

Request for granting an exemption from the obligation to enable permanent physical bi-directional capacity at the IP Cieszyn



CONTENT

I.	Summary.....	3
II.	Cost-benefit Analysis in line with Article 5 (5) of the SoS-Regulation	3
A.	Assessment of Market Demand.....	3
B.	Projections for Demand and Supply	5
1.	Development of Annual Natural Gas Demand in the Czech Republic.....	5
2.	Development of Maximum Daily Natural Gas Demand in the Czech Republic	6
3.	Development of Supplies into the Czech Republic.....	8
C.	The Possible Economic Impact on Existing Infrastructure.....	9
D.	Feasibility Study	10
1.	Existing Capacity.....	10
2.	Technical Solution Securing Reverse Flow	10
3.	Securing the Necessary Capacity and Commodity Volumes to Reduce Dependence on Russian Gas Supplies.....	12
E.	The Costs of Bi-directional Capacity of Stork I Including the Necessary Reinforcement of the Transmission System	12
F.	The Benefits to the Security of Gas Supply Taking into Account the Possible Contribution of Bi-directional Capacity to Meet the Infrastructure Standard	13
1.	N-1 analyses	13
2.	Regional Risk Assessments of Risk Groups.....	14
III.	Conclusion	17
IV.	Consultation with Potentially Concerned TSOs.....	18
	Overview of potential technical solutions for reverse flow at IP Cieszyn.....	19

I. Summary

Using this document NET4GAS, s.r.o (“NET4GAS”) and Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. (“GAZ-SYSTEM”) apply, each individually on the respective side of the border, for granting an exemption from the obligation to enable permanent physical bi-directional capacity at the IP Cieszyn according to Art. 5 par. 4 lit. b) of Regulation (EU) 2017/1938 (“SoS-Regulation”).

NET4GAS, the transmission system operator of the Czech Republic, and GAZ-SYSTEM, the Polish transmission system operator, cooperated jointly on a preparation of the presented request for exemption. The request is based on the elements set out in Art. 5 par. 5 of the SoS-Regulation. NET4GAS and GAZ-SYSTEM apply for granting an exemption from the obligation to enable permanent physical bi-directional capacity at the IP Cieszyn/Český Těšín by the end of 2025.

(The results will be completed after the consultation).

II. Cost-benefit Analysis in line with Article 5 (5) of the SoS-Regulation

A. Assessment of Market Demand

Both transmission system operators (“TSOs”) - Czech NET4GAS and Polish GAZ-SYSTEM, regularly assess the market demand at the Cieszyn/Český Těšín cross border point, since the STORK I pipeline was put into operation in 2011.

NET4GAS carried out a non-binding market survey with the aim of identifying additional market-oriented demand for capacity in the beginning of 2016. The submitted requests concerned transmission between the Czech Republic and the German (former Gaspool market area), Slovak, and Austrian markets. None of the demands concerned transmission from Poland to the Czech Republic. This fact was also presented in the “Application for Exemption from the Requirement to Enable Bidirectional Capacity at the Cieszyn Cross-Border Point, STORK I Pipeline” from 2016.

The first incremental capacity assessment according to CAM NC was made in 2017:

<https://www.entsog.eu/capacity-allocation-mechanisms-nc#incremental-capacity-process-2017-demand-assessment>.

In accordance with the CAM NC both TSOs, NET4GAS and GAZ-SYSTEM, launched the second incremental capacity process as a result of non-binding market demand assessment in 2019. In compliance with CAM NC¹, both TSOs offered a bundled offer level of incremental capacity at IP Cieszyn/Český Těšín in the Polish-Czech Interconnection project at the annual capacity auction on 5 July 2021 in the amount of 1 270 000 kWh/h in the direction from Poland towards the Czech Republic. No amount of incremental

¹ The procedure was carried out in accordance with the Regulation (EU) 2017/459 (CAM NC) and on the basis of approval of the incremental capacity project made by decisions of the respective national regulatory authorities (decision of the President of the Polish Energy Regulatory Office No. DRR.WRG.748.9.2020.ABu1 on 29 April 2021 for Poland and decision of the Czech Energy Regulatory Office 09654-15/2020-ERU on 5 May 2021 for the Czech Republic).

capacity was booked by any market participant in the abovementioned annual capacity auction and therefore the economic test ended with a negative result on both sides of the Polish-Czech border.

The project was terminated according to Art. 22(3) of CAM NC as no offer level resulted in a positive outcome of the economic test, thus the specific incremental capacity process was terminated. For more details on the MDAR for the incremental process 2019-2021 please see:

NET4GAS: <https://www.net4gas.cz/en/customers/products-services/new-transmission-capacity/czech-polish-connection/>

GAZ-SYSTEM: <https://www.gaz-system.pl/en/for-media/press-releases/archives/information-on-the-completion-of-the-procedure-initiated-in-2019-for-incremental-capacity-for-the-border-between-poland-and-the-czech-republic-incremental-2019-2021.html>

The third market demand assessment within the incremental capacity process was running from 5 July to 30 August 2021, both TSOs received non-binding demand indications for firm capacity at the IP between the entry-exit system of GAZ-SYSTEM (Poland) and the entry-exit system of NET4GAS (Czech Republic). The indications were similar to the 2019 MDAR process.

