

**ECRB Report on the application of reference
price methodologies in Contracting Parties**

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Introduction

1. About ECRB

The Energy Community Regulatory Board (ECRB) operates based on the Energy Community Treaty. As an institution of the Energy Community¹, ECRB advises the Energy Community Ministerial Council and Permanent High Level Group on details of statutory, technical and regulatory rules and makes recommendations in the case of cross-border disputes between regulators. ECRB is the independent regional voice of energy regulators in the Energy Community. ECRB's mission builds on three pillars: providing coordinated regulatory positions to energy policy debates, harmonizing regulatory rules across borders and sharing regulatory knowledge and experience. ECRB also has a number of legal responsibilities such as issuing opinions on draft certification decisions of Contracting Parties' regulatory authorities or monitoring the implementation of Network Code Regulations.²

2. Background

Commission Regulation (EU) No 2017/460 establishing a network code on harmonised transmission tariff structures for gas has been included in the *acquis communautaire* of the Energy Community by Decision of the Permanent High Level Group, on 28 November 2018, with an implementation deadline of 28 February 2020, except for chapters II, III and IV that were to be applied as of 31 May 2021³. One of the main objectives of the Regulation (EU) No 2017/460 (hereinafter 'Tariff Network Code'⁴) is to improve the transparency of transmission tariff structures and procedures towards setting them. Furthermore, in order to achieve and ensure a reasonable level of cost reflectivity and predictability in the gas transmission entry- exit systems, the Tariff Network Code requires that transmission tariffs are based on a reference price methodology using specific cost drivers. The guiding principles for such reference price methodology are defined. According to Article 36 of the Tariff Network Code, the ECRB has to publish a report on the application of the reference price methodologies in the Contracting Parties within three years as of the deadline for transposition of the regulation.

¹ www.energy-community.org The Energy Community comprises the EU and Albania, Bosnia and Herzegovina, North Macedonia, Georgia, Kosovo*, Moldova, Montenegro, Serbia and Ukraine. Armenia, Turkey and Norway are Observer Countries. Throughout this document the symbol * refers to the following statement: *This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Advisory Opinion on the Kosovo declaration of independence.*

² For more information on ECRB visit <https://www.energy-community.org/aboutus/institutions/ECRB.html>.

³ Decision No 2018/07/PHLG-EnC of the Permanent High Level Group of the Energy Community of 28 November 2018 on the implementation of Commission Regulation (EU) No 2017/460 establishing a network code on harmonised transmission tariff structures for gas (https://www.energy-community.org/dam/jcr:d40b64ae-08d9-4eb1-b361-660bafdd5342/Decision_2018_07_PHLG-EnC_GasReg_112018.pdf)

⁴ https://www.energy-community.org/dam/jcr:fd41a351-b04c-41a7-b7a5-89da4171aa17/Regulation_2017_460_TAR_NC.pdf

3. Scope

The majority of the Contracting Parties with functioning gas markets has not implemented the Tariff Network Code so far. The exception is Ukraine that applied most of the Tariff Network Code provisions, however not the cost allocation assessment envisaged by Article 5 and the consultation requirements of Chapter VII. This means that the ECRB did not receive the consultation documents in line with the legal requirements and therefore could not perform the analysis in line with Article 27(2) of the Tariff Network Code.

Nevertheless, the ECRB collected and analysed the information on the application of the reference price methodologies or, as appropriate, the transmission tariff methodologies adopted and implemented before the Tariff Network Code had been included in the legislative framework of the Energy Community. The following elements are included in this report:

- (1) Consultation and decision making processes as required by Articles 26 and 27 of the Tariff Network Code;
- (2) Elements and features of the reference price methodologies;
- (3) Reserve prices;
- (4) Reconciliation of the transmission revenue;
- (5) Pricing of bundled capacity and of capacity at virtual interconnection points.

Finally, the current levels of gas transmission tariffs in the Contracting Parties are provided.

The present report covers the following Energy Community Contracting Parties: **Moldova, North Macedonia, Serbia and Ukraine**. For Bosnia and Herzegovina and Georgia most of the relevant information is not available.

