ACER

European Union Agency for the Cooperation of Energy Regulators

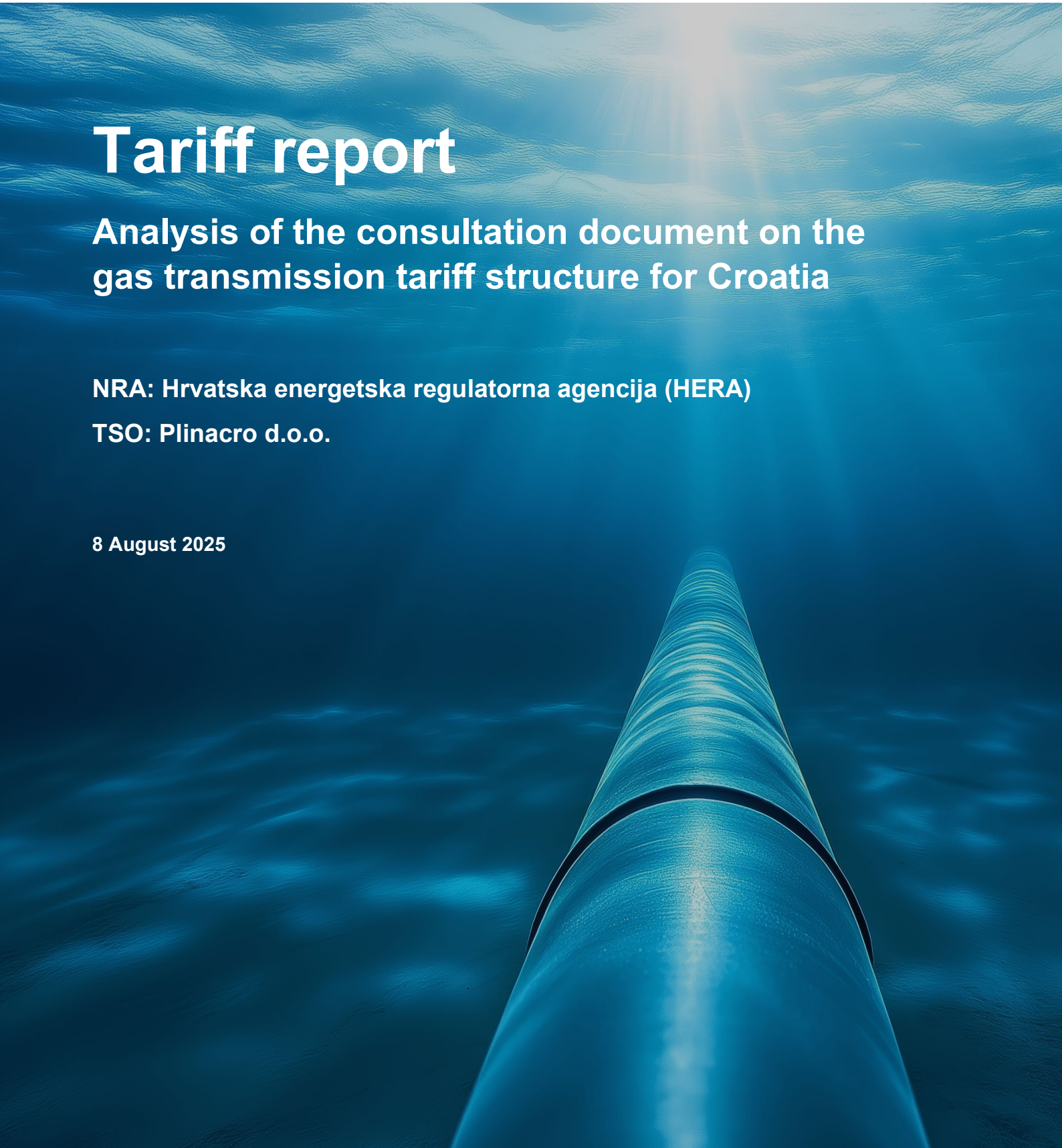
Tariff report

Analysis of the consultation document on the gas transmission tariff structure for Croatia

NRA: Hrvatska energetska regulatorna agencija (HERA)

TSO: Plinacro d.o.o.

8 August 2025



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1. ACER conclusion

1 The Croatian National Regulatory Authority ('NRA'), Hrvatska energetska regulatorna agencija ('HERA'), has carried out a consultation on the reference price methodology ('RPM') for the Croatian transmission network. This is HERA's second consultation since the Commission Regulation (EU) 2017/460 (NC TAR) came into force.

2 The proposed RPM is the same as in the previous period, a postage stamp methodology, applied to Plinacro d.o.o., the single transmission system operator in the Croatian entry-exit zone. The proposed RPM applies different tariffs for entry and exit points.

3 The entry-exit split is set ex ante, its value is 60%-40%.

4 HERA proposes to apply a 90% discount at entry points from storage facilities and a 100% discount at exit points to storage facilities. To compensate for the revenue under-recovery due to the use of storage discounts, HERA does not apply the rescaling to the reference price, instead it proportionally decreases the level of capacities at storage points considered during the calculation of tariffs.

5 The updated methodology phases out the discount applied to LNG facilities, previously set at 15%, by 1 January 2026.

6 No other discounts are proposed in the RPM. Simultaneously with the RPM consultation HERA carried out a consultation on multipliers, seasonal products, discounts in accordance with Article 28 of the NC TAR. In this consultation HERA proposed the application of a derogation from the application of discounts for renewable and low-carbon gases foreseen by Regulation (EU) 2024/1789.

7 Two kinds of non-transmission tariffs are proposed: connection services and non-standard services.

8 The proposed RPM shall apply from 1 January 2026 to 31 December 2030. Indicative tariffs are calculated for all calendar years between 2026 and 2030.

9 In line with the provisions of the NC TAR, HERA carried out a cost allocation assessment ('CAA') and calculated the tariffs in accordance with the capacity-weighted distance ('CWD') methodology. The assessment resulted in the CAA index staying below the 10% threshold foreseen by the NC TAR. The CAA for the tariffs calculated in accordance with the CWD methodology, however, reached 12.81%, slightly higher than the allowed threshold. This indicates that the proposed RPM is a better fit in terms of cross-subsidisation than the CWD methodology.

10 The Agency welcomes that HERA has taken into account the Agency's previous recommendation regarding the classification of the former non-transmission services. Moreover, the Agency appreciates HERA's willingness to discuss the proposed RPM and its provisions and offering additional information in a timely manner.

