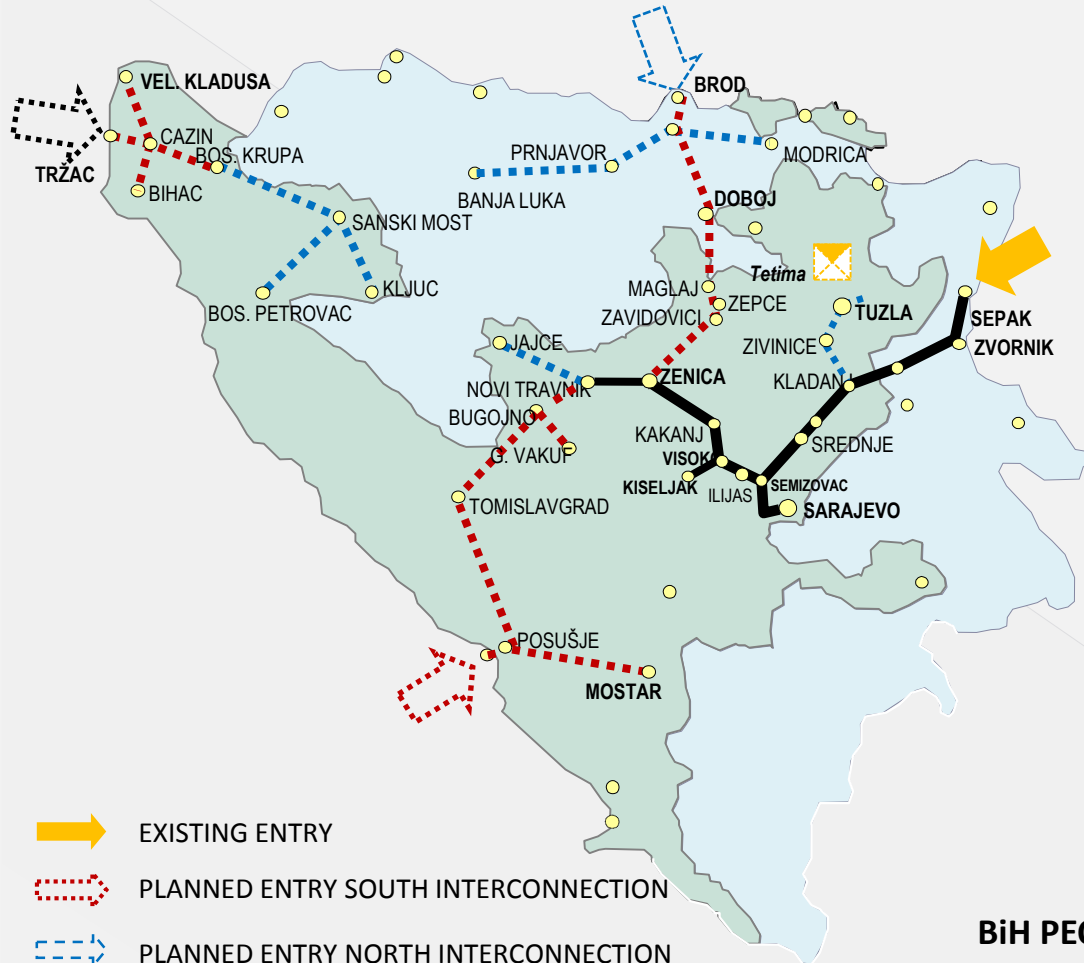










Presentations of Project Promoters

Apart from giving a general project status update, please also focus on the steps taken since the PECI/PMI label has been granted in 2016

BH-Gas Development Strategy



-  EXISTING ENTRY
-  PLANNED ENTRY SOUTH INTERCONNECTION
-  PLANNED ENTRY NORTH INTERCONNECTION
-  PLANNED ENTRY WEST INTERCONNECTION
-  EXISTING GAS PIPELINE
-  PLANNED INTERCONNECTION GAS PIPELINES
-  PLANNED GAS PIPELINE FOR GAS NETWORK EXPANDING
-  POTENTIAL NATURAL GAS STORAGE



BiH PECI candidates:

1. North Interconnection BiH & CRO Brod – Zenica with branch to Banja Luka and Modrica (Part of EC Gas Ring)
2. West Interconnection BiH & CRO Trzacka Rastela – Bosanska Krupa with branch to Bihac and Velika Kladusa
3. South Interconnection BiH & CRO Posusje – Tomislavgrad – Bugojno – Novi Travnik with main branch to Mostar (Part of EC Gas Ring)

BH-Gas PMI Projects - Steps taken



GAS_02

Interconnector BiH and HR Lička Jesenica Tržac B. Krupa

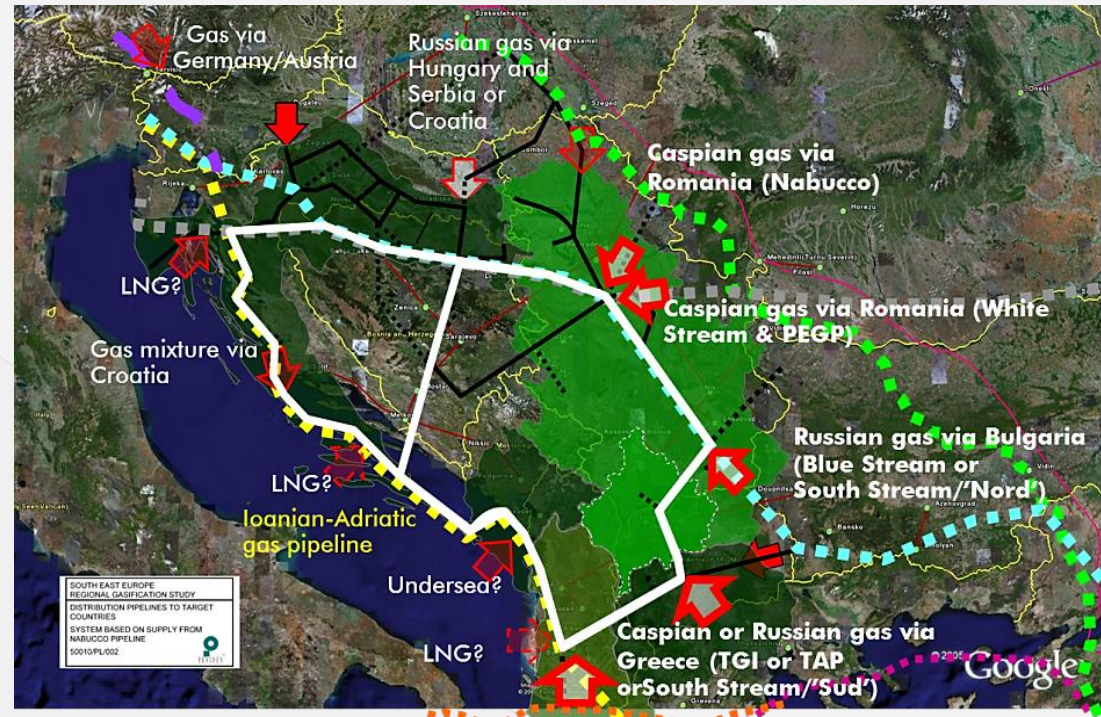
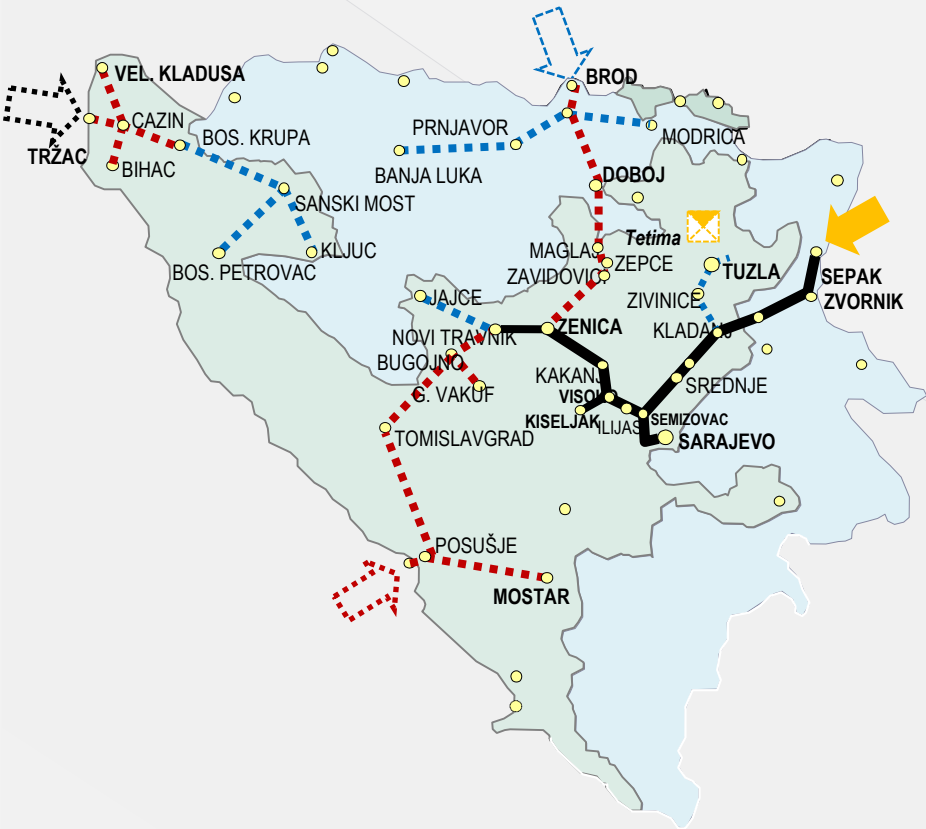
- ✓ August 2017 Preparation of Tender documentation for FS, ESIA, CBA and Preliminary Design was started