The market demand assessment report (MDAR) for incremental capacity between the Czech Republic and Poland was published on 25 October 2021 at the following links:

NET4GAS: <https://www.net4gas.cz/en/customers/products-services/new-transmission-capacity/incremental-capacity-process-2021/>

GAZ-SYSTEM: <https://www.gaz-system.pl/dam/jcr:9932feec-b965-4e06-9551-70293a0d6ed3/20211025-mdar-2021-pl-cz-gaz-system-n4g-final.pdf>

Indications submitted to each TSO were not equal due to the fact that not all market participants decided to submit indications on both sides of the entry-exit system border.

Based on the abovementioned MDAR procedure NET4GAS in cooperation with GAZ-SYSTEM launched the incremental capacity process and prepared the proposal for the incremental capacity project for the border between the Czech Republic and Poland that was consulted with the market participants in the period from January 17 to March 17, 2022. During further preparatory phase of the project, on 16 March 2022 the Court of Justice of the European Union issued a judgment in joined cases T-684/19 and T-704/19, which recognised the inapplicability of the provisions of chapter V of the NC CAM under Article 277 TFEU due to the lack of delegation for the Commission in Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks to adopt a network code governing the process of obtaining incremental capacity. Consequently, the Court annulled the decision of the ACER Appeal Board. The judgment has not been appealed and is therefore final.

Due to different interpretation on the aforementioned judgment, coordinated decision of Czech and Polish regulatory bodies for a project accordingly with the NC CAM incremental provisions was not possible, thus the 2021-2023 incremental capacity process for the border between Poland and the Czech Republic was considered as finished.

For more information, please see announcements on the incremental process published by NET4GAS and GAZ-SYSTEM.

NET4GAS: <https://www.net4gas.cz/en/customers/products-services/new-transmission-capacity/incremental-capacity-process-2021/>

GAZ-SYSTEM: <https://www.gaz-system.pl/en/for-customers/market-consultations/incremental-procedure.html>

NET4GAS performed a new market demand assessment from 3 July until 28 August 2023. The non-binding assessment of market demand was carried out in accordance with the national legislation. No demand indication was received.

NET4GAS: <https://www.net4gas.cz/en/customers/products-services/new-transmission-capacity/incremental-capacity-process-2023/>

GAZ-SYSTEM started the non-binding assessment of market demand for incremental capacity from 3 July until 28 August 2023 according to Chapter V of CAM NC. No demand indication was received.

GAZ-SYSTEM: <https://www.gaz-system.pl/en/for-customers/market-consultations/incremental-procedure.html>

B. Projections for Demand and Supply

1. Development of Annual Natural Gas Demand in the Czech Republic

The estimate of the development of annual gas demand in the Czech Republic was taken over from the latest available Report on Future Expected Electricity and Gas Consumption and on the Method of Ensuring the Balance between Electricity Supply and Demand published by OTE link: https://www.ote-cr.cz/cs/o-spolocnosti/vyrocnizpravy?set_language=cs).

The Report states that important factors for estimating the future development of gas consumption in the Czech Republic are the increasing tendency of replacing lignite with gas in the heating, industry and household sectors. Furthermore, the use of gas for electricity generation and, last but not least, the use of gas in transport in the form of CNG and LNG are also taken into account. The determination of total gas consumption is given by the sum of all these segments (households, industry, heating, electricity and transport) plus gas distribution losses.

In the tables 1 and 2 and Graph 1 is presented historical consumption, including an estimate of gas consumption until 2033.

Table 1: Historical Gas Consumption in the Czech Republic in the years 2013 – 2022

(GWh/y)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Households	26 279	21 253	23 123	25 309	25 902	24 279	23 200	23 984	25 820	21 556
Industry sector	48 463	45 761	46 876	48 087	51 056	48 089	48 539	48 596	53 272	51 397
Transport	176	318	463	634	721	752	799	1 025	1 124	1 423
Heating Plants	12 293	10 527	10 466	11 036	9 569	9 262	9 385	9 993	10 981	10 068
Power Plants	1 089	475	1 352	3 723	3 481	3 615	7 182	9 343	10 455	7 519
Distribution losses	1 512	1 548	1 492	1 424	1 186	1 132	1 124	931	966	911
TOTAL	89 811	79 882	83 772	90 213	91 914	87 129	90 230	93 873	102 618	92 874