4. Methodology

Data and analysis displayed in this report are based on information provided by the regulatory authorities of the analyzed markets. Definitions and terms used in the questionnaires and in this report originate from the Tariff Network Code and orientate on ACER report *The Internal Gas Market in Europe: The Role of Transmission Tariffs*, April 2020.⁵

⁵https://documents.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/The%20internal%20gas%20market%20in%20Europe_The%20role%20of%20transmission%20tariffs.pdf

Analysis

1. Consultation process

With a view to increasing transparency in the tariff setting process, a broad range of provisions describing the consultation and publication processes was included in the Tariff Network Code. These processes may be carried out by the regulatory authorities or the transmission system operators, as decided by the regulatory authorities. One or more consultations may be organized, however the final consultation prior to the motivated decision on tariffs, should be opened for at least two months. This final consultation must include the information on the proposed reference price methodology, transmission tariffs and payable prices, as described in Article 26(1) of the Transmission Network Code.

The currently applicable gas transmission tariff methodologies were adopted in Serbia in 2012 (tariffs entered into force in 2015), in North Macedonia in 2018 (tariffs entered into force in 2019), in Ukraine in 2019 (tariffs entered into force in 2020) and in Moldova in 2020 (tariffs entered into force in 2021). The consultations were performed only in Ukraine, Moldova and Serbia, however not in line with the Tariff Network Code, because it was still not applicable at that time. In Moldova, one consultation process on the tariff methodology was carried out and it was opened for four months (end August- end December). In Ukraine, two rounds of consultation prior to adopting the currently applicable tariff methodology were organized by the regulator. The final consultation was opened for two months whereby also the public discussion with the transmission system operator and other gas market stakeholders was organized. The consultation documents were not published in English language, as recommended by the Tariff Network Code. The consultation responses of stakeholders and their summary were published in both Contracting Parties⁶.

The table below provides an overview of the application of provisions of Article 26(1) of the Transmission Network Code in the final consultations on the transmission tariff methodologies in Moldova and Ukraine.

Table 1 Elements of the final consultation process on the gas transmission tariffs in the Contracting Parties

⁶ After the Russian invasion of Ukraine, a lot of information has been removed from the web page due to security reasons.

Article 26(1) Did final consultation include the following elements:	Moldova	Ukraine
26(1)(a) Description of the proposed reference price methodology	yes	yes
26(1)(a)(i)(1)-(2) Justification of the parameters and assumptions that are an input to reference price methodology	no	yes
26(1)(a)(ii) Adjustments pursuant to Article 9	no	yes
26(1)(a)(iv) Results, components and details of the cost allocation assessment	no	no
26(1)(a)(v) Assessment of the proposed reference price methodology in accordance with Article 7	yes	yes
26(1)(a)(vi) Comparison against the capacity weighted distance reference price methodology	No. The capacity weighted distance reference price methodology is used.	No. The capacity weighted distance reference price methodology is used.
26(1)(b) Indicative information set out in Article 30(1)(b)(i), (iv), (v)	no	partly
26(1)(c)(i)(1)-(3) Assessment of commodity-based transmission tariffs based on Article 4(3)	no	No. Commodity-based transmission tariffs are not used.
26(1)(c)(ii)(1)-(4) Assessment of non-transmission services based on Article 4(3)	no	No. Non-transmission tariffs are not applied
26(1)(d) Tariff trends and simplified tariff model as set out in Article 30(2)	no	partly

Article 26(1) Did final consultation include the following elements:	Moldova	Ukraine
26(1)(e)(i)-(iv) Fixed payable prices (if applicable)	no	not applicable

In parallel to the final consultation, the regulatory authorities are required to conduct a consultation with the national regulatory authorities of the directly connected EU Member States and Contracting Parties on the discounts, multipliers and seasonal factors (Article 28). This consultation was conducted only by the regulatory authority of Moldova.

2. Reference price methodology

Subject to the findings of the abovementioned periodic consultations, the regulatory authorities should set or approve the reference price methodology prepared by the transmission system operators. The result of the chosen reference price methodology is the reference price-the price for a capacity product for firm capacity with a duration of one year, which is applicable at entry and exit points and which is used to set capacity-based transmission tariffs (Article 3(1) of the Tariff Network Code). The same reference price methodology has to be applied for all entry and exit points in one entry-exit system (Article 6(3)). In the case there are more transmission system operators within a Contracting Party, the same reference price methodology should be applied jointly by all transmission system operators (Article 10(1)). However certain exemptions are allowed for such Contracting Parties, as defined in Articles 10 and 11 of the Tariff Network Code:

- ❖ application of the same methodology separately by each transmission system operator and
- ❖ application of different methodologies separately by each transmission system operator, as an intermediate solution in case of planned entry-exit system mergers.

In both cases, an **inter-transmission system operator compensation mechanism** has to be established.