GAS_03

Interconnector BiH and HR Zagvozd Posušje Novi Travnik

- ✓ April 2017 BH-Gas and Plinacro signed MOUC in which both Parties agreed to intensify activities on realization of interconnection projects between BiH and Croatia
- ✓ Jun 2017 Government of Federation of BiHS proclaimed South Interconnection of BiH and Croatia Gaspipeline Project as project of strategic importance with aim to provide security of supply with natural gas
- ✓ July 2017 European Commission approved 141.000 EUR Grant for Connecta Technical Assistance for CBA; Inception Report scheduled for Sept and Final Report for December 2017
- ✓ July 2017 BH-Gas submitted official request and started negotiations with EBRD on financing the construction of South Interconnection pipeline
- ✓ August 2017 Tender procedure for drafting the project documentation started. BH-Gas allocated its own funds for this purpose (support from USAID and EBRD side expected)
- ✓ **The assistance of ECS and its Consultant is expected in terms of the PECCI label for this project for 2018**

Future BiH Position in Regional Gas Network: Energy Community Gas Ring



Source : ECA, SEE Regional Gasification Study World Bank and KfW

Realization of BH-GAS development projects, namely North and South Interconnection projects of BiH and Croatia contributes to the realization of EnC Gas Ring.

Thank you for your attention!

Republic of Macedonia: National Strategy for gasification of the Republic of Macedonia

Joint Stock Company for performing energy activities
MACEDONIAN ENERGY RESOURCES Skopje in State Ownership
(MER JSC Skopje)



Brief description of MER JSC Skopje

The Joint Stock Company for performing energy activities Macedonian Energy Resources (hereinafter referred to as MER JSC Skopje) is a company in state ownership, formed in 2010 for the purposes of realization of the gasification project and construction of the gas pipeline transmission system in the Republic of Macedonia.

MER JSC Skopje undertakes all the activities regarding the construction of new main gas pipeline sections, thereby the development of the natural gas transmission system on the entire territory of the country. Also, MER JSC Skopje is involved in the realization of gas pipeline projects of international character.

MER JSC Skopje is in a procedure for obtaining a License for natural gas transmission system Operator. According to the legal provisions in the Republic of Macedonia, Operator of the natural gas transmission system can be a company which is entirely in state ownership or a company where the state is a dominant owner.

Current situation and future plans for development of the Macedonian natural gas transmission system

- Feasibility Study (FS) for the development of the natural gas transmission system in the Republic of Macedonia was prepared.
- Infrastructure projects and basic designs were prepared for the following sections:
 - Section 1 Klecovce=Negotino (Kavadarci) – in length of 96 km,
 - Section 2 Negotino-Bitola – in length of 92 km,
 - Section 3 Stip-Hamzali – in length of 60 km,
 - Section 4 Hamzali-Stojakovo – in length of 50 km, and
 - Section 5 Skopje-Tetovo-Gostivar with the possibility for connection with Kicevo – in length of 112 km.
- The construction of the new main gas pipeline of the Republic of Macedonia started in March 2015.

Projects for gasification

Gasification of the Republic of Macedonia (Gas Transmission System)



Projects for gasification

ENERGY SECTOR

Gasification of the Republic of Macedonia - Gas Transmission System Planned Activities of MER JSC Skopje

Phase I - priority sections with length, estimated at €140M

- Stip-Kavadarci-Prilep-Bitola - 140 km.
- Stip-Radovis-Hamzali-Strumica-R. Greece - 110 km.
- Skopje-Tetovo-Gostivar - 76 km.

Phase II - priority sections with length, estimated at €200M

- Gostivar-Kicevo-Ohrid-Struga-Kafasan - 114 km.
- Bitola-Ohrid - 64 km.
- Other small sections in length of 250 km.

Projects for gasification

ENERGY SECTOR

Finished projects of MER JSC Skopje

- In the middle of March 2015 the construction of Section Klechovce - Valve Station 5 started.
- According to the prescribed deadlines, the construction was finished in June 2016.
- The realization of this project includes:
 - execution of construction, mechanical, electrical works and cathodic protection on the line part of the main gas pipeline,
 - length 61km,
 - diameter DN=500mm,
 - 7 Valve stations,
 - Pig Launcher Station.

ENERGY SECTOR

Ongoing projects of MER JSC Skopje

- Construction of Section Stip (Valve station 5) - Negotino, with the following main features:
 - o the construction started in July 2016,
 - o execution of construction, mechanical, electrical works and cathodic protection on the line part of the main gas pipeline,
 - o length 36 km,
 - o diameter DN=500mm,
 - o construction period 18 months.
 - o Realized (including June 2017) 75,56%
- Construction of Section Skopje-Tetovo-Gostivar, with the following main features:
 - o the construction started in December 2016,
 - o execution of construction, mechanical, electrical works and cathodic protection on the line part of the main gas pipeline,
 - o length 76 km,
 - o diameter DN=500mm,
 - o construction period 36 months.
 - o Realized (including June 2017): 12,79%
- Construction of Section Negotino-Bitola, with the following main features:
 - o the construction started in February 2017,
 - o execution of construction, mechanical, electrical works and cathodic protection on the line part of the main gas pipeline,
 - o length 92 km,
 - o diameter DN=500mm,
 - o construction period 36 months.
 - o Realized (including June 2017): 15,43%

Projects for gasification

ENERGY SECTOR

Projects of MER JSC which are under preparation for realisation

Projects of Phase 1

| Sections for which funds have been provided | Construction period | | | |
|---|---------------------|------|------|------|
| Valve station 5 – Negotino | 2016 | 2017 | 2018 | |
| Skopje-Tetovo-Gostivar | 2016 | 2017 | 2018 | 2019 |
| Branch to Tetovo | 2016 | 2017 | 2018 | |
| Neogtino-Bitola | 2016 | 2017 | 2018 | 2019 |

| Sections of Phase 1 | Construction period | | | |
|------------------------------------|---------------------|------|------|------|
| Stip-Radovis-Strumica-Greek border | | 2018 | 2019 | 2020 |
| Hamzali-Novo selo | | | 2019 | 2020 |
| Negotino-TEC Negotino | | 2018 | | |

Projects for gasification

ENERGY SECTOR

Participation in international gas pipeline projects

MER JSC Skopje is involved in the following international projects for realization:

- **CESEC (Central and South East Gas Connectivity)** where according to the Memorandum of Understanding signed in Dubrovnik on July 10, 2015 the projects for interconnectors of the Republic of Macedonia with the Republic of Bulgaria and the Republic of Greece were included.



On October 14, 2016 was signed a Memorandum of Understanding between MER JSC Skopje and DESFA S.A. for construction of gas interconnection for transmission of natural gas between the Republic of Macedonia and Greece.