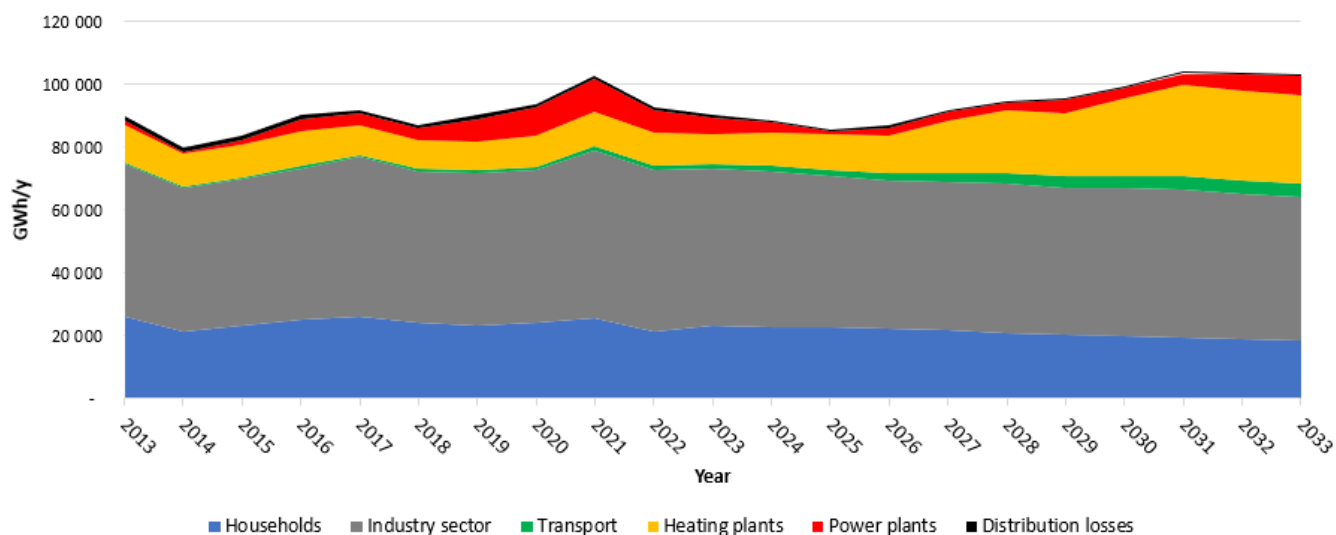
Source: OTE

Table 2: Prognosis of Annual Gas Consumption in the Czech Republic between the years 2023-2033

(GWh/y)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Households	23 408	22 985	22 559	22 098	21 631	21 117	20 601	20 093	19 250	18 872	18 499
Industry sector	49 742	49 248	48 110	47 155	47 412	47 495	46 531	46 968	47 446	46 519	45 617
Transport	1 665	1 903	2 182	2 478	2 884	3 256	3 624	3 847	4 011	4 168	4 367
Heating Plants	9 424	10 626	11 250	11 788	16 410	20 135	20 074	24 633	29 012	28 525	28 046
Power Plants	5 327	3 136	945	2 740	3 001	2 184	4 147	3 545	3 766	5 025	6 281
Distribution losses	841	770	699	629	558	500	500	500	500	500	500
TOTAL	90 408	88 668	85 746	86 888	91 896	94 688	95 477	99 586	103 984	103 608	103 310

Source: OTE

Graph 1: Historical Gas Consumption and Prognosis of Gas Consumption in the Czech Republic between the years 2013-2033



Source: OTE

2. Development of Maximum Daily Natural Gas Demand in the Czech Republic

The prognosis of the maximum daily consumption of gas in the Czech Republic for years 2024-2033 is based on so called the worst possible scenario. Therefore, the prognosis includes the highest actual demand from one day with the extraordinary high consumption, which occurs with the statistical probability once in 20 years (in the Czech Republic it was 23rd January 2006), which is adjusted by all planned projects with final and expected investment decision, which would increase daily demand in the Czech Republic over the next ten years. Planned projects always enter the analysis by their first full calendar year of operation and are taken from the Ten-Year Network Development Plan of the Transmission System in the Czech Republic 2024-2033 draft (TYNDP) which was published for consultation in June 2023.

The following Table 3 shows the estimate of the evolution of the maximum daily gas demand in the Czech Republic in the period 2024-2033. Graphical depiction of the prognosis of the maximum daily demand trend in the Czech Republic can be found in Graph 2.

Table 3: Estimate of Maximum Daily Gas Consumption in the Czech Republic between the Years 2024-2033

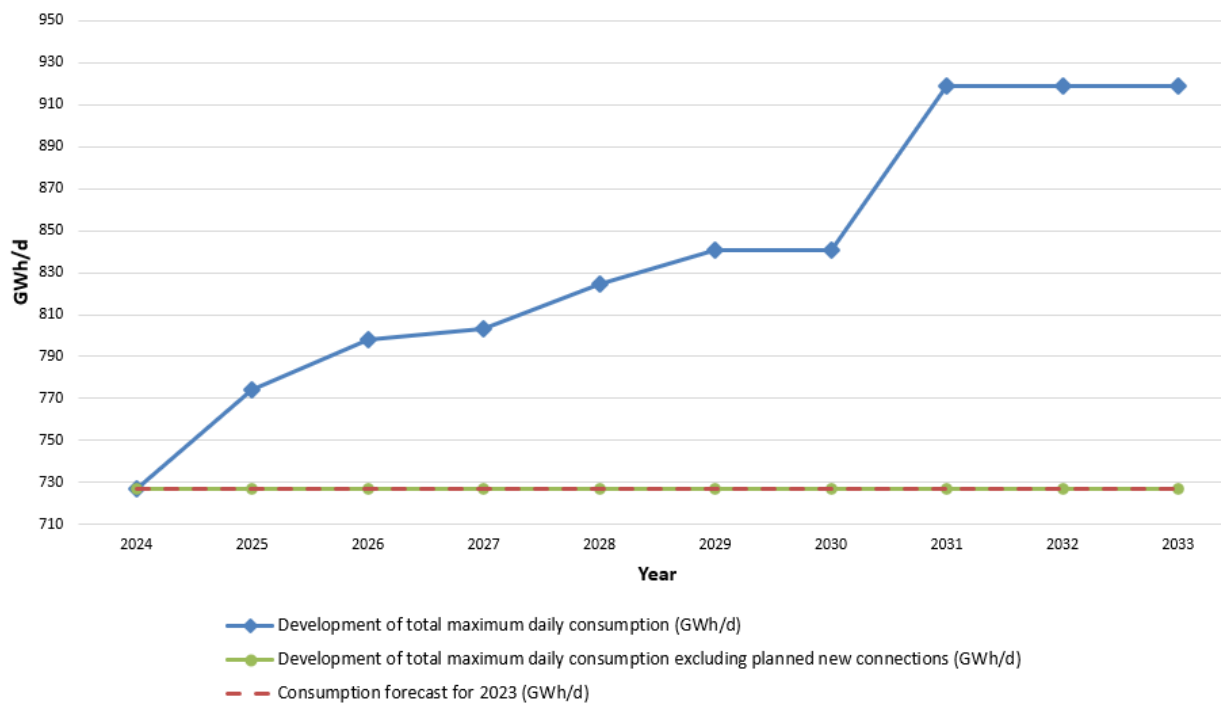
(GWh/d)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Evolution of the total maximum daily consumption ^{a)}	727,0	773,9	797,9	803,1	824,7	840,7	840,7	919,1	919,1	919,1
Evolution of the total maximum daily consumption excluding planned new connections from the TYNDP 2024-2033 draft	727,0	727,0	727,0	727,0	727,0	727,0	727,0	727,0	727,0	727,0

