



CONSULTATION DOCUMENT

FOR

THE NATIONAL TRANSMISSION SYSTEM

IN FULFILMENT OF ARTICLE 26 OF COMMISSION REGULATION (EU) 2017/460 OF 16 MARCH
2017 ESTABLISHING A NETWORK CODE ON HARMONISED TRANSMISSION TARIFF STRUCTURES FOR
GAS

WARSAW, AUGUST 2021

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INTRODUCTION

Commission Regulation (EU) 2017/460 establishing a network code on harmonised transmission tariff structures for gas (Journal of Laws UE L 72/29 of 17.3.2017) (hereinafter: TAR NC) contains provisions on the methodology for determining reference prices and reserve price for standard capacity products' calculation.

The purpose of the TAR NC is to harmonise the transmission tariff structures of Member States' operators and to provide some tools for comparison of transmission tariffs applied within the EU, while maintaining flexibility in the choice of elements of the reference price determination method to adapt to the maturity of the specific market and the level of complexity of the transmission network.

Using this freedom in the construction and selection of parameters used in the reference price methodology and bearing in mind the benefits of system users, Gas Transmission Operator GAZ-SYSTEM S.A. (hereinafter: GAZ-SYSTEM or the Company) has selected the methodology, described in detail later in this document, in such a way as to meet the requirements of the TAR NC Code while minimizing the changes necessary in settlement of the transmission services. Such actions of GAZ-SYSTEM are intended to ensure the predictability of conditions for the provision of gaseous fuel transmission services to transmission system users in Poland. The applied solutions also do not restrict cross-border trade and aim to provide long-term signals for the development of the transmission network.

The consultation on the reference price methodology is intended to enable network users a better understanding of the principles underlying the calculation of the tariffs set for transmission and non-transmission services and the changes made to those tariffs and the way in which they are set.

FINAL CONSULTATION – SCHEDULE

Pursuant to the provisions of the TAR NC and in accordance with the decision of the President of the Energy Regulatory Office (hereinafter: President of the ERO) DRG.DRG-2.7129.5.2018.JDo1 dated 16 July 2018, GAZ-SYSTEM has been appointed as the entity responsible for carrying out periodic consultations pursuant to Article 26 of the TAR NC, under which this document detailing the proposed reference price methodology is published. The process of consultation and approval of the selected reference price methodology and calculating the tariff for 2023 consists of the following stages:

- Final consultation - minimum duration - 2 months 31 August to 31 October 2021
- Publication of responses received in the consultation process - within 1 month after the final consultation until 30 November 2021
- Evaluation process and analysis of the consultation document by ACER - within 2 months after the final consultation until 31 December 2021
- Approval and publication of the motivated decision of the President of the ERO - within 5 months from the end of final consultation until 31 March 2022
- Process of tariff recalculation and renegotiation with the President of ERO based on the approved reference price methodology, completed with the decision of the President of the ERO approving the tariff for gas transmission services April 1 to 31 May 2022
- Tariff publication (30 days prior to annual yearly capacity auction) 03 June 2022
- Yearly capacity auction 04 July 2022
- Entry into force of the tariff 01 January 2023

The time frames of the individual stages of the schedule have been set counting backwards from the date required by the provisions of the TAR NC for publication of reserve prices calculated in accordance with a methodology approved by the regulatory authority through a consultation process, no later than 30 days prior to the annual auction of yearly capacity falling on the first Monday in July (4 July 2022) i.e., no later than 3 June 2022.

Article 27 (5) of the TAR NC states that the consultation process, as described above, should be conducted at least once every 5 years. GAZ-SYSTEM proposes that the reference price methodology described in this document should be valid for a period of 2 years, i.e., from 1 January 2023 at 6:00 a.m. to 1 January 2025 at 6:00 a.m.

The Company plans that tariffs approved under this methodology will be in force for a period of 12 months of a calendar year, assuming that the tariff period is equal to the regulatory period.

During the consultation process starting at the end of August 2021 with the publication of this document and lasting until 31 October 2021, it is possible for interested stakeholders to send their comments to the following e-mail address nctar@gaz-system.pl. In order to ensure

transparency and efficiency of the consultation process, the Company kindly requests to send comments also in English.

Pursuant to Article 26(2) of the TAR NC, the deadline for submitting comments on the methodology for calculating reserve prices for capacity products proposed herein by GAZ-SYSTEM expires at the end of the final consultation, i.e., 31 October 2021.

Under the TAR NC regulations, these comments should be public so that the operator can publish them with a summary as part of the next consultation stage. In order to ensure the confidentiality of the submitted comments an appropriate comment should be included in their content.

In order to make the consultation more effective, the consultation document available at <https://en.gaz-system.pl/strefa-klienta/taryfa/konsultacje-nc-tar/> has been published in both Polish and English language versions.

In case of discrepancies between the Polish and English versions of the consultation document, the consultation document drawn up in Polish shall be binding.

Following the completion of the final consultation phase, GAZ-SYSTEM is obliged to publish the responses received in this process along with a summary within one month. In accordance with TAR NC guidelines, the summary of comments will also be provided in English to ensure transparency and efficiency of the process.

This document published as part of the final consultation is the document submitted to ACER, for analysis and assessment of its compliance with the provisions of Article 27(1) and (2) of the TAR NC. This document will constitute the basis for the President of ERO in taking a justified decision approving the methodology proposed by GAZ-SYSTEM to set the reference price in accordance with Article 27(4) of the TAR NC.

Bearing in mind that in Poland there are two separate entry-exit systems, each of which is managed, pursuant to decisions of the President of ERO¹, by an independent Transmission System Operator:

- National Transmission System (NTS) and

¹ Decision of the President of the ERO dated December 6th, 2018, ref.: DRG.DRG-1.4720.1.2018.KL on extending the term of appointment of Transmission System Operator GAZ-SYSTEM S.A. with its seat in Warsaw as the gas transmission system operator in Poland for the period until December 6th, 2068

Decision of the President of the ERO dated November 17th, 2010, ref.: DPE-4720-4{8}/2010/6154/BT, in the case of on the appointment of Transmission System Operator GAZ-SYSTEM S.A. with its seat in Warsaw as the independent operator of the Polish section of the Yamal gas pipeline for the period until December 31st, 2025.

