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The internal gas market in Europe: The role of transmission tariffs

*European Union Agency Report on the application of
reference price methodologies in Member States*

Main Report

Volume I

6 April 2020

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1. Foreword

- (1) When the European Union's ('EU') regulatory debate started on the reference price methodologies ('RPMs') in 2012, tariffs showed a wide variety of pricing structures. Different approaches were problematic where tariffs were derived from inconsistent tariff structures, impacting transportation prices of the neighbouring Member States ('MSs') and potentially hindering effective cross-border gas trade.
- (2) The intended role of the Commission Regulation (EU) 2017/460 of 16 March 2017¹, establishing a network code on harmonised transmission tariff structures for gas ('NC TAR'), was to create a level playing field amongst domestic and cross-border network users, reduce cross-subsidisation between these users, increase tariff transparency and by these beneficial impacts facilitate cross-border trade. During the implementation this intention was firmly guarded by the European Union Agency for the Cooperation of Energy Regulators ('the Agency').
- (3) Transmission tariffs may need to evolve in the light of major future changes, such as the decarbonisation of the energy sector and sector coupling of the electricity and gas sectors. By ensuring effective and transparent tariffs now, the burden to manage such future challenges can be decreased. An appropriate assessment and effective valuation of transmission assets will be important for the transition, therefore the ability to have transparent and functional methodologies will remain important both for transmission tariffs as well as for allowed or target revenues. Finally, certain market measures, such as to enhance the development of biomethane production, could require more elaborate frameworks as gas markets transform and decarbonise.
- (4) The Agency Report on the application of reference price methodologies in Member States ('the Report') has been written in the context of the present challenges, while keeping in mind the need to pave the way for the future transition.

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R0460&from=EN>

2. Key findings

- (5) With this Report the Agency fulfils its obligation according to Article 36(5) of the NC TAR. The article states that *‘within three years as from the entry into force of this Regulation, the Agency shall publish a report on the application of reference price methodologies in Member States’*.
- (6) The Report is due for publication by 6 April 2020.
- (7) Following the entry into application of the NC TAR, the Agency has reviewed 30 final tariff consultations, from March 2018 until March 2020². The majority of MSs have met the deadline of 31 May 2019 imposed by the NC TAR, and completed the national consultation processes as well as issued a motivated decision. Yet, roughly one third of the MSs have missed this deadline: AT, BG, LT, EE, LV, FR, ES and GB.
- (8) In the following sections, the main implementation issues and the Agency’s findings on those topics are highlighted.

2.1. Transparency

- (9) Overall, the transparency on the RPMs used to determine reference prices has improved significantly as a result of the NC TAR implementation. The consultation processes across MSs have resulted in a large amount of information which was shared with stakeholders and the Agency in the English language. Yet, the information shared has not always followed the requirements of Articles 26 and 30 and, in case of more complex methodologies, the information has not always been sufficient to build a full understanding of the RPM. Where the information sharing was incomplete, these methodologies could only be partially assessed, in particular due to the following reasons:
 - A description of the network was not always provided;
 - The justification of the choice of cost drivers was often insufficient and it was not always discussed against the characteristics of the network;
 - Policy and regulatory objectives were not clearly laid out;
 - Trade-offs between cost-reflectivity and transparency were not always assessed appropriately;
 - Some final consultations were incomplete and did not comply with the information requirements of the NC TAR.
- (10) Therefore, the Agency has often collected additional information from the concerned national regulatory authorities (‘NRAs’) and/or transmission system operators (‘TSOs’) to improve its understanding about the RPM. The additional information was displayed in the Agency’s Reports. In this way, the Agency also contributed to increasing the level of transparency, thanks to and building on its good cooperation with the NRAs.

² In the order of publication: NL, SE, RO, NI, DE, DK, PT, PL, PL (Yamal), SI, IUK, CZ, BE, EL, IT, HU, SK, IE, HR, AT(1), BBL, LT, EE, FR, ES, LV, AT(2), BG, GB.

2.2. Regional networks

- (11) The existence of regional networks as part of TSO assets is a result of the different criteria adopted nationally for the certification of TSOs. In practice, therefore, transmission networks are rather heterogeneous, yet, their costs are allocated using the same RPM.
- (12) In some MSs, assets that are part of the TSOs' regulated asset base ('RAB'), include pipelines and other assets that are dedicated to supplying domestic consumers and cannot be used for transporting gas to IPs (the so-called 'regional networks'). Allocating the costs of these regional networks using a single RPM can lead to cross-subsidisation between cross-system and intra-system use of the networks.
- (13) In some MSs, NRAs and TSOs have referred to regional networks in the national consultations as part of the TSO transmission networks: ES, FR, IT, LT. In other MSs, NRAs and TSOs have not assessed if some parts of their transmission networks could be considered as regional networks in their national tariff consultations: BE, BG, CZ, DE, DK, EE, EL, FI, HR, HU, IE, LV, NL, PL, PT, RO, SI, SK. In case regional networks are part of the TSO's RAB, the separation of regional assets to distribution networks can be an option to follow, without necessarily changing the ownership of these assets.
- (14) The topic of regional network is dealt with at EU level from a regulatory perspective for the first time in this Report. While the findings have helped to clarify the issue and its potential scope, as well as to point out possible solutions, the debate on how to best deal with such networks is not closed and would benefit from further analysis and discussion. Therefore, the Agency would like to continue the work with respect to regional networks:
- First, a better understanding of the definition of regional networks is necessary. The Agency invites the NRAs to assess the existence of regional networks when those are part of the TSO networks. The Agency, in cooperation with the NRAs, will look for alignment for a possible definition of regional networks across the EU.
 - Second, in cases where regional networks are in place, their costs should be allocated using the regular RPM whenever the proposed methodology proves capable of allocating the costs related to regional networks to domestic users³.
 - Third, should the cost allocation of regional networks to domestic consumers not be possible under the proposed RPM, the Agency proposes to change the classification of regional networks to distribution, based on Article 2(5) of the Directive 2009/73/EC⁴.
- (15) Going forward, the Agency will assess an alternative option consisting of excluding regional networks from the RPM in cases where these assets are not part of the entry-exit system, provided that this option proves to have a sound legal basis⁵

³ See more details in Chapter 5 of the Report.

⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0073&from=EN>

⁵ See Chapter 5.

2.3. Charges covering costs unrelated to transmission activities

- (16) The Agency noted that in several systems, TSOs are in charge of collecting revenues unrelated to their transmission activity (e.g. storage). In the rest of cases, these revenues are usually recovered by the relevant entity (e.g. storage operators) directly from users of these services. Yet, in other systems, shippers can be responsible for collecting non-TSO costs from consumers by adding additional fees to transmission tariffs.
- (17) These charges include compensation mechanisms aimed at covering partly or fully costs related to: storage, LNG facilities, the conversion of existing infrastructure (and end-users appliances) from low-calorific gas ('L-gas') to high-calorific gas ('H-gas')⁶, and the promotion of biogas.
- (18) The Agency understands that these mechanisms may be useful under some circumstances, as the market may not be able to price positive externalities provided by the concerned facilities. However, since these costs are charged alongside transmission tariffs, the Agency considers it necessary to assess their impact, as there could be risks of inducing undue cross-subsidies between gas consumers, financing inefficient infrastructure, or distorting competition between gas suppliers.
- (19) The Agency considers that NRAs would have to assess the benefits (security of supply, market competitiveness...) of such a mechanism against the risks associated with it.
- (20) In any case, these compensation mechanisms should be closely supervised:
- They should be subject to transparency and consultation requirements;
 - They should be financially neutral for the entity acting as an intermediary;
 - They should by default allocate the costs to be recovered to domestic consumers (except if a cost benefit study demonstrates that there is a benefit for other market areas).
- (21) Regarding the promotion of biogas, it would be prudent to develop an approach at European level for measuring the economic effectiveness of this kind of mechanism to reduce greenhouse gas emissions. Such a quantitative approach would allow different technological solutions of decarbonisation to compete fairly across European energy markets, provided that this approach can be applied to competing technologies.

2.4. Other implementation issues

- (22) The Agency has also assessed a number of key implementation issues to improve compliance with the NC TAR, and has provided guidance where relevant. The Agency notes that the manner in which these measures are applied may vary significantly from one MS to another. This is either because the chosen application may have required an in-depth interpretation of the key principles of the EU legislation and that has not been provided, or because pre-existing national practices were maintained without carefully assessing their compatibility with the NC TAR as a whole.

⁶ The calorific value means heat combustion value. Some countries use different gas qualities providing different heat combustion. The networks of L-gas cannot be supplied further with the closure of Groningen field. This means that the L-gas infrastructure needs to be replaced with H-gas infrastructure triggering additional charges for infrastructure investments.

2.4.1. Scope of application of the NC TAR

- (23) The scope of application of the NC TAR is underpinned by Article 13 of Regulation (EC) No 715/2009⁷, which refers to '*tariffs for network access*'.
- (24) In view of the policy goals of the NC TAR, the Agency supports a broad scope of application of the NC TAR in order to ensure an appropriate and homogeneous legal application. Consequently, the scope of the NC TAR should be understood to include not only services which enable network users to gain '*access to the natural gas transmission networks*', but may also include services which are provided '*on the occasion of*' accessing natural gas transmission networks or '*in connection with*' such access.
- (25) The Agency is aware that the assessment of the scope may require a case-by-case assessment by the respective NRA.
- (26) Once the network access services are defined, pursuant to Article 4 of the NC TAR, services that fall under the defined scope should be considered as either transmission or non-transmission services.

2.4.2. Volume risk

- (27) The NC TAR requires that the RPM shall ensure that significant volume risk related particularly to transports across an entry-exit system is not assigned to final customers within that entry-exit system. While the NC TAR does not specify what volume risk is, the Agency has interpreted this as an issue related to the potential long-term underutilisation of the network. A volume risk might create uncertainty about the appropriate implementation of an entry-exit system, as it may require isolating potentially underutilised assets⁸ from the rest of the assets in the network and applying a specific treatment to them (potentially similar to a point-to-point network model).
- (28) The mitigation of volume risk can lead to complex regulatory mechanisms that might not be compliant with the NC TAR. In such cases, the Agency considers that the following requirements should apply in order to ensure network efficiency:
- First, the volume risk needs to be a relevant risk. This occurs when the TSO transports significantly more gas into other systems than for its own entry/exit system;
 - Second, the volume risk should be based on evidence, namely a real or potentially significant decrease of transit volumes that would lead to a significant underutilisation of the system;
 - Third, the volume risk should be based on costs at risk associated to the infrastructure used for transit flows (i.e. non-depreciated costs from the transit pipelines);
 - Finally, where a risk premium embedded in the allowed revenue methodology is applied to manage the volume risk, an assessment of this premium should be provided by the NRA. The premium should be proportionate to the risk faced by the operator and should be justified.

⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R0715&from=EN>

⁸ See more details in Chapter 7.2.

2.4.3. Benchmarking

- (29) The NC TAR provides the possibility to apply several secondary adjustments to the RPM: equalisation, rescaling and benchmarking. In this Report, the Agency focuses on the different national approaches applied to benchmarking and reminds that benchmarking has a limited scope of application.
- (30) The Agency considers that the explanatory guidelines issued by the European Commission are useful to inform on how to set and apply benchmarking prices across the EU⁹.
- (31) Building on the European Commission guidance document, the Agency advises to apply the benchmarking adjustment with a limited scope and along the following steps:
- First, benchmarking should be applied after the NRA/TSO assessed whether there is effective pipeline-to-pipeline competition;
 - Second, the assessment should identify the tariffs applicable along the competing route(s);
 - Third, the single RPM for the entry-exit system shall be calculated to determine the level of tariffs in the absence of benchmarking;
 - Finally, benchmarking should apply to competing IPs only and cannot have a system-wide application.

2.4.4. ITC mechanisms

- (32) The NC TAR refers, under Articles 10 and 11 of the NC TAR, to an inter-transmission system operator compensation ('ITC') mechanism that connects to the application of an RPM. An ITC is necessary when a compensation is deemed required for the revenue shortfall incurred by a TSO as a result of hosting flows for which it cannot collect revenues covering all or part of the costs of infrastructure use.
- (33) This mechanism plays a key role in MSs, where more TSOs operate or in regional integration projects that rely on the cooperation of several TSOs¹⁰. Given the clear NRA competence for setting tariffs, and since the ITC is an integral part of the tariff methodology, the competence to decide on an ITC lies within the competence of the NRA.
- (34) In order to assess the compliance of the RPM with the requirement of Article 7 of the NC TAR, and to assure that the ITC mechanism is consistent with the legal requirements of the NC TAR, as well as with the RPM, the Agency provides the following guidance for setting up an ITC mechanism. This guidance would be of a particular use for regional market integration that extends across several MSs:
- First, the transmission assets jointly used within the market zone and their associated costs should be identified to ensure an acceptable level of cost-reflectivity at a regional level. Such an assessment should be based on a forecast of the flows across the merged market zones, and these costs should be logged into the ITC mechanism;

⁹ EC Staff Working Document on Tariffs for Access to the Natural Gas Transmission Networks, see in particular its Chapter 7.3 <https://ec.europa.eu/transparency/regdoc/rep/2/2007/EN/2-2007-535-EN-1-1.PDF>

¹⁰ See further discussion in Chapter 7.4.