11 The Agency, after having completed the analysis of the consultation document pursuant to Article 27(2) of the NC TAR, concludes that:

- The information referred to in Article 26(1) of the NC TAR has been mostly published. The Agency provides commentary on the improvements in this report.
- The RPM is compliant with the requirements on transparency, non-discrimination, prevention of undue cross-subsidisation, volume-risk and non-distortion to cross-border trade listed under Article 7 of the NC TAR.
- The criteria for setting the commodity charge are not applicable.

12 The Agency however cannot conclude that:

- The requirements on cost-reflectivity are met. While the application of a postage stamp methodology is an appropriate choice, given the structure of the Croatian system, the application of an efficiency parameter based on the utilisation rate of exit points, referred to as 'economic justification parameter' raises questions regarding the cost-reflectivity of the allowed revenue recovered through the tariffs.
- The non-transmission services are appropriately classified for the connection services and the non-standard non-transmission services. The compliance of these services to the criteria set by the NC TAR however cannot be assessed due to the lack of information published in the consultation document.

13 The Agency provides the following recommendations to HERA when publishing its motivated decision pursuant to Article 27(4) of the NC TAR:

- First, align the used tariff period with the definition of Article 3(23) of the NC TAR. The Agency recommends HERA to carry out all the tasks linked to tariff periods, notably the transparency publications set out in Article 30 of NC TAR and Article 19(1) of Regulation (EU) 2024/1789) each time the level of the applied tariff changes.
- Second, regularly monitor the status of the Dalmatian pipeline with regard to its possible classification as a regional network in line with the definitions in Article 2(17) and (19) of Directive (EU) 2024/1788. If such an assessment finds that there is no future intention to connect this pipeline to a neighbouring transmission network, classifying this pipeline segment as a regional network would be appropriate. If such a decision is taken in the future, the costs related to regional networks should be allocated to domestic end-users following the measures foreseen in the NC TAR and the guidance the Agency provides in its implementation monitoring report of 2020. [1]
- Third, with regard to the cost-reflectivity of the tariffs, ensure that the application of the economic justification parameter, intended to ascertain the efficiency of the TSO, does not lead to a breach of Article 17(1) of Regulation (EU) 2024/1789 which require tariffs to reflect the operator's *actual costs insofar as such costs correspond to those of an efficient and structurally comparable network operator* and to include appropriate return on investments.
- Fourth, provide more detail on how:
    - The effects of non-yearly capacity bookings are considered in the calculations of the tariffs; then recalculate the cost allocation assessments accordingly.
    - The economic justification parameter is quantified and applied during the calculation of the allowed revenues.
- Fifth, clarify the methodology and the application of 'the *connection service'* and 'the *non-standard services for non-transmission services'*.

[1] https://www.acer.europa.eu/sites/default/files/documents/Publications/The%20internal%20gas%20market%20in%20Europe_The%20role%20of%20transmission%20tariffs.pdf

2. Introduction

14 Commission Regulation (EU) 2017/460 of 16 March 2017 establishes a network code on harmonised transmission tariff structures for gas ('NC TAR').

15 Article 27 of the NC TAR requires the Agency to analyse the consultation documents on the reference price methodologies for all entry exit systems[2]. This Report presents the analysis of the Agency for the transmission system of Croatia.

16 On 10 April 2025, the NRA Hrvatska Energetska Regulatorna Agencija ('HERA') launched the consultation and forwarded it to the Agency. The consultation remained open until 10 June 2025. On 4 July 2025, the two consultation responses and their English summary were published. The Agency has taken these into consideration for its analysis. Within five months following the end of the final consultation, and pursuant to Article 27(4) of the NC TAR, HERA shall take and publish a motivated decision on all the items set out in Article 26(1).

Reading guide

17 Chapter 3 of this document presents an analysis on the completeness, namely if all the information in Article 26(1) has been published. Chapter 4 assesses the proposed reference price methodology ('RPM') for Croatia. Chapter 5 focuses on the compliance, namely if the RPM complies with the requirements set out in Article 7 of the code, if the criteria for setting commodity-based transmission tariffs as set out in Article 4(3) are met and if the criteria for setting non-transmission tariffs as set out in Article 4(4) are met. This document contains two annexes, respectively the legal framework and a list of abbreviations.

[2] With the exception of Article 10(2)(b), when different RPMs may be applied by the TSOs within an entry-exit zone.

3. Completeness

3.1. Has all the information referred to in Article 26(1) been published?

18 Article 27(2)(a) of the NC TAR requires the Agency to analyse whether all the information referred to in Article 26(1) of the NC TAR has been published.

19 Article 26(1) of the NC TAR requires that the consultation document should be published in the English language, to the extent possible. In line with this requirement, HERA also published the document in English simultaneously with the Croatian version.

20 Overall, almost all information in Article 26(1) of the NC TAR has been properly published, as detailed in the following table. The Agency recommends HERA to include the missing information, namely to refine and increase the information value of its data inputs, in its final decision.

Table 1: Checklist information Article 26(1)

Article	Information	Published: Y/N/NA
26(1)(a)	the description of the proposed reference price methodology	Yes
26(1)(a)(i) **26(1)(a)(i)(1)** **26(1)(a)(i)(2)**	the indicative information set out in Article 30(1)(a), including: • the justification of the parameters used that are related to the technical characteristics of the system, • the corresponding information on the respective values of such parameters and the assumptions applied	Yes
26(1)(a)(ii)	the value of the proposed adjustments for capacity-based transmission tariffs pursuant to Article 9	Yes
26(1)(a)(iii)	the indicative reference prices subject to consultation	Yes
26(1)(a)(iv)	the results, the components and the details of these components for the cost allocation assessments set out in Article 5	Yes, however, the method of handling short-term capacities might distort the CAA calculations
26(1)(a)(v)	the assessment of the proposed reference price methodology in accordance with Article 7	Yes
26(1)(a)(vi)	where the proposed reference price methodology is other than the capacity weighted distance reference price methodology detailed in Article 8, its comparison against the latter accompanied by the information set out in point (iii)	Yes, however the tariffs based on the CWD methodology were only published as a weighted average for all domestic exit points and not individually for all points/clusters
26(1)(b)	the indicative information set out in Article 30(1)(b)(i), (iv), (v)	Mainly yes (the total allowed revenue, including non-