There are three Contracting Parties with more than one transmission system operator: Bosnia and Herzegovina, Moldova and Serbia. In Bosnia and Herzegovina and Serbia, there are three transmission system operators, however in Bosnia and Herzegovina two of them are still not unbundled. In Moldova and Serbia two transmission system operators, applied the same reference price methodologies separately by the operators. In none of them the inter-transmission system operator compensation mechanism has been applied because both transmission system operators in the same country have charged tariffs on interconnection point between them. *Gastrans*, the third transmission system operator in Serbia, is exempted from regulated tariffs. But *Gastrans* tariff methodology is mostly in line with the Tariff Network Code. For example, the tariff is calculated using capacity weighted distance reference price methodology, multipliers and seasonal factors are in line with allowed values in the Tariff Network Code and commodity tariff cover only cost driven by quantity of the gas flow.

The chosen reference price methodology has to allow network users to calculate the reference prices, be cost-reflective and non-discriminatory, remove the volume risk from the final customers within the entry-exit system and ensure that resulting prices do not distort the cross-border trade (Article 7). Irrespective of the selected methodology, the regulators or system operators have to apply the capacity-weighted distance reference price methodology, described in Article 8, at least for the purpose of comparing the results of the two methodologies (Article 26(1)(a)(vi)). Among the Contracting Parties, Moldova and Ukraine applied the capacity-weighted distance reference price methodologies. In Serbia, a modified capacity weighted distance based on replacement value for transmission system has been implemented. Replacement value of transmission system parts is used to allocated parts of the transmission services revenues which is recovered from capacity-based tariffs on certain entry and exit points. In Georgia and North Macedonia, the post stamp transmission tariff methodologies are in use.

Adjustments to the application of the reference price methodology to all entry and exit points may be related to the points to or from the storage facilities and at entry points from LNG facilities and infrastructure ending isolation (Article 9). Furthermore, they can be the result of the benchmarking, equalization or rescaling (Article 6(4)). In Serbia and Ukraine, **equalization** of the reference prices for some or all homogeneous group of points are applied. In Serbia, *entry points from domestic production* is the first and *exit points to domestic consumption* is the second group of homogeneous points. In Ukraine, the following equalized points were defined: *exit points to DSOs*, *exit points to customers directly connected to transmission system*, *entry points from domestic production*. According to the relevant methodology, **benchmarking** by the regulatory authority, whereby reference prices are adjusted so to meet competitive price levels, is possible in Ukraine, however not applied in practice. **Adjustments to tariffs at entry points to and exit points from storage facilities** are applied in Ukraine, in a way to set tariffs to zero.

In order to ensure cost-reflectivity of tariffs and to minimize the cross-subsidization between the intra-system and cross-system network use (as define by Article 3), Tariff Network Code envisaged implementation of the **cost allocation assessment**. This assessment should indicate the degree of cross-subsidization resulting from application of the chosen reference price methodology (Article 5(2)). In case the index identifying the level of cross-subsidization is higher than 10%, the regulator should justify such result in its motivated decision (Article 5(6)). **The cost allocation assessment has not been performed so far in any of the Contracting Parties.**

Finally, in addition to the reference price methodology set to calculate the price for firm yearly capacity products, the regulators may set or approve the application of **commodity-based transmission tariffs** as an exception. These commodity tariffs may be the flow-based charges or the complementary revenue recovery charges, levied for the purpose of managing under and over-recovery (Article 5). The commodity, flow-based charges are applied in Georgia, Serbia and North Macedonia. While in Serbia 30% of the approved transmission revenue is recovered through the commodity charge, in Georgia and North Macedonia the transmission revenues are solely recovered through them.

3. Reserve prices

The reference prices resulting from the previously described methodologies serve as the reserve prices for yearly standard capacity products, which should be published before the annual yearly capacity auction. The rules for

calculation of reserve prices for other firm and interruptible capacity products are set out in the Tariff Network Code as well.

The reserve prices were published before the annual yearly capacity auction, in line with Article 29, in Ukraine, where the first yearly auctions were held in 2020. The first auctions of transmission capacity of *Gastrans* in Serbia were organized in December 2021 and of Moldova were organized in November 2022 (for products with duration less than one year). In other Contracting Parties, there were no transmission capacity auctions so far.

The table below provides the information on the levels of multipliers and seasonal factors applied for capacity products with the duration less than one year.

