

Annex to the Decision of the President of ERO
of 31 March 2022
ref. no: DRG.DRG-2.745.1.2022.JDo1

**Reference Price Methodology no 2/OGP
for own transmission network
of Operator Gazociągów Przesyłowych
Gaz-System S.A.
For the period from 6:00 a.m. on 1 January 2023 to 6:00 a.m.
on 1 January 2025**

Warsaw, March 2022

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1. Preliminary information

The reference price methodology (also referred to as the RPM¹) has been developed for Operator Gazociągów Przesyłowych Gaz-System S.A., hereinafter referred to as "the Operator", to calculate transmission rates. The Operator also performs operator tasks on the transmission network owned by the energy company System Gazociągów Tranzytowych EuRoPol GAZ S.A. with its registered office in Warsaw, pursuant to the decision of the President of the Energy Regulatory Office of 17 November 2010 (ref. no DPE-4720-4(8)/2010/6154/BT). The reference price methodology for this network is included in a separate paper.

Decision of the President of ERO concerning issues referred to in Article 28(1)(a)-(c) of Commission Regulation (EU) 2017/460 of 16 March 2017 establishing a network code on harmonised transmission tariff structures for gas (OJ L 72 of 17.03.2017 p. 29), hereinafter referred to as "the Tariff Code", taking into account the results of consultations held from 31 August to 31 October 2021, concerning, among others, multipliers and seasonal factors for short-term gas transmission services, levels of discounts at entry points from the LNG terminal and discounts used to calculate reserve prices of standard interruptible capacity products has been published² independently of the decision on the reference price methodology referred to in Article 27 (4) of the Tariff Code, to which this study is attached.

2. Legal disclaimer on the indicative nature of the data and the results of the calculations contained in this paper

Any figures relating to 2023 presented in this paper (e.g. regulated revenue, contracted capacities, reference prices) are indicative and are intended only to illustrate the impact of the adopted RPM on the level of transmission charges. These data do not constitute the basis for calculation of the tariff during the term of validity of the RPM.

In the event of any discrepancies between the Polish and English versions of this paper, the paper drawn up in the Polish language shall prevail.

¹ Reference price methodology

² <https://www.ure.gov.pl/pl/biznes/taryfy-zalozenia/mnozники-wspolczynniki-3/9723,Rynek-gazu-konsultacje-dotyczace-rabatow-mnozownikow-i-wspolczynnikow-sezonowych-d.html>

3. RPM validity term

In accordance with Article 27(5) of the Tariff Code, the procedure involving final consultation on the RPM, the issuing of a decision on the RPM by the national regulatory authority, the calculation of the tariff on the basis of that decision and its publication should be repeated at least every five years starting from 31 May 2019.

With respect to the validity term of the RPM, the scope of investments currently implemented by the Operator should be taken into account in particular. These investments will have a significant impact on the level of: justified costs, return on capital employed, volume of capacity orders at individual entry and exit points to and from the transmission system and will cause a significant change in gas flows in the network. Therefore, it is difficult to predict to what extent the capacity at the new entry/exit points to/from the transmission system will be incremental, and to what extent it will replace the existing capacity. In this context, a source of significant uncertainty is also the current situation on the gas market and the directions of its development

Putting to use of a major part of the transmission system components resulting from these investments is planned for the end of 2022 and at the beginning of 2023.

Considering the above, the validity term of this RPM was set at 2 years, that is **from 1 January 2023 6 a.m. to 31 December 2022 6 a.m.**³.

Based on this methodology and the applicable regulations, the Operator calculates a tariff and submits it together with a justification to the President of the Energy Regulatory Office for approval. The tariff period is the same as the year (from 6:00 a.m. on 1 January of a given year to 6:00 a.m. on 1 January of the following year).

4. Description of the reference price methodology (Article 26(1)(a) of the Tariff Code)

Pursuant to § 6(1) of Tariff Regulation⁴ transmission tariffs included in a tariff document are calculated for a period of 12 months. However, pursuant to Article 47(5) of the Energy Law Act, the operator shall apply the tariff since the date specified by the President of the ERO in the decision approving the tariff, not earlier than 14 days since the date of its publication.

Transmission charges are calculated based on the entry/exit model, applying the so-called postage stamp RPM. Only fixed rates related to contractual capacity (gr/kWh/h/h)⁵ for entries and exits to and from the transmission system are calculated, taking into account the discount for storage facilities (80%) and LNG facilities (100%), for high-methane E gas⁶.

The same RPM is applied separately to the transmission system of high-methane natural gas E and low-methane natural gas L⁷. These systems are separate balancing areas. The share of revenues from the provision of transmission services in the L gas system is approximately 2% (according to data included in the Consultation Document).

³ Pursuant to the definition of gas day - Article 3(16) of Commission Regulation (EU) 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems and repealing Regulation (EU) No 984/2013 (OJ L 72/1 of 17.03.2017), hereinafter referred to as „the NC CAM”.

⁴ The regulation of the Minister of Energy of 15 March 2018 on detailed terms for structuring and calculation of tariffs and settlements in trade in gaseous fuels (Journal of Laws of 2021, Item 280).

⁵ According to Article 10 of NC CAM.

⁶ High methane natural gas – E group.

⁷ Low-methane natural gas – L group, subgroup Lw.

The entry/exit split, referred to in Article 30(1)(b)(v)(2) of the Tariff Code, for calculation of indicative reference prices was adopted in the same way as in Consultation Document, that is 50/50. Whereas in tariff calculation the allowable entry/exit split in the proportion from 30/70 to 70/30 is assumed, for each gas subsystem.

The assumed flexibility is aimed at reducing possible fluctuations in the levels of transmission charges in subsequent tariffs. These fluctuations may occur in the event of a significant change in the distribution of the forecasted transmission capacities (referred to in point 4.1) resulting in particular from the contracted capacities at entry/exit points to/from the transmission system, due to the commissioning of new elements of the transmission infrastructure (significant increase in the value of regulatory assets - RAB)⁸ and a significant reconfiguration of the system's operation resulting from the ongoing change in the main directions of gas supply (the issue of investments is discussed in more detail in point 8 on the description of the transmission system).

