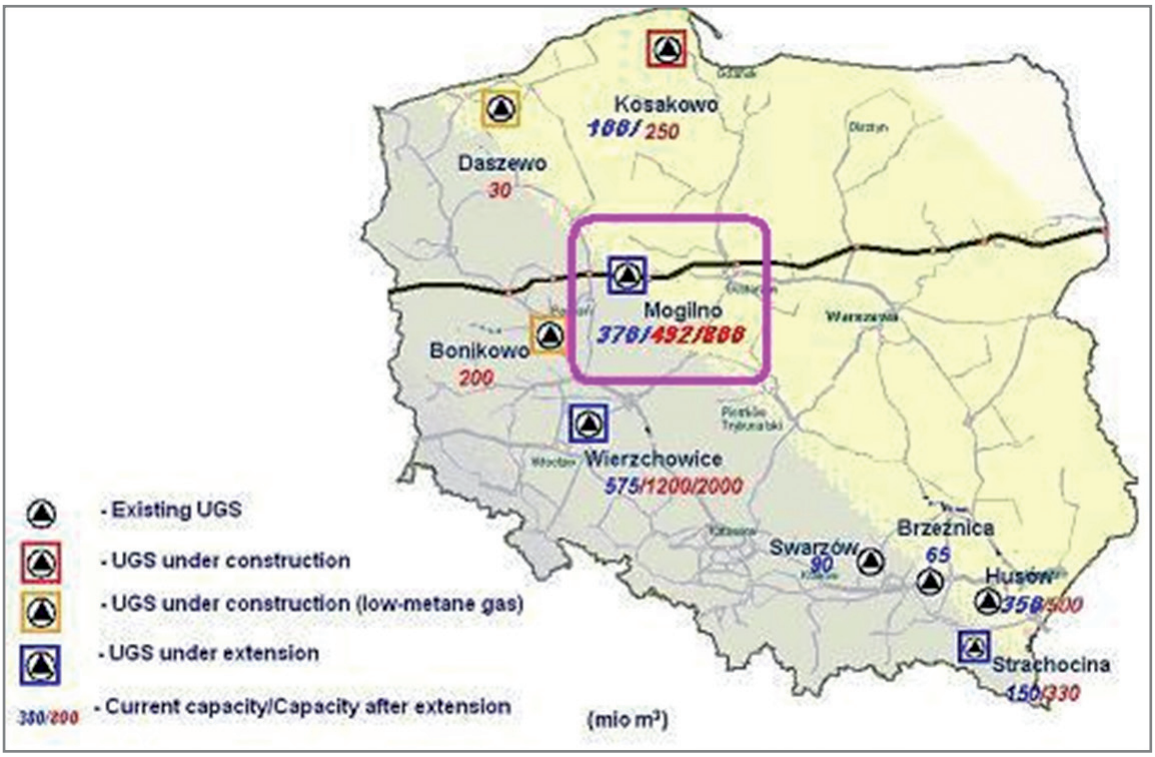


General Information	
Name of project	Kosakowo Cavity Underground Gas Storage Facility Project
Types of project	Storage facility
Expected costs	€ 153 076 771 (net of VAT) € 186 703 419 (gross with VAT)
Name of the sponsors and their shares	100 % - Polskie Górrnictwo Naftowe I Gazownictwo S.A. (in short: PGNiG S.A.) (eng.: Polish Oil and Gas Company Inc.)
Link to the project website	http://osm.pgnig.pl/osm/magazyny/kosakowo http://pgnig.pl

Technical Information	
Working gas volume	CUGSF active capacity: 100 [millions m³]
Deliverability	Maximum gas injection capacity: 100 [thousands m³/h] Maximum gas withdrawal capacity: 400 [thousands m³/h] Gas injection cycle: 42 [days] Gas withdrawal cycle: 25 [days]
Interconnections with other gas infrastructures	Kosakowo CUGSF will be connected with the Polish National Gas System through a gas pipeline (DN 500, length of ca. 15 km), connecting to the gas distribution node (GDN) in Reszki (located west of Gdynia). The construction of this connection will be executed by the Gas Transmission Operator, i.e. Gaz-System S.A. and will constitute a link to the Włocławek- Gdynia transmission gas pipeline (DN 500), currently constructed by Gaz-System S.A.

Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: : (Q1) 2015 FID: (Q1) 2007 End of permitting phase: (Q2) 2009
Project development phase reached	Design & Permitting phase completed – the Project already under construction *Press releases can be found at the following links:* *http://osm.pgnig.pl/osm/magazyny/kosakowo*
TEN-E Project Information	
Is the project part of TEN-E?	Yes
If the project is part of TEN-E, specify the project category.	**Projects of common interest** *See: ANNEX III TRANS-EUROPEAN ENERGY NETWORKS, item:* *8.37. Storage at Kossakowo (PL), developing underground storage* *http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006D1364:EN:HTML*
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS: Obtaining an additional active gas storage capacity in order to increase energy security guaranteeing undisrupted gas supplies irrespective of technical, climatic or political events. • Market Integration (Increase of competition): Creation of technical and organisational conditions in the area of natural gas storage for the purposes of providing storage services to external entities in order to fulfil the requirements of the statutory TPA (Third Party Access) principle. • Others, please specify: Creating the conditions for diversification of natural gas supplies (according to TEN-E guidelines)
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	N/A
Expected or obtained share of private financing	N/A (amount to be determined upon completion and final financial settlement of the Project)
Expected or obtained share of multilateral financing	N/A

Mogilno Cavity Underground Gas Storage Facility Project

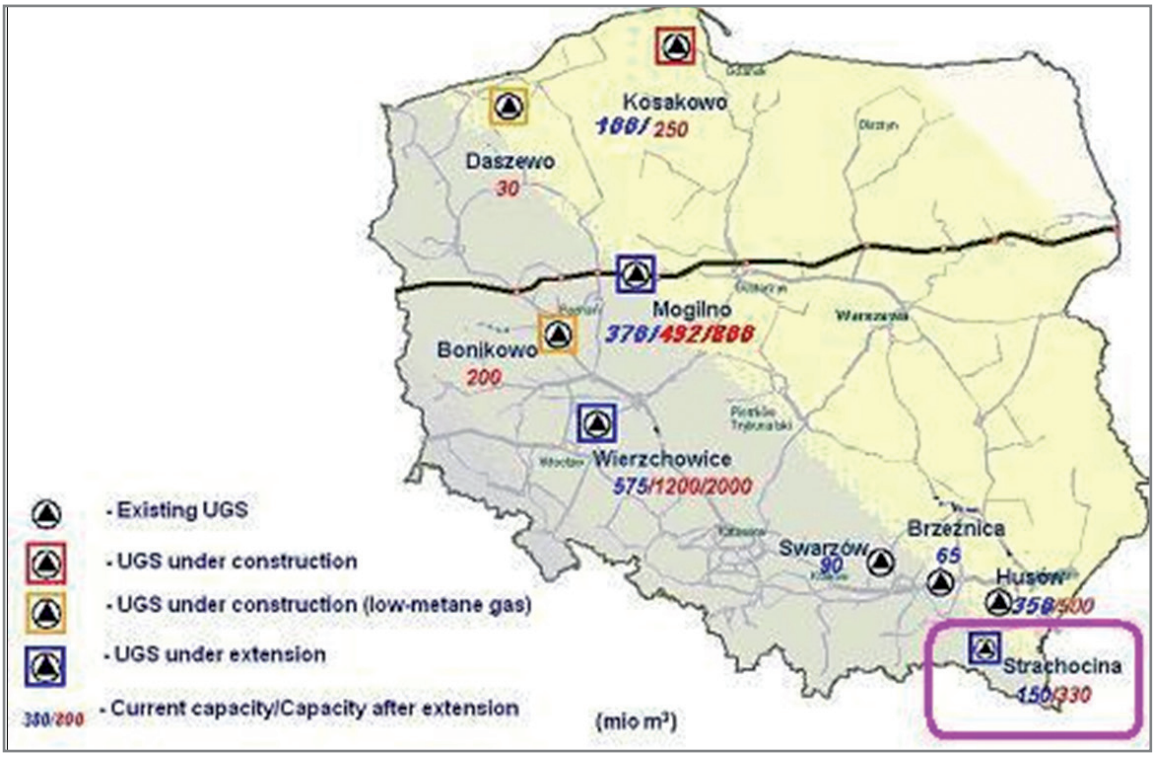


General Information	
Name of project	Mogilno Cavity Underground Gas Storage Facility Project
Types of project	Storage facility
Expected costs	€ 50 551 007 (net of VAT) € 61 672 229 (gross with VAT)
Name of the sponsors and their shares	100 % - Polskie Górrnictwo Naftowe I Gazownictwo S.A. (in short: PGNiG S.A.) (eng.: Polish Oil and Gas Company Inc.)
Link to the project website	http://osm.pgnig.pl/osm/magazyny/mogilno http://pgnig.pl
Technical Information	
Working gas volume	CUGSF active capacity: 492 [millions m³]
Deliverability	Maximum gas injection capacity: 400 [thousands m³/h] Maximum gas withdrawal capacity: 860 [thousands m³/h] Gas injection cycle: 87 [days] Gas withdrawal cycle: 41 [days]
Interconnections with other gas infrastructures	Mogilno UCGSF is located in Central Poland in immediate neighbourhood of the following elements of the Polish National Gas System) operated by the Gas Transmission Operator, i.e. Gaz-System S.A.: a) Gustorzyn junction, from which one can withdraw gas towards large groups of customers, i.e.: o Warsaw - two gas pipelines: DN 500, pr = 5.5 MPa, o Gdańsk - two gas pipelines: DN 500, pr = 8.4 MPa and DN 500/400 pr = 5.5 MPa, o Łódź - gas pipeline: DN 500, pr = 8.4 MPa, o Lower Silesia - gas pipeline: DN 500, pr = 5.5 MPa. b) transit system: East - West, which is the major element of Polish gas transmission network.

Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: : (Q1) 2015 FID: (Q1) 2008 End of permitting phase: (Q3) 2009
Project development phase reached	Design & Permitting phase completed – the Project already under construction *Press releases can be found at the following links:* *http://osm.pgnig.pl/osm/magazyny/mogilno*
TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	N/A
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS: Obtaining an additional active gas storage capacity in order to increase energy security guaranteeing undisrupted gas supplies irrespective of technical, climatic or political events, • Market Integration (Increase of competition): Creation of technical and organisational conditions in the area of natural gas storage for the purposes of providing storage services to external entities in order to fulfil the requirements of the statutory TPA (Third Party Access) principle. • Others, please specify: Creating the conditions for diversification of natural gas supplies (according to TEN-E guidelines)

TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	N/A (amount to be determined upon completion and final financial settlement of the Project)
Expected or obtained share of private financing	N/A (amount to be determined upon completion and final financial settlement of the Project)
Expected or obtained share of multilateral financing	N/A

Strachocina Underground Gas Storage Facility Project



General Information	
Name of project	Strachocina Underground Gas Storage Facility Project
Types of project	Storage facility
Expected costs	€ 113 319 070 (net of VAT) € 138 249 265 (gross with VAT
Name of the sponsors and their shares	100 % - Polskie Górrnictwo Naftowe I Gazownictwo S.A. (in short: PGNiG S.A.) (eng.: Polish Oil and Gas Company Inc.)
Link to the project website	http://osm.pgnig.pl/osm/magazyny/strachocina http://pgnig.pl
Technical Information	
Working gas volume	UGSF active capacity: 330 [millions m³]
Deliverability	Maximum gas injection capacity: 97 [thousands m³/h] Maximum gas withdrawal capacity: 161 [thousands m³/h] Gas injection cycle: 150 [days] Gas withdrawal cycle: 120 [days]
Interconnections with other gas infrastructures	Strachocina UGSF is located in south-eastern part of Poland in immediate neighbourhood of the following elements of the Polish National Gas System: • DN 300/250 Strachocina - Warzyce gas pipeline, • DN 250 Strachocina - Targowiska gas pipeline, • DN 150 to Brzozów gas pipeline, • DN 150 to Sanok gas pipeline, • DN 250 Warzyce - Gorlice - Nowy Sącz gas pipeline, • DN 250 Wygoda - Siołkowa gas pipeline, • DN 250 Warzyce - Wygoda gas pipeline, • DN 250 Sędziszów - Warzyce gas pipeline, • DN 250 Wygoda - Tarnów medium-pressure gas pipeline, • DN 250 Sędziszów - Sandomierz high-pressure gas pipeline with a Mielec branch, • DN 250 Sandomierz - Ostrowiec Świętokrzyski gas pipeline, • DN 500, DN 600 or DN 700 Hermanowice - Jarosław gas pipeline - operated by the Gas Transmission Operator, i.e. Gaz-System S.A.

Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: (Q1) 2012 FID: (Q2) 2007 End of permitting phase: (Q1) 2009
Project development phase reached	Design & Permitting phase completed – the Project already under construction *Press releases can be found at the following links:* *http://osm.pgnig.pl/osm/magazyny/strachocina*
TEN-E Project Information	
Is the project part of TEN-E?	No
If the project is part of TEN-E, specify the project category.	N/A
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS: Obtaining an additional active gas storage capacity in order to increase energy security guaranteeing undisrupted gas supplies irrespective of technical, climatic or political events, • Market Integration (Increase of competition): Creation of technical and organisational conditions in the area of natural gas storage for the purposes of providing storage services to external entities in order to fulfil the requirements of the statutory TPA (Third Party Access) principle. • Others, please specify: Creating the conditions for diversification of natural gas supplies (according to TEN-E guidelines)

TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	N/A (amount to be determined upon completion and final financial settlement of the Project)
Expected or obtained share of private financing	N/A (amount to be determined upon completion and final financial settlement of the Project)
Expected or obtained share of multilateral financing	N/A

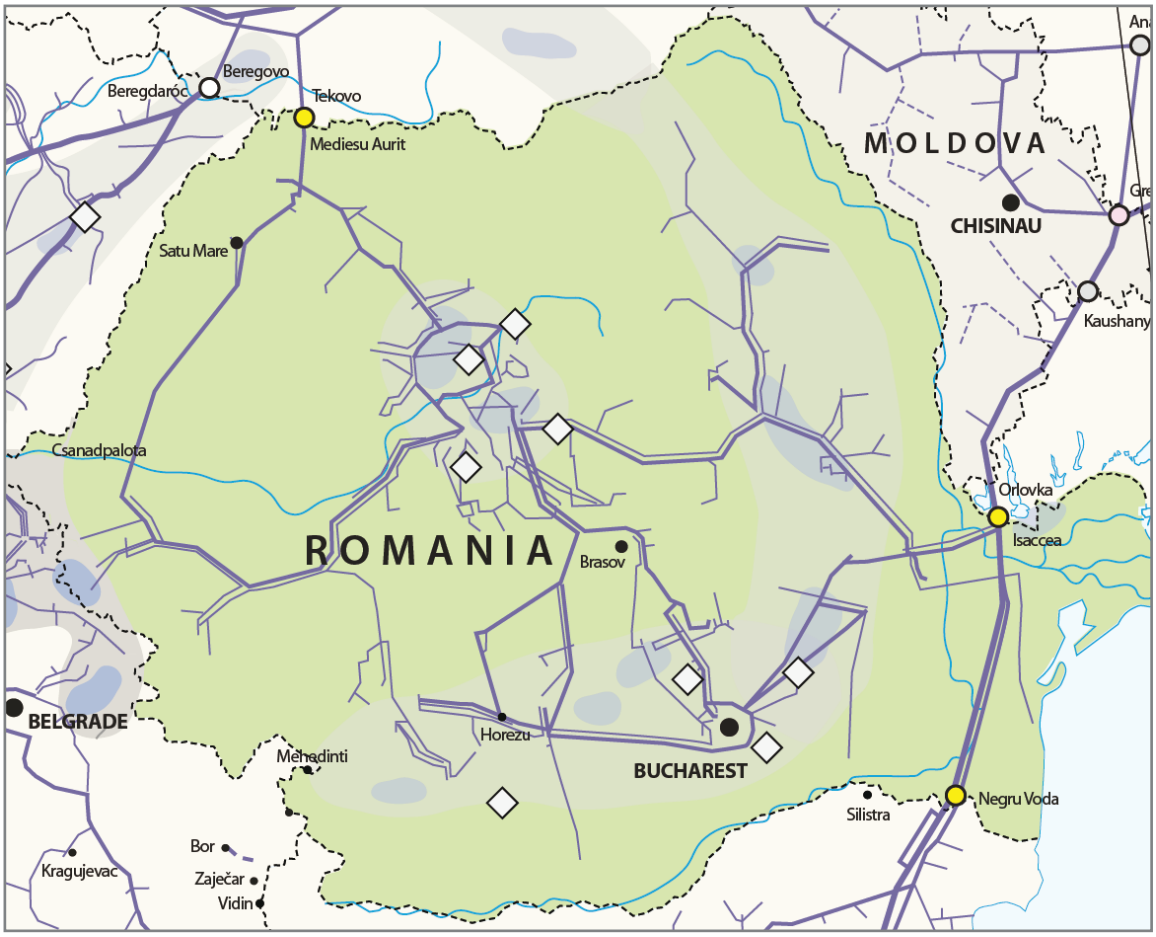
Wierzchowice Underground Gas Storage Facility Project