		transmission revenues is missing from the published document)
26(1)(c)(i) **26(1)(c)(i)(1)** **26(1)(c)(i)(2)** **26(1)(c)(i)(3)**	where commodity-based transmission tariffs referred to in Article 4(3) are proposed • the manner in which they are set • the share of the allowed or target revenue forecasted to be recovered from such tariffs • the indicative commodity-based transmission tariffs	Not applicable
26(1)(c)(ii) **26(1)(c)(ii(1)** **26(1)(c)(ii)(2)** **26(1)(c)(ii)(3)** **26(1)(c)(ii)(4)**	where non-transmission services provided to network users are proposed: • the non-transmission service tariff methodology therefore • the share of the allowed or target revenue forecasted to be recovered from such tariffs • the manner in which the associated non-transmission services revenue is reconciled as referred to in Article 17(3) • the indicative non-transmission tariffs for non-transmission services provided to network users	Partially: the tariffs, detailed methodologies, and reconciliation mechanisms for non-standard services are not included
26(1)(d)	the indicative information set out in Article 30(2);	Yes
26(1)(e) **26(1)(e)(i)** **26(1)(e)(ii)** **26(1)(e)(iii)** **26(1)(e)(iv)**	where the fixed payable price approach referred to in Article 24(b) is considered to be offered under a price cap regime for existing capacity: • the proposed index; • the proposed calculation and how the revenue derived from the risk premium is used • at which interconnection point(s) and for which tariff period(s) such approach is proposed • the process of offering capacity at an interconnection point where both fixed and floating payable price approaches referred to in Article 24 are proposed	Not applicable

4. Assessment of the proposed reference price methodology

21 The following chapter assesses the proposed RPM taking into account the input parameters of the methodology and the cost allocation assessment.

4.1. Timeline for the application of tariffs

22 The regulatory period coincides with the application of the RPM, with both the application of the proposed RPM and the next regulatory period spanning from 2026 to 2030. The proposed RPM would be applicable for the determination of the tariffs applied from 1 January 2026 to 31 December 2030. Tariffs are to be set before the beginning of the regulatory period for all five years simultaneously, at different tariff levels for each year. The consulted non-binding indicative tariffs are based on forecasted inputs and are calculated for each year of the regulatory period.

4.2. Description of the network

23 The Croatian natural gas network is a moderately complex system operated by a single state-owned TSO, Plinacro d.o.o.. Plinacro operates as an ownership unbundled TSO. The TSO operates a pipeline network of approximately 2,544 km, with entry points from the Krk LNG terminal, from domestic production located in the northern part of continental Croatia and the northern Adriatic, and from interconnections with Slovenia and Hungary. Two underground storage facilities are connected to the transmission system. The transported gas may exit the system at the two interconnection points, at the two storage exits, to final consumers connected directly to the transmission network, and at city gate stations to the systems of the 27 distribution system operators. The Croatian transmission system consists of a single balancing zone.

24 During the 2026-2030 regulatory period, significant capacity developments are foreseen to be undertaken which would increase the available capacities at the LNG entry points, and at both interconnection exit points. These developments would be carried out through financing from the European Union's Recovery and resilience program, in which the TSO, Plinacro, was allocated 534 million EUR funding for this project. Therefore, the capacity increases would not result in the increase of the regulated asset base (RAB), and consequently would not lead to the increase of transmission tariffs.

25 The following figure from the consultation document provides a graphical overview of the transmission system:

4.3. The proposed RPM

26 The following chapter assesses HERA's proposed methodology.

27 Croatia applies a revenue cap regime. The TSO's allowed revenue for transmission services is recovered through capacity tariffs only, no flow-based charges are applied. HERA proposes a postage stamp methodology delivering a uniform tariff to be applied at all entry points, and different yet uniform tariff applied at all exit points.

28 A 90% discount is applied at entry points from storage facilities, and a 100% discount is applied at exit points to storage facilities. Croatian underground storages only have connections to the Croatian system, therefore the NC TAR's rules for cross-border facilities don't apply. Regarding the biomethane discounts introduced by Article 18 of Regulation (EU) 2024/1789, HERA proposed in a separate consultation on multipliers, seasonal factors, and discounts a derogation from their application[3]. As opposed to the current regulatory period, the proposed methodology opts for the phase out of the discount for LNG entry points by 1 January 2026.

29 HERA proposes the application of a five-year tariff period, starting in 2026 and ending in 2030. HERA publishes its decision on the transmission tariffs for all years of the regulatory period before the beginning of the regulatory period. The level of the tariffs, however, is not the same for the whole regulatory period: tariffs differ along the period as a result of the input parameters used for their calculation. The reconciliation of over- or under-recovery, which also includes the revision of the estimated allowed revenues, is carried out every five years.

[3] https://www.hera.hr/en/docs/2025/public-consultation-2025-02.pdf

30 Article 3(23) of the NC TAR defines the tariff period as "the time period during which a particular level of reference price is applicable, which minimum duration is one year, and maximum duration is the duration of the regulatory period". Hence, HERA's proposal to set a five-year tariff period during which the applicable reference price is not the same, does not comply with the definition set out in the NC TAR. The Agency understands that having the level of the tariffs determined before the regulatory period for all five years provides stability for the system users and the system operator. The Agency notes that the definition in NC TAR allows setting the transmission tariff at a constant level for five years, i.e. the whole duration of the regulatory period. The Agency also acknowledges that setting the tariff for each year of a given period, based on the forecasted input parameters (expected yet changing capacity bookings of given years) result in tariffs more closely reflecting the actual forecasted costs related to the given period leading to greater cost-reflectivity (provided that the capacity estimates are properly calibrated). While HERA's approach does not technically comply with the definition of the tariff period, the Agency does not consider this practice to be harmful to network users.

31 One of the consultation responses to the proposed methodology addressed the length of the period: the anonymous stakeholder stated that a five-year long regulatory period is inappropriately long for the Croatian market conditions, and does not consider the increased volatility of economic and financial conditions in the recent years. The Agency therefore recommends HERA to further consider the trade-offs between the stability provided by setting the conditions for five years, and the risks arising from a growing gap between actual market conditions and the ones used for the calculations during the five-year regulatory period, and reassess, based on these trade-offs, the rationale of setting the tariffs for five years in advance.

32 Regardless the results of the reassessment, as under the definition in the NC TAR all five years are considered separate tariff periods, even if the level of the tariffs are determined at the beginning of the regulatory period at the same time, the Agency recommends HERA to carry out all those obligations that are linked to tariff periods, namely the transparency obligations set out in Article 30 of the NC TAR and in Article 19(1) of Regulation (EU) 2024/1789, and the consultation on multipliers, seasonal factors and discounts in accordance with Article 28 of the NC TAR every time when the level of tariff changes.