Additionally, the above mentioned changes are combined with changes taking place on the gas market itself.

In connection with the recommendation contained in the ACER Analysis⁹ (paragraph 9, bullet 5), the criterion for applying the entry/exit split different than the 50/50 will be the stabilization of transmission charges or minimization of fluctuations in the levels of these charges, between successive Operator's tariffs. The issue of applying the entry/exit split different than the 50/50 proportion will be assessed by the President of ERO in the annual tariff approval proceedings, in particular on the basis of data provided by the Operator.

Calculated revenue will be divided into entries and exits to and from the transmission system in accordance with the adopted entry/exit split. The transmission rates for entry/exit points is derived by dividing the regulated revenue allocated to particular types of entry/exit points by the total contractual capacity of these points (including discounts applied to the UGS and LNG) and a number of hours in a year.

It is not envisaged to apply commodity-based transmission tariffs, referred to in Article 26(1)(c)(i) and Article 4(3)(a) and (b) of the Tariff Code.

The issue of provided by the Operator non-transmission services¹⁰ was described in section 6 of this document.

The fixed payable price approach referred to in Article 26(1)(e) and Article 24(b) of the Tariff Code shall not be applied. The floating payable price approach referred to in Article 24(a) of the Tariff Code shall be applied.

⁸ Mainly: Baltic Pipe project, Poland-Lithuania Interconnection (GIPL), Poland-Slovakia Interconnection and North-South Corridor.

⁹ [https://extranet.acer.europa.eu//Official documents/Acts of the Agency/Publication/Agency%20report%20-%20analysis%20of%20the%20consultation%20document%20for%20Poland National.pdf](https://extranet.acer.europa.eu//Official%20documents/Acts%20of%20the%20Agency/Publication/Agency%20report%20-%20analysis%20of%20the%20consultation%20document%20for%20Poland%20National.pdf)

¹⁰ Non-transmission services means the regulated services other than transmission services and other than services regulated by Regulation (EU) No 312/2014 that are provided by the transmission system operator (Article 3(15) of the Tariff Code).

4.1. Indicative information referred to in Article 30(1)(a) used in the postage stamp methodology (Article 26(1)(a)(i) of the Tariff Code)

The only cost driver used in the RPM is forecasted contractual capacity.

The level of forecasted contractual capacities constituting the basis for calculation of reference prices for the tariff year n+1 (the year for which the tariff is calculated) will be the sum of:

- firm and interruptible capacities booked for year n+1 under an Open Season procedure, resulting from long-term contracts and capacities booked under concluded auctions,
- contractual capacities booked under yearly standard capacity products for firm and interruptible capacity as of the date of the tariff application submission in year n,
- forecasted capacity bookings under standard yearly products for firm and interruptible capacity (also under long-term bookings, Open Season and auctions) for year n + 1, resulting from investments planned for commissioning in year n and n + 1, including those resulting from the planned commissioning of new, modernized, rebuilt and expanded customer connections,

and

- the level of capacity realised under quarterly, monthly and daily standard products for firm and interruptible capacity in calendar year n-1 - preceding year n, in which the tariff application is submitted,

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

- within the high-methane and low-methane gas, and for
- entry/exit points from/to storage facilities within the high-methane gas subsystem.

The level of transmission capacities adopted for the calculation of indicative reference prices for 2023 is presented in a table no. 1.

Table 1. Indicative transmission capacities for 2023.

Contractual capacity	Unit	Indicative forecast for 2023	
		E gas	L gas
Entry points - TOTAL, including:	kWh/h	60 512 751	1 202 602
Interconnection points	kWh/h	24 809 856	-
Production facilities	kWh/h	2 921 038	1 202 602
Gas storage facilities	kWh/h	24 818 244	-
LNG Terminal	kWh/h	7 963 613	-
Exit points - TOTAL, including:	kWh/h	74 829 441	2 062 997
Interconnection points	kWh/h	3 379 534	-
Internal points		57 075 737	2 062 997
Gas storage facilities	kWh/h	14 374 170	-

4.2. Values of proposed adjustments of transmission tariffs based on capacity, referred to in Article 9 of the Tariff Code (Article 26 (1) (a) (ii) of the Tariff Code)

4.2.1. Discount for UGS¹¹

Pursuant to Article 9(1) of the Tariff Code, a discount of **at least 50%** shall apply to transmission tariffs based on capacity at entry points from storage facilities and exit points to storage facilities, excluding storage facilities connected to more than one transmission or distribution network, to the extent in which the facility is used to compete with an interconnection point.

In the calculation of reference prices for both entry and exit points to/from storage facilities, a discount of **80%** will be applied, which is consistent with the requirements set out in Article 9(1) of the Tariff Code. The adopted discount takes into account the benefits and costs that storage facilities provide for the entire transmission system and is to contribute to the effective utilisation of these facilities. The main benefits from storage facilities include:

- ensuring stability and integrity of the transmission system operation,
- ensuring flexibility in situations of increased demand for gaseous fuel both during the winter season and during daytime peaks,

In addition, its proximity to major demand centres makes it the most responsive source of supply that can be used to meet daily increases in demand for gaseous fuel.

There are no storage facilities in the Polish transmission system that would be connected to more than one transmission or distribution network nor are they used to compete with interconnection points.

4.2.2. Discount for LNG

Pursuant to Article 9(2) of the Tariff Code, a discount may be applied to capacity-based transmission tariffs at the entry points from LNG facilities and at the entry points from and exit points to infrastructure designed to end Member States' isolation, in terms of their gas transmission systems, in order to enhance security of supply.

In the calculation of reference prices for the entry point from the LNG facility, a **100%** discount will be applied, arising mainly from the importance of the facility for the increase of security of gas supply to Poland. The discount at this level has been applied since the commencement of regasification at the LNG Terminal in Świnoujście, that is since June 2016, and stems from its key importance for:

- increasing the security of gas supply to Poland through diversification of supply directions and ensuring access to the global gas market - fully independent from perturbations on the local and regional markets,
- development of competition on the domestic gas market by creating a possibility to obtain gas for the needs of domestic consumers from a new source.