Projects for gasification

ENERGY SECTOR

Participation in international gas pipeline projects

Projects of Energy Community Interest and Projects of Mutual Interest

According to the Decision of the Ministerial Council of the Energy Community of October 14, 2016, the List of Projects of Energy Community Interest („PECIs”) include one project of the Republic of Macedonia - Project of Energy Community Interest („PECI”) for gas interconnection with R. Serbia and one Project of mutual interest („PMI”) for gas interconnection with Greece.

PECI status

In the upcoming period the content of the Memorandum of understanding should be harmonized after which the signing thereof will follow.

PMI status

A Memorandum of understanding was signed, working groups were established, the preparation of the mutual feasibility study is in the final stage.

Projects for gasification

TECHNICAL CHARACTERISTICS OF THE GAS INTERCONNECTION MK-GR

- **Dimensions of the transmission gas pipeline and technical capacity:**

- Diameter: $\varnothing 711$ mm (DN700)
- Length: L= 110 km
- Technical capacity: Q= 326 000 m³/h

- **Working (operating), maximum and minimum pressure:**

- working (operating) pressure p= 40 bars;
- maximum pressure (projected) p_{max} = 54 bars
- minimum pressure p_{min} = 25 bars

- **Data on accompanying elements of the gas pipeline:**

- Valve stations with nominal diameter DN700/DN100, DN700, DN65, DN80, DN100, DN150, DN 700: 10 pcs
- Pig Launcher-Receiver Station DN700: 2 pcs

- **Telemetric system for monitoring**

- GMRS Strumica: Q= 35.000 m³/h
- GMRS Valandovo: Q= 5.000 m³/h
- GMRS Bogdanci: Q= 4.000 m³/h
- GMRS Gevgelija: Q= 15.000 m³/h
- GMRS Radovis: Q= 7.000 m³/h

- Main regulation station Gevgelija and main measuring station Gevgelija with working pressure 65-80 bars/54 bars Q= 326.000 m³/h.

Projects for gasification



MACEDONIA

Thank you for your attention

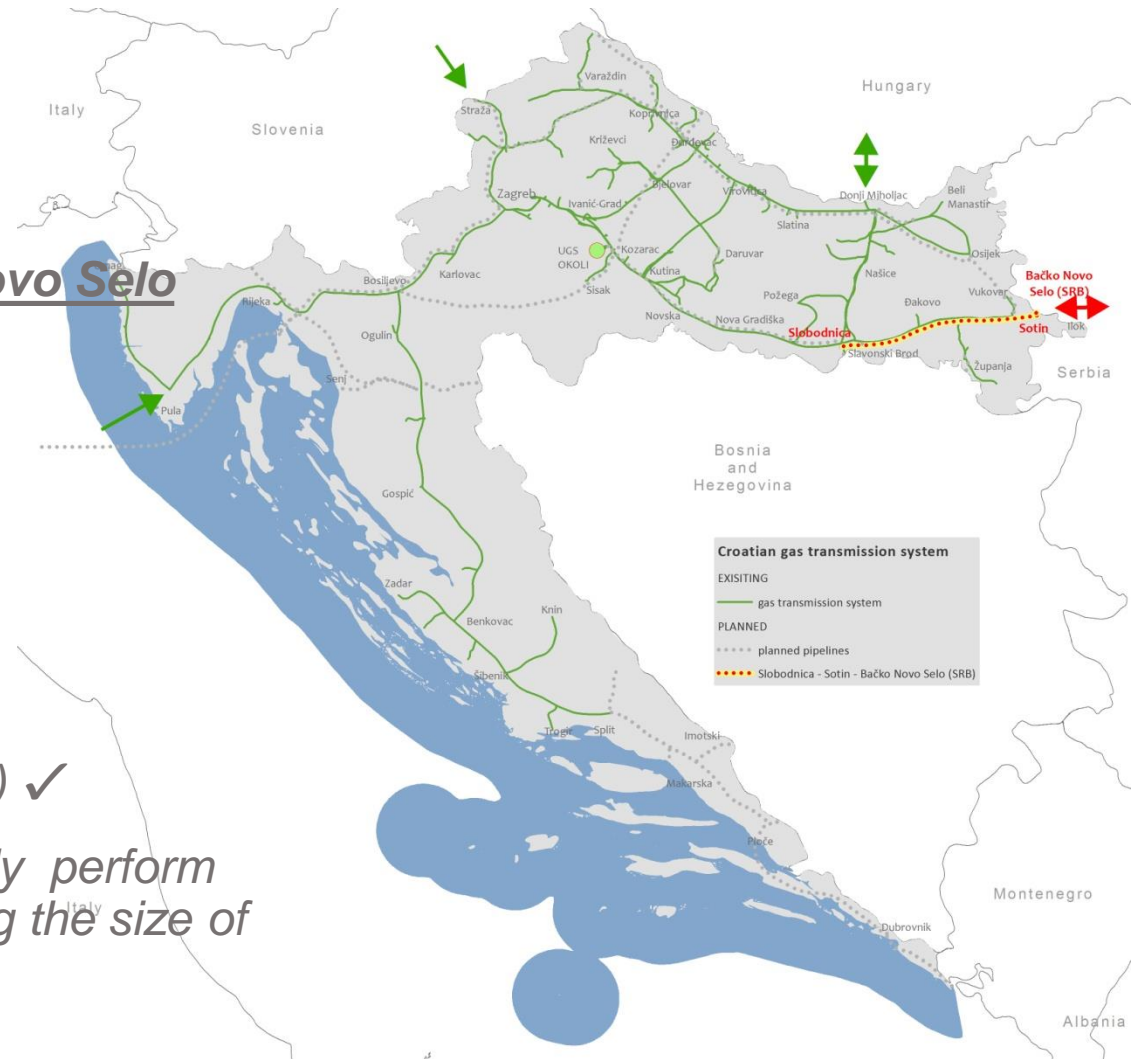
MER JSC Skopje
Str. Maksim Gorki No.11/1-3 Skopje
Tel: 00389 2 6090 137
E-mail: contact@mer.com.mk

Bulgaria – Serbia Interconnector

INTERCONNECTION HR- SERBIA

Slobodnica – Sotin – Bačko Novo Selo

- DN 800/75 bar,
- L 102 km (6-7 bcma)
- Environmental Impact Study ✓
- ESIA ✓
- Basic Design ✓
- Location Permit (for one section) ✓
- Srbijagas and Plinacro will jointly perform the hydraulic simulation regarding the size of the pipeline





Republic of Kosovo
Government
Republic of Kosovo
Ministry of Economic Development

1st Meeting of PEGI/PMI Selection Group: Gas Group

Ljubljana, 21 September 2017
Drin Ponosheci and Mehmet Celaj
Energy Department

CONTENT

- Primary Legislation;
- Regulation (EU) No. 347/2013 /
Transposition/Implementation
- PECI-List 2016: Project of interest to the Energy
Community / developments
- Next steps

PRIMARY LEGISLATION

Primary Legislation, approved in 2016, in compliance with 3d Package of EU Legislation (Directives and respective Regulations), as follows:

- Law no. 05/L-081 for Energy;
- Law no. 05/L-085 on Electricity;
- Law no. 05/ L- 084 for Energy Regulator;
- Law no. 05/L- 082 for Natural Gas.

REGULATION (EU) No 347/2013 –transposition/implementation

Regulation No.347/2013 is being transposed by Administrative Instruction (MED) No. 01/2017 on the promotion of joint regional investments in the energy sector, approved by the Minister of Economic Development on the date: **20.02.2017**.

□ **Implementation:**

The Minister has issued the Decision no. 1502, dated 07.08.2017, where the Division for Standards and Technical Regulations within the Department of Energy is being designated as the Competent Authority (one stop shop) for the coordination of the process related to the activities in issuing permits and licenses by other institutions for projects of interest to the Energy Community, which have a regional - cross-border impact.

PECI-List 2016: Project of interest to the Energy Community / developments

PECI-List 2016:

- Kosovo through MED has applied with the joint project with the Republic of Albania in the Energy Community for the inclusion of the Pre-Feasibility Study for the Albania-Kosovo pipeline (ALKOGAP), within the Projects of Interest (PECI - List 2016). This project has been approved by the Energy Community in October 2016 and has entered in the PECI 2016 list.

- With the same project, Kosovo through MED has applied with a joint project with the Republic of Albania in the framework of the 15th WBIF Round for the realization of the Feasibility Study for the Albania-Kosovo Pipeline within the TAP / IAP system.