- Second, the ITC mechanism should ideally aim at allocating these costs in a manner that is in line with the distribution of the benefits of the market integration;
- Third, adjust the domestic exits of each TSOs within the regional market, to allow them to recover their allowed or target revenue from domestic users after the contribution of cross-border users to the ITC mechanism has been established.

2.4.5. Transmission discount to entry points from biogas facilities

- (35) The Agency identified a 100% discount to entry points from biogas facilities in the national consultations of BE and DE.
- (36) The proposed discounts were justified on the basis of lower costs associated with entries from biogas, which are closer to demand centres, compared to cross-border IPs. Moreover, the discount was deemed to support climate change mitigation policies. The NC TAR does not foresee such application of a discount.
- (37) The Agency invited the two NRAs to consider if the support to renewable gasses could be met in a different way than a discount on the entry tariff. Furthermore, the Agency supports having a more aligned approach at the European level. Indeed, this can be all the more important, as the promotion of low-carbon and zero-carbon gases could be part of the overall EU decarbonisation strategy. With the future perspective of much higher cross-border trade of low-carbon gasses, a clear framework for this type of promotion may become increasingly important and necessary. The Agency notes that BE removed the discount in its motivated decision to ensure compliance with the NC TAR.

2.4.6. Revenue reconciliation

- (38) The revenue reconciliation of TSOs is a relevant element in the tariff setting process. The reconciliation process is the final step to ensure that network users pay fair tariffs.
- (39) The Agency strongly promotes to follow the transparency requirements for the reconciliation of revenues, pursuant to Article 30(1)(b)(iv) of the NC TAR. Moreover, the Agency advises to minimise under- and over-recoveries and any significant differences between the tariffs of two consecutive tariff periods according to Article 17 of the NC TAR.
- (40) Regarding the reconciliation of non-transmission services, the Agency recommends to reconcile them using sub-accounts of the single regulatory account. In this way, it is possible to avoid cross-subsidies between the non-transmission services that are charged to the beneficiaries and the transmission services that are charged to all network users.

2.4.7. Cost allocation assessment

- (41) The Agency recommends as a best practice the calculation of the following cost allocation assessment ('CAA') for the assessment of the proposed RPM in the final consultation:
- When performing the capacity-based CAA, the NRA/TSO shall select from the list of cost drivers presented in Article 5(1)(a) of the NC TAR the cost drivers more closely related to the proposed RPM. For example, if the RPM uses capacity and distance as cost drivers, the CAA should use the same cost drivers;

- Complete this calculation pre- and post- the application of adjustments;
- The NRA/TSO shall additionally include the CAA result for the CWD methodology computed pursuant to Article 26(1)(a)(vi) of the NC TAR, using as cost drivers forecasted contracted capacity and distance.

2.5. Transparency requirements regarding the determination of allowed and target revenues

- (42) The publication requirements of Article 30(1)(b) of the NC TAR concerning the allowed or target revenue can be improved. The Agency recalls its work on Article 34 of the NC TAR that required the Agency to publish a *'Report on the methodologies and parameters used to determine the allowed or target revenue of transmission system operators'* ('Article 34 Report'). This report was delivered in October 2018¹¹.
- (43) The Agency recommended in its Article 34 Report from 2018 to restructure the list provided in Article 30(1)(b)(iii) of the NC TAR into a more comprehensible list that allows the NRAs or TSOs responsible for the publication of the information, to bring the information forward in a more concise and structured manner. The Agency has promoted the voluntary implementation of the new list that contained following high-level features¹²:
- A detailed description of the methodology;
 - The values of the parameters used;
 - The values of costs and expenditures that are used for setting the allowed or target revenue in the local currency and in Euro.
- (44) Since the implementation of the NC TAR, NRAs have significantly improved transparency on the determination of TSOs' revenue by publishing more detailed information and by providing explanations on their methodologies. In order to identify best practices, the Agency reviewed to which extent a consistent publication of values and methodology used in the calculation of TSO revenues (Article 30(1)(b)(iii) of the NC TAR) was achieved in each country.

2.6. Tariff changes resulting from the application of the NC TAR

- (45) The Agency provided the tariff changes resulting from the application of the NC TAR. This comparison is limited in scope (only those MSs are included which delivered their motivated decisions by the time of the publication of this Report and contributed with the relevant data to the analyses, in addition FR¹³) and in breadth, namely the Agency did not assess in-depth the reasons behind the changes.
- (46) The Agency notes that changes in tariffs are not only the result of the NC TAR rules. There are a number of parameters, such as the changes in the allowed or target revenue of the TSO and the

¹¹https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20Methodologies%20Target%20Revenue%20of%20Gas%20TSOs.pdf

¹² For more details see the ['Agency Report on the methodologies and parameters used to determine the allowed or target revenue of transmission system operators'](#), October 2018 (see link in footnote 11).

¹³ These MSs are: BE, HR, CZ, DE, DK, FR, EL, HU, IE, IT, LV, LT, NL, PL, PL (Yamal), PT, RO, SI, SK.

changes in capacity bookings that affect the resulting changes in tariffs. Therefore, the implementation of the RPM is one of the factors, but not the only one that leads to such changes.

2.7. Country sheets

- (47) The Agency, in cooperation with the NRAs, has reviewed the motivated decisions issued after the Tariff Reports of the Agency according to Article 27(1) to (3). Overall, the Agency finds that the NRAs improved the quality of the justifications, where the Agency pointed out such a need.
- (48) The country sheets of the MSs which delivered their motivated decisions by the time of the publication of this Report are available in the second volume of this Report. They are structured in a similar manner to provide a high-level comparison.

3. Introduction

3.1. The intent of the NC TAR

- (49) The objectives of the NC TAR are '*contributing to market integration, enhancing security of supply and promoting the interconnection between gas networks*' as listed in its recitals. The NC TAR aims at ensuring a transparent process to determine tariffs with a view to the non-discrimination between different kinds of users, in particular between users of domestic transmission and cross-border transit. In this way, the NC TAR contributes to increased competitiveness in the EU in two ways: first by charging efficiently incurred network costs to network users in a non-discriminatory way, and second by enhancing cross-border trade, leading to more price pressure and competition on the gas commodity market.
- (50) The Third Energy Package¹⁴ created a new market design. The entry-exit market model allowed network users to book gas capacity independently at entry and exit points. In this way, gas transmission moved from contractual paths to entry-exit zones. Gas transmission and its pricing plays a key role in the success of the entry-exit model.
- (51) When the EU regulatory debates started on tariffs in 2012, tariffs still showed a wide variety of pricing structures. Different approaches were not necessarily problematic where tariffs derived from an objective and transparent methodology, but inconsistent tariff structures across MSs impacted effective cross-border gas transportation.
- (52) The NC TAR has been designed to foster market integration in two ways. On the one hand, its objective is to facilitate cross-border trade by imposing higher consistency for national tariff structures and to increase reliability of tariff methodologies by ensuring that its components are published¹⁵. On the other hand, the NC TAR should improve transparency on tariffs and facilitate the active participation of stakeholders in public consultations, which were to be published both in English and the national language. The consultations have increased a shared understanding of tariffs and allowed network users to anticipate tariff changes.
- (53) After the first tariff consultation processes imposed by the NC TAR, network users improved their understanding about tariffs. The national consultations showed increased confidence of users understanding tariffs, including potential or perceived deficiencies of tariff structures. Most consultations attracted a significant number of stakeholder responses; in a few select cases, only a handful of stakeholders reacted, reflecting a low level of market development and potentially a low level of trust in the consultation process.

¹⁴ https://ec.europa.eu/energy/topics/markets-and-consumers/market-legislation/third-energy-package_en

¹⁵ Assessment of Policy Options Justification document for Framework Guidelines on rules regarding Harmonised Transmission Tariff structures, Ref: ACER-JD-2014-G-01, published on 31 March 2014:
https://www.acer.europa.eu/en/Gas/Framework%20guidelines_and_network%20codes/Documents/Justification%20document%20Policy%20Options%20for%20Harmonised%20Transmission%20Tariff%20Structures.pdf

- (54) Overall, transparency on tariff structures increased across the EU thanks to the NC TAR. The Agency welcomes these improvements and further encourages the NRAs to also publish their tariff decisions in English and improve design consistency with the necessary policy justifications.

3.2. The importance of implementation monitoring

- (55) Implementation monitoring is a key tool to draw on the lessons learnt during the implementation. The Agency would like to open discussions on how to improve the consistency in tariff structures based on the Tariff Reports the Agency issued in the course of the past two years. The current Report intends to serve this purpose.
- (56) The Report is based on the legal requirements of Article 36(5) of the NC TAR foreseeing that '*within three years as from the entry into force of this Regulation, the Agency shall publish a report on the application of reference price methodologies in Member States.*' More general provisions of Article 9(1) of Regulation (EC) No 715/2009 impose that the Agency monitors and analyses '*the implementation of the network codes [...] and their effect on the harmonisation of the applicable rules aimed at facilitating market integration as well as on non-discrimination, effective competition and the efficient functioning of the market, and report to the Commission*'.
- (57) Both monitoring requirements underpin this Report: Article 36(5) of the NC TAR sets the initial boundaries for this Report, yet the current publication sets a slightly larger scope to broaden comprehensively the understanding around the national tariffication systems and structures, in line with the principles imposed by Article 9(1) about '*facilitating market integration, non-discrimination, effective competition and the efficient functioning of the market*'.

3.3. Scope of this report

- (58) The Agency builds its current Report on the experience gained throughout the implementation of the NC TAR. By doing this, the scope of this Report is similar to the scope of the Article 27(2) Tariff Reports issued by the Agency in the past two years, which focused on the national final consultation documents on the gas transmission tariff structures.
- (59) The Agency included within the scope of the Report the following elements that are directly related to the implementation of the RPM:
- Design and components of the RPM, following Chapter II of the NC TAR;
 - Adjustments to the RPM (such as benchmarking), following Article 6(4) of the NC TAR;
 - Publication requirements on allowed revenue, following Article 30(1)(b)(iii) of the NC TAR;
 - Application of the RPM in networks where more than one TSO is active in the same entry-exit zone within the same MS, following Article 10 of the NC TAR;
 - Application of the RPM in networks where more than one TSO is active in the same entry-exit zone covering multiple MSs, following Article 11 of the NC TAR.
- (60) Since the RPMs and the challenges across the MSs differ, the Agency has taken a closer look into a few key aspects that impacted the RPM, either as part of the RPM, or outside the RPM, but with an impact on it.

- (61) These selected topics were chosen carefully and aim at creating a greater consistency and understanding when it comes to assess tariffs and their derivation in the future:
- Transparency. Elements of the RPM that could be outside the publication requirements set in Article 26 of the NC TAR;
 - Scope of application of the NC TAR. This aspect is crucial for understanding the revenue to be allocated using the RPM and, more broadly, that is subject to the rules of the NC TAR;
 - Regional networks. The types of assets that are owned by the TSO but are not used by both cross-border and domestic users, hence have a great impact on the cost-reflectivity of tariffs distributed through a single RPM. These charges can lead to cross-subsidies between network users and can impact the efficiency of network charges, as well as wholesale competition across the EU;
 - Non-TSO costs charged by the TSOs. The Agency has identified a number of charges that TSOs collect for costs that are not related to TSO activities. These charges can lead to cross-subsidies between network users, impact the efficiency of network charges as well as wholesale competition across the EU, and can equally subsidise infrastructures in an inefficient manner;
 - Specific implementation options, such as volume risk, following Article 7(d) of the NC TAR;
 - Inter-TSO compensation mechanisms, following Article 10(3) and Article 11 of the NC TAR;
 - Revenue reconciliation in relation to the RPM, as described in Chapter IV of the NC TAR;
 - Tariff changes, as a result of the RPM, following the publication requirement under Article 30(2).
- (62) Chapter III of the NC TAR on reserve prices, including multipliers, seasonal factors and discounts for interruptible products, is not part of this Report, given that these provisions apply after the reference prices have been set and the main focus of the Agency in this Report is the RPM.
- (63) Finally, the Agency notes that the Report refers to both, the final consultations carried out in each MS, and the motivated decisions published by the NRAs. This analysis is available in the country sheets in greater detail, included in the second volume of the Report.

3.4. Implementation process of the RPMs based on the NC TAR

- (64) Reference price methodologies can ensure a reasonable level of cost-reflectivity and predictability of tariffs through the cost drivers they apply. The publication requirements of Article 26 of the NC TAR ensure that the chosen components of the RPM are described (including justifications and values of relevant parameters), the cost allocation assessments are performed, and that the choice of the RPM is assessed against the principles of transparency, cost-reflectivity, avoidance of cross-subsidisation, mitigation of volume risk and non-distortion of cross-border trade. Other elements of the publication requirements provide for a broader understanding of tariffs, how revenues are recovered, and how transmission and non-transmission tariffs are set and reconciled.
- (65) The Agency has followed the national implementation processes and reviewed the final consultations. Overall, the NC TAR facilitated to understand the RPMs and the tariff setting of transmission and non-transmission tariffs in the MSs. The analyses will be often limited to the MSs that finalised their tariff setting processes and/or their consultations. The Report will bring forward the most challenging issues in this process and will reflect on the policy achievements as well.