¹¹ Underground gas storage constituting a storage facility.

The issue of the discount at the entry point from the LNG facility was the subject of separate consultations held from 1 September to 31 October 2021 pursuant to Article 28 of the Tariff Code and is included in a separate paper published by the President of the Energy Regulatory Office, independently of the decision on the reference price methodology referred to in Article 27(4) of the Tariff Code.

4.3. Indicative reference prices (Article 26(1)(a)(iii) of the Tariff Code)

A comparison of the transmission tariffs for 2022 with the indicative tariffs for 2023, calculated in accordance with the RPM is presented in table no 2.

Table 2. A comparison of transmission tariffs [gr¹²/kWh/h/h].

Gas transmission network:	Reference prices [gr/kWh/h/h]	2022 (valid)	2023 (indicative)	Change [%]
High-methane (E)	Entry points	0,3200	0,4234	32
	Exit points	0,1908	0,2186	15
	Entry points from UGS	0,0640	0,0847	32
	Exit points to UGS	0,0382	0,0437	15
	Entry point from LNG installation	-	-	-
Low-methane (L)	Entry points	0,2105	0,2409	14
	Exit points	0,1499	0,1404	-6

The main factor influencing the increase in indicative tariff for 2023 compared to the tariff applied in 2022 is the increase in regulated revenue assumed by the Operator (by 34%). This increase is mainly related to the implementation of capital-intensive strategic investments, relating to both the reconstruction and expansion of the network inside the Country, as well as the construction of new interconnections, aimed at diversifying the sources and directions of natural gas supplies to Poland and improving the quality and safety of services provided by the Operator. The increase in indicative tariff is also influenced by the adopted entry/exit split of revenues equal to 50/50, which has changed compared to the split adopted in the calculation of the existing tariffs, including the tariffs for 2022 (45/55).

However, it should be emphasized that the increase in revenue assumed by the Operator and its entry/exit split are indicative. The issue of setting the revenue is not covered by the provisions of the Tariff Code and it will be verified in a separate proceedings on approval of the tariff for gas transmission services. Similarly, the target entry/exit split will be established in the tariff approval procedure, taking into account the principles described in section 4 in paragraph 4.

4.4. Comparison of the indicative reference prices arising from the application of this methodology with the indicative prices calculated using the capacity weighted distance methodology (CWD) (Article 26(1)(a)(vi) of the Tariff Code)

The table no. 3 shows a comparison of reference prices calculated in accordance with the postage stamp methodology and prices calculated in accordance with the CWD methodology, including discounts for storage facilities (80%), LNG facilities (100%) and for interruptible transmission services – 6% for interconnection points and 2% - for internal points.

¹² 100 gr = 1 PLN

Table 3. A comparison of transmission tariffs, including discounts [gr/kWh/h/h].

Tariff group	Type of point	Tariff - the Postage Stamp RPM	Tariff - the CWD RPM			
			Minimal	Maximal	Average	Capacity Weighted Average
E-entry	Gas fields	0,4234	0,3430	0,3431	0,3430	0,3430
	IPs	0,4234	0,3285	0,5324	0,4306	0,4481
	Nitrogen removal plants	0,4234	0,2642	0,3550	0,3096	0,3037
E-entry - UGS		0,0847	0,0581	0,0959	0,0717	0,0714
E-exit	IPs	0,2186	0,2575	0,3207	0,2851	0,2880
	Distribution	0,2186	0,0007	0,3073	0,2193	0,2135
	Final customers	0,2186	0,1544	0,2904	0,2194	0,2176
E-exit - UGS		0,0437	0,0362	0,0544	0,0478	0,0451
L-entry	Gas fields	0,2409	0,0821	0,4332	0,2552	0,2409
L-exit	Distribution	0,1404	0,0058	0,2273	0,1223	0,1408
	Final customers	0,1404	0,1307	0,1662	0,1448	0,1381

The table no. 4 shows a comparison of reference prices calculated in accordance with the postage stamp methodology and prices calculated in accordance with the CWD methodology, not including discounts for storage facilities, LNG facilities and for interruptible transmission services.

Table 4. A comparison of transmission tariffs, not including discounts [gr/kWh/h/h].

Tariff group	Type of point	Tariff - the Postage Stamp RPM	Tariff - the CWD RPM			
			Minimal	Maximal	Average	Capacity Weighted Average
E-entry	Gas fields	0,2287	0,1857	0,1857	0,1857	0,1857
	IPs	0,2287	0,1778	0,2882	0,2331	0,2426
	Nitrogen removal plants	0,2287	0,1430	0,1922	0,1676	0,1644
E-entry - UGS		0,2287	0,1572	0,2596	0,1941	0,1933
E-exit	IPs	0,1846	0,2162	0,2693	0,2394	0,2414
	Distribution	0,1846	0,0006	0,2580	0,1842	0,1793
	Final customers	0,1846	0,1297	0,2438	0,1842	0,1827
E-exit - UGS		0,1846	0,1520	0,2283	0,2006	0,1895
L-entry	Gas fields	0,2409	0,0821	0,4332	0,2552	0,2409
L-exit	Distribution	0,1404	0,0058	0,2273	0,1223	0,1408
	Final customers	0,1404	0,1307	0,1662	0,1448	0,1381

The differences in reference prices for high-methane gas E calculated in accordance with the CWD method compared to the postage stamp method result from the assumptions of the CWD method, which takes into account the distance of the entry and exit points from other points in the transmission system in the rate calculation. Points with relatively higher rates are points with poor connection with other points and located on the edges of the transmission system, while points with relatively lower rates are points most often located inside the system, with numerous connections to other points that can be supplied from multiple sources of gaseous fuel supplies.

4.5. Results and components of the assessment of the cost allocation referred to in Article 5 and details of these components (Article 26(1)(a)(iv) of the Tariff Code) and the split between intra-system and cross-system (Article 30(1)(b)(V)(3) of the Tariff Code)

Pursuant to Article 5(1) of the Tariff Code, the regulatory authority or the transmission system operator, depending on the decision of the national regulatory authority, shall perform an assessment of the allocation of costs concerning revenues from transmission services to be recovered in the form of capacity-based transmission tariffs and shall publish them in the final consultation referred to in Article 26 of the Tariff Code.