Table 2 Multipliers and seasonal factors applied for capacity products in the Contracting Parties

The level of multipliers for the following capacity products:	Ukraine	Serbia	Moldova
a) quarterly standard capacity product	1,1	No quarterly products Gastrans 1,2	1
b) monthly standard capacity product	1,2	1 Gastrans 1,3	1
c) daily standard capacity product	1,45	1,875 Gastrans 2	1
d) within day standard capacity products	1,1 to the multiplier for daily standard capacity product	No within-day products Gastrans 3	1
Are the seasonal factors applied? If yes, is the calculation methodology based on forecasted flows or forecasted contracted capacity?	no	Yes, the calculation methodology for seasonal factors is based on forecasted flows, using realized flow in the previous years. Gastrans - no	no
How are the discounts for reserve prices for standard capacity products for interruptible capacity calculated- ex ante or ex post?	Ex post	Ex post. Discount for day with interruption is equal to price for daily capacity.	nap

The applied multipliers for quarterly, monthly, daily and within-day capacity products are in line with the provisions of Article 13 of the Tariff Network Code, which prescribes the ranges of 1 to 1.5 for the quarterly and monthly and 1 to 3 for daily and within-day products. The seasonal factors are used for non-yearly capacity products only in

Serbia for regulated tariffs (*Gastrans* does not apply seasonal factors), where the relevant calculation methodology is based on the forecasted flows (Article 15).

The reserve prices for standard capacity products for interruptible capacity may be calculated by applying ex-ante or ex-post discounts (Article 16). The regulatory authority in Ukraine decided to use the ex-post discounts, where the network users are compensated after the actual interruptions occur. The compensation is based on the actual value of transmission capacity used. The shipper will pay for booked interruptible capacity in case of interruption = transmission tariff * (booked interruptible capacity * (1 – amount of capacity interruption/ booked interruptible capacity)). The regulatory authority in Serbia decided to use the ex-post discounts for yearly and monthly capacity and ex-ante 50% discount for daily capacity. The discount for the day on which interruption occurred is equal to the price of daily capacity, except for *Gastrans* where a discount is equal to three times the reserve price for daily capacity products for firm capacity, as required by the Tariff Network Code.

4. Reconciliation of revenue

The reconciliation of transmission revenue occurs in the case a non-price cap regime or a floating payable price approach is applied. This means that in the case the reconciliation is not applicable, the risks related to under- or over-recovery are covered by the risk premium (Article 17). According to the information provided by the regulators of the Contracting Parties, **neither price cap regimes nor fixed payable price approach are implemented.**

The Tariff Network Code envisages for over or under recoveries of the transmission revenue to be attributed to the **regulatory account**. Depending on the incentive mechanisms applied, the full amount of under or over recovery or only part of it can be credited to this account (Article 19).

The regulatory account has been established so far only in Ukraine, whereby the whole amount of under- or over recovery is attributed to it. The transmission system operator is allowed to establish a separate sub-account, as part of the regulatory account, to attribute earned auction premium. The over or under recovery are reconciled over the whole next regulatory period⁷. The transmission system operator or the regulatory authority may decide to conduct the reconciliation any time within the existing regulatory period.

5. Pricing of bundled capacity and of capacity at virtual interconnection points

In line with the Regulation (EU) 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems, as adopted for the Contracting Parties ('CAM Network Code')⁸, adjacent transmission system operators shall jointly offer bundled capacity products at interconnection points at capacity booking platform (Articles 19 and 37 of CAM Network Code). However, **none of the transmission system operators of the Contracting Parties bundled its capacity products with adjacent transmission**

⁷ The current regulatory period is 2020-2024.

⁸ https://www.energy-community.org/dam/jcr:0898e7e5-b38a-48fc-966f-b60a856c99e5/Regulation_2017_459_CAM.pdf

system operators. Therefore, the relevant prices have not been established (Article 21 of the Tariff Network Code).

The reserve prices for an unbundled capacity products are offered at **virtual interconnection points** by the transmission system operator of Ukraine. The virtual interconnection points are established with the adjacent systems of Poland, Slovakia, Hungary and Moldova.