3.5. Tariff setting process based on a public consultation

- (66) The NC TAR provides legal requirements for the setting of tariffs for the access to gas transmission networks. A key instrument of the NC TAR is the consultation process. The aim of the consultation is to set the network access tariffs in an open process that starts with a tariff proposal provided to stakeholders and leads to the motivated decision of the NRA, which is the final step of the implementation process.
- (67) The NRA is in charge to set the national network tariff based on Article 41(6) of the Directive 2009/73/EC. The NRA has this responsibility, regardless of whether the legislator decided that the TSO shares certain tasks with the NRA, such as providing for the publication or consultation tasks foreseen by the legislation. The regulatory power of the NRA is key in the legislative design and is important to deliver an appropriate implementation of the NC TAR.
- (68) The tariff setting process starts with carrying out a consultation on the RPM to calculate reference prices, which is published by either the NRA (16 publications provided by the NRA) or the TSO (11 publications provided by the TSO), as decided by the NRA. This consultation can be preceded by intermediate consultations on which the NC TAR does not set any requirements. The final consultation should last for a minimum of two months and include the elements detailed in Article 26(1) of the NC TAR. The consultation is provided in English to the extent possible. As a good practice, the NRAs provided extensive English translations, next to the national languages, with the exception of the Estonian consultation.
- (69) Within a month following the end of the final consultation, the NRA or the TSO publishes an English summary with the replies received from stakeholders.
- (70) Two months after the end of the final consultation, the Agency publishes a Report analysing the compliance of the proposed RPM. The Report also checks the compliance of the non-transmission tariffs and the commodity-tariffs, if those are applied.
- (71) At the latest five months after the end of the final consultation, the NRA publishes a motivated decision based on all the consultation requirements and on the collected stakeholder responses.
- (72) The motivated decision by the NRAs, the calculation of tariffs on the basis of this decision, and the publication of the tariffs shall be concluded no later than 31 May 2019.
- (73) Finally, the NC TAR foresees in Article 27(5) that the consultation process above shall be repeated at least every five years, starting from 31 May 2019.

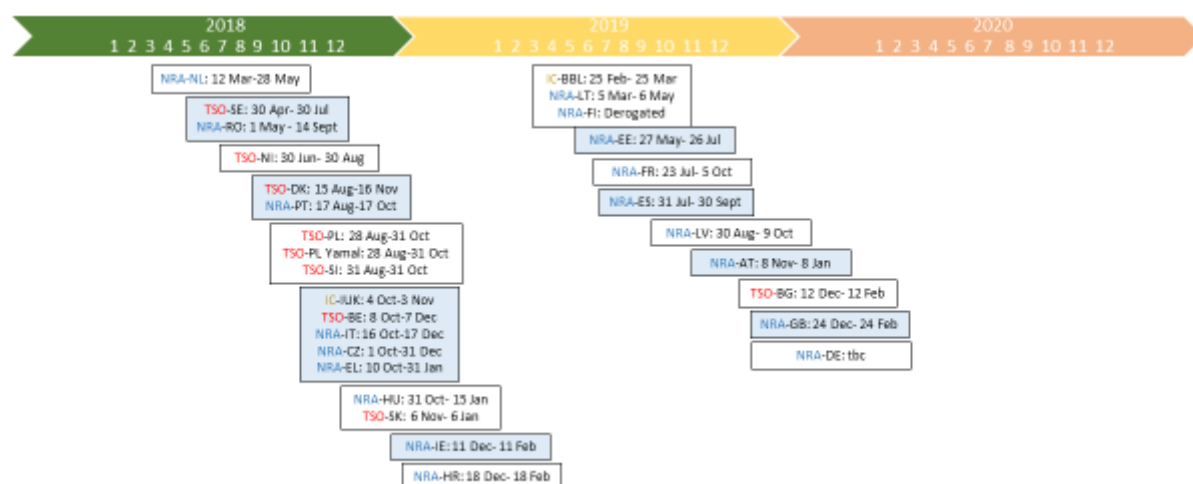
3.6. Compliance with the timelines of the NC TAR

- (74) The Agency concludes that the consultation process has been initiated in all the MSs, yet not all MSs have completed the consultation process and closed it by the prescribed deadline of 31 May 2019.

- The following MSs have completed the process by 31 May 2019: NL, SE, RO, NI, DK, PT, PL, PL Yamal, SI, IUK, BE, IT, DE, CZ, EL, SK, HR, or a few calendar days after: HU, IE, BBL (order based on the launching date of the final consultation).
- The following MSs have not completed the process by 31 May 2019: AT, BG, LT, EE, LV, FR, ES and GB and most of them started their final consultations after the foreseen legal deadline, with the exception of LT and EE, which started their consultations before 31 May 2019.

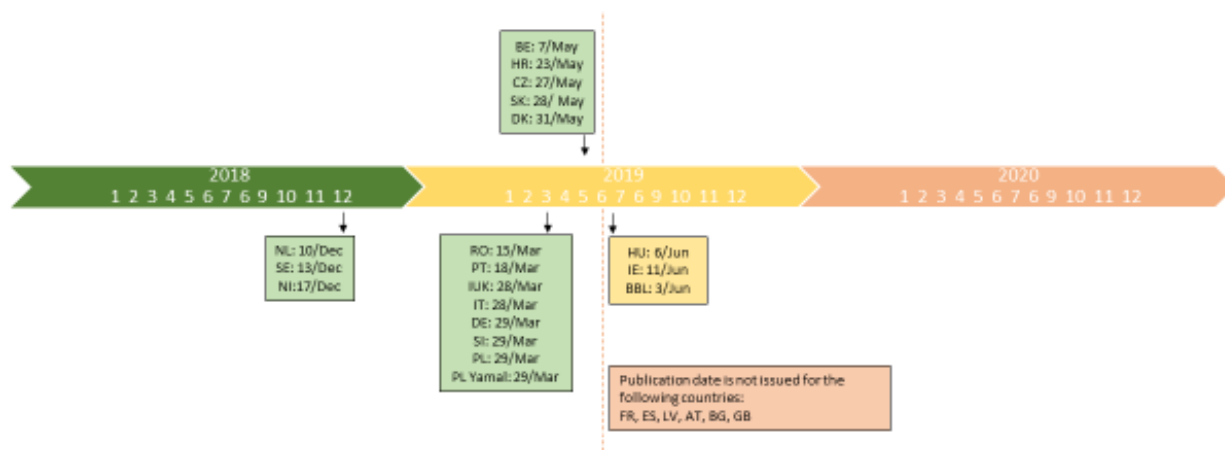
(75) Figure 1 below shows the consultation dates of the MSs between 2018 and 2020.

Figure 1: Consultation timeline across MSs



(76) Figure 2 below focuses on the dates of publication of the motivated decision that follows the consultation and the Agency's review. The column on the right shows the compliance with the 31 May 2019 publication deadline.

Figure 2: Date of publication of the NRA motivated decision compared to the 31 May 2019 deadline for concluding the consultation process.



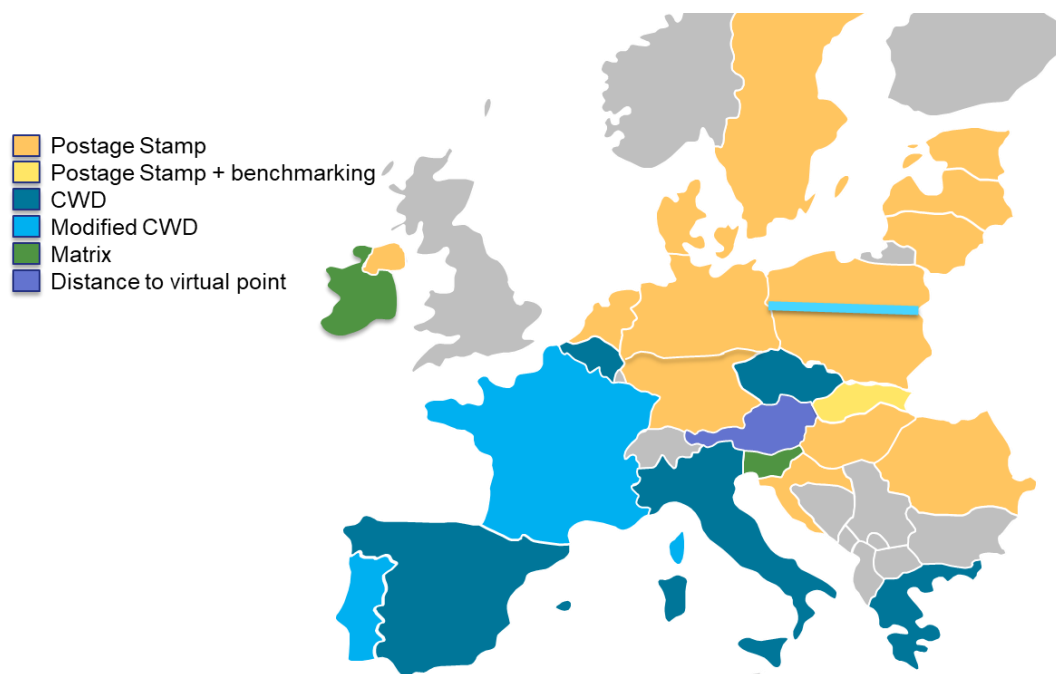
3.7. RPMs implemented across the EU

(77) According to Article 3(1) of the NC TAR, the 'reference price' means 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. Similarly, Article 3(2) defines '*reference price methodology*' as the methodology applied to the part of the transmission services revenue to be recovered from capacity-based transmission tariffs with the aim of deriving reference prices.

- (78) The Agency observes that the methodologies chosen across the EU have become more harmonised, compared to its Justification Document that supported the Framework Guidelines on harmonised transmission tariff structures in 2014¹⁶. In most Member States, the postage stamp methodology or capacity weighted distance methodology are used after the implementation of the NC TAR. The Agency considers the methodologies chosen by the majority of the countries easy to understand, while some methodologies were more complex because of certain design choices, like combined distance cost drivers, flow scenarios, floating entry-exit split or benchmarking (FR, PT, PL Yamal, SI).

Figure 3: RPMs set in the NRA motivated decisions across the EU.



Note on the modified CWD label:

- FR applies a CWD methodology combined with flow scenarios (applicable to entries from LNG, the exit to ES, the exit to CH and domestic points), and a CAA used as an input to the methodology to set equal unit costs for cross-system and intra-system use.
- PT applies a CWD methodology with the cost drivers of effective capacity and effective distance.
- PL Yamal applies a CWD methodology where the unit costs for the utilisation of the pipeline are set to be equal.

3.8. Entry into force of new tariffs

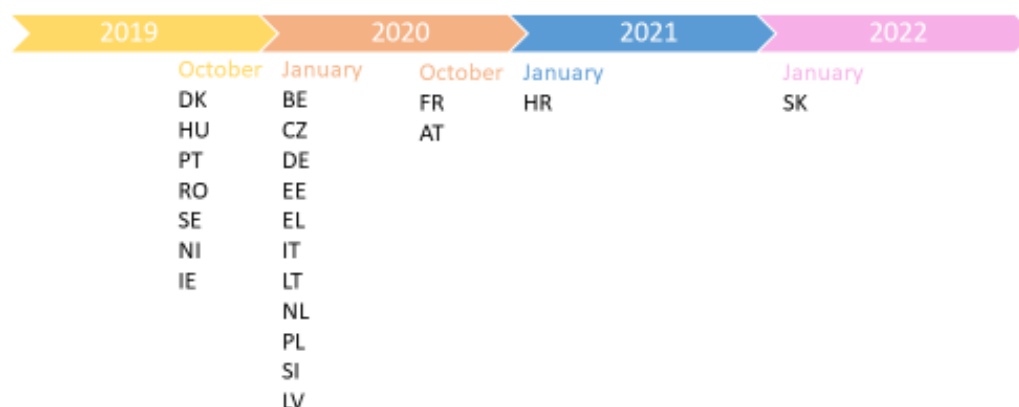
- (79) The NC TAR provides the 31 May 2019 deadline for completing the national consultation processes, which ends with the publication of the motivated decision, according to the NC TAR. At the same time, Article 27(5) of the NC TAR establishes that tariffs, applicable for the prevailing tariff period at 31 May 2019, will be applicable until the end of the tariff period concerned. Therefore, the entry into force of the national tariffs calculated according to the NC TAR depends on the duration

¹⁶ Idem footnote 15

of the prevailing tariff period in each MS. Figure 4 below shows the dates by which the tariffs calculated according to the NC TAR will be applicable in the MSs. Most MSs will change their tariffs by 2020, but some of them will apply the new tariffs as late as 2021 or 2022. Some follow a calendar year, while others align the start of their tariffs to the Gas Year (October to September).

- (80) Given that the prevailing tariffs will still continue to apply in some of the MSs, despite that the new tariffs have been approved, and given that MSs have different frequencies for their periodic consultations following Article 27(5) of the NC TAR, the Agency will review the consultations on the national RPMs along different timelines. Article 27(5) of the NC TAR establishes that the consultation process should be repeated at least every five years. Based on the Agency's Tariff Reports published, and building an estimation based on the duration of the regulatory period, the Agency understands that MSs foresee the following intervals for repeating the final consultation process¹⁷:
- Two years: SI;
 - Three years: DK, EL, LV, NI, PL;
 - Four years: AT, BE, FR, IE, IT, HU, PT, SE;
 - and five years to repeat the consultations on the reference price methodology: CZ, DE, EE, HR, NL, RO, SK.