- Transit Gas Pipeline System (TGPS) being the Polish section of the Yamal - Western Europe gas pipeline owned by EuRoPol GAZ s.a,

pursuant to Article 6(3) of the TAR NC, GAZ-SYSTEM publishes separate consultation documents containing separate methodologies of determining reference prices separately for NTS and separately for TGPS.

At the same time the Company notes that following the decision of the President of ERO appointing GAZ- SYSTEM as the entity responsible for conducting consultations under Art. 26 of the TAR NC, the President of ERO will not conduct separate consultations with respect to the reference price methodology. However, in parallel to the final consultations conducted by GAZ-SYSTEM, the President of ERO is consulting with the national regulatory authorities of all directly connected Member States and relevant stakeholders on Article 28 of the TAR NC. Consultations conducted by the ERO include:

- multiplier levels for the short-term capacity products offered,
- the levels of seasonal factors for the short-term capacity products offered, if applicable, and the way how they are calculated,
- the discount levels specified in Articles 9(2) and 16 of the TAR NC.

Considering the intensive investment process conducted by GAZ-SYSTEM S.A. concerning the development of the transmission infrastructure in Poland and the time horizon for the implementation of projects diversifying natural gas supply to Poland as well as the need to carefully monitor the actual use of the transmission infrastructure, **the Company plans that the reference price methodology described in this document will apply for a period of 2 years, i.e. from 1 January 2023 at 6:00 a.m. to 1 January 2025 at 6:00 a.m.**

1. DESCRIPTION OF THE PROPOSED METHOD FOR THE DETERMINATION OF THE REFERENCE PRICE

The reference price methodology proposed by GAZ-SYSTEM and described in this document assumes charging only capacity-based tariffs, which is in line with the provisions of the Polish The Regulation of the Minister of Energy of 15 March 2018 concerning detailed principles of tariff design and calculation, and settlements in gas trade (hereinafter: Tariff Regulation) and the TAR NC.

The reference price methodology presented in this document assumes that fees depending on the contracted capacity will be charged at all entry points to the transmission system, excluding the LNG Terminal entry point, and at all exit points from the transmission system.

The method of allocating the costs to individual points of the transmission system proposed by GAZ-SYSTEM is the so-called *postage stamp* method. It assumes that costs are allocated to individual entry points and, respectively, to individual exit points on the basis of a single cost driver - the forecasted contracted capacity.

In practice this means that the proposed rate will be the same for all entry points to the transmission system, with the exception of entry points from storage facilities and the entry point from the LNG Terminal and will be the same for all exit points from the transmission system, with the exception of exit points to storage facilities, using a flexible *ex-ante* cost allocation between entry and exit points in the range of 30/70 to 70/30. The proposed flexible solution, in a situation of ongoing investments, can protect system users from significant year-on-year increases in reference prices during the lifetime of this methodology.

For the reference prices applied at the entry points to the transmission system from storage facilities and the exit points from the transmission system to storage facilities, a discount will apply pursuant to Article 9 of the TAR NC, as detailed in paragraph 2 of this document.

For the reference price applied at the entry point to the transmission system from the LNG Terminal, a discount will be applied in accordance with Article 9 of the TAR NC, described in detail in paragraph 2 of this document. The Company points that, the final level of the discount will be decided through the regulator's public consultation process conducted under Article 28 of the TAR NC.

The choice of *postage stamp* method is dictated by the following factors:

- The limitation of changes for GAZ-SYSTEM customers and predictability of the applied reference price methodology is ensured by the fact that the proposed model is largely based on the methodology applied by GAZ-SYSTEM since 2014.

- The majority of gas flows in the national transmission system are intra-system flows – there is no risk of excessive cross-subsidisation of intra-system network customers with respect to cross-system network users by applying the same fees at border and internal entry/exit points. This is supported by the CAA's analysis, consistent with Article 5 of the TAR NC. Importantly, the chosen *postage stamp* method does not disrupt cross-border trade in any way. The rates proposed in this method are the same irrespective of whether the transmission is to an exit point located inside the system or whether it is cross-system transmission.
- High network complexity - the transmission network of GAZ-SYSTEM is highly meshed, with several mutual interconnections. In the two gas transmission sub-systems (high-methane natural gas E subsystem and low-methane natural gas Lw subsystem), the Company operates 60 entry points and over 920 exit points. Different gas flow scenarios - different supply directions, in connection with the construction or expansion of connections located on Poland's southern and north-eastern borders, the expansion of the LNG terminal and the construction of the Baltic Pipe connection, show that it will be possible to supply exit points from all available entry points. This interconnection grid allows the assumption that all transmission system users benefit equally from the transmission system and should therefore bear proportionally the costs of its construction and operation.
- The use of distance as a cost driver, given the aforementioned characteristics of the transmission system, including the large number of connections between system points, could lead to significant changes in the levels of calculated transmission fees for some of the key final customers.

Table 1A presents the technical parameters describing the transmission network operated by GAZ-SYSTEM.

Table 1A

Technical information about the transmission network - the length and the diameter of pipelines

Data valid at the end of June 2021			
Diameter	Length [km]		
	E Gas	Lw Gas	Total E and Lw
up to DN 200	1 718.12	362.51	2 080.63
DN 250 - 400	3 191.00	283.38	3 474.38
DN 500 - 800	4 968.30	56.26	5 024.56
DN 1000	522.22	0.00	522.22
<i>Sum</i>	10 399.64	702.15	11 101.79

Technical information about the transmission network - compressor stations

Data valid at the end of June 2021	E-gas	Lw-gas
Quantity	15	0
Power [MW]	138.4	0.0
Number of entry points*	60	
Number of exit points*	925	

* The data valid at 30 June 2021.

A detailed map of the transmission system operated by GAZ-SYSTEM is available on the website:

<https://swi.gaz-system.pl/swi/public/#!/gis/map/preview?id=10059&lang=en>

- The simplicity and transparency of the construction of the *postage stamp* method promotes transparency of the tariff and limits the possibility of manipulating the parameters and assumptions adopted for it. Furthermore, it allows network users to easily reconstruct reference price calculations as well as accurately forecast them.