- Grant was awarded in the form of Technical Assistance (Grand Code: WB15-REG-ENE-01) for the realization of this Project from the Western Balkans Investment Framework (WBIF) in the amount of 300.000 Euros.

PECI-List 2016: Project of interest to the Energy Community / developments

- The purpose of the study project will be to identify the potential of natural gas consumption in the industry and household sector, and the study will give the other alternatives, so that according to the recommendations issued proceed further with subsequent studies.
- There were meetings, held with the expert and WBIF representatives. The ToR is being started with the preparation by the engaged expertise and we are waiting for their submission for analysis, comment and/or eventual supplement to proceed with further procedures.
- The plan is that the pre - feasibility study to be finished during 2018.
- Upon the realization of the respective plan, there will be necessary recommendations to initiate the complete feasibility study.

Next Steps

- ❑ Implementation of Administrative Instruction (MED) No. 01/2017 for the promotion of joint regional energy investment investments which is in compliance with Regulation (EU) 347/2013;
- ❑ Coordinating the process with the relevant actors of the Republic of Kosovo for the initiatives / requests addressed by the Energy Community, specifically for the current project on Gas and other interests;
- ❑ Development of activities and coordination of processes according to the conclusions of the 1st Meeting of PECCI / PMI Selection Group meeting: Gas Group; and
- ❑ Other Relevant

Thank for your attention!

<http://mzhe-ks.net>



GAS INTERCONNECTION POLAND-UKRAINE

Ljubljana, September 21st 2017

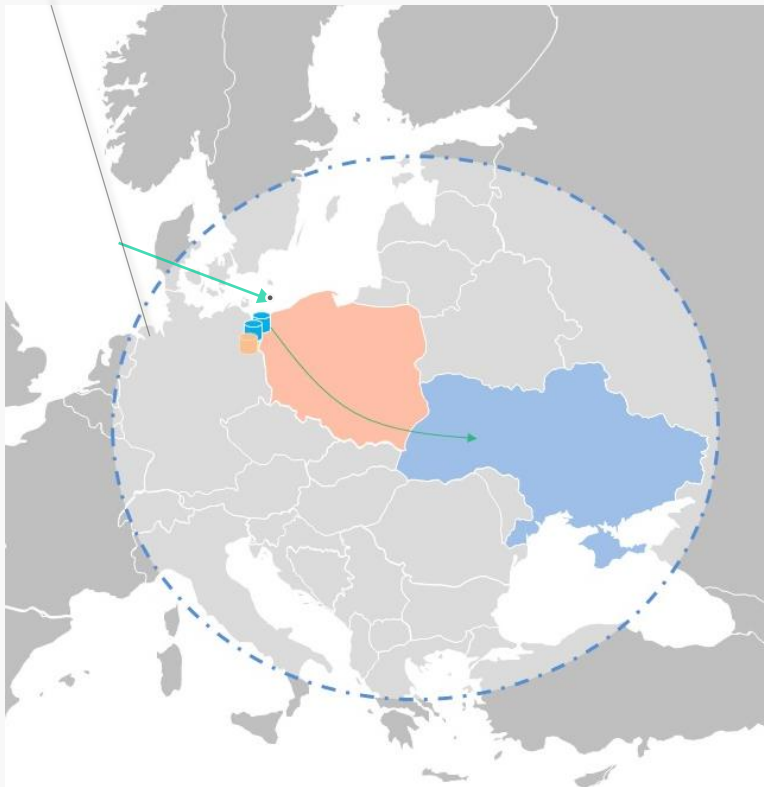


GENERAL INFORMATION

- ✓ In October 2016, the Ministerial Council adopted a list of Projects of Energy Community Interest (PECI) and Projects of Mutual Interest (PMIs) based on Regulation 347/2013 on Guidelines for Trans-European Energy Infrastructure
- ✓ **The Gas Interconnection Poland – Ukraine has obtained a status of a Projects of Mutual Interest (PMI).**
- ✓ **General Information:**

| Country | Project Promoters (TSO's) | Planned capacity | Commissioning |
|---------|--|------------------|---------------|
| POLAND |  | To PL: 5 bcm/a | |
| UKRAINE |  | To UA: 5 bcm/a | 2020 |

GAS INTERCONNECTION POLAND – UKRAINE



- ▶ The main objective of connecting Poland's and Ukraine's system is to **diversify gas supplies for Ukraine** and further **integration of transmission systems and markets in the region of Eastern Europe.**
- ▶ **The PMI status is underlying the regional importance of the PL-UA Project**
- ▶ The commissioning of the project will contribute towards enlarging the area covered by the North-South corridor via **stronger integration of Ukrainian transmission network with the CEE Region.**
- ▶ The Project creates the possibility for deliveries of gas from the **LNG Terminal** as well as **from Norway (through the Baltic Pipe)** to Ukraine
- ▶ The project will also largely increase the volume of an integrated gas market in the region. Such scale effect should positively **influence the competition and attractiveness of the region towards upstream players and shippers.**

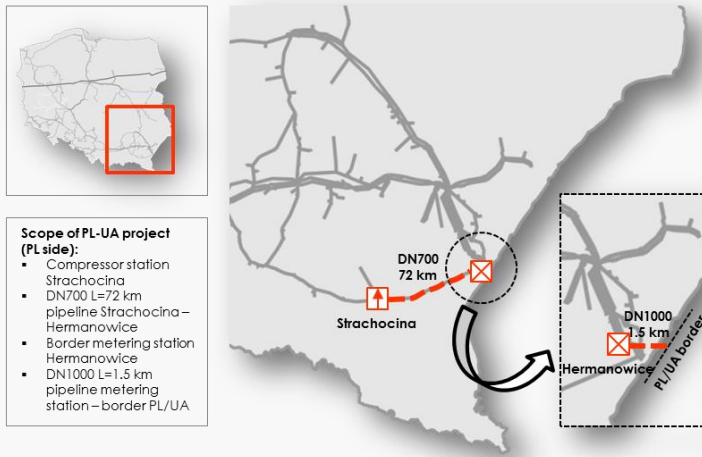
STATUS SUMMARY

- ✓ In December 2016 GAZ-SYSTEM S.A. and PJSC Ukrtransgaz have signed an *Agreement on Rules of Cooperation* of and set forth the principles of cooperation during the engineering and a construction phase.
- ✓ Ongoing engineering works in Poland, all corporate approvals for this phase were obtained. The engineering works are expected to be completed in IVQ 2018 by obtaining of the building permission for the Hermanowice – Border PL/UA pipeline.
- ✓ Ongoing engineering works in Ukraine, all corporate approvals for this phase were obtained. The engineering works are expected to be completed in IVQ 4 quarter 2018.
- ✓ The overall development of the Polish part of the Gas Interconnection Poland-Ukraine is on track, and until now no major risks have been identified. Foreseen commissioning date remains unchanged– 2020
- ✓ GAZ-SYSTEM is in close cooperation with Ukrtransgaz, at the moment both TSO's are discussing the rules for taking the Final Investment Decision.

SCOPE AND STATUS OF THE PROJECT IN POLAND

The main scope of the Project on the Polish side is **construction of a pipeline DN700 Hermanowice – PL/UA border** and the necessary infrastructure. As a part of the investment, the following tasks will be completed*:

| INVESTMENT TASK | STATUS |
|--|--|
| DN1000 8,4 MPa gas pipeline from Hermanowice to the PL/UA border | Ongoing engineering works, in line with the foreseen time schedule |
| Border gas metering station (area of Hermanowice Node) | Ongoing engineering works, in line with the foreseen time schedule |
| Compressor Station in Strachocina | Ongoing engineering works, in line with the foreseen time schedule |
| DN 700 Hermanowice-Strachocina pipeline | Engineering completed, ongoing construction works. |



***For the proper operation of the PL-UA Gas Interconnection additional pipeline projects must be completed in Poland:**

- DN1000 Strachocina-Pogórska Wola pipeline
- DN1000 Pogórska Wola-Tworzeń pipeline
- DN1000 Tworów-Tworzeń pipeline



SCOPE AND STATUS OF THE PROJECT IN UKRAINE

The main scope of the Project on the Ukrainian side is **construction of a DN1000 7,4 MPa gas pipeline from PL/UA border to the UGS Bilche Volytsya**: As a part of the investment, the following tasks will be completed:

- DN1000 7,4 MPa gas pipeline from the state border with Poland in the area of existing GMS “Drozdovychy” to the UGSF “Bilche-Volytsya” (99,3 km)
- Construction of the necessary additional infrastructure



| TASK | STATUS |
|---|--|
| Gas pipeline DN1000 PL-UA Border – UGSF “Bilche Volytsya” | Ongoing engineering works, in line with the foreseen time schedule |



NATURAL GAS TRANSMISSION
MEMBER OF THE MOL GROUP

FGSZ LTD.

