

HI EAST 4 (Less-advanced)

H2 Interconnection Hungary - Slovakia (repurposing)



**Reasons for grouping [ENTSOG]**

The project group aims at interconnecting future hydrogen infrastructure between Hungary and Slovakia.

The group includes investments in Slovakia (HYD-N-661) and in Hungary (HYD-N-732).

**Objective of the group [Promoter]**

Project will increase the capacity of the HI EAST 5 hydrogen corridor. Slovakia and Hungary. Project will also contribute to development of hydrogen economy in the involved countries. Increased interest in domestic hydrogen production and consumption in both countries is expected since this project will enable access to hydrogen transmission system and allow export and import of hydrogen. With this project Slovakia and Hungary will gain access to North Africa region via Italy and South-East hydrogen corridor GR/BG/RO/HU/SK. North Africa and South-East Europe region have vast RES potential and significant hydrogen quantities are expected to be imported from this region. Project will contribute to diversification of energy sources and supply routes, which would result in increase of energy (hydrogen) supply from third countries and EU member states as well. Project will establish a new hydrogen IP between Slovakia and Hungary. Hydrogen additional capacity in both SK-HU and HU-SK directions will be up to 100 GWh/d. Group is a part of broader pan-European corridor connecting production areas with demand ones.



**HYD-N-661** Adjustment of existing eus pipeline SK-HU

Comm. Year 2040



**HYD-N-732** HU hydrogen corridor IV HU/SK

Comm. Year 2040



## A. Project group technical information [Promoter/ ENTSOG]

### Project technical information [Promoter]

#### Hydrogen Transmission

| TYNDP Project code | Section name           | New / Repurposing | Nominal Diameter [mm] | Section Length [km] | Compressor power [MW] |
|--------------------|------------------------|-------------------|-----------------------|---------------------|-----------------------|
| HYD-N-661          | SK part                | Repurposing       | 800                   | 20                  | 0                     |
| HYD-N-732          | Balassagyartmat-Vecsés | Repurposing       | 800                   | 92                  | 9+20                  |
| HYD-N-732          | Vecsés-Városföld       | New               | 800                   | 76                  |                       |
| HYD-N-732          | Vecsés-Ercsi           | New               | 600                   | 40                  |                       |

### Capacity increment [ENTSOG]

| TYNDP Project code | Point name  | Operator       | From system                         | To system                           | Capacity increment [GWh/d] | Comm. year |
|--------------------|-------------|----------------|-------------------------------------|-------------------------------------|----------------------------|------------|
| HYD-N-661          | H2_IP_SK-HU | eustream, a.s. | Transmission Hungary (HU Hydrogen)  | Transmission Slovakia (SK Hydrogen) | 100                        | 2040       |
| HYD-N-661          | H2_IP_SK-HU | eustream, a.s. | Transmission Slovakia (SK Hydrogen) | Transmission Hungary (HU Hydrogen)  | 100                        | 2040       |
| HYD-N-732          | H2_IP_SK-HU | FGSZ Ltd.      | Transmission Hungary (HU Hydrogen)  | Transmission Slovakia (SK Hydrogen) | 100                        | 2040       |
| HYD-N-732          | H2_IP_SK-HU | FGSZ Ltd.      | Transmission Hungary (HU Hydrogen)  | Transmission Slovakia (SK Hydrogen) | 100                        | 2040       |

## B. Project Cost Information

During the TYNDP 2022 Project Data Collection, promoters were asked to indicate whether their costs were confidential or not. The following tables display the non-confidential costs provided by the promoters (as of December 2022, end of PCI project collection). The amounts provided can differ from the figures used by the project promoters in other contexts, where costs can be updated and/or evaluated using different methodologies or assumptions.