Note:

^{a)} Includes the planned new connections to the transmission system which are part of the TYNDP 2024-2033 draft which was published for consultation in June 2023.

Source: NET4GAS

Graph 2: Estimated development of Max. Daily Gas Consumption in the Czech Republic in the Years 2024-2033



Source: NET4GAS

3. Development of Supplies into the Czech Republic

NET4GAS does not have access to gas supply contracts for the Czech customers and therefore it can provide an analysis of neither current nor future supplies into the Czech Republic. Nevertheless, one of the tasks of the TYNDP prepared annually by transmission system operator (TSO) is to analyse the adequacy of the total entry capacity of the transmission system for national consumption. The TSO therefore compared the maximum daily entry (offtake) capacity of the transmission system for the daily consumption of the Czech Republic (a sum of entry capacities of the transmission system for national consumption established on the basis of contractual obligations between the transmission system operator and the distribution system operators and directly connected customers) with the figures of the outlook for the maximum daily consumption in the Czech Republic. Comparing these parameters, it can be concluded that the contractual offtake capacity for national consumption is sufficient for the next ten years (2024-2033) to cover the maximum daily consumption of the Czech Republic determined within the worst-case scenario (defined in Chapter 2). The total entry capacity of the transmission system for national consumption provides adequate flexibility to increase gas supplies to the Czech Republic in the coming years, if necessary, for example by estimating the development of annual gas consumption from the Report on Future Expected Electricity and Gas Consumption and Balancing Supply and electricity and gas demand published by OTE. This is one of the most important prerequisites for the functioning of the gas market.

Table 4: Development of the Use of the Entry Capacity of the Transmission System for the Needs of the Czech Republic in the Years 2024-2033

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Max. daily entry capacity for domestic consumption (GWh/d)	1 123,2	1 164,1	1 169,2	1 174,3	1 193,0	1 193,0	1 193,0	1 193,0	1 193,0	1 193,0
Development of the total maximum daily consumption (GWh/d)	727,0	773,9	797,9	803,1	824,7	840,7	840,7	919,1	919,1	919,1
Maximum usage (%)	64,7	66,5	68,2	68,4	69,1	70,5	70,5	77,0	77,0	77,0

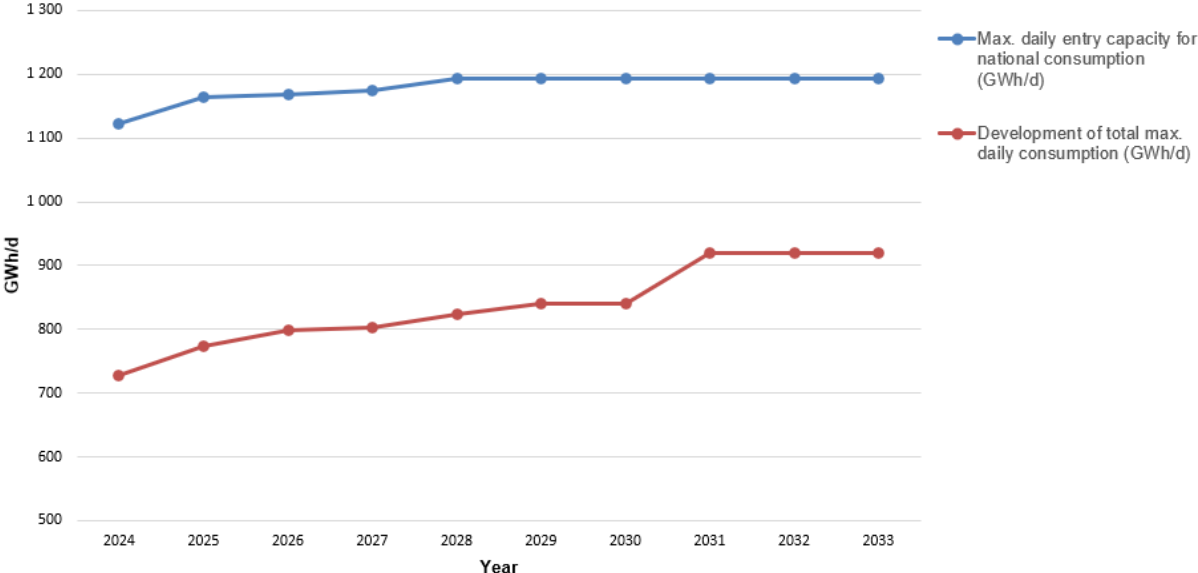
Note:

It is the sum of the entry technical capacities of the transmission system for national consumption determined on the basis of contractual obligations between the transmission system operator and the distribution system operators.