Figure 4: Entry into force of tariffs across MSs



¹⁷ The repetition of the final consultation process does not necessarily need to shadow the duration of the regulatory period.

4. Transparency on the RPM

- (81) One of the main goals of the NC TAR is to increase transparency of transmission tariff structures. The imposition of clear consultation requirements improved the procedures used to set tariffs. The network code requires compliance with a long list of key publication requirements, enshrined in Articles 26, 29¹⁸, 30 and 32 of the NC TAR. This Report focuses on the publication requirements imposed by Articles 26 and 30 of the NC TAR, namely on the reference price methodologies, transmission and non-transmission tariffs and allowed or target revenue, which is a key input into the RPM.
- (82) One of the goals of increased transparency is to enable network users to better understand how the tariffs are set, how they have changed, and how they may change in the future. Also, network users should be able to understand the costs underlying transmission tariffs and to forecast the evolution of transmission tariffs to a reasonable extent.

4.1. Analysis of the final tariff consultation and publication requirements

- (83) The NC TAR gives a lot of freedom to the NRA or TSO to propose a reference price methodology, allowing them to take account of the national characteristics of the network and of policy and regulatory objectives. In this context, the Agency finds it important that the assessment of the principles of Article 7 of the NC TAR on transparency, cost-reflectivity, cross-subsidisation, volume risk and non-distortion of cross-border trade is done properly and consistently, so that national and cross-border interests are balanced. The description of the RPM, the description of the transmission network, the results of the cost allocation assessment and the comparison with the capacity weighted distance ('CWD') methodology play an important role in the Agency's assessment.
- (84) The NC TAR requires that the final tariff consultation and the motivated decision include the following information related to the RPM:
- Article 26(1)(a): A description of the proposed reference price methodology, including the choice of cost drivers and the application of locational signals¹⁹ resulting from the cost drivers applied;
 - Articles 26(1)(a)(i) and 30(1)(a)(i-v): A justification of the parameters used that are related to the technical characteristics of the system, such as the technical or contracted capacity, the length and the diameter of pipelines and the power of compressor stations;
 - Articles 26(1)(a)(ii) and 9(1): The proposed adjustments for capacity-based transmission tariffs;
 - Articles 26(1)(b) and 30(1)(b)(iv): The transmission services revenue that is an input to the RPM.
- (85) The NC TAR requires the RPM to be compliant with the requirements listed under Article 7 of the NC TAR and Article 13 of Regulation (EC) No 715/2009. The second volume of the Report contains the country sheets for the MSs that have completed their consultation processes and issued a

¹⁸ European Federation of Energy Traders notified on the Joint Functionality Platform the incompleteness and inconsistencies of the publication requirements before the yearly capacity auction of 2109. The missing information has been assessed and the improvements needed were listed on the platform with a view for further NRA check.

¹⁹ Locational signals are price levels that send incentives to network users to use the network operators in an efficient way and/or support the financing of the expansion of the gas system.

motivated decision. These country sheets aim to assess how the motivated decisions took into account the Agency's recommendations in its Reports. The country sheets were built up with the support of the NRAs.

- (86) The country sheets are standardised along the following structure:
- Summary of the NRA's motivated decision
 - .i. Description of the RPM
 - .ii. Input values to the RPM
 - .iii. Adjustments to the RPM
 - .iv. Other elements that may not be applied by all countries (commodity, non-transmission charges, etc.)
 - How has the NRA addressed the recommendations made by the Agency in the Report on the final tariff consultation?
 - .i. Includes a qualitative answer from the NRA and a table comparing the compliance of the motivated decision against the NC TAR.
 - Checklist for the publication requirements in Article 26(1) of the NC TAR
 - .i. Has all the required information been published in the motivated decision?
 - .ii. Table comparing the publication requirements in the final consultation and in the motivated decision.
 - Other questions relevant to the applicable TSO tariffs
- (87) As mentioned, the country sheets provide an assessment on the main principles according to Article 7 of the NC TAR, such as:
- Transparency: The RPM's simplified model should enable network users to reproduce the calculation of reference prices and their accurate forecast;
 - Cost-reflectivity: The RPM shall take into account the actual costs incurred for the provision of transmission services considering the level of complexity of the transmission network.
 - .i. Article 26(1)(a)(v) of the NC TAR requires a comparison of the RPM with the CWD methodology. CWD is a reference methodology defined in Article 8 of the NC TAR and is used to compare the proposed RPM with. This comparison is relevant for assessing the cost-reflectivity of the cost drivers and of the RPM. CWD may provide worse results than the RPM proposed by the consultation. Some RPMs, such as the matrix methodology, include different cost drivers, as opposed or next to the cost drivers of capacity and distance in the CWD.
 - Cross-subsidisation and non-discrimination: The RPM shall ensure non-discrimination and shall prevent undue cross-subsidisation between network users and take account of the cost allocation assessments according to Article 5 of the NC TAR.
 - .i. Article 26(1)(a)(iv) of the NC TAR requires the calculation of the cost allocation assessment, which is an instrument that assesses cost-reflectivity and cross-subsidisation of the RPM at the level of intra-system and cross-system users.
 - Volume risk: The RPM shall ensure that significant volume risk related particularly to transports across an entry-exit system is not assigned to final customers within that entry-exit system.
 - Cross-border trade: The RPM shall ensure that the resulting reference prices do not distort cross-border trade.

- (88) The Agency has already provided 26 Tariff Reports according to Article 27(2) of the NC TAR²⁰. The country sheets in the second volume of the Report provide a final snapshot on the compliance with the NC TAR, country-by-country, in a similar spirit, but in a shorter version than the previously published Agency Reports did.

4.2. The Agency could only partially assess the RPMs

- (89) While transparency improved as a result of the legal requirements of the NC TAR on the consultation process, the Agency notes that the assessment of the national consultations, and in particular of the RPMs, could often be only partially completed due to various information shortcomings.
- (90) A number of consultations did not provide the basic information for the assessment of the RPM and did not meet the Article 26 of the NC TAR requirements. This created important limitations for the stakeholders to understand the methodology in full as well as hindered the Agency to build a good analysis on the RPM. These shortcomings were already reported in the Agency Reports.
- (91) The Report in the following two sub-sections will elaborate on two key elements that are instrumental to deliver a transparent RPM. These key elements have multiple layers that are described in the following sections and support the assessment of the RPM.

4.2.1. Description of the network

- (92) The RPM used for the allocation of transmission services revenue should take into account the complexity of the network. There are a number of characteristics that the Agency considers important for this purpose:
- Topology of the network (unmeshed or meshed²¹). In meshed networks, points are well interconnected among each other and several paths could serve to flow gas to a given point, whereas in an unmeshed network there is a single path to flow gas from one point to another²²;
 - Relevance of distance as a cost driver. Unmeshed or linear networks would clearly have distance as a cost driver;
 - Network profile. Does the network have an upstream, transit or downstream profile?
 - Number of entry points and diversification of supply sources;
 - Supply competition and source diversification in the wholesale market;
 - Existence of infrastructure dedicated to several gas qualities (e.g. high and low calorific gas qualities);
 - Security of supply requirements related to any piece of gas infrastructure for which charges are collected by the TSO (e.g. LNG charges in Greece);

²⁰ Reports published by 5 April 2020 include (in order of publication of the final consultation): NL, SE, RO, NI, DK, PT, PL, PL Yamal, SI, IUK, BE, IT, DE, CZ, EL, HU, SK, IE, HR, BBL, LT, EE, FR, ES, LV. AT. In the case of Austria, the Agency analysed the first consultation published on 21 January 2019 but did not publish its assessment as the NRA decided to repeat the consultation.

²¹ Meshed is a network with a net of points allowing multiple combinations between each other. This means that each point can be reached in multiple ways. In a meshed network the delivery of the single point depends on several routes and the right distance for delivery may be hard to identify.

²² Consequently, a partially meshed topology has a limited number of points with multiple gas flow options.

- Reliance on LNG or storage for the delivery of the transmission services (e.g. LV storage facility working to keep pressure levels for gas transmission).

- (93) The description of the network is key for assessing the appropriateness of the RPM. For example, cost-reflectivity of tariffs depends on the appropriateness of the cost drivers for a given network. The easiest example is a linear network, where distance seems a relevant cost driver. Another example is benchmarking, which is an adjustment that applies to IPs in competition, where benchmarking would serve to reduce the tariff of the more expensive route to the level of the competing route. The last example is about the application of discounts. Discounts to LNG and discounts to infrastructure developed with the purpose of ending the isolation of MSs depend on the question if such infrastructure contributes to the security of supply of the system. These examples all describe an appropriate RPM application that fits certain networks as well as certain market circumstances.
- (94) Therefore, the Agency concludes that the adequacy of the RPM closely relates to the characteristics of the network. The compliance check of the RPM based on the requirements listed under Article 7 of the NC TAR, supported the Agency in understanding and evaluating potential inconsistencies between the network characteristics and the RPMs.
- (95) The Agency notes that five consultations did not provide an appropriate description of the network, nor an assessment of the adequacy of the RPM to the characteristics of the transmission system: DE, FR, HU, PL and SE. Some of these deficiencies were corrected in the motivated decisions. In a few cases, network users were looking for deeper understanding of the network characteristics with the aim to challenge a methodology that did not seem adequate from their perspective.
- (96) Other consultations provided extensive information on the complexity of the network supporting the choice and design of the RPM: IT, LV and SI. Those examples shall be considered as best practices when it comes to network descriptions.

4.2.2. Policy and regulatory objectives

- (97) The NC TAR gives flexibility to the NRA to decide on an RPM, but requires an assessment against the criteria in Article 7 of the NC TAR, which is inspired by Article 13 of Regulation (EC) No 715/2009, emphasising effective network tariffication. The Agency notes that in many MSs, policy and regulatory objectives drive choices made in the final consultations and the motivated decisions.
- (98) The Agency understands that policy and regulatory objectives can drive the RPM, and therefore there is a great value in sharing them in the final consultation document. By making these objectives explicit, the RPM can be assessed against them.
- (99) Some examples of such policy and regulatory objectives were made explicit in the consultations:
- Transit countries with significant volume risks aimed to avoid a pass-through to domestic consumers due to lower transit volumes/revenues. This was implemented by means of a revenue/price cap with the application of a risk premium (e.g. CZ) or solely with the application of a risk premium (e.g. AT). The Agency notes that the NC TAR allows for the protection of

domestic users, but it does not prescribe specific measures on how to protect domestic users, which can be done, as long as these remain consistent with key principles of the NC TAR²³.

- Networks with limited competing supply sources lower the market power of the single supplier by the addition of new sources/entries. Such options are often approved for security of supply and market opening purposes (e.g. EL, LT). Another solution was the adoption of a state aid scheme by the European Commission. Based on this scheme, in LT, the security of supply component is paid by the domestic users, as a supplement to transmission tariffs, in order to recover LNG costs. The LNG security of supply scheme is separated from the transmission costs.
- Networks with competing IPs applied benchmarking, without an appropriate assessment of competing routes and not basing the RPM on an NRA decision (e.g. SK).
- Networks deviating from the standard CWD methodology by using additional cost drivers or flow scenarios (e.g. PT, FR) that led to lower or higher tariffs associated to specific points.
- The promotion of wholesale competition on the national market led to the equalisation of entry points, or to postage stamp methodologies, potentially leading to cross-subsidies.
- Network expansion led to more complex methodologies that provided locational signals for new investments, based on unit costs or capacity utilisation factors (IE, PT respectively).
- Equalisation of domestic exit points fostered the economic development of less developed areas, providing a level playing field for the development of industry at comparable prices to the national level.
- Non-recovery of the full allowed or target revenue of the TSO for the purpose of maintaining the sustainability of the gas sector in the country (e.g. SK) or by taking account of a court decision (e.g. SE).
- Promotion of gas-fired power plants by means of using a postage stamp methodology and avoiding a distance cost driver (e.g. NI).

(100) The Agency considers that these objectives should be laid out in the public consultation documents, even if they are initially designed by the national governments or legislators. The stakeholders and network users should be in a position to challenge the implementation of the RPM in relation to the policy and regulatory objectives, and to question both these objectives and the efficiency of the proposed RPM to achieve them.

(101) While the Agency understands these objectives from a national perspective, their impact can be wider, regional. In this respect, the Agency would suggest the NRAs to assess and discuss the implications of such objectives with the NRAs of potentially affected MSs and reach a mutually acceptable outcome. In case an intergovernmental dialogue is needed, it could be facilitated via the political and institutional frameworks of the EU or specific regional structures, like the Pentalateral Energy Forum. The Agency can provide support in such dialogues, if there is a commitment by the relevant partners to meet and discuss.