The table below presents an assessment of cost allocation for the transmission system of high-methane gas, as there is no interconnection point in the low-methane gas system. This assessment was based on the cost driver of the expected contracted capacity.

Table 5. Cost allocation assessment (CAA)

COST ALLOCATION ASSESSMENT	Unit	Postage stamp method	
		With discounts	Without discounts
1	2	3	4
Revenue	1000 PLN	2 425 055	2 425 055
ENTRY rate (cross-system use) E-entry*	gr/kWh/h/h	0,2287	0,2287
EXIT rate (Ewy cross-system use) E-exit	gr/kWh/h/h	0,2186	0,1846
Intra system capacity (E-entry+E-exit)**	kWh/h	128 893 307	128 767 461
Cross-system capacity (E-entry+E-exit)**	kWh/h	6 448 885	6 759 068
Entry income cross-system use	1000 PLN	64 599	67 706
Exit income cross-system use	1000 PLN	61 736	54 650
Income - cross-system use - Total (E-entry + E-exit)	1000 PLN	126 335	122 356
share	%	5%	5%
Income - intra-system use - Total (E-entry + E-exit)	1000 PLN	2 298 721	2 302 699
share	%	95%	95%
Cross-system coefficient	PLN/kWh/h	19,59	18,10
Intra-system coefficient	PLN/kWh/h	17,83	17,88
INDEX	%	9,38%	1,22%

* average charge for entry points, entry points from UGS, entry point from LNG installation.

** The difference of capacity for the scenario with and without discounts results from taking into account interruptible capacities.

Pursuant to the provisions of Article 5(6) of the Tariff Code, where the value of the index presented in the above table does not exceed 10%, no justification of this value is required in the regulatory authority's decision referred to in Article 27(4). The value of the index confirms that there is no excessive cross-subsidisation between the intra- and cross-system utilisation of the transmission network.

4.6. Evaluation of the reference price methodology as regards compliance with the requirements of Article 7 of the Tariff Code (Article 26(1)(a)(v) of the Tariff Code)

Pursuant to Article 7 of the Tariff Code, the reference price methodology must comply with Article 13 of Regulation (EC) No 715/2009 and with the following requirements.

This method should:

- (a) enable network users to reproduce the calculation of the reference prices and provide their accurate forecast;
- (b) take into account actual costs incurred in connection with providing transmission services, including the complexity of the transmission network;
- (c) ensure non-discrimination and prevent undue cross-subsidisation, among others, by taking into account cost allocation assessments as set out in Article 5;
- (d) ensure that significant volume risk associated in particular with transmission via given entry-exit system is not assigned to final customers within that entry-exit system;
- (e) ensure that the reference prices received do not distort cross-border trade.

This reference price methodology meets all the above requirements. In addition, it should be stressed that this methodology is simple and transparent, thanks to which the transmission system users can easily reproduce the calculation of reference prices and estimate their changes in the future.

4.6.1 The tariff models for high-methane and low-methane¹³ gas published on the website enable network users to reproduce the reference price calculations and their forecast. The accuracy of this forecast is limited by the accuracy of estimates of revenue developments and capacity orders. Under this methodology, the final regulated revenue shall be determined annually in the tariff approval proceedings.

4.6.2 The methodology takes into account the actual costs incurred in providing transmission services. Based on actual costs of transmission services provision, disclosed in the audited financial statements, forecasts of justified costs for tariff calculation are made.

As the Polish transmission system is meshed, determining the method of allocation of actual costs to points of the transmission system is very difficult, hence the methodology of the so-called postage stamp, according to which the costs allocated to a given point of the transmission system are proportional to the projected ordered capacity, was applied. Due to the fact that the users, thanks to the multiplicity of entries (including UGS, production and intersystem connections), use the transmission system to the same extent, this approach is justified. There are many interconnections in the transmission network and the points are quite densely and evenly distributed on the topographic map of the transmission system. Various gas flow pattern, various delivery schema due to IPs in S and SW Poland, terminal LNG and Baltic Pipe development show the possibility to supply gas from all entry points. Such a network of connections allows for the assumption that all users of the transmission system use the transmission system equally, and therefore they should bear proportionally

¹³ <https://www.gaz-system.pl/pl/dla-klientow/uslugi-w-ksp/taryfa-ksp/nc-tar.html>

the costs of its development and operation. The transmission system diagram is presented on page 18.

In this system, distance is not a significant cost driver, which was confirmed by comparing the results obtained using the postage stamp methodology with the CWD methodology, presented in item 4.4.

- 4.6.3** The methodology ensures non-discriminatory treatment of transmission system users as the same transmission rates are applied to all users of gas transmission services at entry points and the same at exit points. Discounts/adjustments are applied to entry/exit points from storage facilities and entry points from LNG facilities in accordance with the provisions of the Tariff Code.

The result of the cost allocation assessment referred to in Article 5 of the Tariff Code, presented in item 4.5 (9.38%), confirms that there is no excessive cross-subsidisation between cross-system and intra-system users. It should be noted that due to the meshed transmission system (60 entry points and 925 exit points), the results of this comparison are approximate as it is then almost impossible to accurately allocate costs to a given point.

Moreover, the proposed the postage stamp method also prevents cross-subsidization between the high-methane gas E and low-methane gas L subsystem, thanks to the fact that the rates of transmission fees are calculated on the basis of regulated revenue determined separately for each gas subsystem. Therefore, the tariffs applied to the high-methane gas E and low-methane gas subsystems respectively cover the costs of these transmission subsystems and do not lead to cross-subsidization.

- 4.6.4** Due to the limited use of the system for cross-border transmission (the share of transit – about 5%) and the exclusive application of fixed rates based on capacity, there is no risk of increased costs being allocated to final customers due to lack of capacity orders by users of cross-system services.