The maximum daily entry capacity for national consumption includes the planned connections to the transmission system with FID which are part of the TYNDP 2024-2033 draft which was published for consultation in June 2023.

Source: NET4GAS

Graph 3: Development of the Use of the Entry Capacity of the Transmission System for the Needs of the Czech Republic in the Period 2024-2033



Source: NET4GAS

C. The Possible Economic Impact on Existing Infrastructure

The Czech gas transmission system operator NET4GAS and the Polish gas transmission system operator GAZ-SYSTEM have in the past repeatedly surveyed shippers' interest in increasing capacity of gas transmission via IP Cieszyn/ Český Těšín including their interest in reverse-flow supply at this IP (as described in chapter A). However, any interest in increasing capacity, including reverse-flow capacity from Poland to the Czech Republic, has not yet been confirmed in the binding annual auction. Since an investment for enabling bi-directional capacity between the Czech Republic and Poland is not required by the market, this would require a coordinated decision on cost allocation before any investment decision to enable bi-directional capacity is taken (Article 5 para. 7 of SoS-Regulation). The cost allocation shall consider the principles described and the elements of the contained in Article 12 para. 4 of Regulation (EU) No 347/2013, in particular the proportion of the benefits of the infrastructure for the increase of the security of gas supply of the Member States concerned as well as investments already made in the infrastructure in question.

In order to meet the requirement of providing permanent physical bi-directional capacity TSOs looked for a solution allowing to ensure firm reverse-flow capacity from Poland to the Czech Republic. Polish TSO based on the currently ongoing investment in the Polish Transmission System has checked the possibility to provide permanent flow towards Czech Republic at the IP Cieszyn / Český Těšín, taking into account the network pressure in the Cieszyn region for emergency situations and the shortest perspective possible.

To ensure transporting of gas at the existing IP Cieszyn/ Český Těšín on a firm basis in the direction towards NET4GAS system, it was indicated that already ongoing construction of Sławków (Tworzeń) - Oświęcim gas pipeline and expansion of Compressor Station Kędzierzyn with the compressor unit are required on the Polish side. Both investments in the Polish Transmission System are included in GAZ-SYSTEM's Ten-

Year Network Development Plan 2022-2031 and draft of TYNDP 2024-2033 under President of Polish Energy Regulatory Office approval and are planned for commissioning in 2024.

The Czech transmission infrastructure would require infrastructure changes. To allow reverse-flow on the Czech side possible technical measures were identified (for details please see the Attachment) such as building of a new interconnecting pipeline including flow and pressure regulation and in two scenarios additional compression is needed near Třanovice municipality. Currently, negotiations with the Ministry of Industry and Trade have been started to find the most appropriate solution for the security of supply of the Czech customers.

Based on the above-written, it can be also assumed that the investment on the Czech side would be most probably allocated to the Czech national regulatory asset base (RAB) in a full range. The Polish part is already approved within the Polish TYNDP as it is necessary from the intrastate point of view. The possibility to supply the Czech market in case of emergency thus will change into the firm capacity on Polish side as a result of the already ongoing development of Polish Transmission System.

D. Feasibility Study

1. Existing Capacity

Existing capacity (IP Cieszyn, CZ/PL border)

Currently the Czech gas transmission system is connected with the Polish gas transmission system via STORK I pipeline. Capacity at the IP Cieszyn is allocated as a result of Open Season Procedure until gas year 2025/2026 on the Polish side. Technical parameters of the existing STORK I cross-border pipeline (DN500 PN63 pipeline Třanovice (CZ) – Cieszyn (CZ/PL) – Skoczow (PL)):

Border delivery pressure:

2.6 MPa in the summer (May – September)

4.5 MPa in the winter (October – April).

Pipeline diameter: DN 500

Technical capacity in the direction Czech Republic – Poland at 0 °C:

Winter: 104 000 m³/h

Summer: 15 800 m³/h

Annual volume: Approximately 587 million m³

Technical capacity in the direction Poland → Czech Republic:

There is no firm capacity offered in the direction from PL to CZ. Based on a concluded interconnection agreement between both TSOs transmission could take place in this direction in emergency situations at a reduced pressure of 1.7 MPa. Amount is to be agreed on operational level.

2. Technical Solution Securing Reverse Flow

To enable permanent physical bi-directional capacity at the IP Cieszyn and to allow firm transmission of gas in the direction from Poland to the Czech Republic GAZ-SYSTEM needs to complete two ongoing investments in the Polish transmission system:

- Sławków (Tworzeń)- Oświęcim (project completion scheduled for December 2024),
- Expansion of TG Kędzierzyn with the compressor unit (project completion scheduled for January 2024).



As of beginning of 2025 it could be possible to provide firm capacities towards the Czech Republic allowing to enable permanent physical bi-directional capacity at the IP Cieszyn.

Technical capacity in the direction Poland → Czech Republic at 0 °C:

Summer: 67 000 m³/h by delivery pressure (gauge) 1,7 MPa

Winter: 40 000 m³/h by delivery pressure (gauge) 1,7 MPa

Annual volume: 449 544 000 m³

For enabling reverse flow at IP Cieszyn, there are three possible technical measures on the Czech side. The details are described in the Attachment (Overview of potential technical solutions for reverse flow at IP Cieszyn).