4.3. Trade-offs between cost-reflectivity and transparency

(102) A highly cost-reflective tariff may be very complex, hence difficult to understand. Such tariffs could therefore lack transparency. In return, simpler methodologies, such as the postage stamp

²³ See more details in Chapter 7.2

methodology, provide greater transparency, as they are easy to understand, but they also risk oversimplifying the allocation of costs, which can lead to cross-subsidisation. While there is no easy answer, finding the right trade-offs for a given network, it is possible to make a good assessment of the situation with the market and in an open dialogue with the stakeholders.

- (103) For the analysis of the final consultations, the Agency assessed if the methodology enables network users to reproduce the calculation of reference prices and accurately forecasts them. Article 30(2)(b) of the NC TAR sets clear requirements to publish a simplified tariff model as part of the consultation document. The role of the simplified model is to help stakeholders anticipate the evolution of tariffs and allow them to input their own reference data, and through the outputs of the model, explore potential future tariffs.
- (104) In assessing the compliance of the simplified model, the Agency observed the trade-offs between transparency and cost-reflectivity. Simple models could be described easily in the simplified tariff model, while methodologies with complex or sometimes even less complex assumptions led to oversimplified tariff models. In the latter case, the simplified model was not helpful to give the stakeholders an insight about the RPM.
- (105) Even complex methodologies may be translated into a *simplified tariff model* that mimics well future tariff evolutions. In such cases, a proper description and structure of the simplified tariff model shall provide sufficient information and shall connect well to the description provided in the consultation document. The simplified tariff model shall support the understanding of the RPM. Network users need to anticipate the evolution of tariffs as well as to understand the dynamics of the RPM.
- (106) The Agency recommends that the trade-offs between understanding the tariffs and following closely the network costs should be part of the assessment provided by the consultation. A balanced trade-off could lead to an appropriate choice of the RPM that manages well both objectives.
- (107) The Agency has identified the following aspects as barriers for the reproduction and forecast of tariffs:
- Missing information, e.g. the model provides a tariff calculation but does not allow to forecast tariffs or certain tariffs/fees are not published;
 - The model is not published in English, which favours local market participants;
 - Very short consultation documents provide limited explanation of the model;
 - Overly simple tariff model that is inconsistent with the chosen methodology described in the consultation.
- (108) The Agency notes that other consultations provided extensive and precise information for the reproduction and forecast of tariffs. In the case of NL, the tariff model allows separately to input the allowed or target revenues for the different transmission services²⁴. In the case of HR, the simplified model provided visibility into the costs of the TSO for an extended period of time, going beyond the end of the regulatory period. In the view of the Agency, these represent good practices that allow

²⁴ See Appendix B5 Tariff Model of the draft Decision. The section on 'Parameters' allows using multiple corrections for the allowed revenues of the different transmission services. In addition, the model allows changing the CPI (consumer price index) and the forecasted contracted capacity

increasing the forecast accuracy for reference prices. Other practices were less sound and consisted of models that did not provide sufficient insight into the tariff model during the consultation process (e.g. AT, EE, FR, SI).

4.4. Incomplete consultations

- (109) The Agency remarks that a number of consultations did not include all the required information and had to be extended or re-launched (e.g. DK, EL, PL, RO). The Agency suggested in some cases to extend the consultation period and/or to publish additional information, which took place thanks to the NRAs' willingness to react positively to such suggestions (e.g. DK, EL, IT, RO).
- (110) In two specific cases, BE and EE, the information made available in the consultation was not sufficient or was not made available in time upon request of the Agency. This prevented the Agency from completing its compliance analysis of the proposed RPM. The Agency notes that this shortcoming has been corrected in the NRA's motivated decision in the case of BE.
- (111) In ES, the State Council considered the introduction of a discount on entry points from LNG facilities in the motivated decision to be a significant modification and therefore required a new consultation process.
- (112) In terms of incomplete consultations, the Agency notes that also several other consultations missed information according to Article 26 of the NC TAR. These were outlined in the Agency Reports and cover, in addition to the MSs mentioned already in this section, the following MSs: AT, CZ, DE, FR, IE, HU, LV, PT, SI, SK.
- (113) Overall, the Agency noticed that most consultation documents were not entirely complete. The Agency recommends therefore that its template²⁵ is used to help the NRA or TSO to cross-check if all information has been included. The Agency also proposes to republish the consultation in case key information has been omitted.
- (114) The publication of information is more important than the time constraints perceived by the body issuing the consultation. In the absence of an appropriate level of information, stakeholders will not get to a good understanding of the new tariff methodologies and the lack of information cannot be fully corrected at a later stage, in the sense that stakeholders cannot reflect on issues that were not shared with them during the consultation process. In this context, a good practice would be to start the process on time and allow plenty stakeholder discussions before the final consultation takes place. Such an approach has been followed by ACM, the Dutch NRA.

²⁵ https://acer.europa.eu/Official_documents/Public_consultations/Pages/ACER-Consultation-Template.-Tariff-NC-Article-26%285%29.aspx

5. Regional networks

- (115) Assets that are part of the TSOs' transmission network and that are allocated using the same RPM can be rather heterogeneous. Some assets that are part of the TSOs' transmission networks include pipelines that are dedicated to supplying domestic consumers and cannot be used for transporting gas to IPs. The Agency refers to these parts of the network as 'regional networks'. The cost allocation of these regional networks, together with the rest of costs associated to the access to networks using a single RPM, could be an important factor leading to cross-subsidisation between cross-system and intra-system users.

5.1. Legal background

- (116) The existence of regional networks as part of TSO assets is a result of the different criteria adopted for the certification of TSOs. Directive 2009/73/EC provides two definitions: one for *transmission* and another one for *distribution*, the latter one providing a reference to the lines that are regional with a delivery point to final users. Regulation (EC) No 715/2009 echoes the definition on transmission.
- (117) Specifically, the definition of '*transmission*'²⁶ distinguishes high-pressure transmission pipelines from the part of the distribution network that has high-pressure pipelines primarily used in the context of local distribution of natural gas, with a view to its delivery to customers, but not including supply²⁷. The latter falls under the definition of '*distribution*', which refers to the transport of natural gas through local or regional pipeline networks with a view to its delivery to customers²⁸.
- (118) While the definitions in Directive 2009/73/EC and Regulation (EC) No 715/2009 provide principles to determine the transmission and distribution networks, a clear technical criterion (e.g. pipeline pressure, diameter, etc.) allowing to identify the borders of the regional networks is not provided, leaving this aspect to be handled by the national legislations of the MSs. As a result, the definitions used at a national level for the assets of the TSOs differ between MSs. In some cases, as an outcome, regional networks have been included under the definition of '*transmission*', and therefore are part of the TSO assets.
- (119) Based on these definitions, as well as on the practical experience collected by the Agency, regional networks are high-pressure pipelines primarily used in the context of local distribution of natural gas, which could be categorised as distribution networks. While such an interpretation could be challenging to implement in some MSs, it would lead to the greater harmonisation and comparability of the TSO networks across Europe and would also avoid some risks of cross-subsidisation between cross-system and intra-system uses.

²⁶ See also Article 2(1)(1) of Regulation (EC) No 715/2009.

²⁷ See Article 2(3) of the Directive 2009/73/EC.

²⁸ See Article 2(5) of the Directive 2009/73/EC.

5.2. Cost allocation of regional networks via the RPM

- (120) The Agency notes that the application of a single RPM to TSOs to allocate the costs of both transmission and regional networks could lead to a cross-subsidisation between intra-system and cross-system users. In particular, it is possible that the costs of the regional pipelines are allocated to users of IPs or vice-versa. This affects the cost-reflectivity of tariffs, potentially leading to a distortion of cross-border trade at the detriment of cross-system users.
- (121) The Agency recognises that the alignment of the TSOs' assets with the relevant articles of the Directive 2009/73/EC is the task of the MSs, whereas the compliance assessment of the alignment of the RPM with the requirements in Article 7 is the task of the Agency, according to Article 27(2) of the NC TAR. In the Agency's view, the potentially negative effects that the allocation of regional networks as transmission may imply incompliance with the requirements in Article 7 of the NC TAR. Article 7 requires that reference prices to be cost-reflective and avoid undue cross-subsidisation and distort cross-border trade.
- (122) Moreover, the allocation of costs associated with regional networks to cross-system users can potentially impact market integration in the following three ways.
- (123) First, it can result in a cross-subsidy where costs associated to the regional networks are allocated to cross-systems users and therefore to neighbouring markets.
- (124) Second, it can lead to potential increases in IP tariffs that ultimately impact the spreads between hubs. Such increases can distort cross-border trade and, ultimately, lead to increases in hub prices.
- (125) Third, it is potentially a barrier to market mergers. Such processes require the implementation of complex ITCs. The inclusion of domestic costs when designing an ITC can increase its complexity and potentially hinder a merger agreement. The costs to be compensated in market mergers should be related, to the extent possible, to the cross-system use of the network.
- (126) Finally, the allocation of non-cost-reflective tariffs at IPs is also relevant in view of the discussions in the Gas Bridge Paper²⁹. The Section on 'Transmission Tariffs and Cross-Border Capacity Allocation' focusses on the contribution of cross-border tariffs to wholesale price spreads between hubs. A range of options are considered to prevent distortions of cross-border trade. The Agency considers that allocating the costs of regional networks to IPs can result in a distortion of cross-border trade by deviating from cost-reflective levels. For this reason, limiting potential cross-subsidies resulting from regional networks is in line with the conclusions reported in the Gas Bridge Paper.

5.3. Implementation per MS

- (127) The Agency notes that the following MSs have referred to regional networks in the national consultations as part of the TSO transmission networks:

²⁹https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/SD_The%20Bridge%20beyond%202025/The%20Bridge%20Beyond%202025_Conclusion%20Paper.pdf

- ES: the NRA has opted for removing regional networks from transmission network tariffs and including regional assets in the distribution networks tariffs. This proposal was made in the initial consultation launched in July 2019, which was re-launched in February 2020. At the time of writing this Report, the motivated decision has not been issued yet.
- FR: assets associated with regional networks are separated from the rest of transmission assets and the corresponding revenues are allocated as non-transmission charges to domestic users. Regional networks are primarily used by domestic users and their costs are thus fully borne by them. That prevents the risks of cross-subsidies between users of regional networks and users of the main network (also used for cross-border flows).
- IT: prior to the national tariff consultation, the NRA applied separate charges to allocate the revenues associated with regional networks. The NRA motivated decision is based on a single RPM, using a capacity weighted distance methodology that allocates the TSO's revenue, including regional networks. The distance component of the RPM makes sure that domestic users pay the relevant charges for the costs that they create.
- LT: assets associated with regional networks are separated from the rest of transmission assets and the corresponding revenues are allocated as non-transmission charges. The NRA explains in its motivated decision that this is a provisional solution and that these assets will be charged as distribution. This will require changes in the national law.

(128) The following MSs have not assessed the existence of regional networks in the national tariff consultations: BE, BG, CZ, DE, DK, EE, EL, FI, HR, HU, IE, LV, NL, PL, PT, RO, SI, SK.

(129) In SE, regional networks do not pose a challenge for IP tariffs as there is no possibility of exporting gas to neighbouring networks.

(130) There are two cases where MSs have not considered regional networks for the calculation of tariffs. In the case of AT, regional networks were removed from the TSO transmission network. In the case of ES, regional networks remain as part of the transmission network, but they are not included in the calculation of transmission tariffs.

5.4. ACER guidance

(131) Based on the information assessed in the national tariff consultations and in ongoing discussions with the NRAs, the Agency recommends the following with respect to regional networks.

(132) First, that the NRAs assess the existence of such assets as part of their TSO networks. The Agency will further discuss with the NRAs and seek alignment for a possible definition that clearly identifies regional networks across Europe.

(133) Second, in cases where regional networks are in place, these costs should be allocated using the RPM whenever the proposed methodology proves capable of allocating the costs related to regional networks to domestic users. Such approach should as well provide quantitative evidence supporting the cost-reflectivity of IP tariffs.

- (134) Third, should the allocation of regional costs to domestic consumers not be possible under the proposed RPM, the Agency recommends to change the category of regional networks to distribution.
- (135) The Agency notes that a different approach to regional networks has been applied by both ES and FR. Both NRAs have opted to exclude the regional network that are part of the transmission network from the RPM. In both cases, the NRAs argue that the regional networks, while being transmission assets, are not part of the entry-exit systems. The definition of '*transmission services*' according to Article 3(12) of the NC TAR, states that these services are '*regulated services that are provided by the TSO within the entry-exit system for the purpose of transmission*'. In view of this definition, regional networks could be considered as not being assets of the entry-exit system allocated using the RPM, provided that this understanding does not undermine the Articles 2(3) and 2(5) of the Directive 2009/73/EC. The Agency received this line of argumentation close to the publication deadline of this Report and has not been able to fully assess the compliance of this approach. Therefore, this needs to be assessed in the future.