General Information	
Name of project	Wierzchowice Underground Gas Storage Facility Project
Types of project	Storage facility
Expected costs	€ 448 819 110 (net of VAT) € 547 559 314 (gross with VAT)
Name of the sponsors and their shares	100 % - Polskie Górrnictwo Naftowe I Gazownictwo S.A. (in short: PGNiG S.A.) (eng.: Polish Oil and Gas Company Inc.)
Link to the project website	http://osm.pgnig.pl/osm/magazyny/wierzchowice http://pgnig.pl

Technical Information	
Working gas volume	UGSF active capacity: 1,200 [millions m³]
Deliverability	Maximum gas injection capacity: 400 [thousands m³/h] Maximum gas withdrawal capacity: 600 [thousands m³/h] Gas injection cycle: 150 [days] Gas withdrawal cycle: 110 [days]
Interconnections with other gas infrastructures	Wierzchowice UGSF is connected with the Polish National Gas System through a transmission gas pipeline (DN 1000) operated by the Gas Transmission Operator, i.e. Gaz-System S.A. This gas pipeline connects the UGSF to the gas distribution station in Odolanów (located west of Ostrów Wielkopolski).

Time Schedule	
Probable date of commissioning and the main milestones	Date of commissioning: (Q1) 2014 FID: (Q1) 2007 End of permitting phase: (Q2) 2007
Project development phase reached	Design & Permitting phase completed – the Project already under construction *Press releases can be found at the following links:* *http://osm.pgnig.pl/osm/magazyny/wierzchowice*
TEN-E Project Information	
Is the project part of TEN-E?	Yes
If the project is part of TEN-E, specify the project category.	**Projects of common interest** *See: ANNEX III TRANS-EUROPEAN ENERGY NETWORKS, item:* *8.36. Storage at Wierzchowice (PL), extending existing site* *http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006D1364:EN:HTML*
If the project is part of TEN-E, has financing from TEN-E funds been requested / received?	No
Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS: Obtaining an additional active gas storage capacity in order to increase energy security guaranteeing undisrupted gas supplies irrespective of technical, climatic or political events, • Market Integration (Increase of competition): Creation of technical and organisational conditions in the area of natural gas storage for the purposes of providing storage services to external entities in order to fulfil the requirements of the statutory TPA (Third Party Access) principle. • Others, please specify: Creating the conditions for diversification of natural gas supplies (according to TEN-E guidelines)
TPA regime	
Have you applied for an exemption from Third Party Access?	No
Financing Structure	
Expected or obtained share of public financing	N/A (amount to be determined upon completion and final financial settlement of the Project)
Expected or obtained share of private financing	N/A (amount to be determined upon completion and final financial settlement of the Project)
Expected or obtained share of multilateral financing	N/A

Romania


Beregovo
Beregdaróc
Tekovo
Mediesu Aurit
MOLDOVA
CHISINAU
Satu Mare
Kaushany
Csanadpalota
ROMANIA
Orlovka
Isaccea
Brasov
BELGRADE
Horezu
Mehadinti
BUCHAREST
Negru Voda
Silistra
Bor
Kragujevac
Zaječar
Vidin

Transgaz - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations)
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[17]			
RO-BG Interconnection	FID	01.07.2012	FID taken. The execution contract for GMS Giurgiu and for the Romanian terrestrial sector is in progress. The formalities of purchasing within a turn-key contract for Danube undercrossing are in progress. NOTE: The information refers to the Romanian section of the Interconnector and to the Danube undercrossing section of the Interconnector.
Connecting the Constanța LNG terminal to the Gas Transmission System of Romania	Non-FID	2015 (depending on the implementation of the upstream project, respectively Constanta LNG terminal)	The project is currently in the phase of studying the solution.
GMS Negru Vodă – Reverse Flow	FID	2012	Under construction.
Integration of the transmission and transit systems – reverse flow Isaccea	Non-FID	not established	The project is currently in the phase of studying the solution.
East – West Pipeline	Non-FID	2015 (depending on the implementation of upstream projects, respectively the commissioning stages for Constanța LNG terminal)	The project is currently in the phase of studying the solution
Reverse flow on the Romanian-Hungarian interconnection pipeline	Non-FID	2013	The project is currently in the phase of studying the solution