4.3.1. Cost drivers

33 HERA proposes the use of forecasted contracted capacity as the single cost driver. HERA's reasoning for not utilising distance between entry and exit points as a cost driver is that it would lead to significant deviations in the tariffs and could lead to changes in gas flows by applying non-competitive tariffs at certain points. They argue that such tariffs could adversely affect the security of supply of the Croatian gas market, the functioning of this market and ultimately impact the viability of the Croatian transmission system operator. ACER observes that the values for the forecasted contracted capacities take into account the capacity increases at the entry point from the LNG terminal and the exit point to Slovenia and Hungary. For domestic production an annual 10% decline of capacity bookings is estimated. At domestic exit points a 16% capacity booking increase is forecasted compared to the values used for the calculation of 2025 tariffs.

4.3.2. Entry-exit split

34 HERA applies an ex-ante entry-exit split. The allocation of revenues to entry points and exit points is 60%-40%.

4.3.3. Secondary adjustments

35 HERA does not propose to apply any explicit secondary adjustment. When implementing the NC TAR, national regulatory authorities usually use rescaling as a secondary adjustment to compensate for the over- or under-recovery of the allowed revenue due to the application of discounts (e.g. for storage facilities and conditional products) and multipliers for products shorter than a year. HERA instead proposes to apply different measures.

36 To avoid under-recovery of tariffs due to the application of the storage discounts, HERA proposes the adjustments of storage capacities proportionately to the level of discounts – the higher the storage discount it applies to less storage capacities when calculating the tariffs. While this methodology is not foreseen by the NC TAR, mathematically the two methods are equivalent, therefore this deviation has no direct numerical consequence. During the CAA calculations HERA uses the unadjusted capacities, therefore this approach does not distort the result of the CAA indicator.

37 HERA also applies an adjustment differing from the usual practice of RPMs to account for the short-term capacities: 90% of the allowed revenue is allocated to the reference price, as HERA foresees that this is the share that is expected to be collected from yearly tariffs. ACER notes that revenues recovered from short-term bookings are usually handled by RPMs through the annualisation of capacity bookings, during which the value of the short-term bookings is adjusted by the level of the respective multiplier. The method applied by HERA, however, can mathematically produce the same result through the adjustment of the allowed revenue[4].

38 ACER highlights nevertheless that this approach makes the calculations harder to understand for system users, even more so that the data related to the expected recovery from non-yearly products is not apparent in the published documents. This approach might also have an adverse effect on the reliability of CAA calculations, as they are carried out with forecasted capacities not reflecting the effects of multipliers and seasonal factors.

39 The Agency therefore recommends HERA to provide full clarity on how the effects of non-yearly capacity bookings and the related revenues are considered during the calculations in its final decision.

4.4. Cost allocation assessment

40 HERA provides the results of the CAA both for the proposed RPM and for the counterfactual CWD methodology. The CAA index for the proposed RPM according to HERA's calculations is 9.29%, and for the CWD methodology it is 12.81%.

41 HERA also carried out CAA assessments for hypothetical scenarios, analysing the effects of the application of a 60-40% entry-exit split for the CWD methodology, resulting in a CAA index of 3.72% and the effects of the application of a 50-50% entry-exit split for the postage stamp methodology, resulting in a CAA index of 19.61%. The assessment of these alternative scenarios confirm that the proposed RPM and the proposed entry-exit split are better fits in terms of cross-subsidisation than the CWD methodology and the 50-50% entry exit split.

42 Since the CAA value for the proposed RPM is within the 10% threshold as laid out in Article 5(6) of the NC TAR, it does not need further justification. However, based on the arguments detailed

[4] As it is equivalent to multiply the numerator of a fraction (that is, the allowed revenue) by a number or to multiply the denominator (the forecasted capacities) by the reciprocal of that number.

in Section 4.3.3., the Agency recommends that in the final decision HERA refines the CAA index along the above-listed considerations.

4.5. Comparison with the CWD methodology

43 HERA provides a comparison between the proposed postage stamp methodology and the standard CWD methodology as laid out in Article 8 of the NC TAR. The detailed calculations for the analysis per the counterfactual CWD methodology are not included in the consultation document, however they were submitted to ACER along with the consultation document at the beginning of the consultation process. Nonetheless, the main principles used for the calculations, including the clustering of exit points used to reduce the number of entry-exit combinations and the simplified model are published in the consultation document, along with the resulting tariffs[5] and a comparison of the proposed methodology and the counterfactual CWD methodology.

44 The following table shows the differences between the tariffs calculated by the proposed postage stamp and the CWD methodology.

Type of system points	Proposed postage stamp RPM tariff (EUR/kWh/day)	CWD methodology tariff (EUR/kWh/day)	Δ (%)
Exit reference prices			
Exit at interconnection	0.2346	0.4849	107%
Domestic exits	0.2346	0.2641	13%
Exit to storage	0	0	
Entry reference prices			
Entry from the gas storage	0.0342	0.0114	-67%
Entry from production	0.3420	0.2559	-25%
Entry at interconnection	0.3420	0.0000[6]	-100%
Entry from LNG terminal	0.3420	0.2954	-14%

45 The main difference between the two methodologies results from the change of the entry-exit split. The application of CWD methodology results in lower entry tariffs, higher exit IP tariffs and slightly higher domestic exit tariffs. While the weighted average of the domestic exit tariffs shows a moderate deviation from the postage stamp tariff, the individual tariffs of domestic exits or exit clusters show a high variance ranging from 0.0580 to 0.5819[7]. This huge variance between domestic exits would make the system harder to understand for system users. The higher

[5] The tariffs for the domestic exit points, however, are published in the consultation document in an aggregated manner, with only a weighted average tariff shown for all points. While these points are homogenous points, which allow their uniform handling in many provisions of the NC TAR, for the purpose of the CWD calculation they cannot be aggregated together: Article 8(2)(e) clearly states that the tariffs shall be calculated for points or clusters of points, but not for homogenous groups of points. The background calculations submitted to ACER together with the consultation document, however, made it possible for ACER to view the individual exit point tariffs.

[6] HERA forecasts no capacity bookings at interconnection entries, which results in 0 tariffs in the model. In such cases the use of a non-zero substitute number can lead to more realistic tariffs.