Firm capacity at Beregdaróc DN800 HU>UA direction

PECI/PMI meeting
Ljubljana, 21 September 2017

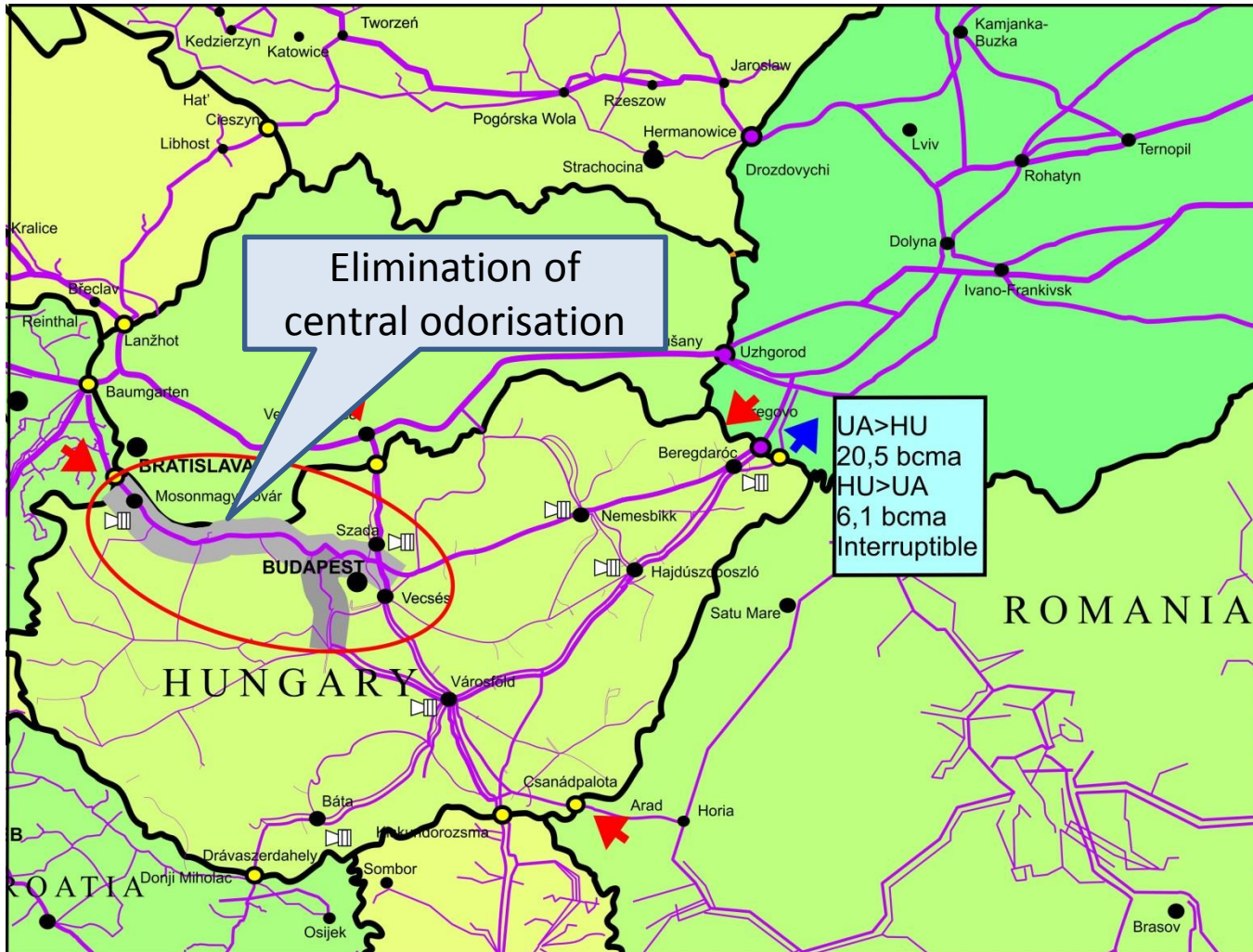
Content:

1. **Current available capacity**
2. **Completed development, which helps the HU>UA deliveries**
3. **Conditions related to HU>UA delivery**
4. **Further developments**
5. **Market survey, demand assessment report**
6. **NRA approval**
7. **Conclusions and further activities**

Current available capacity: interruptible 700,000 m³/h (15°C)



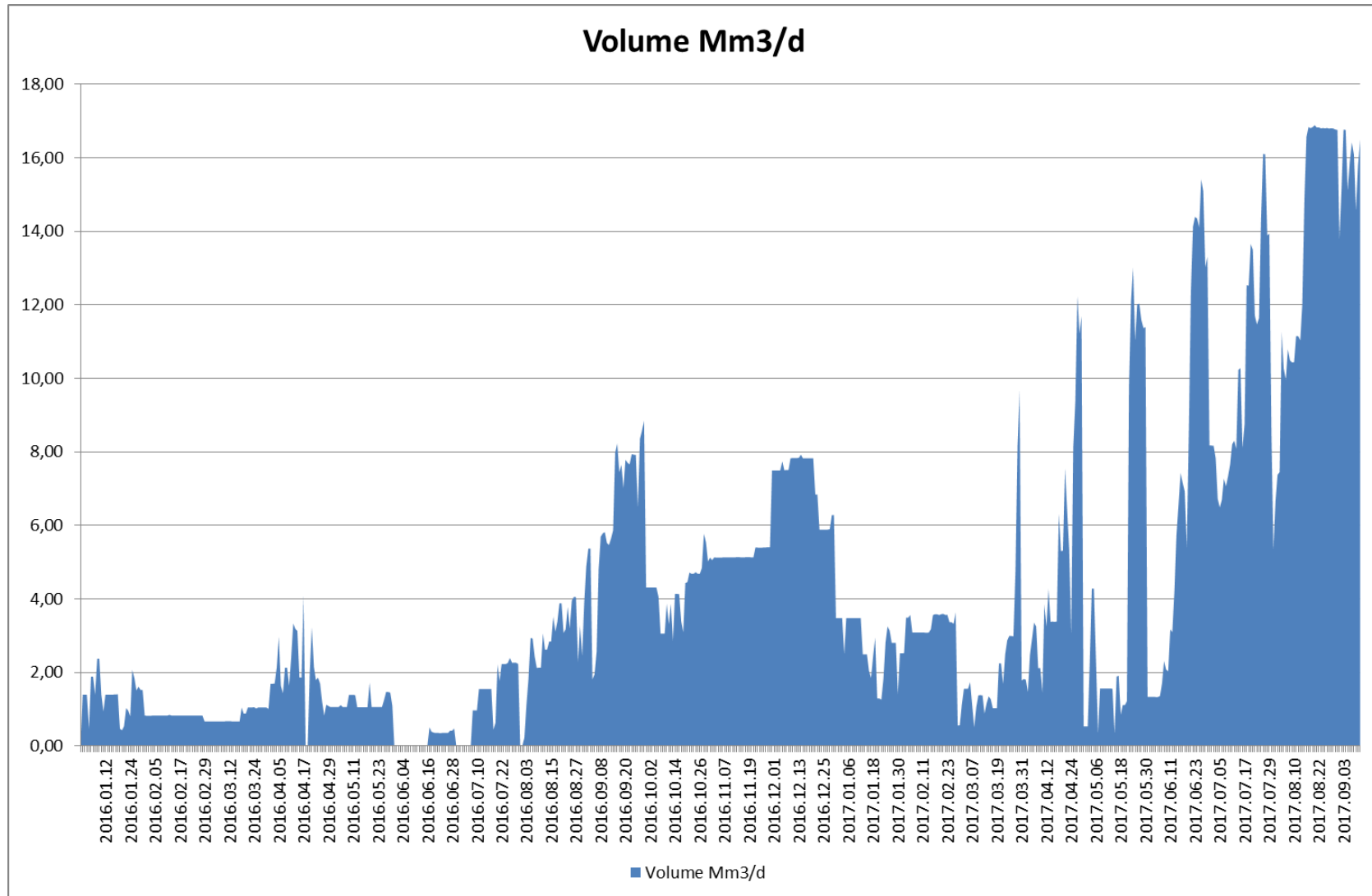
Completed development, which helps the HU>UA deliveries



