NATIONAL TEN-YEAR NETWORK DEVELOPMENT PROPOSAL PUBLIC CONSULTATION

### **2018**



# EUROPEAN NATURAL GAS MARKET OVERVIEW

### NATURAL GAS ACCOUNTS FOR A SIGNIFICANT SHARE OF EUROPEAN ENERGY CONSUMPTION



- O Petroleum and Products
- O Gases
- O Solid Fuels
- O Nuclear
- O Renewables
- Waste, Non-Renewable

#### EU energy mix 2017



Source: EIA, EUROSTAT 2018

### **MAXIMUM SUPPLY POTENTIALS BY SOURCE OF GAS**



Legend

DG: Direct Generation scenario GCA: Global Climate Action scenario EUCO: External scenario produced by **European Commission** 

ST: Sustainable transition scenario

### DECREASING EUROPEAN INDIGENOUS NATURAL GAS PRODUCTION AND INCREASING RUSSIAN IMPORT



### **RUSSIAN IMPORT DOMINATES THE CENTRAL EASTERN EUROPEAN GAS SUPPLY**





### **REGIONAL SUPPLY AND DEMAND TRENDS**



Ukrainian transit distruption scenarios show sensitivity of CEE countries on Russian import source



Figure 3.5: Southern Corridor Yearly Demand Breakdown (historical and forecast)

Source: ENTSOG GRIP Report 2018

CEE and SE region demand forecast shows increasing demand for power generation

### **EUROPEAN GAS HUB PRICES 2018**



- Bullish trend in 2018 due to under-optimized supply over the prolonged winter season.
- Stabile demand for storage injection and diminishing Groningen production supported prices.
- Spread between TTF and other European hubs diminished
- Market hub prices react on the market with same pace.
- The day-ahead average gas price in Hungary in 2018 October was 27.21 EUR/MWh which was 0.76 EUR/MWh higher than CEGH VTP.

Source: Platts, MIBGAS

### **EUROPEAN GAS HUB PRICES 2012-2018**



- 2018 October hub prices are close to 2013 Winter prices.
- Price convergence is supported by incremental capacity development projects as well as the establishment of bidirectional flows across European border points. This makes possible to renegotiate border prices of long term supply contracts.

Source: Platts, MIBGAS

### **TRADED VOLUMES ON HUBS 2012-2017**



- Acer data shows an average 10% annual growth in traded volume both on OTC and Exchange. The rise is the highest at TTF which became the most liquid hub in the past years.
- There is still extensive difference among the hubs in traded volumes despite the price convergence.
- In Hungary shippers trade on both OTC and Exchange market. There was fast growth in traded volume since 2016 however it still lags behind other hubs.
- The goal is to create an integrated European gas market where the liquid hubs offer price and volume flexibility and infrastructures provide alternative routs to deliver gas from A to B.

# **REGIONAL PROJECTS AFFECTING THE HUNGARIAN GAS MARKET**

### **OVERVIEW OF REGIONAL PCI PROJECTS EFFECTING OUR REGION**

#### **PROJECT ROUTE**



#### **PROJECT DESCRIPTION**

Our region is affected by the following two PCI project groups:

- Priority Corridor North-South Gas Interconnections in Central Eastern and South Eastern Europe ("NSI East Gas")
  - Contains group of projects to connect the Polish Swinoujscie and the Croatian Krk LNG terminals vertically
  - The aim is to provide bidirectional route between the related countries to make new sources available in the region

#### Priority Corridor Southern Gas Corridor ("SGC")

- South Caucasus Pipeline (SCPX) Azerbaijan, Georgia
- Trans Anatolian Pipeline (TANAP) Turkey
- Trans Adriatic Pipeline (TAP) Greece, Albania, Italy
- Other related developments
  - BRUA
  - Interconnector Greece-Bulgaria (IGB)
  - Interconnector Bulgaria-Serbia (IBS)