### [ENTSOG]

| TYNDP Project code | CAPEX [M€] | CAPEX range [%] | OPEX [M€/y] | OPEX range [%] |
|--------------------|------------|-----------------|-------------|----------------|
| HYD-N-661          | 1          | 30 %            | 1           | 30 %           |
| HYD-N-732          | 365        | 30 %            | 20          | 30 %           |

#### Description of the cost and range [Promoter]

##### For project HYD-N-661

- CAPEX includes the cost for repurposing of the existing 20 km long pipeline suitable for hydrogen and one ball valve station. No compressors are installed.
- OPEX includes cleaning and diagnostic pigging, maintenance of control valves and ball valves, inspection of insulation, maintenance of cathodic protection

##### For project HYD-N-732

- Description of CAPEX: the cost and range based on pre-feasibility study. During the preparation of TYNDP project submission ACER unit cost was not available for hydrogen project. FGSZ applied ACER based HU NRA guideline unit cost for natural gas 2022 multiplied by 1.3 in case of new pipeline and new compressor unit, in case of repurposed pipeline multiplied by 0.3 and in case of repurposed compressor station multiplied by 0.5.
- Description of OPEX: the most significant impact on operating cost is the energy consumption of compressor stations. OPEX is estimated for max. capacity and electricity price 2022Q4, because FGSZ planned electric driven compressor units.

## C. Project Benefits [ENTSOG]

### C.1 Summary of benefits

This section provides a summarised analysis by ENTSOG of the main benefits stemming from the realisation of the overall group. More details on the indicators are available in Annex D of TYNDP 2022<sup>1</sup>.

#### Distributed Energy

Project group has no benefit. Indeed, it is important to mention that the benefits of this project group are limited due to a competing project group (HI EAST 5, in 2029), located in the same geographical area connecting Slovakia and Hungary via the same route.

#### Sustainability

Project group is not reducing CO2 emissions in reference case and in all disruptions case.

#### Security of Supply:<sup>2</sup>

##### > Reference case

2040 DE- Benefits



2050 DE- Benefits



In the reference case, the project is not contributing to further mitigation of hydrogen demand curtailment risk in average summer and average winter.

##### > Climatic stress cases

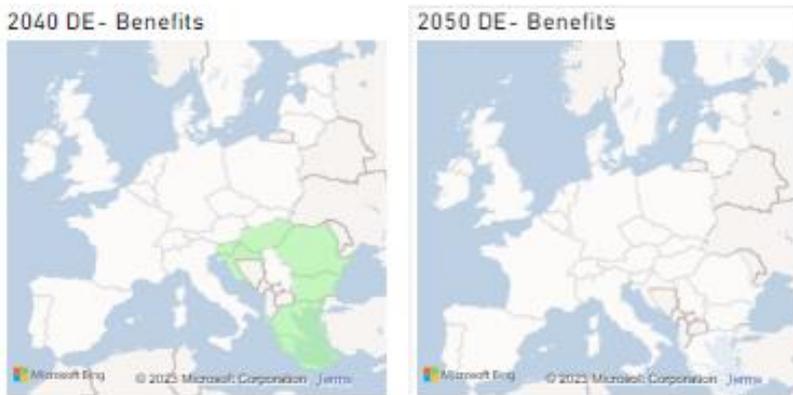
<sup>1</sup> [https://www.entsog.eu/sites/default/files/202304/ENTSOG\\_TYNDP\\_2022\\_Annex\\_D\\_Methodology\\_230411.pdf](https://www.entsog.eu/sites/default/files/202304/ENTSOG_TYNDP_2022_Annex_D_Methodology_230411.pdf)

<sup>2</sup> As for the hydrogen system there is no existing infrastructure level available yet, ENTSOG has identified a possible hydrogen network according to the information provided by promoters in their project submission for the TYNDP/PCI process (i.e., H2 Infrastructure level). Therefore, the System Assessment shows the results that could be reached (for different timestamps) under the hypothesis of a full commissioning of the H2 infrastructure projects that were submitted by project promoters but that are not yet in place. Therefore, even in configurations where no demand curtailment is identified (e.g., average winter in 2030) these results should not be read as an absence of H2 infrastructure needs for the given scenario. On the contrary, the full availability of the planned infrastructures composing the H2 infrastructure level is assumed to avoid the potential demand curtailment.

Under 2 -week and 2-week dunkelflaute climatic stress case, as well as under peak day climatic case the project group is also not showing security of supply benefits.

> Disruption cases (S-1):

Under Ukrainian disruption case, the project group mitigates in Slovenia, Croatia, Hungary, Romania, Bulgaria and Greece, the risk of curtailment by 1-3% in 2040.



> Single largest capacity disruption (SLCD):

From 2040, the project group mitigates risk of demand curtailment in almost all European countries by 1-2%. More benefits are expected in 2050 in Slovakia, Hungary and Croatia by 8%.