In GAZ-SYSTEM's opinion, the proposed reference price methodology meets all the requirements set out in Article 7 of the TAR NC:

- the application of the simplest methodology, which is the *postage stamp*, makes it possible to reproduce the calculation of reference prices and to forecast them on the basis of tariff calculation principles described in detail in the particular steps within this document,
- takes into account the actual levels of costs of providing transmission services and the complexity of the NTS transmission network,

- ensure non-discriminatory treatment of system users and limit the level of cross-subsidisation referred to in Article 5 of the TAR NC. Due to the transparent and simple rules of cost allocation under the *postage stamp* method, GAZ-SYSTEM is of the opinion that the application of any other method would be less favourable to the development of the market for gaseous fuel transmission services,
- reduces the volume risk referred to in Article 7(d) of the TAR NC by basing the proposed method on capacity only,
- does not affect the level of cross-border trade carried out. Based on historical data, GAZ-SYSTEM does not observe any correlation between the *postage stamp* method of determining reference prices, which has been applied so far and is still proposed, and the volumes of cross-border trade in gaseous fuel.

1.1. COST DRIVERS

The only cost driver used in the reference price methodology proposed by GAZ-SYSTEM is the contracted capacity, whereby the Company plans to apply a flexible *ex-ante* cost allocation split between entry and exit points in the range of 30/70 to 70/30. Charging, for the gaseous fuel transmission service provided, only on the basis of capacity-based tariffs is consistent with Article 4 of the TAR NC and Articles 12(1) and 13 of the Tariff Regulation. The volume of contracted capacities constituting the basis for calculation of base prices for tariff year $n+1$ will be the sum of:

- capacity contracted for the year for which the tariff is calculated under the Open Season procedure, capacity resulting from long-term contracts and capacity booked under conducted auctions,
- capacities contracted under standard firm and interruptible yearly capacity products as at the date of submission of the tariff application in year n and long-term forecasts of sales of transmission services with a high probability of implementation,
- the level of capacity contracted under the quarterly, monthly and daily standard firm and interruptible I capacity products booked in year $n-1$ - preceding year n , in which the tariff application is submitted,

separately for entry and exit points to/from the transmission system:

- within the high-methane E and low-methane gas Lw subsystems,

and for

- entry/exit points to and from storage facilities under the high-methane gas E subsystem.

The lack of a hydraulic connection between the E gas subsystem and the Lw gas subsystem makes it impossible to perform gaseous fuel conversion services between these systems.

For the calculation of indicative reference prices for 2023, the Company adopted:

- capacity contracted under standard firm and interruptible yearly capacity products resulting from binding offers submitted under the Open Season procedures and from capacity auctions conducted in July and August 2021 as well as annual product contracted capacities for current tariff year as of August 2021 and long-term transmission sales forecasts with high probability of completion;
- capacity contracted under the standard short-term continuous and interruptible capacity products booked in 2020.

Table 1B shows the contracted capacity underlying the calculation of the indicative reference prices for 2023.

Table 1B

*Contracted capacity for entry and exit points - forecast [kWh/h]**

Year 2023

ENTRY

Entry points capacity - E gas (UGS excluded)	27 730 894
Entry points capacity - UGS (E gas)	24 818 244
Entry points capacity - Lw gas	1 202 602
Entry points capacity - LNG	7 963 613

EXIT

Exit points capacity - E gas (UGS excluded)	60 455 271
Exit points capacity - UGS (E gas)	14 374 170
Exit points capacity - Lw gas	2 062 997

** a discount of 80% at points connected to UGS and a discount of 100% at LNG entry point apply. The discounts are described in detail in point 2 of the document.*

2. DESCRIPTION OF THE DISCOUNTS APPLIED AT THE ENTRY/EXIT POINTS FROM/TO STORAGE FACILITIES AND AT THE ENTRY POINT FROM LNG FACILITIES.

2.1. DISCOUNT FOR UGS

Pursuant to Article 9(2) of the TAR NC, a discount is allowed at the connection points to storage facilities. For the reference price applied at points of connection between the transmission system and storage facilities, a discount of 80% will apply as before, which takes account of the benefits and costs that storage facilities provide to the transmission system as a whole and which is intended to contribute to the efficient use of storage facilities.

In establishing the level of the discount applied to the reference price at points of connection of the transmission system with storage facilities, account was taken of the benefits that gas storage facilities bring to the transmission system in Poland:

- ensuring the stability and integrity of the operation of the transmission system,
- ensuring flexibility in situations of increased demand for gaseous fuel, both in the winter season and within daily peaks,
- location close to the main centres of demand makes it is the most reactive source of supply that can be used to meet daily increases in gaseous fuel demand.

Taking the above arguments into account in the calculation of rates for the transmission service, a discount of 80% has been included in the consulted model at the points of connection of the transmission system with storage facilities.

All storage facilities are connected only to the transmission system. There is no situation where the storage facility would be additionally connected to the distribution system. At the same time, storage facilities connected to the transmission system are not part of the assets of GAZ-SYSTEM.

2.2. DISCOUNT FOR LNG

According to Article 28 of the TAR NC, the consultation on the level of the discount for entry points from LNG facilities is carried out by the regulatory authority.

In the reference price methodology presented in this document, a discount of 100% has been applied to the reference price applied at the entry point to the transmission system from the LNG Terminal. This is consistent with Article 9(2) of the TAR NC, which allows for a discount at entry points from LNG facilities to enhance the security of supply of gaseous fuel.

The LNG Terminal support mechanism introduced by the decision of the President of the Energy Regulatory Office of 9 June 2016, consisting in granting a discount of 100% of the fixed fee at the entry point to the transmission system, has significantly lowered the barrier to LNG entry into Poland. The discount for the LNG Terminal in Świnoujście was also maintained in 2020-2022 in annual announcements of the President of ERO concerning the level of multipliers, seasonal factors and discounts referred to in Art. 28(1) letters a) - c) of the TAR NC, taken into account in the calculation of tariffs for gaseous fuel transmission services.

The justification for continuing to maintain no transmission charges at this entry point is that the LNG Terminal as an alternative supply source is crucial to:

- increase the security of gas supply to Poland by diversification of supply directions and ensuring flexible access to the global gas market - fully independent of perturbations on the local and regional markets,
- development of competition on the domestic gas market by creating opportunities for domestic suppliers to obtain gas from a new source of supply.