6. Tariff levels

Table 3 Transmission tariffs in the Energy Community Contracting Parties

IP or other point	EUR/kWh/day	EUR/kWh
Ukraine		
OGTS Ukraine		
Entry point IP with RF	0.58	
Entry point IP with other countries	0.16	
Entry point production	0.1	
Entry point storage	0	
Exit point domestic consumers	0.12	
Exit point storage	0	
Exit point IP Poland	0.33	
Exit point IP Slovakia	0.35	
Exit point IP Hungary	0.34	
Exit point IP Tekove Romania	0.32	
Exit point IP Orlovka Romania	0.04	
Exit point IP Oleskiivka Moldova	0.35	
Exit point IP Ananiiv Moldova	0.3	
Exit point IP Grebenyky Moldova	0.3	
Exit point IP Lymanske Moldova	0.3	
Exit point IP Kaushany Moldova	0.04	
Exit virtual point with Moldova	0.02	
Serbia		
Transportgas		
Entry point IP KKD1 Hungary	0.11	
Entry point IP Srbija	0.11	
Entry point production	0.15	
Entry point storage	0.09	
Exit point IP Zvornik BiH	0.25	0.0004
Exit point domestic consumers	0.06	0.0004
Exit point storage	0.06	0.0004
Exit virtual flow on entry point IP Hu	0.02	
Gastrans		
Entry point IP Zajecar Bulgaria	0.23	
Exit point IP Serbia	0.15	
Exit point IP KKD2 Hungary	0.26	
Moldova		
Modovatransgaz		

Entry point IP Grebeniki		0.0003
Entry point Cauşeni		0.0003
Entry point SMG Ananiev		0.0003
Exit point SMG Alexeevka		0.0003
Entry point Ungheni		0.0003
Exit point in distribution system		0.0005
Exit point direct customers		0.0003
Exit point IP Grebeniki		0.0002
Exit point Cauşeni		0.0002
Exit point SMG Ananiev		0.0002
Entry point SMG Alexeevka		0.0002
Exit point Ungheni		0.0002

CONCLUSIONS

The majority of the Energy Community Contracting Parties has not implemented the Tariff Network Code until now. The exception is **Ukraine**, where **most of the Tariff Network Code provisions have been applied**, but not the consultation requirements of Chapter VII. It has to be noted that the consultation process was organized, however not in line with the legal requirements of Chapter VII and therefore the ECRB could not perform the analysis as per Article 27(2) of the Tariff Network Code.

This report focused on the application of the reference price methodologies or, as appropriate, the transmission tariff methodologies adopted and implemented before the Tariff Network Code had been included in the legislative framework of the Energy Community.

For the Contracting Parties with more than one transmission system operator, the same reference price methodology should be applied jointly by all the operators. There are possible exemptions to this rule, however, the inter-TSO compensation mechanism must be established. There are three Contracting Parties with more than one transmission system operator- Bosnia and Herzegovina, Moldova and Serbia, and in **none of them the inter-TSO compensation mechanism was established.**

Moldova and Ukraine applied the **capacity-weighted distance reference price methodology**, while Serbia implemented a modified capacity-weighted distance methodology, based on replacement value of the transmission system. **Equalization of the reference prices for homogeneous groups of points** was used in all three countries. **Adjustments** to tariffs at entry points to and exit points from **storage facilities** are applied in Ukraine. The **commodity-based transmission tariffs** (flow-based) are used in Georgia, Serbia and North Macedonia.

The **cost allocation assessment** ensuring cost-reflectivity of tariffs and minimizing cross- subsidization between the intra-system and cross-system network users **has not been performed so far in any of the Contracting Parties.**

The **reserve prices** of transmission capacity were published before the **annual yearly capacity auction** in Ukraine in 2020 for the first time. The capacity auctions were also organized in Serbia-for the exempted transmission system operator *Gastrans* in December 2021 and in Moldova in November 2022. **The multipliers for quarterly, monthly, daily and within-day capacity products were adopted in line with the Tariff Network Code.** The seasonal factors are used only in Serbia for regulated tariffs, while the discounts for interruptible capacity were applied ex-post.

For the recovery of the transmission revenue after the expiry of the regulatory period, a **regulatory account** is required, to which the full or partial amount is credited. So far, only **in Ukraine** it has been established by the tariff methodology and it **will be used after the expiry of 2020-2024 regulatory period.**

Finally, none of the transmission system operators of the Contracting Parties bundled the capacity products with adjacent transmission system operators. The reserve prices for unbundled products are offered at virtual interconnection points between Ukraine and its neighbors- Poland, Slovakia, Hungary and Moldova.

In order to increase the transparency of transmission tariff structures, eliminate cross-subsidization between network user and ensure a reasonable level of cost reflectivity and predictability, the ECRB urges the contracting Parties to implement the Tariff Network Code without further delay.