### TRANS ANATOLIAN PIPELINE (TANAP) AND TRANS ADRIATIC PIPELINE (TAP) ENABLES THE ACCESS TO CASPIAN SOURCES

#### **PROJECT ROUTE**





#### **PROJECT DESCRIPTION**

- TAP is part of the Southern Gas Corridor initiative
- The project brings Azeri gas from the Shah Deniz field from the Caspian See and connecting to the Trans Anatolian Pipeline (TANAP) and the South Caucasus Pipeline (SCPX)
- Crossing Turkey, Greece, Albania, Italy
- Realization: 2019 Q4
- More information: <u>https://www.tap-ag.com/</u>

#### SUB-PROJECTS

- 850 km pipeline (Greek section: 550 km, Albanian section: 252 km, Italian section 53 km,)
- Capacity: 1st phase 10 bcma, option for 2nd phase of 20 bcma

#### **IMPACT ON HUNGARY**

- New source will be available for Hungary through GR-BG-RO
- New sources might be available through the planned Ionian Adriatic Pipeline (IAP) and HR>HU

### **BALTIC PIPE PROJECT ENABLES THE ACCESS TO NORWEGIAN PRODUCTION FOR THE CEE REGION**

#### **PROJECT ROUTE**



#### **PROJECT DESCRIPTION**

- Project promoter: Energinet (D) and GAZ-SYSTEM (PL)
- The goal is to supply the CEE market with North Sea sources.
- It will transport gas from the Norwegian fields to the Danish and Polish markets. At the same time, the Project will enable the supply of gas from Poland to Denmark and Sweden.
- Realization: 2022 Q4
- More information: <u>https://www.baltic-pipe.eu/</u>

#### SUB-PROJECTS

- North Sea offshore pipeline,
- Onshore developments in Denmark,
- Compressor station in Denmark,
- The Baltic Sea offshore pipeline,
- Onshore developments in Poland.

#### **IMPACT ON HUNGARY**

 New sources will be available throughout PL>CZ>AT>HU or PL>SK>HU

### LNG TERMINALS FROM CROATIA, GREECE AND POLAND BRING NEW SOURCES TO THE CEE REGION AND THE BALKAN

#### **PROJECT ROUTE** oper



#### **PROJECT DESCRIPTION**

- Projects aim to support supply security and diversification in the CEE region.
- From Krk LNG additional gas supply to Hungary, Slovenia, Austria, Bosnia & Herzegovina or Serbia.
- From Greece LNG additional gas to supply to Italy, Albania or Bulgaria ٠
- From Polish terminal additional gas supply to Slovakia, Czech Republic ٠ and Ukraine

| Croatioan LNG   | Greece LNG   | Poland LN   |
|---|--|---|
| <ul> <li>Capacities:</li> <li>2.6 bcma</li> </ul>                                   | <ul> <li>Capacities:<br/>3-5 bcma</li> </ul>   | Capacities<br>5→7.5 bcr   |
| • Realization: 202  | • Realization: 2020  | Realiza   |
| <ul> <li>Project<br/>information :<br/><u>https://www.lng</u><br/>hr/en/</li> </ul> | <ul> <li>Project<br/>information:</li> <li><u>http://www.gastr</u><br/>ade.gr/en/</li> </ul> | <ul> <li>Projec<br/>inform<br/><u>http://</u><br/>ng.pl/</li> </ul> |

#### **IMPACT ON HUNGARY**

Global LNG sources will be available for Hungary ٠

### IG

ma

- ation: 2020
- nation : /en.polskiel

### EASTERN CORRIDOR: CONNECTING THE MARKETS FROM FINLAND TO GREECE WITH MISSING INFRASTRUCTURE

#### **EASTERN CORRIDOR**

- Finland and the Baltic countries have been isolated markets with higher gas prices
- Market merge creates Eastern Corridor between CEE and Baltic countries with physical connection from Greece to Finland.
- Developments allow trading of non-Russian sources
- Capacities: 2.6 bcma from 2019 Q4
- More information: <u>http://balticconnector.fi/en/</u>



- GIPL project enables the trade of natural gas between Poland and the Baltic countries
- Capacities: 4.5 bcma from 2020 Q4
- More information: <u>http://en.gaz-system.pl/centrum-prasowe/aktualnosci/informacja/artyk</u>ul/202095/