The main role of the LNG Terminal is to support the process of competition development on the gas market by enabling entities operating on the global LNG market to enter the Polish market. Increased competition on the part of gas suppliers positively influences the negotiating positions of gas trading companies in Poland. Moreover, the LNG Terminal contributes significantly to the development of competition on the domestic gas market by creating the

possibility to obtain gas for the needs of domestic consumers from a flexible source which, unlike the onshore infrastructure, ensures full flexibility as regards various directions of supply and competitive fuel prices and is fully independent of perturbations on the local and regional market.

For the above reasons, the LNG Terminal is also of key importance for increasing and maintaining security of gas supplies to Poland through diversification of supply directions and ensuring access to the global gas market.

The support mechanism introduced from the moment of launching the regasification facility in Świnoujście was maintained in the decisions of the President of ERO approving the tariffs for gas transmission services in subsequent years.

Taking into account the above arguments, in the calculation of indicative reference prices for year 2023 a 100% discount was applied for the entry point from the LNG Terminal to the transmission system.

3. INDICATIVE REFERENCE PRICES FOR YEAR 2023

The table below shows the indicative rates for year 2023 proposed by GAZ- SYSTEM, calculated in accordance with the assumptions detailed within this consultation document.

Table 3A

Indicative reference prices

Physical Entry Points/ Physical Exit Points	<i>Indicative reference price [gr/kMWh/h] per h]</i>
<i>High-methane gas E subsystem</i>	
Entry Points	0.4234
Exit Points	0.2186
Entry - storage facilities	0.0847
Exit - storage facilities	0.0437
LNG entry point	0.0000
<i>Low-methane gas Lw subsystem</i>	
Entry Points	0.2409
Exit Points	0.1404

4. COST ALLOCATION ASSESSMENT CAA

GAZ-SYSTEM evaluated the cost allocation assessment taking into account the assumed cost drivers, allowed revenue and calculated indicative rates for 2023. Due to the specific nature of the low-methane gas Lw transmission subsystem, the Company has made an assessment of

cost allocation exclusively for the high-methane gas E system. The justification for this approach is the lack of interconnections in the low-methane gas Lw gas subsystem. For this reason, the low-methane gas is consumed only for the needs of users operating within this transmission system.

The interconnection revenue assumed for the CAA was calculated basing on transmission charges collected at interconnection exit points.

The cost allocation comparison index is 9.27%. This means that the permissible threshold for cross-subsidisation set at 10% in Article 5(6) of the TAR NC has not been exceeded and therefore the tariff model proposed in the Consultation Document does not generate excessive cross-subsidisation between intra-system and cross-system network users. The result obtained requires no further justification by the national regulatory authority.

The Company made the following capacity assumptions for intra-system and cross-system use of the network to evaluate cost allocation:

- capacity for interconnection use of the network at exit points was assumed to be at the level of the projected capacity contracted at interconnection exit points used to calculate the indicative prices for 2023,
- the capacity for interconnection uses at entry points shall be assumed to be proportional at all entry points in the ratio of the shares of the forecast capacity at a given entry point and the sum of the capacities at all entry points,
- the capacity for intra-system uses of the network, according to the CAA methodology, shall be deducted from the capacity adopted for cross-system use of the network.

Based on the above assumptions and indicative reference prices, the intra-system and cross-system revenues planned to be recovered were calculated.

Table 4A shows the results of the cost allocation assessment conducted in accordance with the provisions of Article 5 of the TAR NC.

Table 4A

Cost allocation assessment		
Year 2023		
Revenues recovered from:		
intra-system network use	[thous PLN]	1 525 065
cross-system network use	[thous PLN]	68 287
Cost drivers - capacities contracted within intra- and cross-system network use		
intra-system network use	[kWh/h]	105 969 675
cross-system network use	[kWh/h]	4 294 564
Capacity ratios		
intra-system network use	[PLN/kWh/h]	17.86
cross-system network use	[PLN/kWh/h]	19.59
CAA comparison index		
COMP	[-]	9,274%

5. DESCRIPTION OF THE TARIFF MODEL

Calculation of reference prices for gaseous fuel transmission services will be carried out on the basis of the Entry-Exit model, *postage stamp* cost allocation methodology.

All reasonable costs and asset value are for transmission operations only and are net of non-transmission service costs.

The Company plans to recover justified costs estimated for the tariff period in fees depending on contracted capacity (ratio of capacity-based to commodity-based tariffs 100/0). The revenue determined for individual gas subsystems is then divided, in the first step, by flexible Entry-Exit ratio of 30/70 to 70/30 into the revenue to be recovered at the entry points and exit points separately for each gas subsystem. The flexibility proposed by the Operator will allow for a minimalization in changes to tariff rate levels in the event of changes to the contracted capacities at entry and exit points to and from the transmission system.

However, a 50/50 Entry-Exit split is included in the calculation of the indicative capacity-based reference prices presented within this consultation document.

Having established the revenue to be recovered at the entry points to and exit points from, respectively for the high-methane gas E and low-methane gas Lw subsystems, the reference prices for the standard capacity products for the two gas subsystems are calculated separately since they are not hydraulically connected, and it is not possible to convert Lw gas

into E gas. This calculation is made by dividing the revenue allocated to a given type of points by the cost driver - the forecast contracted capacity.

According to the proposed reference price methodology, GAZ-SYSTEM applies an 80% discount 80% both at the entry points to the transmission system from underground storage facilities and at the exit points from the transmission system to underground storage facilities, and a discount for the entry point from the LNG Terminal facility in the amount of 100%. The range of adjustments is detailed in Section 2 of this document.

The application of a discount for entry points from and exit points to storage facilities at the level of 80% in relation to the price at entry points to and exit points from the transmission system, respectively, looks in practice as described below. For the purpose of allocating revenue planned to be recovered at entry points from storage facilities, the proportion of capacity contracted at entry points to the high-methane gas E subsystem is calculated based on 100% of the capacity contracted at regular entry points and 20% of the total capacity contracted at entry points from storage facilities. Then, in order to calculate the reference price for the entry points from storage facilities, the share of the revenue to be recovered (calculated on the basis of the above proportion) at these points has to be divided by the total capacity reserved at the entry points from storage facilities. The rate calculated in such a manner, assuming an 80% discount, is 1/5 of the normal rate charged at regular entry points. The fee rate at exit points to storage facilities shall be calculated in a similar manner, taking into account the capacity booked at exit points.