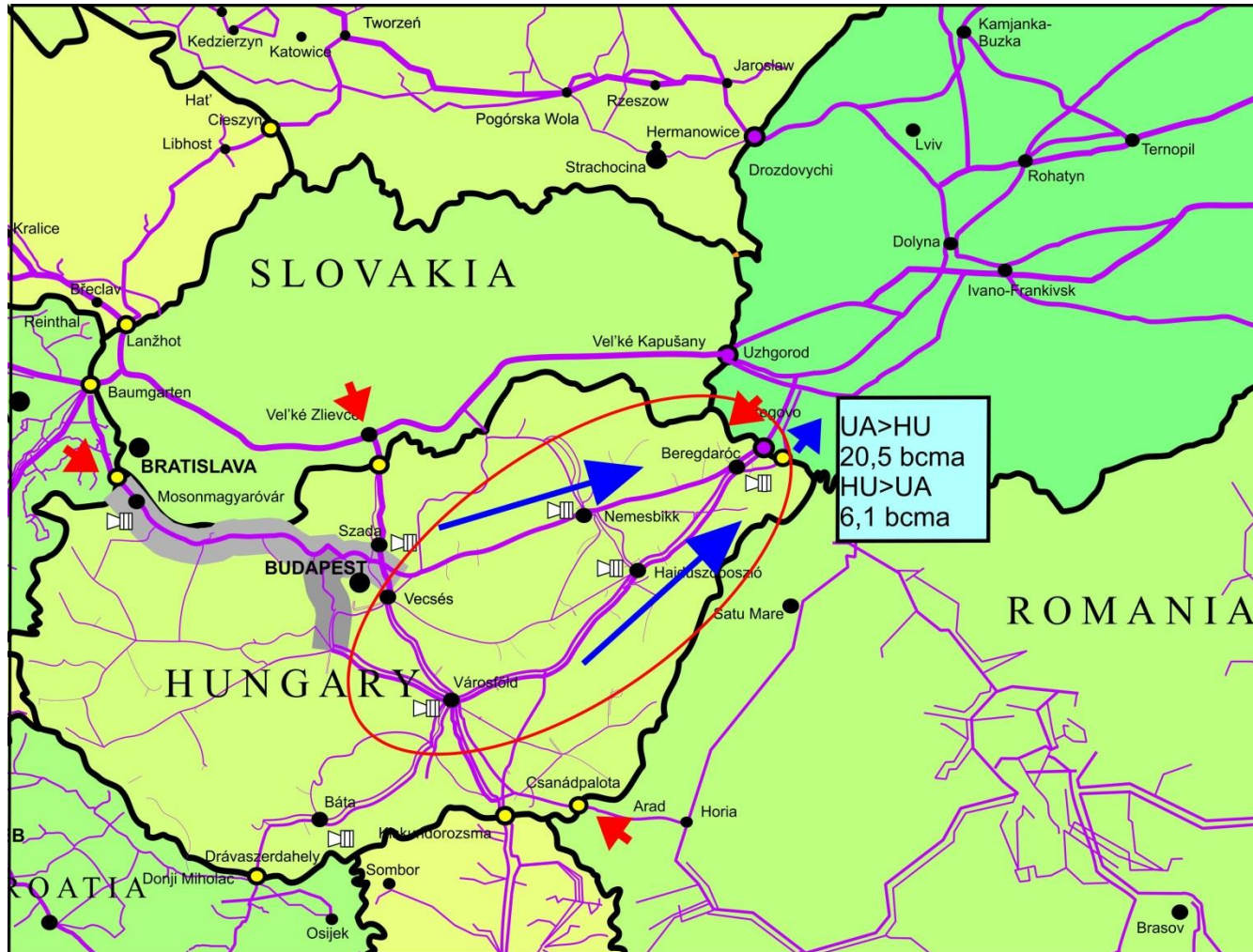
Conditions related to HU>UA delivery

- UA>HU deliveries are needed to fulfill HU>UA deliveries
- FGSZ system is prepared basically UA>HU direction deliveries
- Gas quality parameters are identical in both directions
- Without sufficient UA>HU flow, the gas quality might not meet with the gas quality agreed in IA

Usage of Beregdaróc DN800 HU>UA IP from 01.01.2016



Further developments to ensure 700,000 m³/h firm capacity

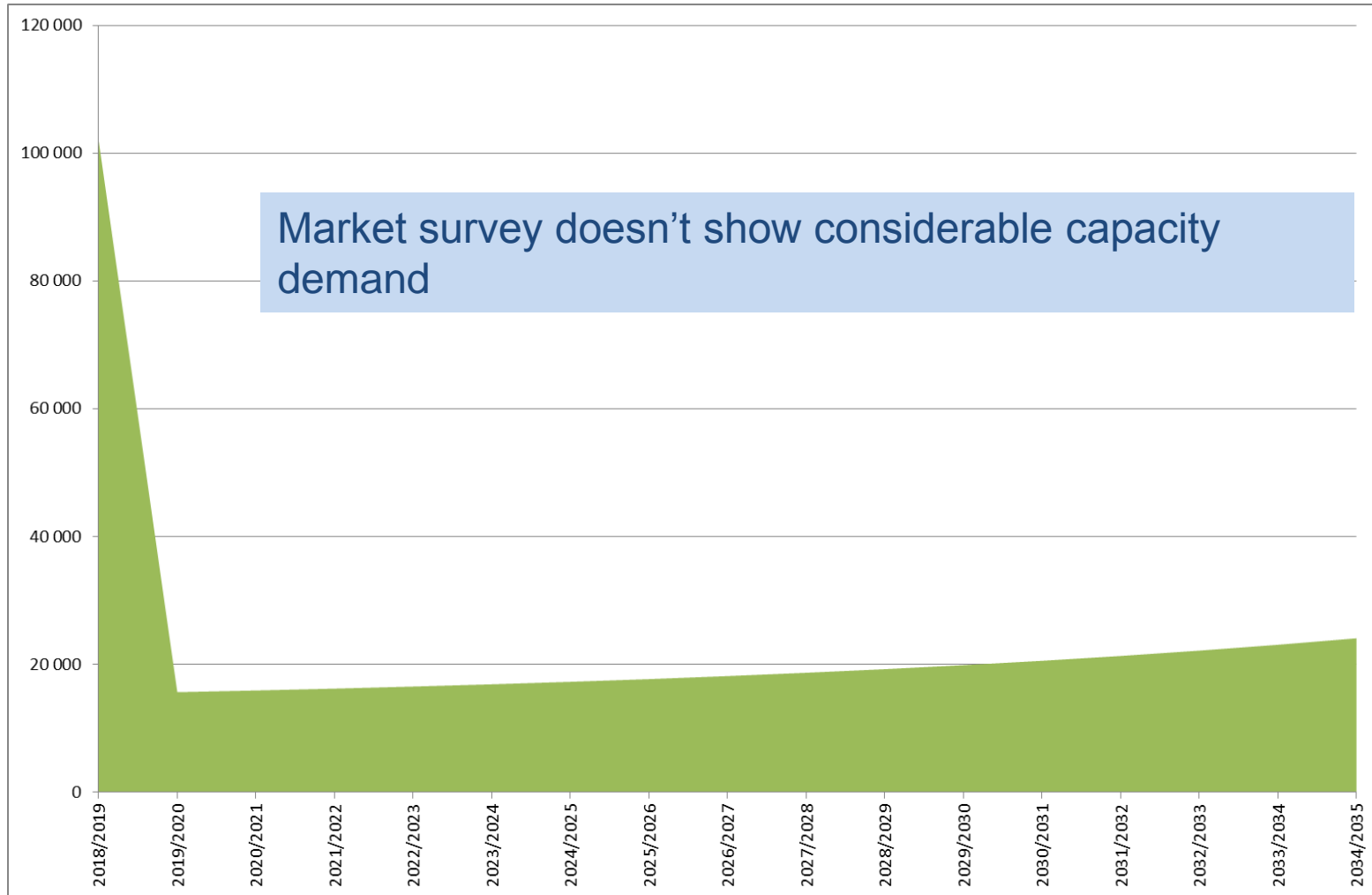


- Modification of 4 nodes helping the reverse flow towards Ukraine
- Measuring station at Bregdaróc
HU>UA direction
- Additional compressor unit at Hajdúszoboszló

New delivery route from LNG terminal KRK from 2020



DAR: indicative capacity demand Beregdaróc 800 (HU>UA) m³/h (15C)



NRA and FGSZ approval

- If the return of the related investment ensured by long term capacity booking contracts

Further steps and further activities

- FGSZ will submit the HU>UA related projects in the National Development Plan 2017 as a studied project and in case of sufficient demand makes suggestion to the realization
- Because of lack of PCI status, there is no reality for EU financing
- Studying EC PEI financing possibility
- Investigating cross border cost allocation possibility
- New common market survey in Ukraine and Hungary
- Parallel HU>UA OS with LNG related OS launched by Plinacro and FGSZ ?