### **POLAND – CZECH REPUBLIC, POLAND– SLOVAKIA PIPELINES CONTRIBUTE TO THE EASTERN CORRIDOR**

#### **PROJECT ROUTE**



#### Tworzeń Tworzeń Tworzeń Pogórska Wola Rzeszow Hermanowice Strachocina Drozdovychi Dolyn SLOVAKIA Veľké Kapušany Uzhgorod

#### **PROJECT DESCRIPTION**

- Project promoter: NET4GAS, s.r.o (CZ), GAZ-SYSTEM S.A. (PL)
- Connection between Kedzierzyn (PL) and Libhošť Hať (CZ/PL),
- Incremental capacity development project (currently it enables 0.5 bcma gas to flow)
- Pipeline development: DN1000, 107 km (CZ 52 km, PL -54 km
- Capacities: PL>CZ 7.5 bmca; CZ>PL -5.2 bcma
- Realization: 2022 Q4
- More information: <u>https://www.net4gas.cz/en/projects/czech-polish-gas-</u> interconnector/
- Project owner: Gaz-System S.A. (PL), Eustream a.s. (SK)
- Project aim is to develop bi-directional cross-border pipeline between Strachocina (PL) and Veľké Kapušany (SK) to support the diversification of sources
- Pipeline development: DN1000, 164 km (PL 58 km, SK -106 km)
- Capacities: Phase I: 4.7 bcma, Phase II: 5.7 bcma
- Realization: 2021
- More information: https://www.eustream.sk/en\_transmissionsystem/en\_pl-sk-interconnector

#### **IMPACT ON HUNGARY**

- New sources will be available throughout the PL > CZ > SK/AT > HU route
- Alternatív route via PL > SK
   > HU
- Price competition may grow

- Competitive gas supply route to UA
- New source will be available throughout PL>SK>HU

### **INTERCONNECTOR GREECE-BULGARIA (IGB), BULGARIA-ROMANIA AND ROMANIA- HUNGARY CREATES THE VERTICAL CORRIDOR**

#### **PROJECT ROUTE**



#### **IMPACT ON HUNGARY**

 Greek LNG, Caspian sources, Eastern Mediterranean and southern sources will be available for Hungary through Bulgaria and Romania.

- New interconnector between Greece and Bulgaria, Bulgaria-Romania, and the Romania-Hungary interconnector provides a new transmission corridor for the region.
- Project aims to support supply security and diversification in the South-East - European and the Central Eastern European region
- Pipeline development: 697.5 km (Romanian section: 529 km, Bulgarian section: 140 km, Greek section:42 km
- Capacities:
  - Greece- Bulgaria: Phase I: 3 bcma, Phase II: 5 bcma
  - Bulgaria Romania: 1.5 bcma
  - Romania- Hungary: 4.4 bcma
- More information: <u>http://www.icgb.eu/home</u> and <u>http://www.transgaz.ro/en</u>

# HUNGARIAN NATURAL GAS DEMAND-SUPPLY BALANCE AND TRANSMISSION SYSTEM

### PRIMARY ENERGY CONSUMPTION AND ELECTRICITY GENERATION IN HUNGARY

#### SOURCES OF DOMESTIC ENERGY PRODUCTION 2017



Nuclear and fossil energy sources dominate the Hungarian domestic energy production



Source: Data of Hungarian Electricity System 2017

### NEW POWER PLANT DEVELOPMENTS LEAD THE DOMESTIC NATURAL GAS CONSUMPTION



### DECREASING PRODUCTION AND FIELD DEVELOPMENTS BY INDEPENDENT E&P COMPANIES DESCRIBE DOMESTIC PRODUCTION



### **DOMESTIC UNDERGROUND STORAGE USAGE**

#### Withdrawal and injection between 2012 and 2018





### HUNGARIAN ENTRY AND EXIT CAPACITIES WITH APPROVED DEVELOPMENTS I.



### HUNGARIAN ENTRY AND EXIT CAPACITIES II.

Entry and exit capacities with ROHU 2nd phase, Croatian, Slovenian and Serbian entry developments



### HUNGARIAN ENTRY AND EXIT CAPACITIES III.

Entry and exit capacities with ROHU 2nd phase, medium Croatian entry and without Ukrainian entry