Tabela 5A

<i>Indicative reference price calculation</i>		E Gas	Lw Gas
Indicative allowed revenue	[m PLN]	2 425.06	50.75
Revenue recovered from Entry points	[m PLN]	1 212.53	25.37
Revenue recovered from Exit points	[m PLN]	1 212.53	25.37
Contracted capacities			
Entry Points	[MWh/h]	21 553	1 376
Entry Points UGS	[MWh/h]	21 522	
Entry Point LNG	[MWh/h]	6 371	
Exit Points	[MWh/h]	48 268	1 870
Exit Points UGS	[MWh/h]	12 551	
Revenue allocation			
Entry Points	[m PLN]	1 028.44	25.37
Entry Points UGS*	[m PLN]	184.08	
Entry Point LNG*	[m PLN]		
Exit Points	[m PLN]	1 157.49	25.37
Exit Points UGS	[m PLN]	55.04	
Reference prices			
Entry Points	[gr/kWh/h per h]	0.4234	0.2409
Entry Points UGS*	[gr/kWh/h per h]	0.0847	
Entry Point LNG*	[gr/kWh/h per h]		
Exit Points	[gr/kWh/h per h]	0.2186	0.1404
Exit Points UGS	[gr/kWh/h per h]	0.0437	

* for points connected to UGS and entry point from LNG terminal discounts of respectively 80% and 100% in comparison to normal tariff for those points apply.

The simplified tariff models presented at <http://en.gaz-system.pl/customer-zone/tariff/tar-nc-consultation/> allow calculation of indicative reference prices for standard capacity products proposed for the tariff year 2023 and make it possible to estimate them for the following year, with any choice of parameters concerning proportions of Entry-Exit split, level of forecasted revenue and forecasted contracted capacities or relevant adjustments (UGS, LNG discounts) according to the algorithm described above.

6. COMPARISON OF THE CHOSEN METHOD FOR DETERMINING THE REFERENCE PRICES WITH THE CWD METHOD AS DESCRIBED IN ARTICLE 8 OF THE TAR NC

The reference prices calculated on the basis of the CWD methodology, and the *postage stamp* methodology adopted by GAZ-SYSTEM are based on an indicative level of regulated revenue from transmission services for year 2023 amounting to PLN 2,476 million.

The parameters adopted to calculate the reference prices, both in the CWD methodology and the *postage stamp* methodology adopted by GAZ-SYSTEM, are presented in the table below.

Tabela 6A

Basis assumptions for tariff calculation

Allowed revenue	[m PLN]	2 476
Cost allocation		
Indicative allowed revenue - gas E subsystem	[m PLN]	2 425
Indicative allowed revenue - gas Lw subsystem	[m PLN]	51
Revenue recovered from capacity-based tariffs	100%	
Revenue recovered from commodity-based tariffs	0%	
Revenue to be recovered at Exit points (gas E and gas Lw)	50%	1 238
Revenue to be recovered at Entry points (gas E and gas Lw)	50%	1 238
Number of hours in the tariff year	[h]	8 760

The differences in reference prices levels between the CWD method and the *postage stamp* method are due to the following factors:

a) the use of other cost drivers

The method proposed by GAZ-SYSTEM to set the reference price is the *postage stamp* method. It assumes that costs are allocated to individual entry points and, respectively, individual exit points on the basis of a single cost driver - the forecasted contracted capacity. This results in equal reference prices at the entry and exit points respectively.

The reference prices calculated under the CWD method, which is designated in the TAR NC as the comparative methodology, are calculated using two cost drivers: forecasted contracted capacity and the distance between each entry and exit point on the transmission system if they can be combined into pairs under certain flow scenario.

b) the level of discounts at the entry/exit points to UGS and the LNG entry point

In the method for setting reference prices consulted by GAZ-SYSTEM:

- at the entry points to the transmission system from the storage facilities and the exit points from the transmission system to the storage facilities a discount in the amount of 80% has been applied, described in detail in item 2 of this document;
- at the entry point to the transmission system from the LNG terminal, a discount of 100% has been applied to the reference price, described in detail in item 2 of this document.

Both, in counterfactual CWD method and the proposed *postage stamp* method, the discounts listed above were applied when determining the reference prices at the transmission system connection points to the LNG facility and UGS facilities.

A comparison of indicative reference prices calculated on the basis of the reference price methodology proposed by GAZ-SYSTEM and the CWD comparative method can be found in Appendix No. 1 to this document which is available on the website:

<https://en.gaz-system.pl/strefa-klienta/taryfa/konsultacje-nc-tar/>.

The attached tables present only the entry and exit points for which the Company, based on historical data, forecasts transmission capacity for year 2023.

7. INFORMATION REGARDING THE INDICATIVE REGULATED REVENUE USED TO CALCULATE THE INDICATIVE REFERENCE PRICES IN EFFECT IN 2023.

The allowed revenue approved by the President of the Energy Regulatory Office is determined using the *cost-plus* method and represents the sum of the forecasted operating costs associated with the transmission services of the Company in a given tariff year and the return on capital employed set as a percentage of the regulatory asset base allocated to the transmission services run by GAZ-SYSTEM.

Allowed revenue is calculated for a 12-month period and is recovered through transmission service charges calculated based on contracted capacity.

Because the Company plans to provide non-transmission services related to pressure reduction service and gas compression service upon customer's request, the allowed indicative revenue planned for 2023 was divided into:

- allowed revenue related to transmission services, on the basis of which indicative reference prices were calculated, amounting to PLN 2 476 million
- allowed revenue related to non-transmission services of PLN 64 million.

A detailed breakdown of the allowed revenue as required for the consultation document is shown in the table below.