Benefits  100% - 20%  20% - 5%  5% - 0%



## Global Ambition

Project group has no benefit. Indeed, it is important to mention that the benefits of this project group are limited due to a competing project group (HI EAST 5, in 2029), located in the same geographical area connecting Slovakia and Hungary via the same route.

## Sustainability

Project group is not reducing CO2 emissions in reference case and in all disruption's cases.

## Security of supply benefits

### > Reference case

2040 DE- Benefits



2050 DE- Benefits



In the reference case, the storage is not contributing to further mitigation of hydrogen demand curtailment risk in average summer and average winter.

### > Climatic stress cases

Under 2 -week and 2-week dunkelflaute climatic stress case, as well as under peak day climatic case the project group is also not showing security of supply benefits.

### > Disruption cases (S-1)

Under Ukrainian disruption case, the project group mitigates in Slovenia, Croatia, Hungary, Romania, Bulgaria and Greece, the risk of curtailment by 3-4% from 2040.

2040 GA- Benefits



2050 GA- Benefits



> Single largest capacity disruption (SLCD)

In 2040, the project group mitigates risk of demand curtailment in almost all European countries by 1-2%.

Benefits  100% - 20%  20% - 5%  5% - 0%

Sum of 2040-GA-DELTA by Country



Sum of 2050-GA-DELTA by Country



## C.2 Quantitative benefits [ENTSOG]

The following tables display all the benefits quantified by ENTSOG through specific indicators and stemming from the realisation of the considered project group.

### CO2 Emissions:

| ModelYear | Disruption    | Scenario | Unit  | Emission Delta | Emission Plus | Emission Minus |
|-----------|---------------|----------|-------|----------------|---------------|----------------|
| 2030      | NO DISRUPTION | DE       | tonne | 0              | 538.677.299   | 538.677.299    |
| 2030      | NO DISRUPTION | GA       | tonne | -5             | 592.910.448   | 592.910.454    |
| 2030      | noLH2         | DE       | tonne | 0              | 540.175.890   | 540.175.890    |
| 2030      | noLH2         | GA       | tonne | 0              | 594.817.481   | 594.817.481    |
| 2030      | noNAh2        | DE       | tonne | 0              | 539.785.356   | 539.785.356    |
| 2030      | noNAh2        | GA       | tonne | 0              | 594.141.433   | 594.141.433    |
| 2030      | noNOh2        | DE       | tonne | 0              | 538.877.198   | 538.877.198    |
| 2030      | noNOh2        | GA       | tonne | 0              | 593.310.994   | 593.310.994    |
| 2030      | noUAh2        | DE       | tonne | 0              | 539.378.772   | 539.378.772    |
| 2030      | noUAh2        | GA       | tonne | 0              | 593.627.618   | 593.627.618    |
| 2040      | NO DISRUPTION | DE       | tonne | 0              | 392.077.044   | 392.077.044    |
| 2040      | NO DISRUPTION | GA       | tonne | 0              | 396.523.252   | 396.523.252    |
| 2040      | noLH2         | DE       | tonne | 0              | 392.213.883   | 392.213.883    |
| 2040      | noLH2         | GA       | tonne | 0              | 397.455.197   | 397.455.197    |
| 2040      | noNAh2        | DE       | tonne | 0              | 392.188.098   | 392.188.098    |
| 2040      | noNAh2        | GA       | tonne | 0              | 397.301.977   | 397.301.977    |
| 2040      | noNOh2        | DE       | tonne | 0              | 392.144.023   | 392.144.023    |
| 2040      | noNOh2        | GA       | tonne | 0              | 397.450.977   | 397.450.977    |
| 2040      | noUAh2        | DE       | tonne | 1.809          | 392.399.183   | 392.397.374    |
| 2040      | noUAh2        | GA       | tonne | 0              | 397.478.498   | 397.478.498    |
| 2050      | NO DISRUPTION | DE       | tonne | 0              | 232.557.735   | 232.557.735    |
| 2050      | NO DISRUPTION | GA       | tonne | 0              | 228.306.707   | 228.306.707    |
| 2050      | noLH2         | DE       | tonne | 0              | 232.557.735   | 232.557.735    |
| 2050      | noLH2         | GA       | tonne | 0              | 228.306.707   | 228.306.707    |
| 2050      | noNAh2        | DE       | tonne | 0              | 232.557.735   | 232.557.735    |
| 2050      | noNAh2        | GA       | tonne | 0              | 228.306.707   | 228.306.707    |
| 2050      | noNOh2        | DE       | tonne | 0              | 232.557.735   | 232.557.735    |
| 2050      | noNOh2        | GA       | tonne | 0              | 228.306.707   | 228.306.707    |
| 2050      | noRU          | DE       | tonne | 0              | 232.557.735   | 232.557.735    |
| 2050      | noRU          | GA       | tonne | 0              | 228.306.707   | 228.306.707    |
| 2050      | noUAh2        | DE       | tonne | 0              | 232.557.735   | 232.557.735    |
| 2050      | noUAh2        | GA       | tonne | 0              | 228.306.707   | 228.306.707    |

