



## **PUBLICATION DOCUMENT**

IN FULFILMENT OF THE REQUIREMENTS ARISING FROM THE ART. 30 OF THE  
COMMISSION REGULATION (EU) 2017/460 OF 16 MARCH 2017 ESTABLISHING  
A NETWORK CODE ON HARMONISED TRANSMISSION TARIFF STRUCTURES FOR GAS

Warsaw, December 2018

## INFORMATION ON PARAMETERS USED IN THE APPLIED REFERENCE PRICE METHODOLOGY RELATED TO THE TECHNICAL CHARACTERISTICS OF THE TRANSMISSION SYSTEM

### 1. TECHNICAL CAPACITY AT ENTRY AND EXIT POINTS AND ASSOCIATED ASSUMPTIONS, ARTICLE 30 (1) (A) (I)

The table below sets out the total technical capacity of groups of points, which contracted capacity was included in the calculation of the reference prices within the Tariff No 12 for gaseous fuels transmission services of the Gas Transmission System Operator GAZ-SYSTEM S.A.

Entry/Exit points	Technical Capacity	Unit
Technical Capacity Entry E (high-methane gas)	37,967,218	kWh/h
Technical Capacity Entry UGS (high-methane gas)	25,077,074	kWh/h
Technical Capacity Entry LNG (high-methane gas)	7,576,800	kWh/h
Technical Capacity Entry Lw (low-methane gas)	4,332,079	kWh/h
Technical Capacity Exit E (high-methane gas)	77,710,183	kWh/h
Technical Capacity Exit UGS (high-methane gas)	14,315,079	kWh/h
Technical Capacity Exit Lw (low-methane gas)	3,322,728	kWh/h

### 2. FORECASTED CONTRACTED CAPACITY AT ENTRY AND EXIT POINTS AND ASSOCIATED ASSUMPTIONS, ARTICLE 30 (1) (A) (II)

The below table sets out aggregated forecasted contracted capacities of long-term and short-term capacities taking account of the duration of service as well as interruptible capacities included in calculation of the reference prices under the Tariff No 12 for gaseous fuels transmission services of the Gas Transmission System Operator GAZ-SYSTEM S.A.

Entry/Exit points	Contracted Capacity	Unit
Contracted Capacity Entry E (high-methane gas)	21,552,732	kWh/h
Contracted Capacity Entry UGS (high-methane gas)	21,521,889	kWh/h
Contracted Capacity Entry LNG (high-methane gas)	6,370,890	kWh/h
Contracted Capacity Entry Lw (low-methane gas)	1,375,942	kWh/h
Contracted Capacity Exit E (high-methane gas)	48,267,544	kWh/h
Contracted Capacity Exit UGS (high-methane gas)	12,551,184	kWh/h
Contracted Capacity Exit Lw (low-methane gas)	1,869,884	kWh/h

3. QUANTITY AND THE DIRECTION OF THE GAS FLOW FOR ENTRY AND EXIT POINTS AND ASSOCIATED ASSUMPTIONS, SUCH AS DEMAND AND SUPPLY SCENARIOS FOR THE GAS FLOW UNDER PEAK CONDITIONS, ARTICLE 30 (1) (A) (III)

Non applicable. GAZ-SYSTEM does neither use the reference price methodology based on the quantity and the direction of the gas flow for entry and exit points nor demand and supply scenarios for the gas flow under peak conditions.

4. STRUCTURAL REPRESENTATION OF THE TRANSMISSION NETWORK WITH APPROPRIATE LEVEL OF DETAIL, ARTICLE 30 (1) (A) (IV)

[See the operating coverage of the Gas Transmission Operator GAZ-SYSTEM S.A. \(joint stock company\) \(Transmission System Map\)](#)

5. ADDITIONAL TECHNICAL INFORMATION ABOUT THE TRANSMISSION NETWORK, SUCH AS LENGTH AND THE DIAMETER OF PIPELINES AND THE POWER OF COMPRESSOR STATIONS, ARTICLE 30 (1) (A) (V)

Length and diameter of the pipelines being part of GAZ-SYSTEM asset base for high-methane and low-methane gas.

Pipeline diameter DN	Length [km]	
	High-methane gas (E)	Low-methane gas (Lw)
up to DN 200	1,915.33	373.20
DN 250 - 400	3,467.72	282.21
DN 500 - 800	4,890.71	56.30
DN 1000	77.28	-
TOTAL	10,351.03	711.71

Quantity and the power of compressor stations, as broken down into high-methane and low-methane gas.