Thank you for your kind attention!

IONIAN ADRIATIC PIPELINE – IAP

Ljubljana, 21 September 2017

1st PECI/PMI Gas Group Meeting

plinacro



Galgaz

BH-GAS

SOCAR

IONIAN ADRIATIC PIPELINE - IAP

- *Connecting Croatian Gas Transmission System with project TAP*
 - *New supply source for the region from the Southern Corridor*
 - *Possibility of gas transit to the SEE and CEE*
 - *Reverse flow*
 - *pipeline Split (HR)-Fieri (ALB) DN800 /1000 / 75 bar, L= 511 km, capacity 5 bcma*
 - *gas supply of:*
 - Albania - 1 bcma*
 - Montenegro - 0,5 bcma*
 - BiH - 1 bcma*
 - Croatia - 2,5 bcma*
- Length:*
- Croatia – 249 km*
 - Montenegro – 95*
 - Albania – 167*



PROJECT MANAGEMENT UNIT

- August 2016 in Dubrovnik- Ministerial Memorandum of Understanding and Cooperation signed between Albania, Croatia, Montenegro, BiH –pending
- PMU established consisting of: Ministries and TSOs – Albania, BiH, Croatia, MNE and SOCAR; Energy Community Secretariat – Observer Member

Alb: Ministry of Energy and
Infrastructure
Albgaz

BiH Ministry of Foreign Trade and
Economic Relations
BH Gas

HR: Ministry of Environment and Energy
Plinacro

MNE: Ministry of Economy
Montenegro Bonus

SOCAR

**Secretariat of IAP PMU – Ministry of
Economy MNE**

PMU for IAP Project –

devoted to defining further steps leading to
facilitation of development and
implementation of the IAP Project

- 4 PMU Meetings held
- Action Plan – drawn up
- ENTSOG TYNDP 2017
- Meetings held with: DG Energy, TAP,
EBRD,..

-Next steps: establishing IAP company,
signing MOU with TAP,...

STATE OF PLAY

HR sections (DN 800/75 bar):

Split-Ploče

ESIA, Basic Design, Location Permit, Main Design ✓

Building Permit :

1. *Gas Node Split* ✓
2. *Split-Zagvozd- in progress*
-
3. *Zagvozd –Ploče – in progress*

MNE section (DN 800/75 bar):

Gas Master Plan ✓ ; *Preliminary Design– in progress*

ALB section (DN 1000/75 bar):

Gas Master Plan ✓ ; *Preliminary Design– in progress*

Ploče-Dubrovnik and Dubrovnik-Prevlaka-Dobreč

ESIA, Basic Design ✓ ; *Location Permit in progress*



Branch to BiH Imotski – Zagvozd Posušje- Novi Travnik with a branch to Mostar

**THANK YOU FOR
YOUR ATTENTION!**

PLINACRO



Galbgaz

BH-GAS

SOCAR

The republic of Moldova

Iasi (RO)-Ungheni (MD, phase I)
-Chisinau (phase II)
gas pipeline project

Energy Community Project of Mutual Interest (PMI):
Ungheni-Chisinau
Recommendation 2016/01/MC-EnC
14th Ministerial Council EnC of October 14, 2016

Iasi (RO)-Ungheni (MD) gas pipeline project:

- **first interconnection between the Republic of Moldova and Romania (ENTSO-G)**
- **construction works completed in August of 2014**
- **first gas supplies started in March of 2015**
- **automation centre in Ungheni put in operation on 31 May, 2017**
- **pipeline technical capacity: 1.5 bcm/y,**
- **investment: 26.5 mln euro**

Ungheni - Chisinau gas pipeline project:

- pipeline financing agreement signed with EIB and EBRD for 92 mln euro (41 mln euro each) on December 19, 2016. EU provided 10 mln euro grant
- ministerial decision taken regarding elaboration of the joint implementation plan between RO-MD on May 5, 2017
- RO-MD ministerial decision to elaborate joint road map for the project implementation, July 28, 2017

Ungheni - Chisinau gas pipeline project (II):

- Ungheni – Chisinau gas pipeline project was defined as project of national interest and project related construction works received the status of works of public utility: Law nr. 105 of June 09, 2017
- operator of Iasi-Ungheni pipeline – TSO Vestmoldtransgaz – received the urbanism certificate on September 01, 2017
- next steps: design of the construction works, authorisation of the construction, interconnection and operational agreements between TSO Moldovatrangaz and TSO Vestmoldtransgaz, pipeline construction
- expected project completion: 2019

PECI Oil_01

Adamowo (PL) -Brody (UA)

Oil Pipeline Project



1st PECI/PMI Gas Group

Meeting

21 September, 2017

Ljubljana, Slovenia

INFRASTRUCTURE TO BE BUILT



The pipeline:

- Total Line Length – 396,3 km (270,6 km Poland + 125,7 km Ukraine),
- diameter - 32" (800 mm),
- MOP - 6,5 MPa,
- wall thickness - 13-23 mm,
- capacity 10 MTA

Pump stations:

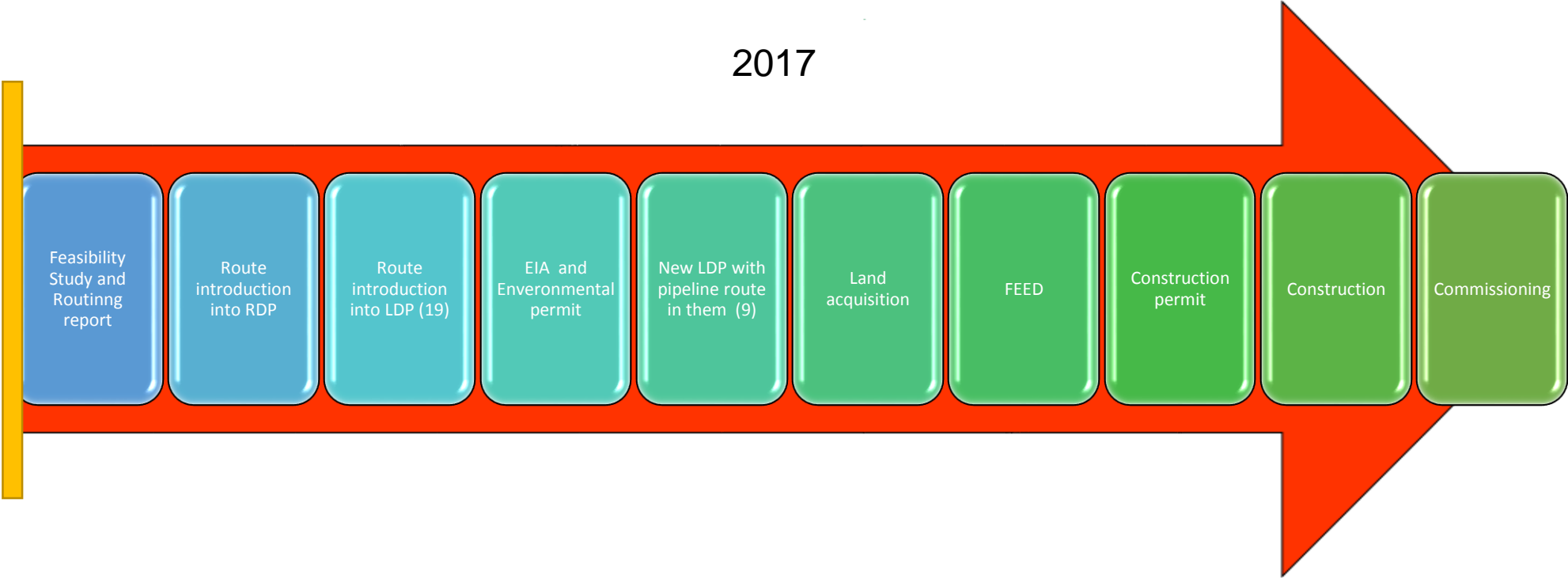
- 1 in Brody (Ukraine),
- 2 in Poland on future stages

Control system SCADA with optical fiber cable along the pipeline.