The implementation of network development projects is aimed mainly at the diversification of gas flow directions in order to make Poland independent of a single supplier. This means that the capacities that will emerge as a result of the investment program being implemented (e.g. after the Baltic Pipe commissioning) will largely be replacement capacities and not incremental ones, and as a consequence the degree of system utilization for the needs of internal users will not change radically.

- 4.6.5** Reference prices do not distort cross-border trade, as there is no discrimination of transmission system users and cross-subsidisation.

The same level of transmission fees is used for all entry points and the same level for all exit points, therefore there are no price preferences for a specific flow of gaseous fuels.

5. Indicative information referred to in Article 30(1)(b)(i), (iv) and (v) of the Tariff Code (Article 26(1)(b) of the Tariff Code)

5.1. Allowed revenue of the transmission system operator (Article 30(1)(b)(i) of the Tariff Code)

Regulated revenue approved by the President of the Energy Regulatory Office is the sum of forecasted justified operating costs related to regulated activity for a given tariff year and return on capital employed.

Regulated revenue is determined for a period of 12 months in administrative proceedings on the approval of the tariff.

Pursuant to Article 10 (1), (2) and (3) of the Ordinance of the Minister of Energy of 15 March 2018 on detailed rules of shaping and calculating tariffs and settlements in the gaseous fuel trade (Journal of Laws of 2021, item 280), regulated revenue is covered by revenue earned from:

- a) transmission rates,
- b) fees for exceeding contracted capacity in the year preceding the year in which the tariff is submitted for approval,
- c) fees for services performed at the additional demand of the customer (the quality testing of gaseous fuels supplied, interruption or resumption of the supply of gaseous fuels) achieved during the year preceding the year in which the tariff was submitted for approval,
- d) revenues under the performance of the contract referred to in Article 9h (3) (2) of the Energy Law Act, as well as from the performance of activities arising from the decision referred to in Article 9h (9) of the Energy Law (balance of revenues and costs).

Pursuant to the administrative decision No. DRG.DRG-2.745.3.2021.JDo1¹⁴ dated of 26th August 2021 issued upon Article 19(5) of the Tariff Code the total revenues from the auction premium, which will be achieved by the Operator in 2022 and the following years in connection with the sale of contracted capacity / transmission capacity in its own transmission network, will be used to reduce tariffs for subsequent tariff periods. This decision is of particular importance due to the planned large increase in RAB in the coming years due to the completion of capital-intensive investments.

In addition, in connection with the statement made by the Operator during the proceedings concerning the approval of this reference price methodology, the aforementioned regulated revenue will also be decreased by revenues earned from the provision of services by the GSA platform and possible revenues from the provision of services by gas quality measurement laboratories and calibration of gas meters for third parties.

Pursuant to Article 7(10) of the Energy Law Act, costs arising from expenditures on connection of entities applying for connection to the gas network, to the extent that they have been covered by revenues from grid connection fees, do not constitute a basis for determining the tariff rates for the transmission of gas fuels.

Due to the fact that the Tariff Code does not include detailed rules for determining regulated revenue, this issue will not be explained in more detail in this paper.

5.2. Revenues from transmission services (Article 30 (1) (b) (iv) of the Tariff Code)

Table 6. Indicative transmission services revenue

Revenue covered by transmission rates, including:	1000 PLN	2 475 802
Rates based on capacities	1000 PLN	2 475 802
Rates based on volume	1000 PLN	-
High-methane (E) gas network, including:	1000 PLN	2 425 055
Entry points	1000 PLN	1 212 528
Exit points	1000 PLN	1 212 527
Low-methane (Lw) gas network, including:	1000 PLN	50 747
Entry points	1000 PLN	25 374
Exit points	1000 PLN	25 373

¹⁴ <https://bip.ure.gov.pl/bip/taryfy-i-inne-decyzje-b/inne-decyzje-informacji/4002,Inne-decyzje-informacje-sprawozdania-opublikowane-w-2021-r.html>

6. Non-transmission services and tariffs (Article 26 (1) (c) (ii) of the Tariff Code)

Pursuant to Article 4 (1) of the Tariff Code, a given service is included in transmission services, provided that both of the following criteria are met:

- the costs of such service are caused by the cost drivers of both technical or forecasted contracted capacity and distance;
- the costs of such a service are related to the investment in and operation of infrastructure which is part of the regulated asset base for the provision of transmission services.

If any of the above criteria is not met, a given service may be classified as transmission or non-transmission service depending on the findings of the periodic consultations by the transmission system operator and decisions of the national regulatory authority.

In accordance with the Consultation Document, the Operator planned revenues for non-transmission services in the amount of PLN 64 million, including PLN 23 million for compression services and PLN 41 million for pressure reduction services. Revenues from the provision of non-transmission services will be taken into account in determining the balance of the regulatory account.

It should be emphasized that all data and assumptions adopted by the Operator to calculate the rates for compression services and gas pressure reduction services in the Consultation Document are indicative and will be subject to final verification during the administrative procedure for tariff approval.

In the event of the emergence of non-transmission services other than those identified to date, the revenues from these services will be included in the regulated revenue.

6.1. Compression services

At the user's request, the operator will offer the gas fuel compression service at selected (10) entry points to the transmission system, in particular for the delivery of natural gas from local gas fields. The service will be provided with the use of compressor stations, the capacity of which is not fully used for system needs.

The revenue covering the costs of compressor stations in the part allocated to the provision of gas fuel compression services (by excluding costs related to the provision of transmission services) and the return on capital on assets or their part involved in the provision of compression services, will be recovered at the entry points to the gas transmission system in the form of monthly fees.

The monthly fee for the compression service will be the sum of the two components:

- fixed subscription fee based on fixed costs of the compression service for a given gas compressor station [PLN / month];
- variable fee constituting the product of:
 - amount of gas used to drive compressors in a given compressor station in the part related to the provided gas fuel compression service [kWh] and
 - reference gas price (CRG) for the high-methane gas balancing area defined as the price representing the weighted average purchase price of gaseous fuel by the Operator in the gas month preceding the month in which the CRG will be published [PLN/kWh]. The published CRG price for the period covered by the billing is accepted for billing.