[7] While not published in the consultation document, the individual tariffs were provided to ACER by HERA along with the detailed CWD calculations.

interconnection exit tariffs could also have a negative effect on cross-border flows, which in turn would also decrease the utilisation rate of the LNG terminal. The differences in the resulting tariffs from the application the CWD mechanism do not question the choice of the postage stamp RPM as proposed by HERA.

5. Compliance

5.1. Does the RPM comply with the requirements set out in Article 7?

46 Article 27(2)(b)(1) of the NC TAR requires the Agency to analyse whether the proposed reference price methodology complies with the requirements set out in Article 7 of the NC TAR. This article refers to Article 17 of Regulation (EU) 2024/1789 and lists several requirements to take into account when setting the RPM. As these overlap, in the remainder of this chapter, the Agency will take a closer look at the five requirements listed in Article 7 of the NC TAR.

47 As the concepts of transparency, cost reflectivity, non-discrimination, cross-subsidisation and cross border trade are closely related the Agency concludes with an overall assessment.

5.1.1. Transparency

48 **Article 7(a)** of the NC TAR requires that the RPM aims at ensuring that network users can reproduce the calculation of reference prices and their accurate forecast. The Agency finds the simplified tariff model, as required by Article 30(2)(b) of the NC TAR, useful. The Agency considers that network users would be able to reproduce the calculation of reference prices. The Agency further considers that network users would be able to forecast the reference prices.

49 The Agency considers the choice of a postage stamp RPM with uniform tariffs at all points a simple solution that makes it easy for all network users to understand and reproduce the way the allowed revenue is allocated to the points of the network.

50 The Agency therefore concludes that the proposed RPM complies with the criteria of transparency.

51 The Agency however recommends HERA to consider providing more detail on how the effects of non-yearly capacity bookings are taken into account during the calculations of the tariffs, and how the ‘economic justification parameter’ is quantified and applied during the calculation of the allowed revenues. Article 19(1) of Regulation (EU) 2024/1789 introduces new transparency requirements on the composition and calculation of the allowed revenue and regulated asset base of gas transmission system operators, with the details of the data to be published listed in Annex I of the Regulation. While this new transparency requirement does not directly affect the consultation process of reference price methodologies, the Agency recommends that as a good practice decide upon the details and depth of simplified tariff models and the data used in them with the new requirements in mind.

52 The consultation document also contains less information about the background calculations for the counterfactual capacity weighted distance methodology than similar consultation documents usually do. While this is not in breach with the provisions of Article 26(1)(a)(vi) of the NC TAR, which only require the publication of the indicative reference prices according to the CWD methodology, a more detailed publication would provide more transparency and help networks users in understanding the tariffs better. When submitting the consultation document to ACER, HERA also provided the background data and calculations used for CWD tariffs. Nonetheless, the Agency advocates for more transparency towards stakeholders, if it does not require the publication of commercially sensitive information or information the disclosure of which could pose security risks.

5.1.2. Cost-reflectivity

53 **Article 7(b)** of the NC TAR requires the RPM to take into account the actual costs incurred for the provision of transmission services, considering the level of complexity of the transmission network and the technical characteristics of the transmission system. The transmission system network in Croatia can be considered a network with medium complexity and some meshed elements. This is reflected in the choice of the postage stamp methodology with forecasted contracted capacity as the sole cost driver.

54 The RPMs usually make a trade-off between simplicity and transparency, and cost-reflectivity. Given the medium complexity of the Croatian system, a postage stamp is a good compromise between cost-reflectivity and simplicity. While such a methodology does not take extra steps to ensure that the costs of the network are allocated in a meticulously proportionate manner to the network users, it also lacks any factor that would lead to obvious distortions.

55 One factor that the Agency in multiple Member States found to decrease the cost-reflectivity of postage stamp methodologies is the potential existence of regional networks. In its previous reports issued to several Member States and in the 2020 monitoring report on the application of reference price methodologies[8], the Agency defined regional networks as those infrastructure elements that are owned and operated by the TSO, but do not fall under the scope of transmission as defined by Article 2(17) of the Directive (EU) 2024/1788 which excludes "*the part of high-pressure pipelines primarily used in the context of local distribution of natural gas, with a view to its delivery to customers*" from the scope of transmission.

56 In the Croatian gas transmission system, the Dalmatian pipeline segment appears to be a likely candidate for being categorised as a regional network, as it currently does not serve the purpose of transporting gas between Member States and can only be used to deliver gas to the customers in Croatia's Southern Region. During the Agency's discussions with both HERA and with the Croatian gas TSO, Plinacro, it became clear, however, that this pipeline was developed with a view of eventually connecting it to other gas transmission infrastructure, providing access to Mediterranean gas sources, and potentially to the gas network of Bosnia and Hercegovina too. (Other, less significant network elements with similar characteristics in the northern part of Croatia have the potential of being connected to the Serbian network.) The following figure from Plinacro's ten-year network development plan[9] illustrates these potential connections.

[8] https://www.acer.europa.eu/sites/default/files/documents/Publications/The%20internal%20gas%20market%20in%20Europe_The%20role%20of%20transmission%20tariffs.pdf

[9] https://www.hera.hr/hr/docs/2020/Plan_razvoja_plinskog_transportnog_sustava_RH_2021-2030.pdf

57 The Agency acknowledges that, due to the existence of these plans for further connections, these network elements are not to be categorised as regional networks for the moment. Nonetheless, while the development of these plans is still ongoing, its progression is very slow. Therefore, the Agency recommends HERA to closely monitor the viability of these plans, and in case it comes to the conclusion that these plans are not viable, to consider categorising these parts of the transmission system as regional networks, and allocate the related costs, either through the use of the reference price methodology or by other measures, primarily to the end-users of the Croatian network.

58 The Agency during its analysis interprets cost-reflectivity as a double criteria: cost-reflectivity should provide that (i) costs caused by the different system users relate to the tariffs paid by them, and (ii) total costs related to the provision of transmission services are associated with the totality of revenues recovered by the transmission tariffs. Article 17(1) of Regulation (EU) 2024/1789 states that tariffs applied by transmission system operators shall "*reflect the actual costs incurred, insofar as such costs correspond to those of an efficient and structurally comparable network operator and are transparent, whilst including an appropriate return on investments*".

59 During the setting of the allowed revenue, the Croatian regulatory framework applies an economic justification parameter. Article 15 of The Methodology on the determination of the amounts of tariff items for gas transport[10] introduces an economic efficiency justification parameter, which adjusts the net book value of the regulated asset base proportionally to the utilisation rate of exit points with a 30% allowance, so at 70% utilisation the total value of the regulated assets is considered justified. While the Regulation (EU) 2024/1789 requires the use

[10] https://narodne-novine.nn.hr/clanci/sluzbeni/2020_07_79_1496.html

of efficiency benchmarking during tariff setting to avoid the financing of inefficiencies, the utilisation rate of gas networks are not directly dependant on the transmission operator's performance and as such are considered to be outside the scope of the transmission system operator's influence.