5.4.1. Moving regional networks to distribution networks

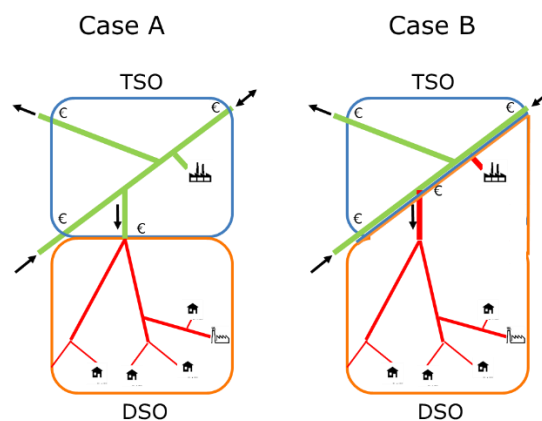
- (136) The Agency notes that changing regional networks into distribution networks faces several challenges.
- (137) First, the mandate to change the assets often lies outside the competences of the relevant NRA and the NRAs have to accept the network configuration as a given. In such cases, the Agency acknowledges that NRAs might be required to reach the relevant governmental institutions to request the revision of the national law concerning the category of regional networks and their inclusion into distribution.
- (138) Second, it is possible that the legislation applicable to distribution assets differs from the rules applicable to transmission assets, which is based on Directive 2009/73/EC and Regulation (EC) No 715/2009. Removing the regional assets from the transmission assets and including them in the distribution network might require changing the legislation applicable for distribution to guarantee NRAs a similar regulatory oversight over the regional high-pressure pipelines.
- (139) Third, the change of regional networks to distribution could also require, depending on the national legislation, a change of the ownership of the assets. In the view of the Agency, the EU legislation does not require such change and the Agency will continue the discussions with the NRAs to fully understand this aspect. In this respect, it is relevant to note that Article 29 of Directive 2009/73/EC allows for combined operators of transmission, LNG, storage and distribution.
- (140) Finally, the change of regional networks into distribution could entail a revision of the remuneration associated to these assets, as the change can potentially affect the risk associated to the cost of capital of regional networks. The assets will no longer be associated with the use of cross-system users and will be associated with captive intra-system users. In this context, turning regional assets into distribution could lead to a change of the weighted average costs of capital of these assets – both of the remainder of the transmission assets and of the newly categorised distribution assets. Therefore, the separation of regional networks from both transmission and distribution could be

promoted by some NRAs to encourage cross-border trade. The separation of regional assets, in the view of some NRAs, can be as well a tool to exert good control over the allowed revenue associated with these assets.

5.4.2. Definition of regional networks

- (141) The Agency is of the view that a technical definition would allow to systematically identify regional networks across the EU, in particular in support of the cost-reflectivity principle and the principle of preventing undue cross-subsidisation. For this reason, the Agency will engage in a process with NRAs and stakeholders to see whether there is a value to develop such technical assessment.
- (142) Building on the existing definitions of transmission and distribution, ‘*regional networks*’ could be considered as pipelines that cannot be used to flow gas to cross-border IPs. The application of such definition is depicted in Figure 5 below, where the assets not allowing to flow gas back to transmission pipelines are represented in red (see Case B).
- (143) Another option could be to seek a definition based on technical criteria, such as diameter or pressure levels. Such definition is exemplified in Figure 5 below, under Case A, and it may lead to include some lines that are of local use only.
- (144) As an alternative, the Agency will consider assessing the perimeter of application of the NC TAR. This could allow establishing the transmission assets whose costs should be allocated using the RPM. Should regional networks be outside the perimeter of the entry-exit zone, the Agency will assess whether these assets could be allocated outside the RPM.

Figure 5: Definitions under discussion for the identification of regional networks.



5.5. Case study: Italy

- (145) In Italy, the gas transmission service is rendered by TSOs operating both national and regional transmission networks. Currently, there are six regional-only TSOs, one national-only TSO, and two TSOs operating both regional and national pipelines. Out of about 35,000 km of transmission network, national pipelines account for around 10,300 km (29%) and have an associated CAPEX-related revenue of around EUR 1.2 billion (68% of the total CAPEX).

5.5.1. Legal considerations

- (146) The distinction between national and regional pipelines is based on functional criteria set out in the national legislation, and it is the duty of the relevant Ministry (Ministero per lo Sviluppo Economico) to provide and update the list of national and regional pipelines accordingly. In particular, the legislative decree n. 164/00 defines '*gas transmission*' as '*the transmission of natural gas through a network of pipelines, excluding upstream pipeline networks and distribution networks*', and '*national network*' as '*the network comprising offshore pipelines, import and export pipelines, pipelines connecting two or more administrative regions, pipelines connected to storages facilities, pipelines directly or indirectly functional to the national natural gas system*'. Until 2005, a clear definition of '*regional network*' was missing, and it was implicitly defined as non-national gas transmission. A ministerial decree of 29 September 2005 introduced specific criteria for identifying new pipelines as '*regional*', including a minimum pressure of 5 bars, and serving at least two distribution networks or final customers with special supply requirements (e.g. pressure levels).
- (147) The functional criteria set out in the legislation deliver a system whereby the national network can be seen as the pipelines used for the purpose of providing the gas transmission service at system level, including those providing the option to import and export gas from/to other countries; instead, regional pipelines are *de-facto* those used for the purpose of serving domestic (i.e. Italian) users, and that cannot be used for cross-border purposes. Also, note that all transmission delivery points (e.g. to distribution networks, industrial customers, gas-fired power plants) are connected to the regional network, and no delivery point is directly connected to the national network.
- (148) While the distinction is not based on technical features, in fact almost all national pipelines are operated above 24 bars (usually up to 70 bars) while several regional pipelines are operated between 5 and 24 bars (with some operated even at lower pressure levels). At the same time, a large share of the national network has a diameter above 600 mm (24"), while regional pipelines are usually below such threshold.

5.5.2. Status pre-NC TAR

- (149) Prior to the implementation of the NC TAR in Italy, different tariff regimes were applied to the national and the regional network of pipelines. In particular, an entry-exit system was in place for the use of the national network, comprising cross-border, LNG, storage and production points, as well as exit points to the domestic delivery areas; charges were derived according to the matrix methodology applied to the national share of transmission costs. For the use of the regional network, instead, an exit-only system was in place, with a postage-stamp charge based on regional network costs; such charge had to be paid, in addition to entry/exit national charges, to serve delivery points. To distinguish between national and regional networks, TSOs were required to keep separate accounts on the corresponding assets; charges were set at system level, with an inter-TSO compensation mechanism in place to deal with potential discrepancies. The resulting system was very cost-reflective as it succeeded in keeping national and regional costs separated, with regional charges only paid by domestic users and national charges paid by both domestic and cross-border users.

5.5.3. Status under the NC TAR

- (150) When dealing with the NC TAR implementation, ARERA was faced with the provisions requiring a single RPM for the whole entry-exit system, and investigated several options including the treatment of transmission over regional network as a non-transmission service. The main concern was that the adoption of a single methodology would yield a different allocation of costs between domestic and cross-border users, whose effects were hardly predictable and partially conflicting with the purposes of the NC TAR.
- (151) Following the proposals in the final consultation³⁰, in the motivated decision the option of allocating both regional and transmission revenues via a single RPM was chosen. At the same time, the RPM changed from a matrix to a CWD methodology, while the previous intermediate step of capacity allocations at exit points from national network domestic delivery areas was eliminated. Justifications for the choice included a clear compliance with NC TAR provisions and more simplicity and predictability compared to the previous framework.
- (152) Concerning potential cross-subsidies, to avoid a shift of costs from exit (namely, domestic) to entry points, the entry-exit split was changed as to collect from the entry points the same amount of revenues as before: until 2019, a 40/60 split was in place for the national network (i.e. entry points were attributed 40% of national revenues); from 2020, the split was changed to 28/72, thus allocating 28% of overall revenues to entry points, still corresponding to about 40% of national revenues.
- (153) Regarding potential shifts of costs among different entry points and among different exit points because of the single methodology, the concerns were addressed by comparing, in earlier stages of the consultation process³¹, the outcome of the single RPM with the outcome of separate RPMs (consistent with the approach in place at that time). Results showed that the overall revenue allocated to cross-border points was similar under the two assumptions, thus implying no cross-subsidisation, at system level, between domestic and cross-border points. One of the reasons is that the revenue shares the single CWD attributes to delivery points (through the cost-drivers of capacity and distance) is similar to the revenue shares resulting from the application of two separate methodologies.

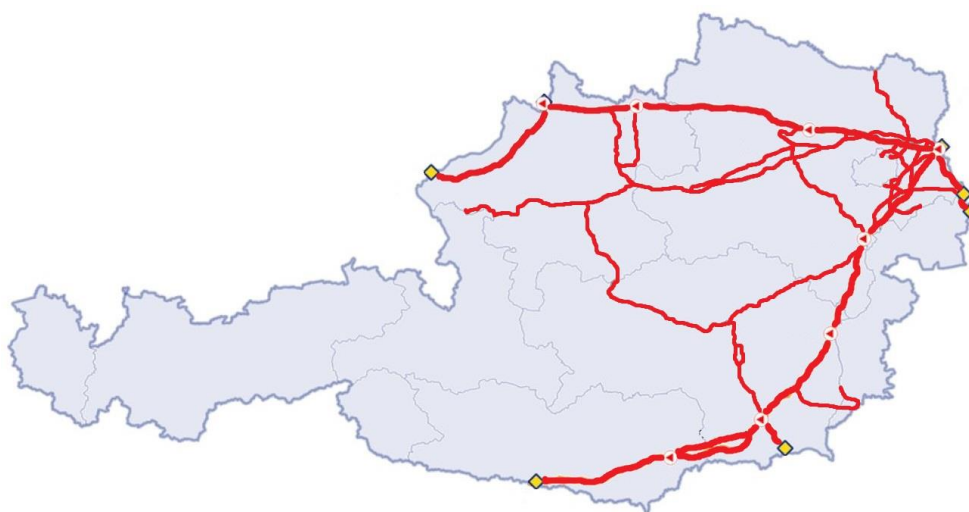
5.6. Case study: Austria

- (154) Until 2011, regional networks were classified as part of the transmission system in Austria (see Figure 6). In 2011, the Directive 2009/73/EC was transposed into Austrian national legislation. This triggered a reclassification of regional networks since the definition of 'transmission' had changed at European level.

³⁰ ARERA consultation document 16th October 2018, 512/2018/R/gas.

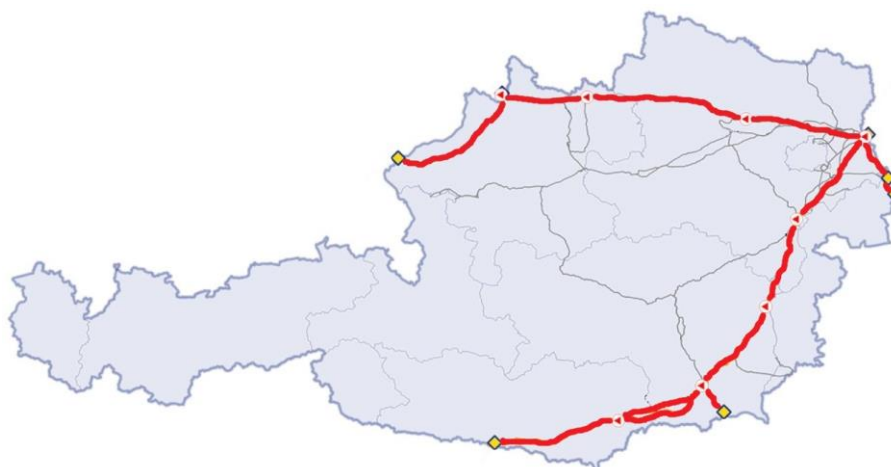
³¹ ARERA consultation document 19th March 2018, 182/2018/R/gas.

Figure 6: Austrian transmission network (regional and national transmission) until 2011. Source: ECA.



- (155) The repealed Directive 2003/55/EC³² (Second Package) defined ‘transmission’ as ‘*the transport of natural gas through a high-pressure pipeline network, other than an upstream pipeline network with a view to its delivery to customers, but not including supply*’.
- (156) Directive 2009/73/EC modified the old definition of ‘transmission’ by adding inter alia the underlined wording in this paragraph: ‘*the transport of natural gas through a network, which mainly contains high-pressure pipelines, other than an upstream pipeline network and other than 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, but not including supply*’.
- (157) With the transposition of Directive 2009/73/EC in 2011, the regional networks were classified as distribution systems, leaving a reduced transmission network that is focused on cross-border transmission (see Figure 7).

Figure 7: Austrian transmission network (cross-border transmission) after 2011.



³² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0055&from=EN>

- (158) The main consideration for the classification of the regional networks was that they are primarily used in the context of local distribution. The regional networks are almost exclusively used to distribute gas to Austrian customers. The pressure level was not a relevant consideration since both transmission and regional networks in Austria consist of high-pressure pipelines ($p_{\max} = 70$ bar). The capacity of the transmission network is about 560 TWh/y, whereas the capacity of the regional network is about 120 TWh/y.
- (159) The reclassification did not require changes in ownership of the assets. Article 29 of the Directive 2009/73/EC, as well as the Austrian Gas Act, allow for combined operators. A network operator may therefore own and operate transmission and distribution systems.
- (160) Five network operators were affected by the reclassification of the regional networks. One of them now acts as a combined operator and is certified as an Independent Transmission Operator ('ITO') for the transmission activity. The reclassification changed the status of some of its assets from transmission to distribution (regional network). The other four network operators act as distribution system operators. The reclassification of the assets did not lead to a change in the value of the assets.
- (161) The regulatory oversight regarding the approval of investments is the same for transmission and regional networks. For regional networks, a ten-year network plan needs to be submitted to E-Control each year, and projects need *ex-ante* regulatory approval based on national legislation. Similarly, TSOs (ITOs) are obliged to submit a ten-year network development plan for regulatory approval.