6.2. Pressure reduction services

The gas pressure reduction service will be provided by the Operator on technological devices installed at exit points from the transmission system in order to reduce the gas pressure to medium and / or low pressure at the connection point of the gas station with the customer's installation connected to the transmission system.

Thanks to this service, cross-subsidization of customers requiring the gas pressure reduction service (682 points) to medium and / or low pressure will be limited by:

- customers with their own reduction and measurement stations (6 points) and
- customers who do not need an additional pressure reduction service (231 points).

The introduction of this service will result in the costs related to, inter alia, with the operation, renovation and modernization of the reduction and measurement stations¹⁵ will be borne by the users of these services. In the tariffs used so far, these costs were included in the calculation of the charges for the transmission of gaseous fuels and thus incurred jointly and severally by all users (the so-called socialized).

The revenue covering the costs related to the operation of pressure reduction and metering stations in the scope of the provision of reduction services and the return on capital on assets or their part involved in the provision of pressure reduction services, will be recovered at the exit points from the gas transmission system where the pressure reduction service is required, in the form of fixed fees depending on the contracted capacity / transmission capacity [gr/kWh/h/h]. The rate of this fee will be calculated as the quotient of the regulated revenue related to reduction services and the sum of contracted capacities / capacities at transmission system exit points, where it is necessary to provide the pressure reduction service by the Operator, and the number of hours in a year.

The above solution is in line with the recommendation set out in recital 8, 9, indent 5 and in section 5.3 of the ACER Analysis¹⁶. The Agency recommended the Regulator to consider setting two rates of fees at the exit from the transmission system: higher for exit points where the pressure reduction service provided by the Operator is required and lower for other points of the transmission system. The solution will be a slight deviation from the postage stamp method, but it will make it possible to limit cross-subsidization between these groups of recipients

7. Indicative information referred to in Article 30(2) of the Tariff Code (Article 26(1)(d) of the Tariff Code)

The Operator's website¹⁷ contains simplified tariff models which allow to calculate indicative reference prices of standard capacity products proposed for the 2023 tariff year and to estimate them for the following year, with any selection of parameters concerning the revenue entry/exit split or appropriate adjustments (discounts for UGS and LNG), in accordance with the algorithm presented below:

Table 7. indicative prices calculation

¹⁵ Including heating (boilers and gas consumption) and pressure reduction facilities (three-level of pressure safety).

¹⁶ https://extranet.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/Agency%20report%20-%20analysis%20of%20the%20consultation%20document%20for%20Poland_National.pdf

¹⁷ <https://www.gaz-system.pl/pl/dla-klientow/uslugi-w-ksp/taryfa-ksp/nc-tar.html>

Natural gas transmission network	Unit	2019		2020	
		E	L	E	L
Calculation revenue	PLN thousand	1 847 625	49 269	2 425 055	50 749
Revenue share at entries	1000 PLN	1 847 625	49 269	2 425 055	50 749
Revenue split EN/EX	%	45	45	50	50
Discount at entries from UGS	%	45:55	45:55	50:50	50:50
Discount at exits to UGS	%	80	80	80	80
Discount at entries from LNG installation	%	80	80	80	80
Capacity at entries	%	100	100	100	100
Capacity at entries from UGS	kWh/h	24 695 646	1 202 602	27 730 894	1 202 602
Capacity at entries from LNG installation	kWh/h	24 818 244	none	24 818 244	none
Capacity at exits	kWh/h	7 963 613	none	7 963 613	none
Capacity at exits to UGS	kWh/h	57 922 966	2 062 997	60 455 271	2 062 997
Rate at entries	kWh/h	14 374 170	none	14 374 170	none
Rate at entries from UGS ⁵	gr/kWh/h/h	0,3200	0,2105	0,4234	0,2409
Rate at entries from LNG	gr/kWh/h/h	0,0640	none	0,0847	none
Rate at exits	gr/kWh/h/h	-	none	-	none
Rate at exits to UGS ¹⁸	1000 PLN	1 847 625	49 269	2 425 055	50 749

8. Description of the gas transmission system of the Gas Transmission Operator GAZ-SYSTEM S.A.

The transmission system included in the Operator's assets consists of a part related to the transport of high-methane gas (group E) and low-methane gas (group L, subgroup Lw).

Table 8. Length and diameters of pipelines.

Diameter	Gas E	Gas Lw	Total
[mm]	[km]	[km]	[km]
<DN[mm] ≤ 100	732	170	902
100<DN[mm] ≤ 300	2 800	423	3 223
300 < DN[mm] ≤ 400	1 377	52	1 429
400 < DN[mm] ≤ 500	3 103	56	3 160
500 < DN[mm] ≤ 700	1 784		1 784
700 < DN[mm] ≤ 900	81		81
900< DN[mm] ≤ 1000	815		815
Total	10 692	702	11 394

¹⁸ Rates obtained by applying a discount of 80% to the rate at entries and exits. The calculation of entry/exit rates takes into account 20% of capacity at entries/exits from storage installations, which results from the mathematical equation.

8.1. High-methane gas transmission system (group E) - status as at 31 December 2021

8.1.1. The high-methane gas system forms a main system comprising:

8.1.1.1. East main line on the route Hermanowice-Jarosław-Wronów-Rembelszczyzna,

8.1.1.2. Southern main line on the route Hermanowice-Jarosław-Pogórska Wola-Tworzeń-Odolanów-Lwówek,

8.1.1.3. The north-western main line on the route Lwówek-Szczecin-Terminal LNG-Świnoujście-Gdańsk,

8.1.1.4. Central Poland gas supply system on the route Hołowczyce-Rembelszczyzna-Gustorzyn-Odolanów,

8.1.1.5. Gas supply system for northern Poland on the Gustorzyn-Gdańsk route,

8.1.1.6. Transmission system in Lower Silesia.

Gas flows in the system vary depending on the demand for gas, the operation of connected facilities (gas storage facilities, LNG terminal) and gas import.