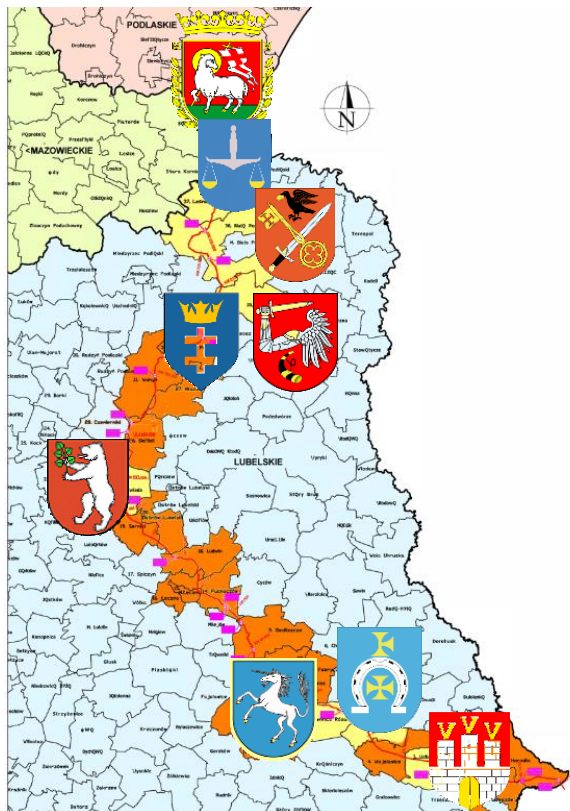
Total CAPEX - 489,0 million EUR

INVESTMENT PROCESS

2017



LOCAL DEVELOPMENT PLANS FOR THE PIPELINE ROAD

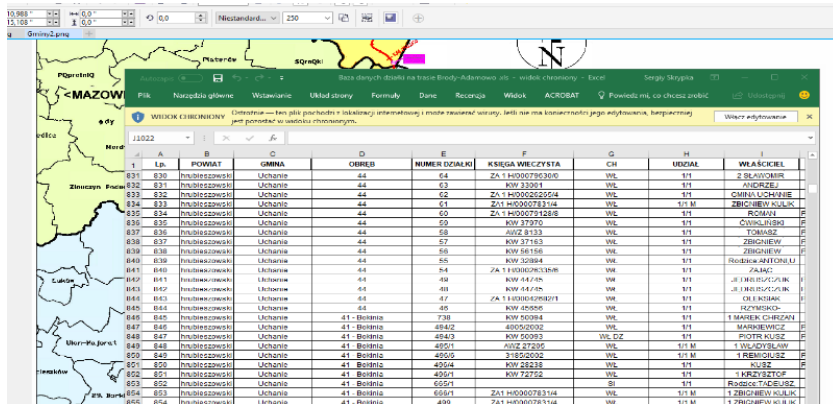


During 2016 – 2017 years the Local Development Plans with a pipeline road in them were prepared for 9 Commune (Gminas) in Poland.

- 5 LDP are already adopted
- The procedure for the 4th LDP is being completed.

 - Gminas with new LDP

LAND ACQUISITION

| | A | B | C | D | E | F | G | H | I |
|-----|-----|--------------|----------|---------------|----------------|-----------------|----|---------|-------------------|
| | PK | POWIAT | GMINA | OROBIEC | HIMIER DZIALKI | KSEGA WIECZYSTA | CH | INIZJAT | WLASKOCIEL |
| 831 | 830 | Pruskiemierz | Uchancie | 44 | 64 | ZA 1 H000790300 | WL | 1/1 | 2 SŁAWOMIR |
| 832 | 831 | Pruskiemierz | Uchancie | 44 | 63 | KW 22091 | WL | 1/1 | ANDRZEJ |
| 833 | 832 | Pruskiemierz | Uchancie | 44 | 62 | ZA 1 H000793254 | WL | 1/1 | GABRIELUCHOWIE |
| 834 | 833 | Pruskiemierz | Uchancie | 44 | 61 | ZA 1 H000793144 | WL | 1/1 | M |
| 835 | 834 | Pruskiemierz | Uchancie | 44 | 60 | ZA 1 H000793268 | WL | 1/1 | BOGUSI |
| 836 | 835 | Pruskiemierz | Uchancie | 44 | 59 | KW 37970 | WL | 1/1 | OWULFEBIA |
| 837 | 836 | Pruskiemierz | Uchancie | 44 | 58 | WZ 8133 | WL | 1/1 | TOMASZ |
| 838 | 837 | Pruskiemierz | Uchancie | 44 | 57 | KW 27163 | WL | 1/1 | ZBIGNIEW |
| 839 | 838 | Pruskiemierz | Uchancie | 44 | 56 | KW 58154 | WL | 1/1 | ZBIGNIEW |
| 840 | 839 | Pruskiemierz | Uchancie | 44 | 55 | KW 50984 | WL | 1/1 | SILWIAKARCEMUSI |
| 841 | 840 | Pruskiemierz | Uchancie | 44 | 54 | ZA 1 H000793380 | WL | 1/1 | ZALAC |
| 842 | 841 | Pruskiemierz | Uchancie | 44 | 48 | KW 41176 | WL | 1/1 | 1 IMBIECZAN |
| 843 | 842 | Pruskiemierz | Uchancie | 44 | 48 | KW 41176 | WL | 1/1 | 1 IMBIECZAN |
| 844 | 843 | Pruskiemierz | Uchancie | 44 | 47 | ZA 1 H000498071 | WL | 1/1 | CH 1 INIANK |
| 845 | 844 | Pruskiemierz | Uchancie | 44 | 46 | KW 40400 | WL | 1/1 | 1 SCYMION |
| 846 | 845 | Pruskiemierz | Uchancie | 41 - Bolesina | 738 | KW 50094 | WL | 1/1 | 1 MARCEK CHYZAN |
| 847 | 846 | Pruskiemierz | Uchancie | 41 - Bolesina | 4842 | 48000000 | WL | 1/1 | 1 MARCEK |
| 848 | 847 | Pruskiemierz | Uchancie | 41 - Bolesina | 4843 | KW 50093 | WL | 1/1 | 1 BOGUSI |
| 849 | 848 | Pruskiemierz | Uchancie | 41 - Bolesina | 4901 | WZ 27202 | WL | 1/1 | 1 WŁADYSŁAW |
| 850 | 849 | Pruskiemierz | Uchancie | 41 - Bolesina | 4900 | 31850000 | WL | 1/1 | 1 BOGUSI |
| 851 | 850 | Pruskiemierz | Uchancie | 41 - Bolesina | 4904 | KW 28228 | WL | 1/1 | 1 KUZ |
| 852 | 851 | Pruskiemierz | Uchancie | 41 - Bolesina | 4901 | KW 24258 | WL | 1/1 | 1 BOGUSI |
| 853 | 852 | Pruskiemierz | Uchancie | 41 - Bolesina | 6551 | | SI | 1/1 | 1 RODZICE-TADEUSZ |
| 854 | 853 | Pruskiemierz | Uchancie | 41 - Bolesina | 6561 | ZA 1 H000793144 | WL | 1/1 | 1 ZBIGNIEW KULIK |
| 855 | 854 | Pruskiemierz | Uchancie | 41 - Bolesina | 489 | ZA 1 H000793144 | WL | 1/1 | 1 ZBIGNIEW KULIK |

The pipeline road is crossing more than 8300 land parcels on the polish side.

To get the right of way, Investor should sign the agreements with all the owners of the mentioned land parcels.

In order to prepare for the land acquisition, a data base of landowners was created.

Thank You for Your attention !

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