3. Securing the Necessary Capacity and Commodity Volumes to Reduce Dependence on Russian Gas Supplies

Gas flows in Europe have changed dramatically from the beginning of 2022 and securing the reverse flow from Poland to the Czech Republic has taken on a completely different aspect. The Czech Republic is looking for a safe and reliable solution that will enable to diversify supply sources and routes. The responsibility to secure the diversification of gas supplies stays with the market (traders) and the government (the Czech Ministry of Industry and Trade in particular). Whatever solution they will find appropriate, NET4GAS is ready to secure transmission of such gas in any direction and, if necessary, to build the needed infrastructure with clear cost recovery.

In the overall context of securing the reverse gas flow via a physical interconnection point between Poland and the Czech Republic, there are two possible ways/routes to secure potential direct flow from LNG terminals in Poland and from Baltic Pipe.

The first one is via existing IP Cieszyn/Český Těšín, which is described in the broader context in this document as a solution enabling to provide firm transmission of gas from Poland to the Czech Republic.

Another option is via building of new IP Hat' (project known as STORK II) being in discussion between governments of the Czech Republic and Poland after the start of Russian invasion against Ukraine. This solution is however out of the scope of the current request for an exemption and will be the subject of further intergovernmental/ministerial discussions.

E. The Costs of Bi-directional Capacity of Stork I Including the Necessary Reinforcement of the Transmission System

Investment costs on the Czech side (STORK I Reverse-Flow project):

Stage 1 – no compressor station, amount which can be taken over in the exceptional state of emergency	EUR 5.4 million
Stage 2A – small compressor station, firm capacity (DSO and SSO commitment is needed)	EUR 14.7 million
Stage 2B – multi-stage compressor station, firm capacity (no need of DSO and SSO commitment)	EUR 22.2 million

Details of the investment costs are mentioned in the Attachment.

Investment costs on Polish side (STORK I Reverse-Flow project):

Sławków (Tworzeń) - Oświęcim	EUR 93.3 million
Expansion of TG Kędzierzyn with the compressor unit	EUR 28.8 million
Total costs	EUR 122.1 ² million

Both above-mentioned investments on the Polish side already have final investment decisions, thus no cross-border cost allocation is expected to be applied on the Czech customers.

F. The Benefits to the Security of Gas Supply Taking into Account the Possible Contribution of Bi-directional Capacity to Meet the Infrastructure Standard

The analysis of security of gas supply described below is based on several aspects. First the analysis of the Czech existing infrastructure standard N-1 and the impact of reverse flow capacity from Poland to the Czech Republic on N-1 calculation. Second, common risk assessment of risks groups of which is the Czech Republic as benefiting country of reverse-flow, a member.

In the Czech Republic, the competent authority providing measures based on the SoS-Regulation, is the Ministry of Industry and Trade.

1. N-1 analyses

The infrastructure standard N-1, as defined in Annex II in the SoS-Regulation, describes the ability of the technical capacity of the gas infrastructure to satisfy total gas demand in the calculated area in the event of disruption of the single largest gas infrastructure during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years. As per Annex II of the SoS-Regulation the results of the N-1 formula shall be equal to the minimum of 100%.

The Table 5 shows that the Czech Republic meets the minimum requirement of Regulation (EU) 2017/1938 of the European Parliament and of the Council between 2024 and 2033 and exceeds it by approximately 270% at the end of this period. We expect that in the long-term horizon (2024-2033) the Czech infrastructure standard N-1 will remain at a very high level and the assumption for ensuring security of supply will thus be met. The realization of reverse-flow at the IP Cieszyn/Český Těšín would increase the already high level of N-1 just by 2.5% (in the summer capacity scenario). We expect the minimum requirement for N-1 for the Czech gas infrastructure to exceed by at least 270%, see the following table.

² Average monthly exchange rate of Narodowy Bank Polski for 12 July 2023 (1EUR= 4,4426PLN) was used for calculation of the costs in EUR

Table 5: Security of Gas Supply for the Czech Republic in 2024-2033 according to the N-1 Formula for Existing Infrastructure and Assuming Capacity of the Reverse-flow PL→CZ

Security of supply (GWh/d)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
P_m	4,4	4,2	4,3	4,7	5,2	4,6	4,8	4,2	3,4	3,2
S_m	619,7	713,7	713,7	713,7	713,7	713,7	713,7	713,7	713,7	713,7
EP_m	4 306,7	4 306,7	4 306,7	4 306,7	4 306,7	4 306,7	4 306,7	4 306,7	4 306,7	4 306,7
EP_m (incl. STORK I Reverse-Flow)	4 306,7	4 306,7	4 326,6	4 326,6	4 326,6	4 326,6	4 326,6	4 326,6	4 326,6	4 326,6
I_m (Lanžhot)	1 640,4	1 640,4	1 640,4	1 640,4	1 640,4	1 640,4	1 640,4	1 640,4	1 640,4	1 640,4
D_{max}	727,0	773,9	797,9	803,1	824,7	840,7	840,7	919,1	919,1	919,1
Min. requirement of the Regulation (%)	100	100	100	100	100	100	100	100	100	100
N-1 (%) excl. STORK I Reverse-Flow	452,6	437,3	424,1	421,5	410,5	402,6	402,6	368,2	368,1	368,1
N-1 (%) incl. STORK I Reverse-Flow	452,6	437,3	426,6	423,9	412,9	405,0	405,0	370,4	370,3	370,3