Table 7A*Indicative allowed revenue for year 2023*

Allowed revenue	[m PLN]	2 540
Transmission services revenue		
Revenue from capacity-based tariffs	[m PLN]	2 476
Revenue from commodity-based tariffs	[m PLN]	-
Non-transmission services revenue		
Compressing services	[m PLN]	64
Pressure gas reducing	[m PLN]	23
		41
High-methane gas E subsystem		
	[m PLN]	2 425
Entry points	[m PLN]	1 213
Exit points	[m PLN]	1 213
Low-methane gas Lw subsystem		
	[m PLN]	51
Entry points	[m PLN]	25
Exit points	[m PLN]	25
High-methane gas E subsystem		
	[m PLN]	2 425
Intra-system network use	[m PLN]	2 330
Cross-system network use	[m PLN]	95
Low-methane gas Lw subsystem		
	[m PLN]	51
Intra-system network use	[m PLN]	51
Cross-system network use	[m PLN]	-

7.1. BREAKDOWN BETWEEN REVENUE GENERATED FROM CAPACITY AND COMMODITY-BASED TARIFFS

The breakdown of the revenue planned to be recovered from capacity-based tariffs and commodity-based tariffs proposed by GAZ-SYSTEM is 100/0. This solution adopted by national legislation (tariff regulation) is in line with the provisions of Article 4 of the TAR NC. The effect of the proposed solution is to charge tariffs based on a single cost driver - contracted capacity.

7.2. ENTRY-EXIT BREAKDOWN

A predetermined (*ex-ante*) Entry-Exit split determines the proportion of regulated revenue derived from capacity-based tariffs at entry points to revenue derived from capacity-based tariffs at exit points. The Company plans to use a flexible Entry-Exit split ranging from 30/70 to 70/30. The proposed flexible solution in a situation of ongoing investments can protect system users from significant year-on-year increases in reference prices during the lifetime of this method. However, a 50/50 Entry-Exit split is included in the calculation of the indicative reference prices presented within this consultation document.

The 50/50 split between entry and exit points of the transmission system as postulated by the Company is justified by the fact that due to the expansion of interconnections and the

expansion of the LNG terminal, and the resulting possibility of supplying exit points from all available entry points, all users of the transmission system benefit equally from the transmission system and should therefore bear the costs of its construction and operation proportionally.

In situations where there is a significant disparity in the change in the reference price level at entry points or at exit points, an Entry-Exit cost allocation in the range of 30 to 70 or in the range of 70 to 30 is allowed. The scope of cost allocation between fees charged at entry and exit points, as proposed by the Operator, is intended to ensure the highest possible stability of transmission fee rates during the period of the GAZ-SYSTEM intensive investment program aimed at diversification of gas supply sources.

The years 2020-2023 represent the peak of the Company's investment activity.

The development of gas infrastructure in Poland is determined mainly by the following factors:

- the need to ensure diversification of gas supply sources to Poland,
- the level of the forecast demand for gas and the demand for transmission service, including the possibility to export gas,
- development of import and export connections ensuring integration of the European Community markets.

In recent years, GAZ-SYSTEM has implemented a number of investment projects aimed at diversification of natural gas supply directions and sources, seeking independence from the historically dominant shipper (Russia) while enhancing integration with other EU Member States. This was possible due to the expansion of interconnectors (Lasów, Cieszyn, Mallnow) and the construction of the LNG Terminal in Świnoujście. These actions have certainly contributed to increased security of gas supply.

Further development of energy independence will be ensured through implementation of inter alia: the connection to Norwegian gas fields by the offshore gas pipeline between Poland and Denmark (Baltic Pipe), expansion of regasification capacity of the existing LNG Terminal in Świnoujście, as well as the construction of the FSRU Terminal in Gdańsk. These projects represent a huge potential for ensuring a stable gas supply to the country.

In relation to the above, GAZ-SYSTEM is currently carrying out the following projects:

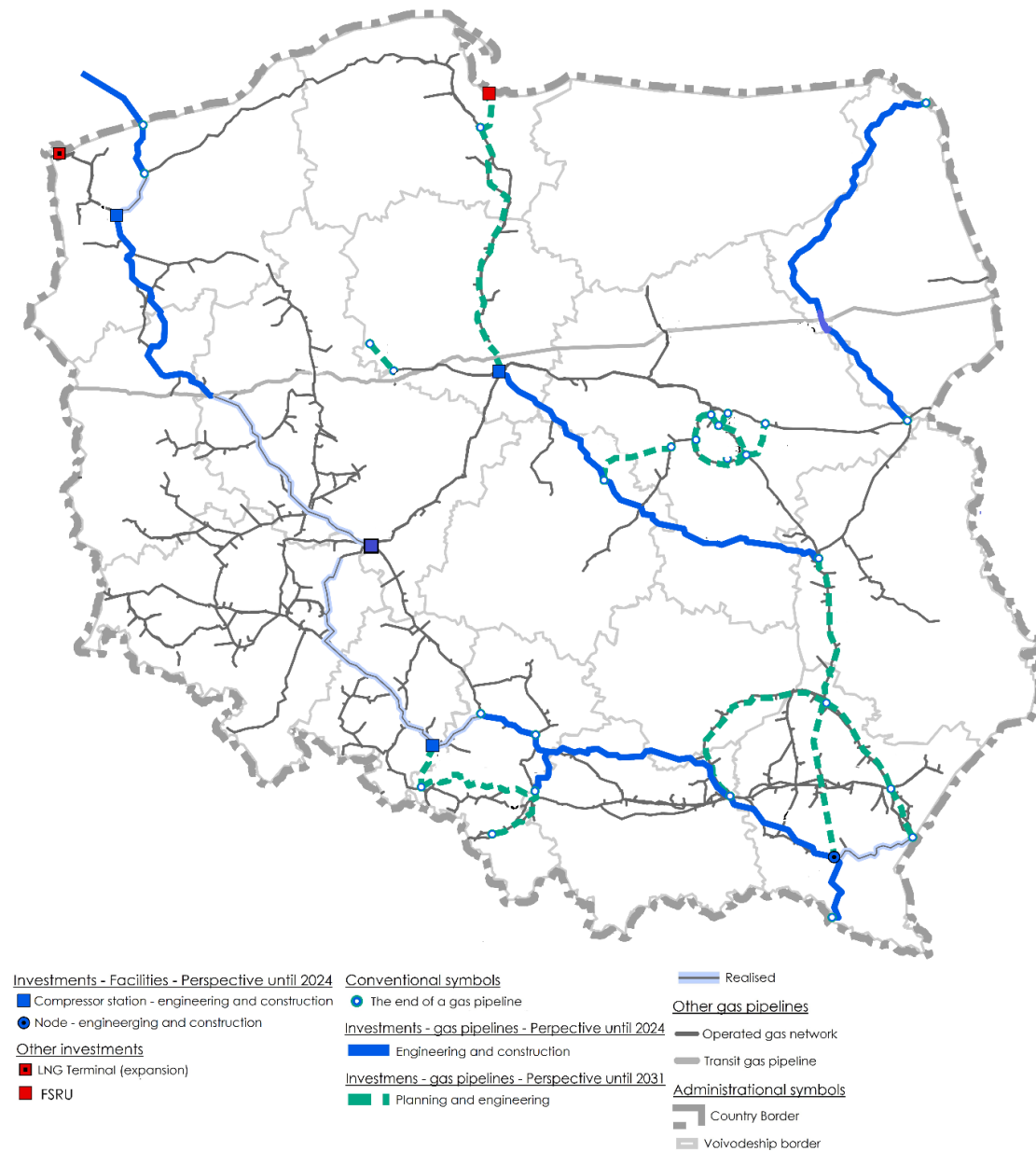
- Poland - Denmark Interconnector (Baltic Pipe) and investments to connect the offshore gas pipeline with the National Transmission System,
- Poland - Lithuania interconnector,
- Poland - Slovakia interconnector,
- North - South Corridor - to connect the LNG Terminal in Świnoujście and the Baltic Pipe with the south - eastern region of Poland.