Gas grade	Quantity of compressor stations	Power of compressor stations MWh/h
High-methane gas (E)	15	138
Low-methane gas (Lw)	-	-

## **INFORMATION ON THE ALLOWED AND/OR TARGET REVENUE**

THE ALLOWED OR TARGET REVENUE OF THE TRANSMISSION SYSTEM OPERATOR, ARTICLE 30 (1) (B) (I)

The approved by the Regulator allowed revenue for the tariff year 2019, respectively:

- For high-methane gas – **1,517,429 PLN thousand**, for both transmission and non-transmission services, i.e. gaseous fuels odourisation provided by GAZ-SYSTEM,
- For low-methane gas – **48,397 PLN thousand**.

The total allowed revenue for the tariff year 2019 equals to **PLN 1,565,826 thousand**.

## INFORMATION RELATED TO CHANGES IN THE REVENUE

1. INFORMATION RELATED TO CHANGES IN THE REVENUE REFERRED TO IN POINT (I) FROM ONE YEAR TO THE NEXT YEAR, ARTICLE 30 (1) (B) (II)

	Tariff no 11 2018 [thous. PLN]	Tariff no 12 2019 [thous. PLN]
Allowed revenue	1,562,088	1,565,826
Percentage change		0.24%

**INFORMATION RELATED THE FOLLOWING PARAMETERS: TYPES OF ASSETS, COST OF CAPITAL, CAPITAL AND OPERATIONAL EXPENDITURES, INCENTIVE MECHANISMS AND EFFICIENCY TARGETS, INFLATION INDICES**

1. TYPES OF ASSETS INCLUDED IN THE REGULATED ASSET BASE AND THEIR AGGREGATED VALUE, ART. 30 (1) (B) (III) (1)

In accordance with guidelines issued by the President of the Energy Regulatory Office (hence ERO) the regulated asset base is calculated as follows:

$$\mathbf{M2019 = M2017 + \frac{1}{2} * E * (I2018 + I2019) - \frac{1}{2} * (A2018 + A2019)}$$

where:

M2019 – fixed assets as planned for 31 December 2019,

M2017 – fixed assets as at 31 December 2017,

E – rate of realization of planned net value of the investment costs in years 2015 - 2017,

I2018 – planned net value of the investment cost as per the Development Plan for 2018,

I2019 – planned net value of the investment costs as per the Company's Investment Plan for 2019,

A2018 – planned depreciation for year 2018,

A2019 – depreciation planned for 2019.

The regulated asset base for the tariff year 2019, estimated on the basis of the above formula, equals to **PLN 6,277,184 thousand**.

GAZ-SYSTEM adjusted the regulated assets base of the assets financed from EU funds, which amounts to PLN 1,790,068 thousand, finally assuming the regulated assets base to **PLN 4,487,116 thousand**.

2. COST OF CAPITAL AND ITS CALCULATION METHODOLOGY, ARTICLE 30 (1) (B) (III) (2)

The rate of return is being calculated under the formula:

$$\mathbf{ZNK = WACC * WRA}$$

where:

ZNK – return on capital employed,

WACC – weighted average cost of capital,

WRA – net value of the regulated asset base, calculated under the formula recommended by the President of ERO.

The weighted average cost of capital was determined based on the formula below, recommended by the President of Energy Regulatory Office in the document entitled: *Metoda określania wskaźnika kosztu zaangażowanego kapitału na lata 2016 - 2018 dla infrastrukturalnych przedsiębiorstw sektora gazowego* (The methodology of setting the weighted average cost of capital for 2016 – 2018 for infrastructural enterprises in gas sector).

$$WACC_{pre-tax} = (r_f + DP) * \frac{D}{D+E} + \frac{(r_f + \beta_e * ERP)}{(1-T_N)} * \frac{E}{D+E}$$

where:

WACC pre-tax – weighted average cost of capital, pre-tax,

rf – risk-free rate – 3.308%,

DP – premium for the risk of providing external (debt) financing – 1%,

D – external (debt) financing – 30%,

E – equity – 70%,

ERP – equity risk premium – 4.50%,

$\beta_e$ , – risk of the capital involved – 0.5389,

TN – nominal tax rate – 19%.