Expected costs	**RO-BG Interconnection:** 23.8 (in 10^6 €) **GMS Negru Vodă – Reverse Flow:** 0.4 (in 10^6 €)

[17] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

Name of the sponsors and their shares	**RO-BG Interconnection:** SNTGN Transgaz SA Medias: 10.97 (in 10^6 €) Bulgartransgaz EAD: 12.83 (in 10^6 €) **Connecting the Constanța LNG terminal to the Gas Transmission System of Romania:** SNTGN Transgaz SA Medias **GMS Negru Vodă – Reverse Flow:** SNTGN Transgaz SA Medias **Integration of the transmission and transit systems – reverse flow Isaccea:** SNTGN Transgaz SA Medias **East – West Pipeline:** SNTGN Transgaz SA Medias **Reverse flow on the Romanian-Hungarian interconnection pipeline:** SNTGN Transgaz SA Medias
Link to the TSO's website	www.transgaz.ro

Technical Information	
Total length of new pipes (based on the above list)	910 km except: - GMS Negru Vodă – Reverse Flow; - Integration of the transmission and transit systems – reverse flow Isaccea; - Reverse flow on the Romanian-Hungarian interconnection pipeline.
Diameter range of new pipes	500-1,000 mm except: - GMS Negru Vodă – Reverse Flow; - Integration of the transmission and transit systems – reverse flow Isaccea); - East – West Pipeline; - Reverse flow on the Romanian-Hungarian interconnection pipeline.
Technical capacity	

Interconnections	**(in 10^9 Nm^3/y)**	**Remarks**
RO-BG Interconnection	min. 0.5 max. 1.5	
Connecting the Constanța LNG terminal to the Gas Transmission System of Romania		
GMS Negru Vodă – Reverse Flow	5.27	reverse flow capacity – from BG to RO
Integration of the transmission and transit systems – reverse flow Isaccea	5.27	subject to technical solution to be adopted
East – West Pipeline	8	
Reverse flow on the Romanian-Hungarian interconnection pipeline	1.75	reverse flow capacity – from RO to HU

Interconnections with other gas infrastructures	**RO-BG Interconnection:** • GMS Giurgiu (Romania) – interconnection with Romanian NTS operated by Transgaz. • GMS Russe (Bulgaria) – interconnection with Bulgarian NTS operated by Bulgartransgaz. **Connecting the National Gas Transmission System to the Constanța LNG terminal** can be achieved in the following conditions: • Building of a new transmission pipeline from the Constanta LNG terminal to the transit pipeline T1 Bulgaria, with a length of about 35 km; • Using the existing transit pipeline T1 Bulgaria; • Using the existing import pipelines (DN 1000 and DN 700) Isaccea-Şendreni. **Integration of the transmission and transit systems – reverse flow Isaccea:** Construction of a connection pipeline between the DN 1000 pipeline (Transit 1 Bulgaria) and the Romanian National Transmission System with the possibility to measure the natural gas volumes transported in both directions. *Both Transit 1 Bulgaria and Romanian NTS are operated by TRANSGAZ.* **East – West Pipeline:** The starting point is the LNG terminal in Constanța, and the exit point is at the border between Romania and Hungary, in the western part of the country near Nădlac.

Expected Benefits	
What is/are the expected benefit(s) of the project?	• SoS • Market Integration (Increase of competition)

RO-BG Interconnection:
It will diversify the gas supply sources and routes of both countries, enable bidirectional gas flows, improve the infrastructure standard (N-1) by creating an additional infrastructure which will link the national transmission systems from Romania and Bulgaria, increase the degree of interconnection of the gas transmission systems of the two countries, generate a favourable impact on the Romanian market in terms of competition and prices, contribute to the establishment of the South-Eastern European regional gas market.