### **CORRELATION BETWEEN DOMESTIC CONSUMPTION AND TEMPERATURE I.**



### **CORRELATION BETWEEN DOMESTIC CONSUMPTION AND TEMPERATURE II.**



### **DAILY DOMESTIC PEAK CONSUMPTION**



### THE HUNGARIAN SYSTEM COMPLIES WITH N-1 REQUIREMENTS

|         | EP 1 | EP 2 | EP 3 | EP 4 | EP 5 | EP 6 | S <sub>m</sub> +S <sub>str</sub> | P <sub>m</sub> | D <sub>max</sub> | N-1<br>Winter |
|---------|------|------|------|------|------|------|----------------------------------|----------------|------------------|---------------|
| 2018/19 | 14.4 | 12.0 | 0.24 |      |      |      | 79.6                             | 5.1            | 79.5             | 1.40          |
| 2019/20 | 14.4 | 12.0 | 4.8  | 1.2  |      |      | 79.6                             | 4.3            | 79.9             | 1.46          |
| 2020/21 | 14.4 | 12.0 | 4.8  | 1.2  |      |      | 79.6                             | 3.8            | 83.5             | 1.39          |
| 2021/22 | 14.4 | 12.0 | 4.8  | 4.8  | 1.2  | 16.4 | 79.6                             | 2.9            | 86.1             | 1.58          |
| 2022/23 | 14.4 | 12.0 | 12.0 | 4.8  | 1.2  | 16.4 | 79.6                             | 2.6            | 90.7             | 1.58          |
| 2023/24 | 14.4 | 12.0 | 12.0 | 4.8  | 3.6  | 16.4 | 79.6                             | 3.3            | 91.0             | 1.61          |
| 2024/25 | 14.4 | 12.0 | 12.0 | 4.8  | 5.52 | 16.4 | 79.6                             | 3.5            | 93.3             | 1.59          |
| 2025/26 | 14.4 | 12.0 | 12.0 | 4.8  | 5.52 | 16.4 | 79.6                             | 2.8            | 93.3             | 1.58          |
| 2026/27 | 14.4 | 12.0 | 12.0 | 4.8  | 5.52 | 16.4 | 79.6                             | 2.3            | 93.4             | 1.57          |
| 2027/28 | 14.4 | 12.0 | 12.0 | 4.8  | 5.52 | 16.4 | 79.6                             | 1.8            | 93.4             | 1.57          |

EP 1: AT>HU; EP 2: SK>HU; EP 3: RO>HU; EP 4: HR>HU; EP 5: SI>HU; EP 6: SRB>HU;  $S_m+S_{str}$ : Commercial and strategic storage;  $P_m$ : Domestic production;  $D_{max}$ : Domestic consumption

# FGSZ OPERATES THE HIGH PRESSURE HUNGARIAN GAS SYSTEM



IP entry

#### IP exit

#### MAIN PARAMTERS OF THE SYSTEM

- 5,782 km long pipeline network
- Diameter 200-1400 mm
- Operational pressure 40-75 bar
- Daily firm capacity 133 Mcm
- Total compressor capacity: 234 MW
- 25 entry and ~400 exit points on the system

| ENTRY POINTS (MCM/D)      | 2018  | 2022  |  |
|---------------------------|---|---|--|
|                           |   |   |  |
| Beregdaróc (UA>HU):       | 48.0  | 48.0  |  |
| Balassagyarmat (SK>HU):   | 12.1  | 14.4  |  |
| Mosonmagyaróvár (AT>HU):  | 14.4  | 14.4  |  |
| Drávaszerdahely (HR>HU)*: | 19.2*   | 19.2**  |  |
| Csanádpalota (RO>HU)***:  | 0.2   | 12.0  |  |
|                           | Beregdaróc (UA>HU):<br>Balassagyarmat (SK>HU):<br>Mosonmagyaróvár (AT>HU):<br>Drávaszerdahely (HR>HU)*:<br>Csanádpalota (RO>HU)***: | ENTRY POINTS (MCM/D)2018Beregdaróc (UA>HU):48.0Balassagyarmat (SK>HU):12.1Mosonmagyaróvár (AT>HU):14.4Drávaszerdahely (HR>HU)*:19.2*Csanádpalota (RO>HU)***:0.2 | ENTRY POINTS (MCM/D)       2018       2022         Beregdaróc (UA>HU):       48.0       48.0         Balassagyarmat (SK>HU):       12.1       14.4         Mosonmagyaróvár (AT>HU):       14.4       14.4         Drávaszerdahely (HR>HU)*:       19.2*       19.2**         Csanádpalota (RO>HU)***:       0.2       12.0 |