Interconnection expansion activities will allow for:

- integration of markets in the region,
- development of the gas market in Poland,
- ensuring security by guaranteeing uninterrupted gas supplies in the event of supply disruptions,
- development of the transit functionality of the National Transmission System.

Increasing the degree of integration of the NTS with the EU system, development of transmission routes within the country, as well as the release of gas prices are the key elements supporting the construction of a liberalised internal gas market in the EU. until now, a number of activities have been taken in Poland to open the market to new entities. From GAZ-SYSTEM's perspective this will contribute to the increased importance of the Company both as a regional partner for transmission system operators in Central and Eastern Europe and on the EU forum as an entity actively pursuing the objectives of the EU energy policy.

Figure. Planned development of the National Transmission System.



The vast majority of the capacities that will be created as a result of the investment will not only be incremental, but also substitutive in relation to the current transmission capacities from the eastern directions.

The implementation of the projects will enable diversification of gas flow directions but will not significantly affect the increase in capacity constituting the base for tariff calculation. However, in the period of the reference price methodology, as a result of the implementation of investment projects, the value of RAB will double, which will result in a significant increase in the level of regulated income.

Therefore, fixing in a rigid and unchangeable Entry/Exit split will make it impossible for the Company and the President of ERO to level out or reduce the differences in the levels of transmission rates at the entry points to and exit points from the transmission system.

Taking into account market conditions, including the level of maturity of the transmission services market in Poland and the number of system users, Company believes that the Entry-Exit split proposed by GAZ-SYSTEM is non-discriminatory and does not represent a barrier to both intra- and cross-system transmission.

7.3. SPLIT BETWEEN INTRA-SYSTEM AND INTER-SYSTEM REVENUES

GAZ-SYSTEM does not apply *ex-ante* split between revenue planned to be recovered from intra-system and cross-system transmission services. The resulting (*ex-post*) revenue split between intra-system and cross-system revenues is 96/4. The practically homogeneous nature of transmission is another argument for the use of the *postage stamp* method - the very limited risk of cross-subsidisation between intra-system and cross-system transmission is confirmed by the cost allocation analysis (CAA) detailed in Section 4 of this document.

8. COMMODITY-BASED TARIFFS

GAZ-SYSTEM does not plan to charge commodity-based tariffs. This solution is in line with the provisions of national tariff regulation and is allowed by the provisions of the TAR NC.

9. COMPLEMENTARY REVENUE RECOVERY CHARGE

The Company does not apply a complementary revenue recovery charge.

10. NON-TRANSMISSION SERVICES

GAZ-SYSTEM plans to provide non-transmission services related to pressure reduction and gas compression services upon request of the customer.

Given the requirements of Article 17.3 of the TAR NC, the Company proposes the following approach to the settlement of non-transmission services under the regulatory account.

$$S_{KR} = P_{UP(n-2)} + P_{US(n-2)} + P_{UR(n-2)} - P_{D(n-2)}$$

where:

S_{KR} - balance of the regulatory account calculated in the year (n-1) in which the tariff for the year (n) is set

$P_{UP(n-2)}$ - transmission service revenue in calendar year (n-2),

$P_{US(n-2)}$ - compression service revenue realized in calendar year (n-2),

$P_{UR(n-2)}$ - revenue from reduction services realized in calendar year (n-2),

$P_{D(n-2)}$ - revenue authorised by the ERO President for year (n-2).

Taking into account the above, the allowed revenue in year n , for which the tariff is being set, will be the sum of revenue from transmission services (P_{UP}) and revenue from compression services P_{US} and revenue from reduction services (P_{UR}).

10.1. GAS PRESSURE REDUCTION SERVICE

Gas pressure reduction service - a service provided by the TSO on the technological equipment installed at the exit points from the transmission system, aimed at adequate reduction of the gas pressure in the place of connection between the gas station and the facility of the user connected to the transmission system.

The gas pressure reduction service is provided by GAZ-SYSTEM at approx. 670 pressure reduction and metering station (SRP).

The reduction devices at the gas station significantly increases the operational and maintenance costs of the facility due to the need for additional gas heating systems, reduction systems (three-stage pressure safety level, boiler rooms devices and the associated consumption of fuel gas). The reduction systems used at the stations also increase the expenditures necessary for the modernization of such facilities.

Due to the lack of separation of reduction costs in the current GAZ-SYSTEM Tariff, the costs of operating and upgrading pressure reduction and metering stations are borne by all transmission system users, including those customers who reduce gas pressure using their own facilities.

Therefore, in GAZ-SYSTEM' opinion, the pressure reduction service should be qualified as a non-transmission service, which means that this service should be separated from the transmission

service tariff base in the method of determining reference prices approved by the President of ERO.

The calculation of reference prices for gas pressure reduction services will be based on the regulated revenue for this service determined by the 'cost plus' method.

This means that operating costs associated with the operation of pressure reduction and metering stations for the provision of reduction services will be separated from the cost base of GAZ-SYSTEM in the process of tariff approval and then increased by the return on capital employed on the assets separated as assets for the provision of reduction services.