Connecting the Constanța LNG terminal to the Gas Transmission System of Romania:
The project will contribute to the diversification of import sources, increase the reliability of gas supply, improve the infrastructure standard (N-1) by creating an additional import point, generate a favourable impact on the Romanian market in terms of competition and prices.

GMS Negru Vodă – Reverse Flow:
The project will enable the possibility of reverse flow in GMS Negru Voda, increase the degree of interconnection of the national gas transmission system, increase the diversification of gas supply sources and integration of a regional market. It has potential favourable impact on the Romanian market in terms of competition and prices. It will contribute to the implementation of the provisions of Regulation No. 715/2009 in Romania and Bulgaria and improve the infrastructure standard (N-1).

Integration of the transmission and transit systems – reverse flow Isaccea:
The project will enable the possibility of direct and reverse flow in GMS Isaccea, increase the degree of interconnection of the NTS, increase the diversification of gas supply sources and integration of a regional market, enable the transit system integration with the NTS. It has a favourable impact on the Romanian market in terms of competition and prices and it will contribute to the implementation of the provisions of Regulation No. 715/2009 in Romania and improve the infrastructure standard (N-1).

East – West Pipeline:
The main objectives of the project are: to connect the Central European countries to the regional LNG terminal (LNG Constanța) and thus to have access to the Caspian natural gas reserves, diversification of natural gas supply source, increase of competition, increasing the security of natural gas supply.

Reverse flow on the Romanian-Hungarian interconnection pipeline:
The main objectives of the project are: availability of a reverse flow capacity on the existing interconnector between RO and HU, diversification of natural gas supply sources for HU, increase of competition, increasing the security of natural gas supply and fulfilling the provisions of Regulation (EU) No. 994/2010

Gas Sourcing	
(Expected) Gas Sourcing	**Connecting the Constanța LNG terminal to the Gas Transmission System of Romania:** Gas from the Caspian Sea area **GMS Negru Vodă – Reverse Flow:** The project offers the possibility to Romania to have access to other natural gas sources (via Greece/Turkey – Bulgaria, etc.). **East – West Pipeline:** Caspian gas reserves. **Reverse flow on the Romanian-Hungarian interconnection pipeline:** The project offers the possibility to Hungary to have access to other natural gas sources via Romania.

Financing Structure	
Expected or obtained share of public financing	**RO-BG Interconnection:** 8.92 (in 10^6 €) of which – TRANSGAZ: 4.55 (in 10^6 €) **GMS Negru Vodă – Reverse Flow:** 0,1715 (in 10^6 €) financing from EU EEPR program
Expected or obtained share of private financing	**RO-BG Interconnection:** 14.88 (in 10^6 €) of which – TRANSGAZ: 6.42 (in 10^6 €) **GMS Negru Vodă – Reverse Flow:** 0.2285 (in 10^6 €)
Expected or obtained share of multilateral financing	