| <ol> <li>Beregdaróc (HU&gt;UA):</li> </ol> | 16.8* | 16.8**** |
|--|-------|----------|
| 2 Balassagyarmat (HU>SK):                  | 4.8 * | 14.4     |
| Siskundorozsma (HU>SRB):                   | 13.2  | 13.2     |
| 4 Drávaszerdahely (HU>HR):                 | 7.2   | 19.2     |
| Csanádpalota (HU>RO):                      | 4.8   | 12.0     |

2018 2022

\*interruptible only

**EXIT POINTS (MCM/D)** 

- \*\*firm part depends on Croatian development
- \*\*\* current capacity, this IP is under development -
- capacity goes up to 4.8 and afterwards to 12.0
- *mcm/d in two phases*
- \*\*\*\* will be firm capacities from 2022

# **PROJECTS UNDER CONSTRUCTION**

### **RO-HU CROSSBORDER CAPACITY DEVELOPMENT, STAGE I.**

#### **PROJECT ROUTE**



- The project has an FID and is under construction.
- The project enables the shipment of natural gas fro Romania to CEE markets.
- Project: Development of a new compressor station at the existing Csanádpalota cross-border point (2 x 5.7 MW)
- Capacity: 1.75 bcma bi-directional cross-border capacity
- The development fulfils the bidirectional reverse-flow requirements of the 1938/2017/EU order.
- Realization: 2019 Q4

# **CONDITIONAL PROJECTS TO BE DEVELOPED IN 2019-2022**



### **RO-HU CROSSBORDER CAPACITY DEVELOPMENT, STAGE II.**

#### **PROJECT ROUTE**



#### **PROJECT DESCRIPTION**

- Condition for realisation is closing the ongoing ROHU Open Season procedure with positive economic test.
- The project enables the increase of shipment of natural gas from Romania from 1.75 bcma to 4.4 bcma, and creates the possibility to transport to other regional countries.
- The NRA conditionally approved the realization of the project based on the results of the open season procedure.
- The offered capacities were overbooked, the open season process is in progress, further details in the Rulebook: <u>https://fgsz.hu/en/transparency-information/main-publications/open-season-ro-hu</u>
- Capacity: 4.4 bcm bi-directional cross- border capacity
- Realization: 2022 Q4

#### SUB-PROJECTS

- New compressor unit at Csanádpalota compressor station (4.5 MW)
- New compressor unit at Városföld compressor station (5.7 MW)
- Modification of North-Eastern Hungarian nods (4 stations: Városföld, Hajdúszoboszló, Nemesbikk, Beregdaróc)
- New compressor station at Dorog (3 x 5.7 MW)
- New compressor unit and replacement of existing compressor bundles at Mosonmagyaróvár compressor station (5.7 MW)
- New pipeline between Kozármisleny-Kaposvár (DN400, PN63, 80 km)
- Modification of central odorization, stage II.

### HUSKAT CROSSBORDER CAPACITY DEVELOPMENT

#### **PROJECT ROUTE**





#### **PROJECT DESCRIPTION**

- The condition for realisation of the project is closing the ongoing HUSKAT capacity allocation procedure with positive economic test. The NRA conditionally approved the realization of the project, based on the results of the procedure.
- The project enables the shipment of different sources (Black Sea production and other sources) of gases from Romania to Slovakia, Czech Republic and Austria.
- The project is being developed by Magyar Gáztranzit, Eustream and Gas Connect Austria within the framework of an "alternative allocation mechanism"
- The HU>SK capacities were overbooked, while there were no demand for the SK>AT capacities, the process is still ongoing. Further details: www.gaztranzit.hu/hu/balmenu/huskat/alternativ-allokaciosmechanizmus/Lapok/default.aspx
- The owner of the system need to develop the automatic direction change mechanism regardless of the results of the HUSKAT procedure. This enables the development of 1.75 non-interruptible capacities in HUSK direction, that fulfils the bidirectional reverse-flow requirements of the 1938/2017/EU order.
- Capacity: 5,2 bcm bi-directional cross- border capacity.
- Realization: 2022 Q4