**Curtailement Rate (SLCD):**

| Country         | 2030-DE-DELTA | 2030-GA-DELTA | 2040-DE-DELTA | 2040-GA-DELTA | 2050-DE-DELTA | 2050-GA-DELTA |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Belgium         | 0%            | 0%            | -2%           | -1%           | -1%           | 0%            |
| Czechia         | 0%            | 0%            | -2%           | -2%           | -2%           | 0%            |
| Estonia         | 0%            | 0%            | -2%           | -1%           | -2%           | 0%            |
| Finland         | 0%            | 0%            | -2%           | -1%           | -2%           | 0%            |
| Germany         | 0%            | 0%            | -2%           | -1%           | -1%           | 0%            |
| Latvia          | 0%            | 0%            | -2%           | -1%           | -1%           | 0%            |
| Lithuania       | 0%            | 0%            | -2%           | -1%           | -1%           | -1%           |
| Poland          | 0%            | 0%            | -2%           | -1%           | -1%           | 0%            |
| Portugal        | 0%            | 0%            | -2%           | -1%           | 0%            | 0%            |
| Slovenia        | 0%            | 0%            | -2%           | -1%           | -1%           | 0%            |
| Sweden          | 0%            | 0%            | -2%           | -1%           | -2%           | 0%            |
| Switzerland     | 0%            | 0%            | -2%           | -1%           | -1%           | -1%           |
| France          | 0%            | 0%            | -2%           | -1%           | -1%           | 0%            |
| The Netherlands | 0%            | 0%            | -1%           | -1%           | -2%           | 0%            |
| Austria         | 0%            | 0%            | -1%           | -1%           | -2%           | 0%            |
| Croatia         | 0%            | 0%            | -1%           | 0%            | -8%           | 0%            |
| Denmark         | 0%            | 0%            | -1%           | -1%           | -1%           | 0%            |
| Hungary         | 0%            | 0%            | -1%           | 0%            | -8%           | 0%            |
| Italy           | 0%            | 0%            | -1%           | -1%           | -2%           | 0%            |
| Slovakia        | 0%            | 0%            | -1%           | 0%            | -8%           | -1%           |
| Spain           | 0%            | 0%            | -1%           | -1%           | -1%           | 0%            |

**Curtailement Rate (Climatic Stress):**

| SimulationPeriod | Country  | 2030-DE-DELTA | 2030-GA-DELTA | 2040-DE-DELTA | 2040-GA-DELTA | 2050-DE-DELTA | 2050-GA-DELTA |
|------------------|----------|---------------|---------------|---------------|---------------|---------------|---------------|
| Average2W        | Austria  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Belgium  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Bulgaria | 0%            | 0%            | 0%            | -1%           | 0%            | 0%            |
| Average2W        | Croatia  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Cyprus   | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Czechia  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Denmark  | 0%            | 0%            | 0%            | -1%           | 0%            | 0%            |
| Average2W        | Estonia  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Finland  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | France   | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Germany  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Greece   | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Hungary  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Ireland  | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Italy    | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |
| Average2W        | Latvia   | 0%            | 0%            | 0%            | 0%            | 0%            | 0%            |