The regulated revenue thus determined relating to the reduction service will be recovered at the exit points from the transmission system by means of monthly charges calculated as the quotient of the regulated revenue on a monthly basis and the divisor, i.e., the number of pressure reduction and metering stations, according to the following formula:

$$R_m = P_R / n / 12$$

where:

R_m - monthly fee charged to the user using the gas pressure reduction services at pressure reduction and metering stations [PLN],

P_R - regulated revenue for gas pressure reduction services [PLN],

n - number of pressure reduction and metering stations [pcs].

The calculation of the reduction service fee will be determined once a year during the process of approval of the tariff for transmission and non-transmission services for the following calendar year by the President of ERO.

The indicative regulated revenue related to the gas pressure reduction service amounts to PLN 41.4 million. The indicative monthly fee to be charged at pressure reduction and metering stations in 2023 will amount to PLN 5,178.

All data and assumptions adopted by GAZ-SYSTEM for the calculation of reference prices for gaseous fuel pressure reduction services will be, at the stage of the tariff process, subject to final assessment and acceptance by the President of ERO by means of a decision on the approval of tariffs for 2023 and 2024 calculated in accordance with this methodology.

10.2. GAS COMPRESSION SERVICE AT THE CUSTOMER'S REQUEST

Gas compression service upon customer's request - the service of permanent or temporary ensuring of pressure at the entry or exit point to or from the national transmission system above

or below the values published on TSO website, requiring involvement of additional technical and organizational resources of the TSO. The service is provided by the TSO upon request of the Customer and after confirmation by the TSO of the possibility of its provision at a given point.

The compression service will be carried out using system compressors, through which gaseous fuel will be compressed at the request of the customer.

In order to calculate indicative rates for gas compression services on customer request, GAZ-SYSTEM, on the basis of historical data, assumed that in 2023 will provide the service at 10 points of the National Transmission System.

The calculation of reference prices for gas compression services was carried out on a cost-plus basis.

This means that operating costs related to the provision of compression services at the request of customers will be separated from the cost base of GAZ-SYSTEM in the process of tariff approval, and then they will be increased by the return on capital employed on the assets separated as assets used for the provision of compression services. The regulated revenue so determined for compression service will be recovered at the transmission system entry/exit points through monthly charges calculated as described below.

The compression service fee will consist of two components:

- a fixed subscription fee determined once a year on the basis of the fixed costs of the compression service in the previous calendar year,
- a variable fee depending on:
 - the amount of energy added to the gaseous fuel during the compression process,
 - Gas Reference Price (GRP) for the high-methane gas balancing area defined as the price representing the weighted average price of gaseous fuel purchased by the TSO in the gas month preceding the month when the GRP will be published,

The fee for the provision of gas compression services at the request of the customer will be billed according to the following formula:

$$W_m = O_a + CRG_E * E$$

where:

W_m - monthly remuneration for the gas compression service [PLN],

O_a - subscription fee determined once a year on the basis of fixed compression service costs in the previous calendar year for each settlement point [PLN/month],

CRG_E - reference price of gas for the high-methane gas balancing area - price constituting the weighted average price of gaseous fuel purchased by the TSO in the gas month preceding the month in which the CRG will be published [PLN/kWh],

E - the amount of energy used in the compression process per month [kWh] resulting from the suction and pressing pressure levels and the amount of compressed gaseous fuel

The indicative revenue related to the provision of gas compression services at the customer's request in 2023 will amount to PLN 22.9m.

The subscription fees have been calculated in such a manner so as to ensure that the revenues from these fees cover the fixed costs associated with the operation of the assets, together with the return on the capital employed on the fixed assets used to provide gas compression services to the customer.

The variable part of the revenue will cover the cost of purchasing the fuel gas necessary to provide the gas compression service to the customer.

The indicative monthly subscription fee rate for the entry point from the domestic fuel gas field is PLN 148,687 thousand. The indicative variable fee rate will be 0.074 PLN/kWh.

Calculations using the presented formula will ensure the unification of settlements, transparency of the proposed method and easy calculation of charges for compression services by the System Users.

All data and assumptions adopted by GAZ-SYSTEM for the calculation of reference prices for gaseous fuel compression services will be, at the stage of the tariff process, subject to final assessment and acceptance by the President of ERO by way of a decision on the approval of tariffs for 2023 and 2024 calculated in accordance with this method.

11. COMPARISON OF REFERENCE PRICES FOR 2022 AND INDICATIVE REFERENCE PRICES FOR 2023.

The reference prices for 2022 presented below and the indicative reference prices for 2023 have been calculated according to the assumptions presented in this document. Based on these assumptions, simplified tariff models were prepared, available at <https://en.gaz-system.pl/strefa-klienta/taryfa/konsultacje-nc-tar/>.

Table 11A

*The comparison of the reference prices for year 2022
and indicative reference prices for year 2023*

Tariff Group	Indicative reference prices - year 2023 [gr/(kWh/h) per h]	Reference prices - year 2022 [gr/(kWh/h) per h]	difference [%]
<i>High-methane gas E subsystem</i>			
Entry Points	0.4234	0.3200	32%
Exit Points	0.2186	0.1908	15%
LNG entry point	0.0000	0.0000	
UGS entry point	0.0847	0.0640	32%
UGS exit point	0.0437	0.0382	14%
<i>Low-methane gas Lw subsystem</i>			
Entry Points	0.2409	0.2105	14%
Exit Points	0.1404	0.1499	-6%

The main factor affecting the difference in rates in the 2022 tariff and the indicative rates in the 2023 tariff is the change in the level of the allowed revenue allocated to transmission services. The approximately 34% increase in revenue planned by the Company is mainly due to the implementation of capital-intensive strategic investments, both in terms of internal network expansion and the construction of new interconnectors, in order to enhance the quality and safety of services provided by GAZ-SYSTEM.

The difference in the rates compared is also due to the different approach to cost allocation adopted in the calculation of the two tariffs compared to 2022. The rates approved for 2022 were calculated assuming an Entry-Exit split of 45/55.

In the model proposed by GAZ-SYSTEM for setting indicative reference prices for 2023, a 50/50 Entry-Exit split was applied, which does not discriminate between transmission system users, equally charging both entry and exit users to/from the transmission system and does not constitute barriers to both intra-system transmission and cross-system use of the network.

12. FIXED PRICE PAYABLE APPROACH

GAZ-SYSTEM applies a tariff model based on a variable payable price approved by the Energy Regulatory Office.