#### **SUB-PROJECTS**

- Development of Gödöllő junction, with a new metering station.
- Firm bi-directional development of the HU-SK pipeline.
- New compressor units at Szada compressor station (2 x 7.5 MW)

### HU-SRB CROSSBORDER CAPACITY DEVELOPMENT, STAGE I.

#### **PROJECT ROUTE**



- The project is conditional upon a positive FID. The FID is based on the technical discussion with the Serbian TSO and/or on a future binding capacity allocation procedure, approved by the Hungarian NRA.
- The goal of the project is to develop the N-S connection in a bidriectional way. The project together with the IGB and IBS project enables the development of bidirectional connection between the CEE markets and the Bulgarian market and the Greek LNG terminal.
- The project: Kiskundorozsma new metering station and modification of the nod.
- Capacities: Up to 6 bcma new capacity from Serbia to Hungary, if the Serbian TSO can provide 66 bars of border pressure
- Realization : FID+ 1,5 year

### HU-SRB CROSSBORDER CAPACITY DEVELOPMENT, STAGE II.

#### **PROJECT ROUTE**



#### **PROJECT DESCRIPTION**

- In order to meet the capacity demands, conditional on the border pressure, provided by the Serbian project promoter in the Stage I. of the HU-SRB capacity development and the market demand the development of a new pipeline may be needed.
- In case the Serbian project promoter can not provide sufficient border pressure, or the the needed technical capacity is more than 6 bcma, the development of a new pipeline is needed.
- The project is conditional to an FID, that is based on a succesful binding capacity allocation procedure and a positive economic test that is based on a binding capacity allocation procedure approved by the respective NRAs.
- The project, conditional on the demand and the technical content enables the shipment of 6/8.5/10 bcma gas.

#### **SUB-PROJECTS**

#### Option 1:

- Új DN1200 csővezeték, PN75: SRB/HU hatá Kiskundorozsma között, 15 km
- New DN1200 pipeline, PN75: SRB/HU bord Kiskundorozsma, 15 km
- New measuring station at Kiskundorozsma and new
   New junctions
   Kisku
- Required border pressure: 66 bar
- Capacity: 6 bcma
- Realization: FID + 1.5 2 year

#### Option 2:

- határ New DN1200 pipeline, PN75: SRB/HU border-Kiskundorozsma, 15 km
- New measuring station at Kiskundorozsma and new junctions to be planned
  - New compressor station
     Kiskundorozsma 18 MW
  - Capacity: 8.5 bcma
  - Realization: FID + 2.5 3 year

#### Option 3:

- New DN1200 pipeline, PN75: SRB/HU border-Kiskundorozsma, 15 km
- New DN1000 pipeline, PN75: Kiskundorozsma-Városföld, 67 km
- New measuring station at Kiskundorozsma and new junctions
  - Required border pressure: 66 bar
  - Capacity: 10 bcma
  - Realization: FID + 3.5 year

### FIRM UKRAINIAN TRANSMISSION DEVELOPMENT

#### **PROJECT ROUTE**



- The project is conditional upon FID based on a future binding capacity allocation procedure.
- FGSZ currently offers 6.1 bcma (16.8 mcm/day) interruptible capacity to Ukraine
- The development of the project develops the interruptible HU-UA capacities to firm capacities.
- Network Users increase their shipment year-by –year to Ukraine:

| 2015: 0.5 bcma | 2017: 2.8 bcma |
|----------------|----------------|
| 2016: 1.0 bcma | 2018: 3.2 bcma |

- Ukraine can import at least 6.1 bcma gas from on a firm basis to diversify its supply portfolio.
- Project: modification of metering station and junctions
- Realization: 2022 Q3