8.1.2. The Operator's transmission system is supplied with high-methane gas at 54 entry points:

8.1.2.1 Entries to the national transmission system (gas import):

8.1.2.1.1. Kondratki with a technical transmission capacity of 42.68 GWh/h,

8.1.2.1.2. GCP GAZ-SYSTEM/UA TSO with a technical transmission capacity of 5.65 GWh/h,

8.1.2.1.3. Wysokoje with a technical transmission capacity of 7.04 GWh/h,

8.1.2.1.4. Mallnow with a technical transmission capacity of 7.70 GWh/h,

8.1.2.1.5. GCP GAZ-SYSTEM/ONTRAS with a technical transmission capacity of 2.03 GWh/h,

8.1.2.1.6. Tietierowka with a technical transmission capacity of 0.30 GWh/h,

8.1.2.1.7. Cieszyn with a technical transmission capacity of 1.17 GWh/h,

8.1.2.1.8. Branice with a technical transmission capacity of 0.002 GWh/h,

8.1.2.1.9. LNG Terminal with a technical transmission capacity of 6.58 GWh/h,

8.1.2.2. Entries from high-methane natural gas fields, located in SE Poland (37 gas fields),

8.1.2.3. Entries from the nitrogen removal plants (Odolanów and Grodzisk Wielkopolski),

8.1.2.4. Entries from underground gas storage facilities (7 storage facilities),

8.1.3. 14 compressor stations with the installed capacity of 133 MW operate in the transmission system.

8.1.4. The transmission system is connected with other systems and large industrial customers at 846 exit points (without UGS exit).

8.1.5. The annual volume of transmitted natural gas amounted to approx. 225.8 TWh (excluding the UGS approx. 202.4 TWh).

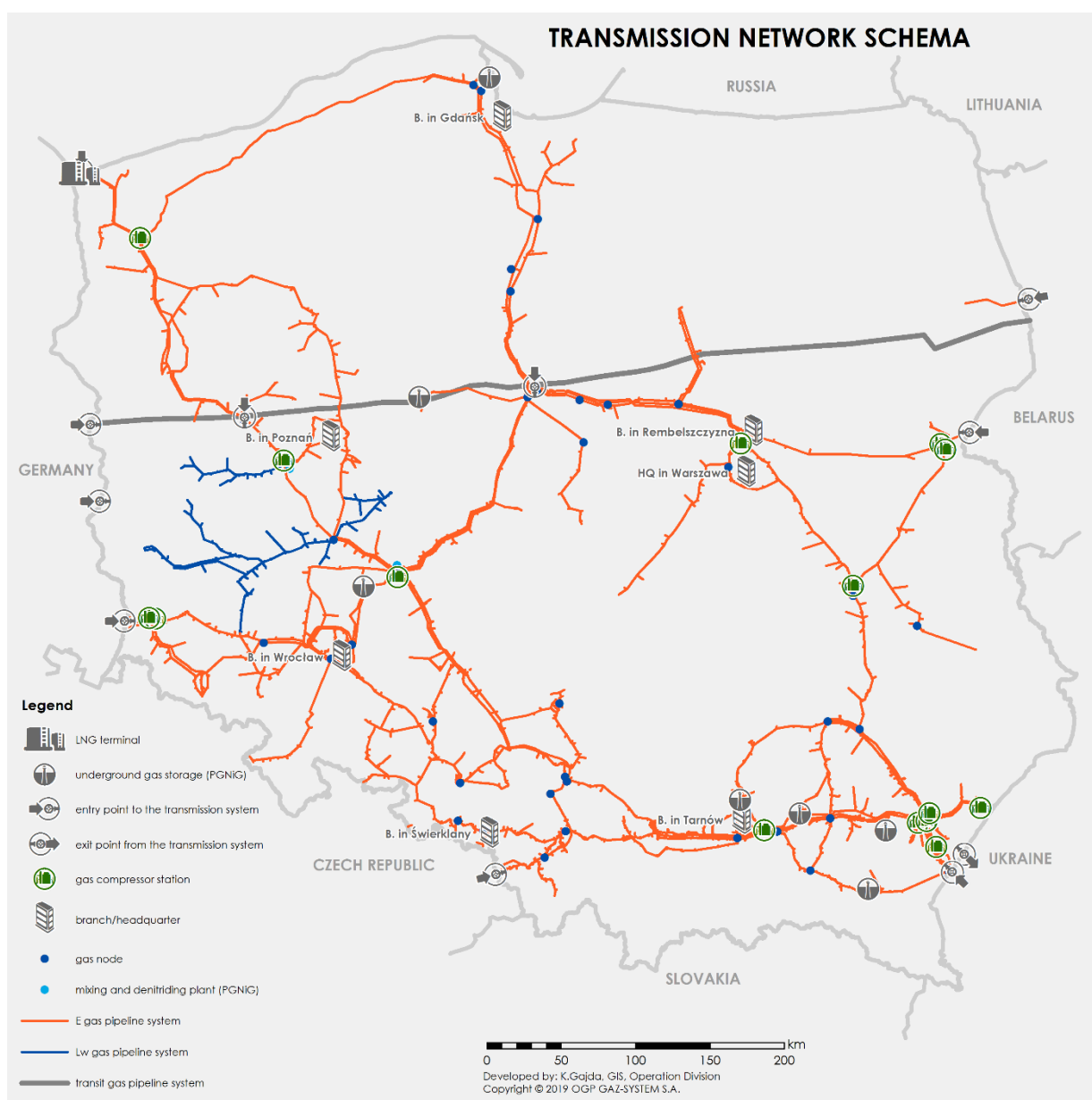
8.1.6. 7 underground gas storage facilities with a total working volume of 3.07 BCM (34.19 TWh) cooperate with the transmission system:

8.1.6.1. 2 UGS developed in salt caverns with working volume of 824.8 MMCM (9.19 TWh),

8.1.6.2. 5 UGS developed in partly depleted natural gas fields with working volume of 2,250 MMCM (25 TWh).

8.1.7. A stable increase in the volume of transmitted gas is expected.

Scheme no 1. Map of the high-methane gas transmission system (group E).