6. Charges for costs unrelated to transmission activities

6.1. Context

- (162) According to the Article 27(2) and 27(3) of the NC TAR, the Agency shall analyse the consultation documents published by each TSO or NRA before setting their transmission tariffs. On this occasion, the Agency noted that in several systems:
- Some TSOs are in charge of collecting revenues unrelated to their transmission activity (while these revenues are usually recovered by the relevant entity -e.g. storage operators- directly from users of the service);
 - In other systems, TSOs are not involved in such revenue collection. Instead, shippers are responsible for collecting non-TSO costs from network users by adding additional fees to transmission tariffs.
- (163) In both cases, TSOs and shippers only act as intermediaries to recover costs unrelated to their transmission activity and do not/are not supposed to make a profit.
- (164) For instance, TSOs in France and in Italy are in charge of collecting a part of storage operators' allowed revenues. TSOs in Italy, Greece and Lithuania are in charge of collecting a part of LNG terminals operators' allowed revenue. In Spain, shippers collect a part of the LNG terminals' allowed revenues through a compensation mechanism, with capacity charges billed directly to domestic consumers. The German TSOs collect two levies to recover costs of:
- promoting the production of biogas and
 - technical adjustments of connection points, customer facilities and consumer appliances necessary because of the conversion of the gas quality from L- to H- gas for the part of the German gas system that is currently supplied with L-gas.
- (165) The list of these mechanisms is probably not exhaustive. It corresponds to the mechanisms of which the Agency is aware and which were mentioned in NRAs' final consultations. The Agency considers that such mechanisms must be presented in a transparent manner to market players, as is the case in several countries. The Agency also believes that it will be necessary to check elsewhere in Europe whether similar mechanisms are implemented.
- (166) In most cases, the national laws prescribe the use of these mechanisms. The NRAs usually explain the necessity of these mechanisms with two key arguments:
- These services induce significant positive externalities (security of supply, improved competition, energy transition) or might even be necessary to operate the gas system;
 - At the same time, the market value of these services is not sufficient to cover their costs.
- (167) These costs are charged alongside transmission tariffs, it is therefore important for NRAs to assess the impact of these instruments at the same time as that of transmission tariffs. This can be done by using the same public consultation to gather the views of the stakeholders on transmission tariffs as well as on this type of compensation mechanisms.
- (168) Following its tariff reviews, the Agency has the following concerns regarding these mechanisms/instruments:

- First, they could lead to undue cross-subsidies between gas consumers: not all gas consumers benefit from positive externalities to the same extent, yet the way in which costs are recovered may not reflect such difference;
- Second, they should be proportionate with the objectives and not reduce the incentives for infrastructure operators to be cost-efficient³³. Getting direct feedback from the market whether these services are needed is recommended to avoid excessive socialisation or financing assets that are over-dimensioned;
- Third, they could distort competition between gas sources: these mechanisms may have an impact on competition between suppliers, by favouring one supplier or one gas source over other alternatives.

³³ In the cases studied in this section, the considered infrastructure operators are regulated. The reason is that they are not supposed to be subject to sufficient competitive pressure (unlike some other European operators benefiting from an exemption). If the national regulation is done properly and without cross-subsidisation, such mechanisms should not distort competition between infrastructures, also not cross-border.

6.2. Storage facilities

6.2.1. Descriptions of compensation mechanisms and context

ITALIAN STORAGE FACILITIES
Technical figures:
<ul style="list-style-type: none">• Domestic consumption: 769.3 TWh (in 2018, Eurostat).• Working gas volume: 196.4 TWh (in 2020, GIE transparency platform), i.e. about 26% of the domestic consumption.• Usage rate (ratio between booked capacities and working gas volume): 98.9% on 1 November 2019.
Description of the mechanism:
<p>According to legislative decree 164/00, the storage service is offered under a regulated regime. The allowed revenues of the Italian storage operators are set by the NRA, and since 2002 it is subject to a revenue compensation mechanism (ARERA resolution 26/02), to grant financial stability to system storage operators (SSOs). The mechanism applies to all currently operating storage facilities and to future facilities in case they are deemed as strategic by the Ministry.</p> <p>Prior to gas year 2013-2014, storage capacities were allocated at a tariff level covering the costs of the facilities if the amount of allocated capacity was sufficient. A compensation mechanism was then used to cover a volume risk (if storage capacities were not fully allocated, and the missing revenues were collected by the TSO). Since Gas Year 2013/14 (law 7 August 2012, n. 134), most of the storage capacities are now allocated through auctions, with a reserve price below the corresponding costs. A compensation mechanism is now implemented to cover a price risk: if the auctions revenues do not fully cover the storage facilities' costs, the TSOs are in charge of collecting the missing revenue on behalf of the SSOs through a commodity charge applied at domestic delivery points during the winter period.</p> <p>A portion of the storage capacities (strategic storage) is set aside as a strategic reserve (about 49 TWh) for energy/gas supply crisis. The corresponding costs are recovered by the TSOs on behalf of the SSOs through a commodity charge applied at domestic delivery points.</p> <p>Another portion is used for balancing purposes and the corresponding costs are covered by the TSOs balancing charges.</p>
Amounts at stake:
<ul style="list-style-type: none">• Allowed revenue of the Italian storage operators: about EUR 590 million/y from 2016 to 2019.• Amount collected by the Italian TSOs on behalf of the storage operators (during the same period): about EUR 280 million/y to recover the missing revenue caused by the difference between the auction clearing price and the storage operators' costs (the auctions revenues amount at less than EUR 100 million/y).• The remaining part of the storage operators' revenues is associated with the remuneration of the strategic storage and balancing of the transmission system³⁴.
FRENCH STORAGE FACILITIES
Technical figures:
<ul style="list-style-type: none">• Domestic consumption: 475.3 TWh (in 2018, Eurostat).• Working gas volume: 131.3 TWh (in 2020, GIE transparency platform), i.e. about 28% of the domestic consumption.• Usage rate (ratio between booked capacities and working gas volume): 98.5% on 1 November 2019.

³⁴ See the Agency's Third Report on the implementation of the Balancing Network Code.

Description of the mechanism:
Law No. 2017-1839 of 30 December 2017 modified the regime governing third parties' access to storage facilities in France, and introduced a regulated regime as of 1 January 2018. This law establishes that storage operators shall allocate storage capacities through auctions. The French TSOs are in charge of recovering, on behalf of the SSOs, the storage compensation which corresponds to the difference between the forecast allowed revenue of SSOs and the income SSOs receive directly, mainly from the auctioning of storage capacity. The NRA follows the national law, as decided by the French legislator.
Amounts at stake:
<ul style="list-style-type: none"> Allowed revenue of the French storage operators: about EUR 712 million/y from 2020 to 2023. Amounts collected by the French TSOs on behalf of the SSOs: EUR 540 million in 2018, EUR 500 million in 2019, EUR 251.1 million in 2020.

6.2.2. Analysis

- (169) In both the cases studies, the concerned storage capacities are regulated. Both ARERA³⁵ and CRE³⁶ submitted for public consultation their methodologies for determining their respective storage operators' allowed revenue, their storage capacity auction mechanisms and the financial compensation mechanism with the TSOs. The motivated decisions of ARERA³⁷ and CRE³⁸ fulfil transparency requirements comparable to the ones applied to the transmission tariff with respect to the determination of allowed revenue.
- (170) The assessed mechanism can be broadly described as a joint application of the following provisions:
- On the one hand, storage operators which are deemed as strategic for the system³⁹ are granted a cost-reflective revenue recovery to ensure their costs are covered (i.e. a share of the total allowed revenues), insofar as they correspond to the costs of efficient operators;
 - On the other hand, certain storage services are allocated via competitive auctions with reserve prices (and usually, but not necessarily, also clearing prices), below a tariff level that reflects the costs of the storage operators.
- (171) The two mechanisms are independent insofar as a revenue recovery can also be set regardless to the way in which the service is offered. For instance, Italy introduced competitive auctions in 2013, but the compensation mechanism dates back to 2002 and was primarily aimed at covering the risk of storage capacity not being fully booked.

³⁵ <https://www.arera.it/it/docs/19/288-19.htm>

³⁶ <https://www.cre.fr/en/Documents/Public-consultations/Next-tariff-for-the-use-of-Storengy-Terega-et-Geomethane-natural-gas-underground-storage-infrastructures>,
<https://www.cre.fr/en/Documents/Public-consultations/New-tariff-for-the-use-of-natural-gas-transmission-networks-GRTgaz-and-Terega>

³⁷ <https://www.arera.it/it/docs/19/419-19.htm>

³⁸ <https://www.cre.fr/en/Documents/Deliberations/Decision/tariffs-for-the-use-of-the-underground-natural-gas-storage-infrastructure-of-storengy-terega-and-geomethane>,
<https://www.cre.fr/en/Documents/Deliberations/Decision/tariffs-for-the-use-of-grtgaz-s-and-terega-s-natural-gas-transmission-networks>

³⁹ In both cases, the assessment is in the hands of the Ministry rather than a NRA competence.

- (172) In the Italian case, the main justification provided by ARERA was that the compensation and auction mechanisms, by maximising the use of storage, serve for improving security of supply in terms of availability of both the commodity and the necessary withdrawal capacity when most needed⁴⁰. Furthermore, ARERA considers that the mechanisms also improve the Italian wholesale market price stability, in particular with regards to the summer/winter spread. In the French case, CRE also considers that the compensation and auction mechanisms serve to improve security of supply: the storage filling rate was deemed too low before their implementation (66% in the Gas Year 2017/18 versus more than 98% since the implementation of the new French law), with a higher risk of supply disruption in the south of the country.
- (173) While ARERA considers the commodity charges used by Italian TSOs to collect revenues on behalf of the Italian storage operators as outside of the scope of the NC TAR, CRE regards its own compensation mechanism as a non-transmission service from the perspective of the NC TAR.
- (174) Regarding the possible negative side-effects, which could be induced by these compensation mechanisms, the Agency considers that:
- Regarding the risk of undue cross-subsidy between gas consumers:
 - .i. In Italy, the amounts recovered by the TSOs on behalf of the storage operators are collected through a commodity charge applied to domestic exits during the winter period, and proportional to delivered quantities.
 - .ii. In France, these amounts are collected through a capacity charge applied to domestic exits and proportionate to the consumers' seasonal modulation on the distribution networks. CRE indicated in its motivated decision that it expects an extension of the compensation basis to clients directly connected to the transmission network to be implemented as of the first update of the transmission tariff of 1 April 2021. CRE will conduct a public consultation in the second half of 2020 in preparation of this change.
 - .iii. It is interesting to note that the two cost recovery methods are different. One interpretation could be that ARERA creates an *insurance*, where each consumer benefits from security of supply and increased market price stability by paying a risk premium proportionate to its consumption. On the contrary, CRE seeks to reflect the storage costs induced by each consumer and seems to consider that the users of the storage infrastructure are the ones who must cover its costs.
 - .iv. In both cases, the compensation mechanisms are only applied to domestic exits and do not modify cross-border tariffs. They do not negatively affect cross-border consumers and thus do not hamper market integration.
 - It should remain proportionate and preserve efficiency:
 - .i. The MSs decide which storage facilities benefit from the compensation mechanism and set the target in terms of security of supply. Nonetheless, ARERA and CRE are responsible for setting the allowed revenue of the storage operators, which gives the NRAs leverage to encourage efficiency.

⁴⁰ In case of depleted field storages, withdrawal capacity is a function of the quantity of gas stored.