### HUNGARY-SLOVENIA CROSSBORDER CAPACITY DEVELOPMENT

#### **PROJECT ROUTE**



#### **PROJECT DESCRIPTION**

- The project is conditional upon FID based on a future binding incremental capacity allocation procedure.
- The project develops physical connection between Hungary Slovenia and Italy. The project offers additional sources for Italian and Slovenian markets. Italian sources, including LNG will be available for CEE markets. Hungarian storages will be accessible for Slovenian and Italian markets
- Non-binding market test carried out in October 2018 by FGSZ and Plinovodi.
- Capacities: Phase I: 0.4 bcma, Phase II: 2 bcma or 2.6 bcma
- Commercial operation: Phase I: FID+2 year, Phase II: FID+3.5 year

#### SUB-PROJECTS

- <u>Phase I:</u> Tornyiszentmiklós-Pince pipeline connection (DN600, PN75), Tornyiszentmiklós metering station, Tornyiszentmiklós-Nagykanizsa pipeline (DN600, PN75)
- <u>Phase II option 1:</u> New compressor station at Nagykanizsa (2x 6MW), Nagykanizsa-Kaposvár pipeline (DN600, PN75, 75 km), Kaposvár-Kozármisleny pipeline (DN600, PN75, 79 km)
- <u>Phase II option 2:</u> New compressor station at Nagykanizsa (3x4.5 MW), Nagykanizsa-Kaposvár pipeline (DN600, PN75, 75 km), Kaposvár-Kozármisleny pipeline (DN600, PN75, 79 km), New compressor station at Kozármisleny (for 2x 4MW)

### **SK>HU TRANSMISSION CAPACITY DEVELOPMENT**

#### **PROJECT ROUTE**





- The project is conditional of an FID based on a future binding incremental capacity allocation procedure.
- The project enables extended transmission of gas towards SK>HU direction (600 000 m<sup>3</sup>/h→ 800 000 m<sup>3</sup>/h)
- Development: Development of Balassagyarmat metering station (further clarification needed about Szada compressor station)
- Capacity: 5.2 bcma → 7 bcma
- Realization: FID + 2 years

# PROJECTS ANALYSED, BUT PROPOSED NOT TO BE DEVELOPED

### HAJDÚSZOBOSZLÓ COMPRESSOR STATION DEVELOPMENT

#### **PROJECT ROUTE**



- The project was analysed but is not proposed to be developed
- Replacement of compressor unit might be required for increased domestic flow and Ukrainian reverse flow. Investment depends on export volumes for HU>SK and HU>UA directions.
- Development: compressor unit built in with 7.7 MW power

# **NEW VÁROSFÖLD COMPRESSOR STATION**

#### **PROJECT ROUTE**



- The project was analysed but is not proposed to be developed
- The project enables the shipment of increased volume towards the Western part of Hungary and to the neighbouring countries and reasonability depends on HR>HU entry flow
- Development: New compressor station, close to the existing station

# **VÁROSFÖLD-VECSÉS PIPELINE**

#### **PROJECT ROUTE**



- The project was analysed but is not proposed to be developed
- The project enables the increased shipments from the Southern part of Hungary to Slovakia though transmission route is already available. There is no need for further development up to 600 thm<sup>3</sup>/h capacity as shipments are enabled on existing route after ROHU project realization. Capacity above 600 thm<sup>3</sup>/h requires further developments on Slovak side as well.
- Development: New pipeline between Városföld-Vecsés (DN800, PN75, 76.5 km)

### EASTRING

#### **PROJECT ROUTE**



- The project was analysed but is not proposed to be developed in this maturity phase
- The project enables extended bidirectional transmission of gas towards Slovakia from BG-TR border via Bulgaria, Romania and Hungary
- Capacity: 20 bcma (project available with 10 bcma and 40 bcma as per market demand)
- Connection to the Hungarian system at Városföld or Beregdaróc (with 600 000 m<sup>3</sup>/h capacity)
- Development: Construction of 283 km DN1400 PN100 pipeline between Csanádpalota-Városföld-Vecsés-Balassagyarmat (Option 2 chosen by project promoter eustream and indicated with green)
- Planned operation: 2025 Q1