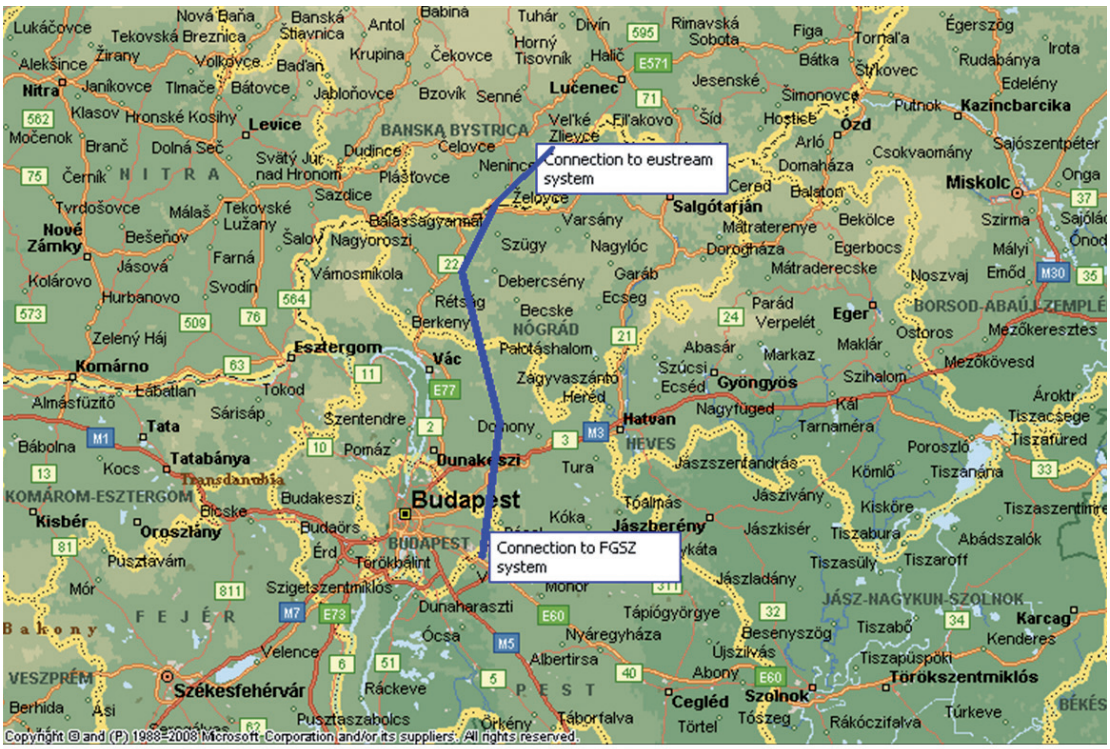
Slovakia


REP.
Drozdwicze
Drozdo
SLOVAKIA
Břeclav
Lanžhot
Velké Kapušany
Uzhgoro
HAG
Kittsee
BRATISLAVA
Beregdaróc
Be
Mosonmagyaróvar
BUDAPEST

Eustream - Infrastructure Projects

General Information	
Types of project	✓ Pipeline (incl. compressor stations) ✓ Storage facility (indicate the type of storage)
List of Projects	

Project	FID	Commissioning	Remarks
Pipes[18]			
Modernization and Upgrade of the Network and Replacement of Technologies due to Environmental Norms	2010	2010-2016	
Slovakia - Hungary interconnector	2010	2015	EEPR project
Slovakia – Poland interconnection	2014	2020	TEN-E (Project of Common Interest)
Storage interconnection	2009	2011	
Reverse flows in the eustream transmission system	2009	2011	Reverse flows development at the border by NET4GAS and BOG transmission system operator



Link to the TSO´s website	www.eustream.sk

[18] for genuine Interconnections include the name of the IP or the CC-CC indication in brackets (to be used under the Technical Capacity listing)

Technical Information	
Total length of new pipes (based on the above list)	21 km
Diameter range of new pipes	700 – 800 mm
Technical capacity	

Interconnections	(in 10^6 Nm³/d)	Remarks
SK-HU interconnection	13.8	Bi-directional
SK – PL interconnection	up to 13.7	Preparatory phase, capacity not yet decided
Lanžhot	23.3	
Baumgarten	22.2	Baumgarten BOG

Expected Benefits

The proposed Eustream infrastructure projects will, increase capacity in Slovak transmission system, improve the integration of the EU gas infrastructure system, produce new transmission opportunities for market players, enhance cross-border liquidity and increase the security of gas supplies of the region. The reverse flow projects will also increase the level security of supply in the region as well as fulfilling a key obligation of the Security of Supply regulation. SK-HU and SK-PL interconnection projects will be part of new North-South interconnections/transmission systems, which will change recent dominant status of East-West system. By connecting two big LNG terminals at opposite sides of Europe and crossing several large transmission systems, the N-S interconnection will dramatically increase market liquidity and level of Security of Supply not only in all of the involved states but in the whole region.

Inter-governmental Agreements

Interconnector Slovakia – Hungary: Intergovernmental agreement between Slovak Republic and Hungary has been concluded. Prime ministers of both countries signed it on January 28th 2011.

Financing Structure	
Expected or obtained share of public financing	**Interconnector Slovakia – Hungary:** EEPR: € 3.3 mil. **Reverse flows in the eustream TS:** EEPR: € 0.7 mil. **Interconnector Slovakia – Poland:** TEN-E: € 105,000
Expected or obtained share of private financing	
Expected or obtained share of multilateral financing	

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CEE GRIP

c/o NET4GAS, s.r.o.
Na Hřebenech II 1718/8
140 21 Praha 4
Czech Republic
EML: ceegrip@net4gas.cz