Source: NET4GAS (summer capacity used for calculation)

2. Regional Risk Assessments of Risk Groups

A common assessment at regional risk group level is prepared by the respective competent authorities every four years as per Article 7 of the SoS-Regulation. Based on Annex I of the SoS-Regulation the Czech Republic is a member of risk groups Ukraine, Belarus and Baltic Sea. New data is also available for the newly established group in Eastern gas supply Corridor - North-Eastern, which was taken into account in the risk assessment. It is worthwhile mentioning that the SoS-Regulation does not consider regional risk group under which all three mentioned supply corridors (Ukraine, Belarus, Baltic Sea) are disrupted simultaneously.

Herein below we refer to assessments done by ENTSOG in 2021. The updated results showing the recent development of flows are not available yet.

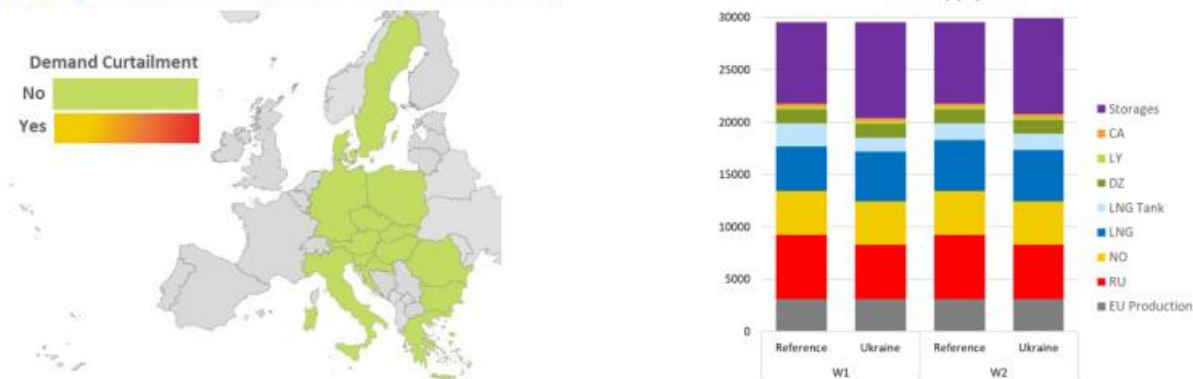
Risk group Ukraine

The Ukraine common risk assessment scenario for Disruption of all supply routes via Ukraine to the EU (simulation of 2-week/20 years, simulation from 15 – 28 Feb) shows that supplies are used at the maximum potential for the 2-week cold spell. The overall flows of Russian gas are limited by capacities via Belarus to Poland (reduced capacities as of 2023), Nord Stream (used up to the technical maximum), Turk Stream (all

routes are used up to the technical maximum)³. Nevertheless, the decrease in Russian imports could be replaced by LNG supply as well as utilisation of the existing storage capacity. The conclusion in this case is that there are no risks for either Poland or the Czech Republic.

Graph 4: Disruption of all Imports to EU via Ukraine, Scenario 2-week / 20 years – Simulated from 15 to 28 February

2-week / 20 years: Simulated from 15 to 28 February



Source: ENTSOG Union-wide simulation of gas supply and infrastructure disruption scenarios 2021

Risk group Belarus

In the Belarus common risk assessment in scenario Disruption of all supply routes through Belarus for (simulation of 2-week/20 years, simulation from 15 – 28 Feb) results in increased gas transit through Nord Stream I and Ukraine. In this case the overall flows of Russian gas stay on a similar level, reaching the maximum supply potential. Transits through Belarus are re-directed through other Russian supply routes. There are no risks under analysed scenario for Poland or the Czech Republic.

Graph 5: Disruption of all Imports to EU via Belarus, Scenario 2-week / 20 years – Simulated from 15 to 28 February

2-week / 20 years: Simulated from 15 to 28 February



Source: ENTSOG Union-wide simulation of gas supply and infrastructure disruption scenarios 2021

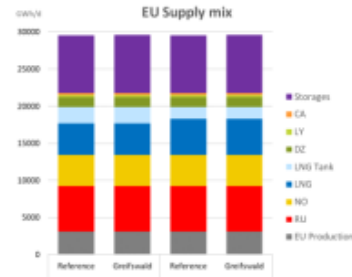
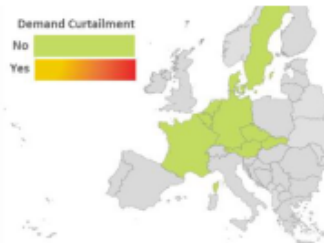
³ From April 2022 there is no Russian gas flow and transmission at Polish-Belarusian border as well as from January 2023 the IP is not available for the market. Technical capacity at Nord Stream equals 0 after its explosion in September 2022.

Risk group Baltic Sea

The Baltic Sea risk assessment in scenario Disruption of the onshore receiving facility of Nord Stream I (simulation of 2-week/20 years, simulation from 15 – 28 Feb) concludes that there are no risks for the Czech Republic in case of a disruption. The overall flows of Russian gas stay on a similar level, reaching the maximum supply potential.