The WACC calculation follows the capital structure determined by the ERO President for 2019 at 70% (equity) to 30% (debt).

The cost of equity was estimated in accordance with the following formula:

$$K_e = \frac{(r_f + \beta_e * ERP)}{(1-T_N)}$$

where:

Ke – cost of equity pre-tax (including tax shield).

WACC calculated in accordance with the above formula equals to **6.25%**.

The below table sets out the amount of the return on capital employed included in the reference price calculation within the Tariff for 2019.

Return on capital employed calculated according to the formula	thous.PLN	280,298
Adjustments made during the tariff process	thous.PLN	0
Adjusted return on capital employed	thous.PLN	280,298

3. CAPITAL EXPENDITURES, ARTICLE 30 (1) (B) (III) (3)

Investments planned for tariff year 2019 are **PLN 1,774,600 thousand**.

4. METHODOLOGIES TO DETERMINE THE INITIAL VALUE OF ASSETS, ARTICLE 30 (1) (B) (III) (3) (A)

The initial value of fixed assets depending on the method of acquisition is determined as follows:

- for a purchased fixed asset — the initial value is the purchase price, i.e. the actual purchase price including the seller's due (excl. VAT), and if imported: plus non-refundable charges of public-law nature, and plus costs directly relating to the purchase and adaptation of the fixed asset to reach usable condition,

- for a fixed asset received as a non-financial contribution, the initial value is the fair value determined by an independent appraiser.

The initial value of fixed assets will be increased by expenditures for improvements consisting in overhaul, expansion, modernization or reconstruction and causing the useful value of such a fixed asset to exceed the fair value it has when accepted for use, measured using the duration of use, production capacity, quality of products obtained using the improved fixed asset, exploitation costs or other measures.

5. METHODOLOGIES TO RE-EVALUATE THE ASSETS, ARTICLE (30) (1) (B) (III) (3) (B)

Not applicable. GAZ-SYSTEM has not re-evaluated the assets so far.

6. EXPLANATIONS OF THE EVOLUTION OF THE VALUE OF THE ASSETS, ARTICLE 30 (1) (B) (III) (3) (C)

Evolution of the value of the assets p.a. arises from depreciation and amortization write-offs and permanent loss of value, as well as liquidation, and increases arise from new fixed assets commissioned in the reporting year.

7. DEPRECIATION PERIODS AND AMOUNTS PER ASSET TYPE, ARTICLE 30 (1) (B) (III) (3) (D)

All fixed assets and intangible and legal assets owned by the Capital follow the line method of depreciation and amortization respectively.

Due to the obligation to periodically verify the economic life of fixed assets (hereinafter: OEU), which results directly from the provisions of the Accounting Act, on 21<sup>st</sup> of September 2017 the Management Board of GAZ-SYSTEM approved the updating of the "Company's Accounting Policy" introducing a change regarding adjustments of OEU with effect from the financial year 2018.



The below table presents rates used in the various groups of fixed assets, the planned depreciation and amortization value as at 31 December 2018.

Group name	Planned depreciation and amortization for 2018 [thous. PLN]	OEU [Years]	OEU [%]
group 0 Land	715	up to 99 years	no less than 1%
group I Buildings	5,502	15 - 60	2 - 7 %
group II Structures	137,651	7 - 60	2 - 14 %
group III Boilers and power machines	2,437	7 - 50	2 - 14 %
group IV General machines	31,786	1 - 30	3 - 100 %
group V Specialist machines	784	5 - 15	7 - 20 %
group VI Technical devices	52,639	5 - 50	2 - 20 %
group VII Means of transport	10,785	5 - 14	7 - 20 %
group VIII Equipment	5,020	5 - 55	2 - 20 %
Intangible and legal assets	16,135	4 - 50	2 - 25 %

#### 8. OPERATIONAL EXPENDITURES, ARTICLE 30 (1) (B) (III) (4)

Operational expenditures accounted for in the calculation of tariff rates for 2019 are **PLN 1,022,061 thousand**.

#### 9. INCENTIVE MECHANISMS AND EFFICIENCY TARGETS, ARTICLE 30 (1) (B) (III) (5)

Not applicable.

#### 10. INFLATION INDEX, ARTICLE 30 (1) (B) (III) (6)

Not applicable. The tariff year is equal to the regulatory period, hence inflation indices are not used.