8.1.8. Development of the Operator's infrastructure

Until 2024, the priority will be to diversify the directions and sources of natural gas supplies by building new cross-border connections with Denmark, Slovakia and Lithuania, increasing the regasification capacity of the LNG terminal and building the so-called North-South corridor. The

European Commission has placed these projects on the list of PCI projects, emphasizing their particular significance for the growth of security and diversification of natural gas supplies in Europe and for the development of an integrated and competitive market. The implementation of these projects will entail significant changes in the natural gas flows in the transmission system of the Operator as a result of the construction of cross-border interconnections and the expansion of the LNG terminal.

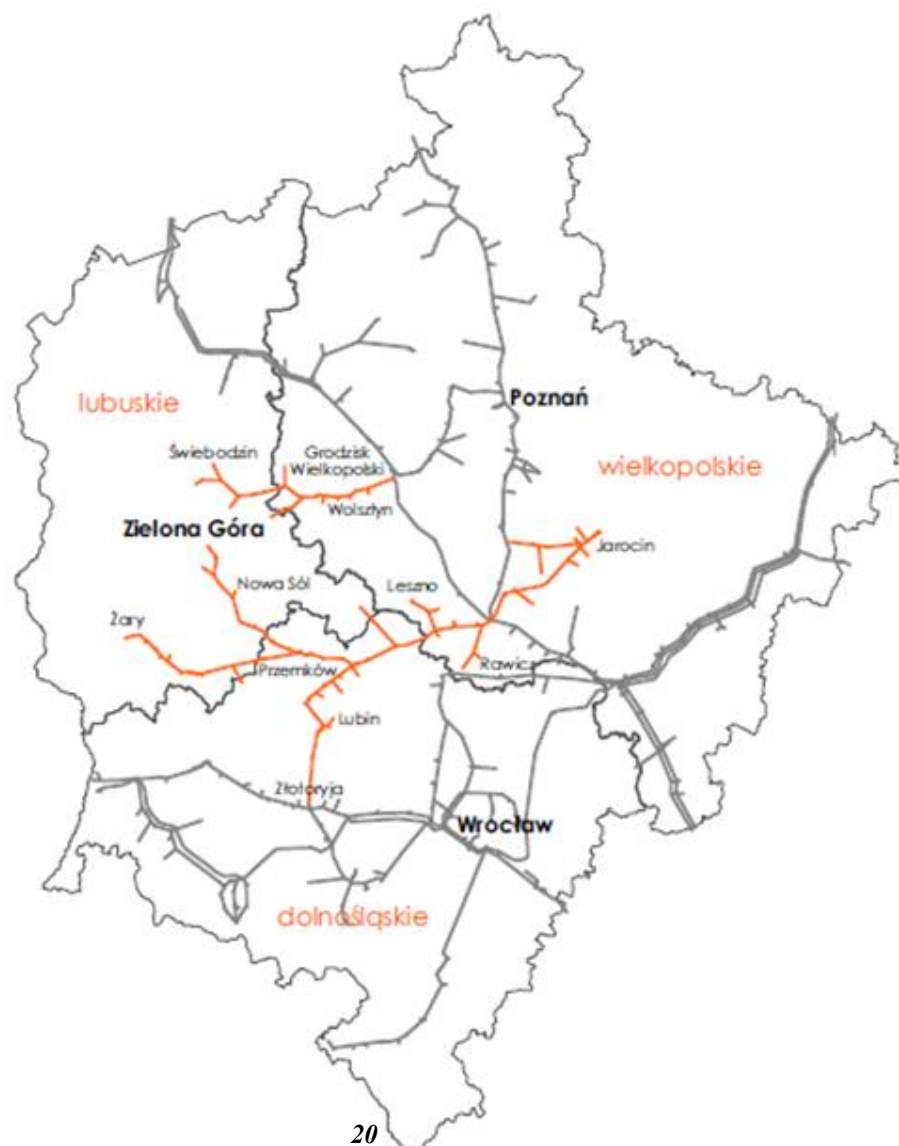
The map of the Operator's investments until 2022 is presented in Scheme 3.

8.2. Transmission system of low-methane gas (group L, subgroup Lw) - status as at 31 December 2021

The low-methane gas transmission system (group L, subgroup Lw) is a local island gas subsystem in western Poland in the Lubuskie, Wielkopolskie and Dolnośląskie Voivodships. The only sources and regulators in this system are the natural gas fields, e.g.: Kościan_Brońsko, Białcz, Radlin, Kaleje (Mchy), Roszków and the natural gas mixing plant in Grodzisk Wielkopolski (connected to the nitrogen removal plant, which is a facility dedicated to the gas production sector) - a total of 8 entry points. The transmission system of Lw low-methane gas is not directly connected to the transmission system of high-methane gas.

In the Lw gas system, gas is delivered to 77 exit points and has a low stable growth rate.

Scheme no 2. Map of the low-methane gas transmission system (Lw).



Scheme no 3. Map of the Operator's investments until 2022



No.	Project	Diameter (mm)	Length (km)
1.	Baltic Pipe offshore gas pipeline	DN 900	273
2.	Niechorze-Ploty gas pipeline	DN 1000	40
3.	Goleniów-Lwówek gas pipeline	DN 1000	191
4.	Strachocina-Pogórska Wola gas pipeline	DN 1000	98
5.	Pogórska Wola-Tworzeń gas pipeline	DN 1000	174
6.	Strachocina – Slovakian border gas pipeline	DN 1000	64
7.	Oświęcim-Tworzeń gas pipeline	DN 700	45
8.	Hołowczyce-Lithuanian border gas pipeline	DN 700	342
9.	Gustorzyn-Wronów gas pipeline	DN 1000	306
10.	CS Odolanów		
11.	CS Gustorzyn		
12.	CS Goleniów		
13.	CS Kędzierzyn		
14.	Gas node Strachocina		

Remaining projects:

- LNG Terminal (expansion)
- FSRU in the Gulf of Gdańsk

Projects – 2024 perspective:

- Gas compressor station - designing and constructing
- Gas node - designing and constructing

Map symbols:

- Gas pipelines border points

Gas pipelines projects – 2024 perspective:

- Designing and constructing
- Completed

Other gas network:

- Operated gas network
- Transit gas pipeline

Administrative borders:

- State border
- Voivodeships border