60 The effects of the application of the 'economic justification parameter' on the level of the allowed revenue and on the viability of the transmission system operator's operations are not detailed in the consultation document. Based on the discussions the Agency carried out with experts from HERA and from Plinacro, the decrease of the allowed revenue due to the application of this adjustment is significant and according to the TSO's experts, has the potential to materially influence the TSO's operation. The Agency recommends HERA to provide more transparency on this topic, and to clearly ensure that the allowed revenue from transmission tariffs reflects the *actual costs* of *an efficient network operator* and according to the TSO's economic efficiency to include an appropriate return on the operator's investments. As guidance, the Agency points at its work currently being undertaken on the mandatory efficiency comparison between transmission system operators as required by Article 19(2) of Regulation (EU) 2024/1789, delivering results in 2027 whereas methodological guidance would be available already by October 2025.

61 Absent clarity regarding the effects of the economic justification parameter, the Agency concludes that the cost-reflectivity of the proposed RPM cannot be conclusively assessed.

5.1.3. Cross-subsidisation and non-discrimination

62 Article 7(c) of the NC TAR requires the RPM to ensure non-discrimination and prevent undue cross-subsidisation. One instrument to evaluate this is the cost allocation assessment ('CAA', Article 5 of the NC TAR). HERA carried out the CAA, resulting in 9.29% for the proposed methodology. Since this value is below the 10% threshold, it does not require further justification. While the CAA analysis alone does not necessarily guarantee the lack of cross-subsidisation, the Agency notes that these results do not indicate the existence of cross-subsidies.

63 The CAA only assesses cross-subsidisation between intra-system and cross-system network use. A possible source of cross-subsidies between different groups of intra-system system users might be the use of unjustified differences between domestic exit tariffs. As HERA proposes a postage stamp methodology, with only the mandatory storage discount resulting in differences between exit point tariffs, such possible sources of unjustified cross-subsidies were not identified.

64 As the principles of cost-reflectivity and avoidance of cross-subsidisation are strongly interconnected usually the inability to conclude that a reference price methodology is cost-reflective would also result in the inability to conclude on the lack of cross-subsidisation. However, as the potential issues with cost-reflectivity only affect the determination of total level of the allowed revenue, and not its distribution amongst the different network users, the Agency concludes that the proposed RPM is compliant with the requirement of preventing undue cross-subsidisation.

65 The Agency concludes that the allocation of all transmission costs via a single postage stamp RPM to all entry-exit points minimises the possibility of forms of discrimination not allowed by the NC TAR.

5.1.4. Volume risk

66 **Article 7(d)** of the NC TAR requires that the RPM ensures that significant volume risk related particularly to transport gas across an entry-exit system is not assigned to final customers within that entry-exit system.

67 Based on the forecasts provided by HERA, even after the conclusion of the new infrastructure developments enhancing the entry capacities for LNG injections to the system and the exit capacities at the interconnections to Hungary and Slovenia, the share of cross-border capacity bookings remains around one-third of all capacity bookings. This shows that the share of gas transported across the network is lower than the share of gas transported to domestic final customers.

68 The proposed reference price methodology is a postage stamp, which lessens the potential for volume risks being allocated excessively to domestic users. Moreover, the stability of the bookings of the regasification capacities of the LNG terminal further mitigates risks related to the volatility of cross-system flows.

69 Based on the reasoning in paragraphs (66-68), the Agency concludes that the RPM is compliant with the requirement on volume risk.

5.1.5. Cross-border trade

70 **Article 7(e)** of the NC TAR requires that the RPM ensures that the resulting reference prices do not distort cross-border trade.

71 As HERA proposes a postage stamp tariff uniform at entry points and uniform at exit points, the Agency could not identify specific elements explicitly distorting cross-border trade. The comparison of the indicative tariffs with the tariffs derived through the application of the CWD methodology shows that the proposed postage stamp tariffs result in lower IP exit tariffs, therefore they are less likely to cause barriers to gas flows between Member States.

72 HERA proposed the phasing out of the 15% LNG entry point discount that was applied in the previous methodology. HERA justifies the phase-out by referring to the high booking rate of the Krk LNG terminal. A stakeholder response submitted to the consultation on the methodology argues that the removal of the discount negatively impacts the competitiveness of LNG exports, and harms those users who have booked long term capacities. While the changed discount level impacts economic activity, discount are set with a clear purpose and the application of discounts follow regulatory provisions. In this case, Article 27(5) of the NC TAR foresees that the consultation and the decision on the applied reference price methodology shall be repeated at least every five years. Moreover, Article 28(1)(c) and 28(2) of the NC TAR states the level of the discount set out in Article 9(2) shall be consulted before every tariff period. Finally, Article 9(2) of the NC TAR states that discounts at LNG facilities may be applied for the purpose of increasing security of supply. As the LNG terminal's existing capacities are fully booked until the gas year 2036/37, it can be well argued that keeping the discount has limited benefit to ensure security of supply. To conclude, the level of the applied discounts can change with a certain frequency, are applied to ensure greater security of supply and where such needs are justified, so consequently, shall not be assumed to stay constant over time.

73 Taking into account the above, the Agency concludes that the proposed RPM does not distort cross-border trade.

5.2. Are the criteria for setting commodity-based transmission tariffs as set out in Article 4(3) met?

74 Article 27(2)(b)(2) of the NC TAR requires the Agency to analyse whether the criteria for setting commodity-based transmission tariffs as set out in Article 4(3) are met.

75 The use of commodity-based transmission tariffs is an exception. Only part of the transmission services revenue may be recovered by commodity-based transmission tariffs. HERA proposes not to apply commodity-based transmission tariffs.

5.3. Are the criteria for setting non-transmission tariffs as set out in Article 4(4) met?

76 Article 27(2)(b)(3) of the NC TAR requires the Agency to analyse whether the criteria for setting non-transmission tariffs as set out in Article 4(4) are met.

77 HERA proposes to make use of non-transmission tariffs. The costs of the following services are recovered via non-transmission tariffs: connection service to the transmission system or increase of connection capacity, and non-standard services. These services should qualify as non-transmission services: the costs for these services are not driven by both capacity and distance and the costs of these services are not related to the part of the RAB for the provision of transmission services.