Graph 6: Disruption of the Onshore Receiving Facility of Nord Stream, Scenario 2-week / 20 years – Simulated from 15 to 28 February

2-week / 20 years: Simulated from 15 to 28 February



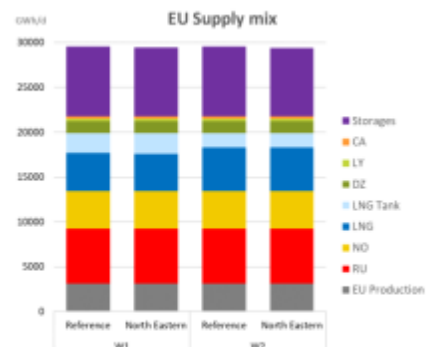
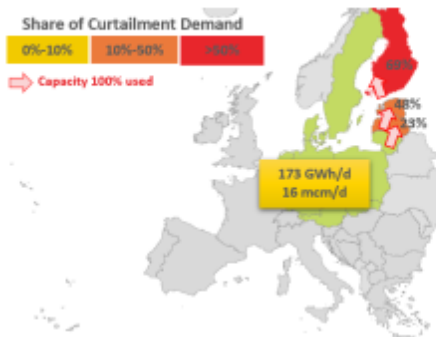
Source: ENTSOG Union-wide simulation of gas supply and infrastructure disruption scenarios 2021

Risk group Eastern gas supply – North-Eastern

In 2021 modelling there was a new group in Eastern gas supply Corridor - North-Eastern. One more scenario is therefore presented for this new group. The Eastern gas supply – North-Eastern risk assessment in scenario Disruption of all imports to the Baltic states and Finland (simulation of 2-week/20 years, simulation from 15 – 28 Feb). It is obvious that there are no risks under this analysed scenario for Poland or the Czech Republic.

Graph 7: Disruption of all Imports to the Baltic States and Finland, Scenario 2-week / 20 years – Simulated from 15 to 28 February

2-week / 20 years: Simulated from 15 to 28 February



Source: ENTSOG Union-wide simulation of gas supply and infrastructure disruption scenarios 2021

III. Conclusion

The Czech gas transmission system is considered as robust and reliable, to which gas can be supplied from several independent sources. The sum of the technical capacity of all border entry points capable of supplying gas to the Czech transmission system is in the amount of 4 307 GWh/d without reverse-flow at IP Cieszyn/Český Těšín. If the reverse-flow at IP Cieszyn/Český Těšín would be realised, the total daily entry capacity would increase to the amount of 4 327 GWh/d (in the summer capacity scenario).

Ensuring a firm reverse-flow capacity from Poland towards the Czech Republic will not materially increase a security of supply standard as N-1 criterion already now amounts to 400%. However, the firm capacity can be of interest for the Czech market in gas supply emergency situation. For this reason, NET4GAS has prepared possible alternatives to secure bi-directional capacity. All variants are described in the Attachment and the exemption period is set to finalize discussion with the Czech public bodies to find appropriate solution for the Czech consumers.

The investment focused on enabling a reverse-flow at IP Cieszyn/Český Těšín brings limited additional benefits to increase the security of supply in the region but can allow for a new route and secure bi-directional capacity towards the Czech Republic.

Thus, the Czech gas transmission operator NET4GAS and the Polish gas transmission operator GAZ-SYSTEM ask for an exemption from the obligation to enable permanent physical bi-directional capacity at the IP Cieszyn/Český Těšín by end of 2025, i.e. until the decision on reverse flow at IP Cieszyn/Český Těšín is taken.

IV. Consultation with Potentially Concerned TSOs

(This part will be completed after the consultation).

Overview of potential technical solutions for reverse flow at IP Cieszyn to be performed at the Czech side

	Stage 1	Stage 2A	Stage 2B
Investment: Pipeline	interconnection incl. pressure regulation between Stork I and DSO	interconnection incl. pressure regulation between Stork I and DSO	interconnection incl. pressure regulation between Stork I and UGS/DSO Třanovice and DN500 to Libhošť
Investment: Compressor station	NO	up to 1 MW + 1 MW as back-up (used for increase of output pressure towards DSO)	4x0.6 MW + 2x 0.6 MW as back-up, but gas temperature reaches 97°C = robust cooling needed
Pressure assumption	GAZ-SYSTEM provides gas at 17 barg at IP Cieszyn		
Capacity PL > CZ (0°C); min. delivery pressure	The amount which can be taken over in the exceptional state of emergency.	The <u>firm</u> capacity up to 40 tcm/h (Agreement with DSO and SSO needed)	The <u>firm</u> capacity of 30 - 40 tcm/h (Depends on compressor unit's parameters, no need of DSO and SSO commitment)
	It is expected that GAZ-SYSTEM will guarantee the offered capacity as a firm capacity from their side in the Interconnection agreement.		
Capacity CZ > PL (0°C); min. delivery pressure	<i>As valid for Stork I (interconnection agreement):</i> WINTER Oct – April: 2.5 mcm/d; 45 barg SUMMER May – Sep: 0.4 mcm/d; 26 barg		
Start of trial operation (depends on date of decision and acceleration performed by state)	2025/2026	2027/2028	2027/2028
Rough estimate of budget [mEUR] incl. 25% reserve *	5.4	14.7 (stage 1 for 5.4 plus 9.3 mEUR for the compressor station)	22.2 (stage 1 for 5.4 plus 16.8 mEUR for the compressor station)

* Exchange rate used 25 CZK/€

Note: The total investment costs do not include operating costs.