|             |                 |     |    |    |     |    |     |
|-------------|-----------------|-----|----|----|-----|----|-----|
| Average2W   | Lithuania       | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Luxembourg      | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Malta           | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Poland          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Portugal        | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Romania         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Serbia          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Slovakia        | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Slovenia        | 0%  | 0% | 0% | -1% | 0% | 0%  |
| Average2W   | Spain           | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Sweden          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | Switzerland     | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | The Netherlands | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2W   | United Kingdom  | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Austria         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Belgium         | -1% | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Bulgaria        | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Croatia         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Cyprus          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Czechia         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Denmark         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Estonia         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Finland         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | France          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Germany         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Greece          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Hungary         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Ireland         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Italy           | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Latvia          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Lithuania       | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Luxembourg      | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Malta           | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Poland          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Portugal        | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Romania         | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Serbia          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Slovakia        | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Slovenia        | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Spain           | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Sweden          | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | Switzerland     | 0%  | 0% | 0% | 0%  | 0% | -1% |
| Average2WDF | The Netherlands | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| Average2WDF | United Kingdom  | 0%  | 0% | 0% | 0%  | 0% | 0%  |
| DC          | Austria         | 0%  | 0% | 0% | 0%  | 0% | 0%  |

|    |                 |    |    |    |    |     |    |
|----|-----------------|----|----|----|----|-----|----|
| DC | Belgium         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Bulgaria        | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Croatia         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Cyprus          | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Czechia         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Denmark         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Estonia         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Finland         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | France          | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Germany         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Greece          | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Hungary         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Ireland         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Italy           | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Latvia          | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Lithuania       | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Luxembourg      | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Malta           | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Poland          | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Portugal        | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Romania         | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Serbia          | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Slovakia        | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Slovenia        | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Spain           | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Sweden          | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | Switzerland     | 0% | 0% | 0% | 0% | -1% | 0% |
| DC | The Netherlands | 0% | 0% | 0% | 0% | 0%  | 0% |
| DC | United Kingdom  | 0% | 0% | 0% | 0% | 0%  | 0% |

## D. Environmental Impact [Promoter]

Any gas infrastructure has an impact on its surroundings. This impact is of particular relevance when crossing some environmentally sensitive areas. Mitigation measures are taken by the promoters to reduce this impact and comply with the EU and National regulations.

| TYNDP Code | Type of infrastructure | Surface of impact | Environmentally sensitive area |
|------------|------------------------|-------------------|--------------------------------|
| HYD-N-661  | N/A                    | N/A               | N/A                            |
| HYD-N-732  | N/A                    | N/A               | N/A                            |

| Potential impact | Mitigation measures | Related costs included in project CAPEX and OPEX | Additional expected costs |
|------------------|---------------------|--|---------------------------|
| HYD-N-661        | N/A                 | N/A  | N/A                       |
| HYD-N-732        | N/A                 | N/A  | N/A                       |

### Environmental Impact explained [Promoter]

#### SK part

This project uses the repurposed natural gas pipeline. No compressor station, no noise emissions on SK side are foreseen. Considering the relief of the country, no investments in anti-flooding measures are expected nor landslide remediation measures

Environmental impact is expected only during the construction phase.

#### HU part

This project uses partially the repurposed natural gas pipeline and compressor station, and new pipeline sections and new compressor unit as well.

All new pipelines will be built parallel with existing ones. Environmental impact on the Hungarian side is expected only during the construction phase, but not envisaged major difficulties. In case of repurposing the environmental impact is more modest. Compressor will be electricity driven compressor.

## E. Other benefits [Promoter]

Missing benefits are all benefits of a project which may be not captured by ENTOSOG analysis.

As a necessary condition a missing benefit cannot have discrepancies with the benefits already covered by the assessment run by ENTOSOG and this condition needs to be proved and justified.

### Description of Other benefits [Promoter]

#### SK part

- Project will give positive signals to the future hydrogen market development and could decrease uncertainty of other parts of hydrogen value chain to further invest into the hydrogen industrial technology or final customers' appliances.
- Connecting the project to another production area reduces Europe's dependence on a limited number of hydrogen producers with a positive impact on sustainability, hydrogen availability and affordability.

#### HU Part

- Along the pipeline route hydrogen producers will have the possibility to establish electrolyzer and hydrogen entry points in both countries.
- The project group will help development of hydrogen economy in Central part of Hungary.
- Together with HI EAST 4 creates the RO>HU>SK hydrogen corridor and the South-Eastern EU region excess H2 supply from TR, GR, BG and RO can be delivered towards Slovakia and downstream countries, and also possible to deliver H2 from the Slovak system toward HU, RO, BG.

## F. Useful links [Promoter]

### Useful links:

HU/SK hydrogen corridor: [FGSZ Földgázz szállító Alcím dia 1](#)

[Central European Hydrogen Corridor \(cehc.eu\)](#)

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