## INFORMATION ON THE TRANSMISSION SERVICES REVENUE INCLUDING CAPACITY-COMMODITY SPLIT, ENTRY-EXIT SPLIT AND INTRA-SYSTEM/CROSS-SYSTEM SPLIT

### 1. SUM OF TRANSMISSION SERVICE REVENUE, ARTICLE 30(1)(B)(IV)

The value of approved transmission services revenue for tariff year 2019 is **PLN thousand 1,565,811**.

### REVENUE RATIOS

#### 1. CAPACITY-COMMODITY SPLIT, MEANING THE BREAKDOWN BETWEEN THE REVENUE FROM CAPACITY-BASED TRANSMISSION TARIFFS AND THE REVENUE FROM COMMODITY-BASED TRANSMISSION TARIFFS, ARTICLE 30(1)(B)(V)(1).

In accordance with the Polish Regulation of the Minister of Economy of 15<sup>th</sup> March 2018 concerning detailed principles of tariff design and calculation, and settlements in gas trade, 100% of GAZ-SYSTEM's revenue is recovered through capacity-based transmission tariffs (fixed fee for transmission service).

The table below illustrates the capacity-commodity split separately for high-methane gas E and low-methane gas Lw.

Gas grade	Capacity-based revenue [thous. PLN]	Commodity-based revenue [thous. PLN]
High-methane gas (E)	1,517,414	-
Low-methane gas (Lw)	48,397	-

#### 2. ENTRY-EXIT SPLIT, MEANING THE BREAKDOWN BETWEEN THE REVENUE FROM CAPACITY-BASED TRANSMISSION TARIFFS AT ALL ENTRY POINTS AND THE REVENUE FROM CAPACITY-BASED TRANSMISSION TARIFFS AT ALL EXIT POINTS, ARTICLE 30(1)(B)(V)(2)

In accordance with the ERO President's guidelines, the split between revenue recovered in the form of capacity-based transmission tariffs between all entry and all exit points is 45/55. The table below presents the split of regulated revenue recovered as capacity-based

transmission tariffs on entries and exists separately for high methane gas E and low-methane gas Lw.

Gas grade	Revenue based on capacity at all entry points [thous. PLN]	Revenue based on capacity at all exit points [thous. PLN]
High-methane gas (E)	682,836	834,578
Low-methane gas (Lw)	21,779	26,618

3. INTRA-SYSTEM/CROSS-SYSTEM SPLIT, MEANING THE BREAKDOWN BETWEEN THE REVENUE FROM INTRA-SYSTEM NETWORK USE AT BOTH ENTRY POINTS AND EXIT POINTS AND THE REVENUE FROM CROSS-SYSTEM NETWORK USE AT BOTH ENTRY POINTS AND EXIT POINTS CALCULATED AS SET OUT IN ARTICLE 5 — ARTICLE 30(1)(B)(V)(3)

The value of intra-system revenue was calculated in accordance with the guidelines contained in Article 5 NC TAR both at all entry and exist points of high-methane gas (E) exceeds 96% of the total regulated revenue for grade E gas consumers. The remaining 4% for high-methane gas (E) is intra-system revenue achieved at all entry and exit points of the transmission system. For low-methane Lw — 100% of the revenue is intra-system.

Gas grade	Intra-system use revenue [thous. PLN]	Cross-system use revenue [thous. PLN]
High-methane gas (E)	1,452,468	64,946
Low-methane gas (Lw)	48,397	-

**INFORMATION RELATED TO THE PREVIOUS TARIFF PERIOD REGARDING THE RECONCILIATION OF THE REGULATORY ACCOUNT**

1. ACTUALLY, OBTAINED REVENUE, THE UNDER- OR OVER-RECOVERY OF THE ALLOWED REVENUE AND THE PART THEREOF ATTRIBUTED TO THE REGULATORY ACCOUNT AND, IF APPLICABLE, SUB-ACCOUNTS WITHIN SUCH REGULATORY ACCOUNT, ARTICLE 30(1)(B)(VI)(1)

The implementation of all TAR NC provisions will be accomplished by May 31<sup>st</sup> 2019. GAZ-SYSTEM plans to attribute under- or over-recovered transmission services revenue to the regulatory account starting from tariff year 2020.

2. RECONCILIATION PERIOD AND INCENTIVE MECHANISMS IMPLEMENTED, ARTICLE 30(1)(B)(VI)(2)

Not applicable.