78 During the previous consultation, undertaken in 2019, HERA originally did not propose these services to be classified as non-transmission services. However, based on the characteristics of these services in its previous tariff report, the Agency recommended HERA to reassess and consider them as non-transmission services. HERA did recalibrate them as non-transmission services in its final decision in 2019.

79 The NC TAR states that non-transmission tariffs shall be cost-reflective, non-discriminatory, objective and transparent and shall be charged to the beneficiaries of the non-transmission service.

80 The **connection service fee** is determined based on the complexity of the connection work and is charged directly to the investors who initiated the request for the service. The tariff to be paid for the connection is calculated as the product of the hourly unit cost of labour, the number of working hours required for the connection, and the coefficients for work complexity and connection category. The Agency assesses that this likely fulfils the criteria on the non-discriminatory, objective, and transparent nature of non-transmission tariffs, as well as the criteria that they should be charged to the beneficiaries of the service. However, as the details, complexity coefficients, and hourly unit prices of labour for the connection service are not included in the consultation document, and they are regulated by a separate *Methodology for determining the connection fees for the gas distribution or transmission system and increases in the connection capacity*[11], the Agency cannot conclude that this approach is fully compliant with the requirements of the NC TAR.

81 As for the **non-transmission services categorised as non-standard services**, the consultation document only contains a projection for the total allowed revenue allocated to these services, but it does neither include a methodology for their calculation, nor their cost drivers, or even the level of the tariff foreseen for this service. HERA references in the consultation document a separately approved *Methodology for determining the price of non-standard services for gas transmission, gas distribution, gas storage, reception and dispatch of liquefied natural gas and public gas supply service*[12] which regulates the tariffs and the underlying costs for these services. As there is a separate methodology applied, HERA made the decision to exclude these services from the scope of the consultation.

[11] https://narodne-novine.nn.hr/clanci/sluzbeni/2018_05_48_927.html

[12] https://narodne-novine.nn.hr/clanci/sluzbeni/2018_05_48_926.html

82 The Agency does not consider this approach to be in line with the requirements set out in the NC TAR. Article 26(1)(c)(ii) of the NC TAR states that where non-transmission services provided to network users are proposed, the final consultation shall include their methodologies, the share of revenue forecasted to be recovered from such tariffs, how the associated non-transmission services revenue is reconciled, and the indicative non-transmission tariffs.

83 The Agency therefore cannot assess whether the non-standard services are compliant with any of the requirements of Article 4(4)(a) of the NC TAR. The Agency recommends HERA to clarify the methodology and the tariffs of this non-transmission service in its motivated decision. The Agency, however, also notes that this non-transmission service only accounts for 0.2% of the total operating revenue of the Croatian TSO.

6. Annex 1: Legal framework

Article 27 of the NC TAR reads:

1. *Upon launching the final consultation pursuant to Article 26 prior to the decision referred to in Article 27(4), the national regulatory authority or the transmission system operator(s), as decided by the national regulatory authority, shall forward the consultation documents to the Agency.*
2. *The Agency shall analyse the following aspects of the consultation document:*

   (a) whether all the information referred to in Article 26(1) has been published;

   (b) whether the elements consulted on in accordance with Article 26 comply with the following requirements:

   (1) whether the proposed reference price methodology complies with the requirements set out in Article 7;

   (2) whether the criteria for setting commodity-based transmission tariffs as set out in Article 4(3) are met;

   (3) whether the criteria for setting non-transmission tariffs as set out in Article 4(4) are met.
3. *Within two months following the end of the consultation referred to in paragraph 1, the Agency shall publish and send to the national regulatory authority or transmission system operator, depending on which entity published the consultation document, and the Commission the conclusion of its analysis in accordance with paragraph 2 in English.*

   The Agency shall preserve the confidentiality of any commercially sensitive information.
4. *Within five months following the end of the final consultation, the national regulatory authority, acting in accordance with Article 41(6)(a) of Directive 2009/73/EC, shall take and publish a motivated decision on all items set out in Article 26(1). Upon publication, the national regulatory authority shall send to the Agency and the Commission its decision.*
5. *The procedure consisting of the final consultation on the reference price methodology in accordance with Article 26, the decision by the national regulatory authority in accordance with paragraph 4, the calculation of tariffs on the basis of this decision, and the publication of the tariffs in accordance with Chapter VIII may be initiated as from the entry into force of this Regulation and shall be concluded no later than 31 May 2019. The requirements set out in Chapters II, III and IV shall be taken into account in this procedure. The tariffs applicable for the prevailing tariff period at 31 May 2019 will be applicable until the end thereof. This procedure shall be repeated at least every five years starting from 31 May 2019.*

Article 26(1) of the NC TAR reads:

1. *One or more consultations shall be carried out by the national regulatory authority or the transmission system operator(s), as decided by the national regulatory authority. To the extent possible and in order to render more effective the consultation process, the consultation document should be published in the English language. The final consultation prior to the decision referred to in Article 27(4) shall comply with the requirements set out in this Article and Article 27, and shall include the following information:*

   (a) the description of the proposed reference price methodology as well as the following items:

   (i) the indicative information set out in Article 30(1)(a), including:

   (1) the justification of the parameters used that are related to the technical characteristics of the system;

(2) the corresponding information on the respective values of such parameters and the assumptions applied.

(ii) the value of the proposed adjustments for capacity-based transmission tariffs pursuant to Article 9;

(iii) the indicative reference prices subject to consultation;

(iv) the results, the components and the details of these components for the cost allocation assessments set out in Article 5;

(v) the assessment of the proposed reference price methodology in accordance with Article 7;

(vi) where the proposed reference price methodology is other than the capacity weighted distance reference price methodology detailed in Article 8, its comparison against the latter accompanied by the information set out in point (iii);

(b) the indicative information set out in Article 30(1)(b)(i), (iv), (v);

(c) the following information on transmission and non-transmission tariffs:

(i) where commodity-based transmission tariffs referred to in Article 4(3) are proposed:

(1) the manner in which they are set;

(2) the share of the allowed or target revenue forecasted to be recovered from such tariffs;

(3) the indicative commodity-based transmission tariffs;

(ii) where non-transmission services provided to network users are proposed:

(1) the non-transmission service tariff methodology therefor;

(2) the share of the allowed or target revenue forecasted to be recovered from such tariffs;

(3) the manner in which the associated non-transmission services revenue is reconciled as referred to in Article 17(3);

(4) the indicative non-transmission tariffs for non-transmission services provided to network users;

(d) the indicative information set out in Article 30(2);

(e) where the fixed payable price approach referred to in Article 24(b) is considered to be offered under a price cap regime for existing capacity:

(i) the proposed index;

(ii) the proposed calculation and how the revenue derived from the risk premium is used;

(iii) at which interconnection point(s) and for which tariff period(s) such approach is proposed;

(iv) the process of offering capacity at an interconnection point where both fixed and floating payable price approaches referred to in Article 24 are proposed.

Article 7 of the NC TAR reads:

The reference price methodology shall comply with Article 13 of Regulation (EC) No 715/2009 and with the following requirements. It shall aim at:

(a) enabling network users to reproduce the calculation of reference prices and their accurate forecast;

(b) taking into account the actual costs incurred for the provision of transmission services considering the level of complexity of the transmission network;

(c) ensuring non-discrimination and prevent undue cross-subsidisation including by taking into account the cost allocation assessments set out in Article 5;

(d) ensuring that significant volume risk related particularly to transports across an entry-exit system is not assigned to final customers within that entry-exit system;

(e) ensuring that the resulting reference prices do not distort cross-border trade.

Article 17 of Regulation (EU) 2024/1789 reads:

1. *Tariffs, or the methodologies used to calculate them, applied by the transmission system operators and approved by the regulatory authorities pursuant to Article 78(7) of Directive (EU) 2024/1788, as well as tariffs published pursuant to Article 31(1) of that Directive, shall be transparent, take into account the need for system integrity and its improvement and reflect the actual costs incurred, insofar as such costs correspond to those of an efficient and structurally comparable network operator and are transparent, whilst including an appropriate return on investments. Tariffs, or the methodologies used to calculate them, shall be applied in a non-discriminatory manner.*

   Tariffs may also be determined through market-based arrangements, such as auctions, provided that such arrangements and the revenue arising therefrom are approved by the regulatory authority.

   Tariffs, or the methodologies used to calculate them, shall facilitate efficient natural gas trade and competition, while at the same time avoiding cross-subsidies between network users and providing incentives for investment and maintaining or creating interoperability for transmission networks.

   Tariffs for network users shall be non-discriminatory and shall be set separately for every entry point into or exit point out of the transmission system. Cost-allocation mechanisms and rate setting methodology regarding entry points and exit points shall be approved by the regulatory authorities. Regulatory authorities shall ensure that network tariffs shall not be calculated on the basis of contract paths.

2. *Tariffs for network access shall neither restrict market liquidity nor distort trade across borders of different transmission systems. Where, notwithstanding Article 78(7) of Directive (EU) 2024/1788, differences in tariff structures would hamper trade across transmission systems, transmission system operators shall, in close cooperation with the relevant national authorities, actively pursue convergence of tariff structures and charging principles.*

3. *Until 31 December 2025, the regulatory authority may apply a discount of up to 100 % to capacity-based transmission and distribution tariffs at entry points from, and exit points to, underground natural gas storage facilities and at entry points from LNG facilities, unless and to the extent that such a storage facility which is connected to more than one transmission or distribution network is used to compete with an interconnection point.*

   From 1 January 2026, the regulatory authority may apply a discount of up to 100 % to capacity-based transmission and distribution tariffs at entry points from, and exit points to, underground natural gas storage facilities and at entry points from LNG facilities for the purpose of increasing security of supply. The regulatory authority shall re-examine that tariff discount and its contribution to the security of supply during every regulatory period, in the framework of the periodic consultation carried out pursuant to the network code adopted pursuant to Article 71(2), first subparagraph, point (d).

4. *Regulatory authorities may merge adjacent entry-exit systems with a view to enabling full or partial regional integration where tariffs may be abolished at the interconnection points between the entry-exit systems concerned. Following the public consultations conducted by the regulatory authorities or by the transmission system operators, the regulatory authorities may approve a common tariff*

and an effective compensation mechanism between transmission system operators for the redistribution of costs arising from the abolition of interconnection points.

5. *Member States with more than one interconnected entry-exit system, or more than one network operator within one entry-exit system, may implement a uniform network tariff with the aim of creating a level playing field for network users, provided that a network plan has been approved and a compensation mechanism between the network operators is implemented.*

Article 4(3) of the NC TAR reads:

3. *The transmission services revenue shall be recovered by capacity-based transmission tariffs.*

As an exception, subject to the approval of the national regulatory authority, a part of the transmission services revenue may be recovered only by the following commodity-based transmission tariffs which are set separately from each other:

(a) a flow-based charge, which shall comply with all of the following criteria:

(i) levied for the purpose of covering the costs mainly driven by the quantity of the gas flow;

(ii) calculated on the basis of forecasted or historical flows, or both, and set in such a way that it is the same at all entry points and the same at all exit points;

(iii) expressed in monetary terms or in kind.

(b) a complementary revenue recovery charge, which shall comply with all of the following criteria:

(i) levied for the purpose of managing revenue under- and over-recovery;

(ii) calculated on the basis of forecasted or historical capacity allocations and flows, or both;

(iii) applied at points other than interconnection points;

(iv) applied after the national regulatory authority has made an assessment of its cost-reflectivity and its impact on cross-subsidisation between interconnection points and points other than interconnection points.

Article 4(4) of the NC TAR reads:

4. *The non-transmission services revenue shall be recovered by non-transmission tariffs applicable for a given non transmission service. Such tariffs shall be as follows:*

(a) cost-reflective, non-discriminatory, objective and transparent;

(b) charged to the beneficiaries of a given non-transmission service with the aim of minimising cross-subsidisation between network users within or outside a Member State, or both.

Where according to the national regulatory authority a given non-transmission service benefits all network users, the costs for such service shall be recovered from all network users.

7. Annex 2: List of abbreviations

Acronym	Definition
ACER	European Union Agency for the Cooperation of Energy Regulators
ENTSOG	European Network of Transmission System Operators for Gas
NRA	National Regulatory Authority
TSO	Transmission System Operator
EC	European Commission
EU	European Union
MS	Member State
NC TAR	Network code on harmonised transmission tariff structures for gas
IP	Interconnection Point
VIP	Virtual Interconnection Point
RPM	Reference Price Methodology
CWD	Capacity Weighted Distance
CAA	Cost Allocation Assessment
RAB	Regulated Asset Base
OPEX	Operational Expenditures
CAPEX	Capital Expenditures
HERA	Hrvatska energetska regulatorna agencija