**INFORMATION ON THE INTENDED USE OF THE AUCTION PREMIUM**

Potential revenue from the auction premium would be allocated to bottleneck elimination.

## INFORMATION ON TRANSMISSION AND NON-TRANSMISSION TARIFFS ACCOMPANIED BY THE RELEVANT INFORMATION RELATED TO THEIR DERIVATION

### 1. COMMODITY-BASED TRANSMISSION TARIFFS REFERRED TO IN ARTICLE 4(3) — ARTICLE 30(1)(C)(I)

GAZ-SYSTEM does not 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.

### 2. NON-TRANSMISSION TARIFFS FOR NON-TRANSMISSION SERVICES REFERRED TO IN ARTICLE 4(4) — ARTICLE 30(1)(C)(II)

GAZ-SYSTEM provides the service of odorisation of gaseous fuels. As at 1 June 2018 the GAZ-SYSTEM transmission network operated one gas-odorisation station in place, serving one final customer, under a contract expiring in August 2020. Due to the marginal nature of this service, the regulated revenue includes revenue from non-transmission services on the level achieved in the preceding year, i.e. **PLN 15.0 thousand**.

### 3. REFERENCE PRICES AND OTHER PRICES APPLICABLE AT POINTS OTHER THAN THOSE REFERRED TO IN ARTICLE 29.

The table presents the rates of capacity-based transmission rates for all points of the GAZ-SYSTEM transmission system, Article 30(1)(c)(iii).

	Capacity-based rate [PLN/(MWh/h) per h]
Entry E	3.015
Exit E	1.876
Entry UGS	0.603
Exit UGS	0.375
Entry Lw	1.807
Exit Lw	1.625

## INFORMATION ON TRANSMISSION TARIFF CHANGES AND TRENDS

1. DIFFERENCE IN THE LEVEL OF TRANSMISSION TARIFFS FOR THE SAME TYPE OF TRANSMISSION SERVICE APPLICABLE FOR THE PREVAILING TARIFF PERIOD AND FOR THE TARIFF PERIOD FOR WHICH THE INFORMATION IS PUBLISHED, ARTICLE 30(2)(A)(I)

The tables below present the differences in tariff levels for 2018–2019 for high-methane gas (E) and low-methane gas (Lw).

Tariff period	Tariff year	High-methane gas E				
		Capacity-based rate				Commodity-based rate
		Entry	Entry UGS	Exit	Exit UGS	
		PLN/MWh/h	PLN/MWh/h	PLN/MWh/h	PLN/MWh/h	PLN/MWh
Current tariff period	2018	3.039	0.608	1.649	0.330	0.818
Proposed tariff	2019	3.015	0.603	1.876	0.375	
Change (Y <sub>0</sub> to Y <sub>+1</sub> )	2019 vs. 2018	-0.024	-0.005	0.227	0.045	-0.818
		-0.8%	-0.8%	13.8%	13.6%	-100.0%

Tariff period	Tariff year	Low-methane gas Lw		
		Capacity-based rate		Commodity-based rate
		Entry	Exit	
		PLN/MWh/h	PLN/MWh/h	PLN/MWh
Current tariff period	2018	1.736	1.265	0.654
Proposed tariff	2019	1.807	1.625	
Change (Y <sub>0</sub> to Y <sub>+1</sub> )	2019 vs. 2018	0.071	0.360	-0.654
		4.1%	28.5%	-100.0%

The differences in the level of tariffs occur from changes in the level of allowed revenues approved by the decision President of the Energy Regulatory Office, contracted capacities in years 2018 and 2019 and changes to the cost allocation resulting from applying only the capacity-based tariff in 2019.

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.

The differences between the reference prices for year 2018 and 2019 result from a different approach for the Entry-Exit split applied to calculate both tariffs. The Entry-Exit split applied to calculate the reference prices for the year 2019 equals 45/55.

2. ESTIMATED DIFFERENCE IN THE LEVEL OF TRANSMISSION TARIFFS FOR THE SAME TYPE OF TRANSMISSION SERVICE APPLICABLE FOR THE TARIFF PERIOD FOR WHICH THE INFORMATION IS PUBLISHED AND FOR EACH TARIFF PERIOD WITHIN THE REMAINDER OF THE REGULATORY PERIOD, ARTICLE 30(2)(A)(II)

Not applicable. The tariff year equals the regulatory period.