- ### 6.3. LNG facilities

<h2>ITALIAN LNG FACILITY</h2>
<p>Technical figures:</p> <ul style="list-style-type: none"> Domestic consumption: 769.3 TWh (in 2018, Eurostat). Total send-out capacity: 187.6 TWh/y (in 2020, GIE transparency platform), i.e. about 24% of the domestic consumption. Usage rate (ratio between the average flow and the send-out capacity): 78.2% in 2019.
<p>Description of the mechanism:</p> <p>According to legislative decree 164/00, the LNG regasification service is offered under a regulated regime. Currently, out of three terminals, two are fully regulated, while one is under an 80% third party access ('TPA') exemption.</p> <p>The allowed revenues of the Italian LNG operators are set by the NRA, and since 2005 regulated LNG terminals benefit from a partial revenue recovery mechanism (64% of allowed revenues). The mechanism applies to all currently operating LNG facilities and to future facilities in case they are deemed as strategic by the Ministry.</p> <p>Prior to Gas Year 2018/19, LNG regasification capacities were offered at a tariff level reflecting the full costs of the infrastructures; the compensation mechanism partially covered the risk of storage capacities not fully allocated. Since the Gas Year 2018/19, capacities are offered through competitive auctions, with a reserve price that can go below the cost-based tariff level; the compensation mechanism covers the difference, if any, between auction revenues and 64% of the allowed revenues. Italian TSOs carry out this revenue recovery by collecting the corresponding amount on behalf of the LNG operators through a commodity charge applied at the domestic exits.</p>
<p>Amounts at stake:</p> <ul style="list-style-type: none"> Allowed revenue of the Italian LNG operators: about EUR 520-550 million/y from 2016 to 2018 Amounts collected by the Italian TSOs on behalf of the LNG operators (during the same period): about EUR 100 million/y

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GREEK LNG FACILITY

Technical figures:

- Domestic consumption: 57.4 TWh (in 2018, Eurostat).
- **Total send-out capacity: 98.5 TWh/y (in 2020, GIE transparency platform), i.e. about 172% of the domestic consumption.**
- Usage rate (ratio between the average flow and the send-out capacity): **34.1% in 2019.**

Description of the mechanism:

According to article 88.3 of Law 4001/2011, the Tariff Regulation can stipulate that all or part of the costs of the Revythoussa LNG Facility is recovered through the users of the transmission system. Therefore, **Article 8 of the Tariff Regulation provides that a share of the LNG terminal's allowed revenue can be recovered through a distinct LNG socialisation charge added to the transmission tariffs at domestic exit points. RAE sets the share of LNG costs to be socialised based on a cost benefit analysis considering the contribution of the LNG facility to the balancing of the transmission system, the security of supply and the facilitation of new suppliers into the Greek natural gas market. In 2020, the Greek TSO will collect an important part (50%) of the Revythoussa LNG terminal allowed revenue through an equalised capacity charge applied to domestic exits.**

Amounts at stake:

- Allowed revenue of the Greek LNG operators: from EUR 48 to 37 million/y between 2018 to 2022
- **Amounts collected through an equalised capacity charge applied to domestic exits:** from EUR 36 to 28 million/y between 2018 to 2022 (75% of the LNG operator's allowed revenue, until 2019).

LITHUANIAN LNG FACILITY
Technical figures:
<ul style="list-style-type: none"> • Domestic consumption: 22.9 TWh (in 2018, Eurostat). • Total send-out capacity: 45.8 TWh/y (in 2020, GIE transparency platform), i.e. about 200% of the domestic consumption. • Usage rate (ratio between the average flow and the send-out capacity): 42.7% in 2019.
Description of the mechanism:
<ul style="list-style-type: none"> • According the Law of Liquid Natural Gas terminal (2012 June 12 No. XI-2053), the Lithuanian TSO is responsible for collecting a security of supply charge, which is set to recover: <ul style="list-style-type: none"> ○ a part of the LNG terminal's costs; ○ the designated supplier's costs in charge of shipping a minimum quantity of gas to maintain the terminal in operation; ○ administrative costs incurred by the TSO. • This security of supply charge is approved by the NRA. The TSO distributes the collected amounts to the LNG terminal operator (AB 'Klaipėdos nafta') and to the designated supplier (UAB 'Ignitis'). The TSO does not receive any return on investment for this role but it covers its own administrative costs (which cannot exceed EUR 145,000). • The European Commission approved a state aid scheme⁴² allowing the security of supply charge. This charge is billed only to Lithuanian natural gas customers connected to the transmission grid as an additional fee, which is not a part of transmission tariffs. Separate accounting ensures that the role of the TSO in the collection of security of supply costs has no influence on the transmission activity or on the transmission tariffs.
Amounts at stake:
<ul style="list-style-type: none"> • Allowed revenue of the Lithuanian LNG operators: about EUR 36.3 million/y in 2020. • Amounts collected by the Lithuanian TSO to cover costs corresponding to LNG activities (during the same period): EUR 57.7 million/y in 2020 (LNG terminal's costs: EUR 32.6 million, designated supplier in charge of ensuring a minimum quantity of deliveries to maintain the terminal in operation: EUR 25 million), • Administrative costs incurred by the TSO: EUR 0.065 million).

⁴² European Commission decision on Lithuania Aid to LNG Terminal:
https://ec.europa.eu/competition/state_aid/cases/250416/250416_1542635_190_2.pdf

SPANISH LNG FACILITIES
Technical figures:
<ul style="list-style-type: none"> Domestic consumption: 350.1 TWh (in 2018, Eurostat). Total send-out capacity: 697.4 TWh/y (in 2020, GIE transparency platform), i.e. about 199% of the domestic consumption. Usage rate (ratio between the average flow and the send-out capacity): 32.5% in 2019.
Description of the mechanism:
<ul style="list-style-type: none"> The gas suppliers in Spain (on behalf of the final customers) are responsible for collecting a part of the costs induced by the Spanish LNG terminals through a variable charge for consumer supplied from own satellite LNG facilities and through a combination of capacity charges or fix-charges for the rest of customers.
Amounts at stake:
<ul style="list-style-type: none"> Allowed revenue of the Spanish LNG operators: about EUR 450 million in 2020. Amounts recovered from consumers connected to local networks: about EUR 125 million in 2020 covering costs not depending on the use of LNG terminals (costs associated with security of supply, with a court decision and with the mothballed Musel LNG terminal). The costs associated with the security of supply are inherited from the previous remuneration framework established by the Spanish Government and are transitory in accordance with the new methodology of remuneration of the activity established by CNMC.

6.3.2. Analysis

- (175) NRAs provide justifications for these compensation mechanisms, stating that the instruments aim at improving security of supply and competition in isolated markets with few alternative gas sources available in the region. Moreover, NRAs mention the need to maintain a minimum flow of LNG in order to keep the terminal in operation, the need to foster the use of LNG terminals and the need to maintain stable terminal tariffs over time despite the variability and usage of LNG flows.
- (176) In all the cases studied, the concerned LNG capacities are regulated⁴³. The NRAs shall submit for public consultation the methodology for determining their LNG operators' allowed revenue, the LNG capacity allocation mechanism and the financial compensation mechanism (in the Spanish case, CNMC did it simultaneously with the final consultation pursuant to the NC TAR).
- (177) Most of the NRAs decisions fulfil transparency requirements comparable to the ones applied to the transmission tariff with respect to the determination of allowed revenue.
- (178) Regarding the possible negative side effects, which could be induced by these compensation mechanisms, the Agency considers that:
- It could lead to undue cross-subsidy between gas consumers:
 - The amounts recovered by the TSOs on behalf of the LNG terminal operators are collected through charges applied to domestic exits.
 - Since these compensation mechanisms do not modify cross-border tariffs, they do not negatively affect cross-border consumers and they do not hamper market integration.
 - It could finance inefficient infrastructure:

⁴³ In the Italian case, one terminal (Rovigo) is exempted from TPA and does not benefit from the compensation mechanism.

- .i. NRAs are responsible for setting the allowed or target revenues of their respective regulated LNG operators, which gives the NRA sufficient leverage to encourage cost-efficiency.
- .ii. Given that LNG capacities are priced and allocated below their costs, facilities providing similar services, but with higher tariffs, could theoretically⁴⁴ in turn have a lower usage rate.
- .iii. In small countries, the capacity of LNG terminals could be deemed over-dimensioned in comparison with the domestic consumption. Nonetheless, the size of an LNG terminal should be sufficient to unload an LNG cargo (usually between 140,000 and 266,000 m³ of LNG).
- It could distort competition between gas supply sources:
 - .i. By decreasing the LNG terminal tariffs, the compensation mechanism improves the competitiveness of LNG over other gas sources. This mechanism cannot be considered neutral in terms of competition for the market.
 - .ii. However, it may contribute to improve the competition by lowering the barrier to entry for LNG suppliers in isolated markets where an incumbent supplier benefits from market power. In that case the LNG supplier is the provider of a competitive source.

⁴⁴ Nonetheless, it would remain necessary to determine what is the concerned market area and to prove that other infrastructures can offer similar services on a level playing field.

6.4. Levies collected by TSOs for biogas and conversion

6.4.1. Descriptions of compensation mechanisms and context

GERMANY
Technical figures:
<p>The legal basis for the Biogas charge is a national regulation called Gasnetzzugangsverordnung (GasNZV, paragraphs 31-37). The legal basis for the conversion charge is paragraph 19 of EnWG (Energiewirtschaftsgesetz).</p> <ul style="list-style-type: none">• Domestic consumption: 950.5 TWh (in 2018, Eurostat).• Share of the consumption currently supplied with L-gas: 30% in 2017 (source: ENSTOG Gas Regional Investment Plan 2017).• Biomethane production: ~10 TWh in 2019.
Description of the mechanism:
<ul style="list-style-type: none">• BNetzA has set up two compensation mechanisms with the aim of:<ul style="list-style-type: none">○ Covering the costs for the technical adjustments of connection points, customer facilities and consumer appliances necessary because of the conversion of the gas quality from L- to H- gas (due to the phase-out of the Groningen gas field);○ Promoting the production of biogas.• Both mechanisms are considered as non-transmission services from the perspective of the NC TAR. The costs to be recovered are allocated exclusively to domestic exits through an additional capacity charge.
Amounts at stake:
<ul style="list-style-type: none">• Allowed revenue of German TSOs: EUR 2.4773 billion in 2020 (without levies).• Levy for the promotion of biogas: EUR 196 million.• Levy for the conversion of the L-gas market area: EUR 179 million.

6.4.2. Analysis

- (179) As explained in its Report⁴⁵ analysing the final consultation document published by BNetzA, the Agency cannot strictly consider these two compensation mechanisms as non-transmission services, as they do not cover costs relating to TSOs' activities, despite the fact that they are charged to beneficiaries. Nevertheless, the Agency agrees that classifying the compensation mechanisms as non-transmission services allows for a better application of the NC TAR requirements in terms of transparency and consultation. In addition, the approach taken by BNetzA does not hamper market integration. Costs are allocated to domestic points and not to IPs. In this manner, they are allocated to the beneficiaries of the service and do not hinder cross-border trade.

6.5. Analysis and guidance

- (180) The Agency understands the context that leads to these compensation mechanisms, allowing for the recovery of non-TSO costs at domestic delivery points or directly from consumers.

⁴⁵ https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/Agency%20report%20-%20analysis%20of%20the%20consultation%20document%20for%20Germany.pdf

6.5.1. Potential overcapacity in EU gas networks

- (181) During the past 20 years, most European countries developed their gas infrastructure. This development was justified by an assumption of gas demand growth and by the willingness to reduce transmission congestions in order to integrate the European gas market and to foster competition between suppliers. In the meantime, the gas consumption decreased (-5% overall between 2009 and 2018 in EU 28) and physical congestion between the European transmission networks became rare. As a consequence, services provided by LNG or storage facilities saw their market value decrease: network users booked less flexibility within each system to hedge against transmission congestions, since short-term flexibility could often be imported from one system to another through arbitrage and physical infrastructure was competing with these opportunities.

6.5.2. Pricing positive externalities

- (182) Although the described compensation mechanisms may not appear in line with some economic signals received by market stakeholders, the market does not always price the positive externalities delivered by gas infrastructure:
- Without an appropriate regulation, competitors are incentivised to underestimate high risks with low occurrence to increase their market shares and/or their benefits. This can potentially lead to an overall lower wholesale price that does not reflect these specific risks;
 - Also, concerning the policy objective of security of supply, prices at hubs cannot always fully reflect the costs related to potential gas demand disruptions;
 - In relatively isolated markets, the preservation of an additional and marginal source of gas (such as an LNG terminal) increases the competitive pressure on the incumbent supplier, even at a low usage rate.
- (183) In the same way, the current short-term market conditions may not allow the development of biogas production and a support mechanism, if well-designed, could be key to achieving the objectives of decarbonisation and the energy transition.
- (184) The limited ability of the market to price positive externalities explains why a compensation mechanism might be necessary under some circumstances, provided that it is underpinned by an appropriate assessment that reflects the efficiency of the compensation mechanism in question.

6.5.3. Guidelines

- (185) Nonetheless, the Agency considers that this type of compensation mechanism should be more closely supervised.
- (186) Since these mechanisms have similar impacts as transmission tariffs, the Agency considers it as a best practice to have them comply with similar standards, with particular regard to transparency and consultation requirements. As was done in the NC TAR for transmission tariffs, obligations of transparency and public consultation could be established in European regulations, beyond the high-level principles that are already enshrined (see its discussion at the beginning of the chapter).
- (187) More broadly, compensation mechanisms should be proportionate to the problems they aim to solve and should not affect the efficiency of the gas system. They should not interfere with the

objectives set by the Regulation 715/2009 for transmission tariffs and with the principles of the Article 7 of the NC TAR (efficient gas trade and competition, non-discrimination, avoiding cross-subsidies between network users). The consistency with these principles would allow for the creation of a consistent and efficient infrastructure development.

- (188) To do so, these compensation mechanisms should be financially neutral from the perspective of the entity collecting it (TSOs in most cases, shippers in Spain).
- (189) The compensation mechanisms should be proportional to the benefits they support. The NRAs should be particularly careful in ensuring that an appropriate assessment is provided about the benefits and to mitigate the three risks identified previously -cross-subsidy between gas consumers, inefficient infrastructure, distorted competition between gas suppliers -.
- (190) The Agency understands that compensation mechanisms in line with the principles above do not incur cross-subsidisation (as it is not in line with Article 41(1)(f) of the Directive 2009/73/EC). The Agency understands that in such cases, the TSO would merely act as a platform to allocate costs not causing cross-subsidisation across infrastructures.

6.5.3.1. LNG terminals and storage facilities:

- (191) The Agency considers that only regulated infrastructures should be able to benefit from revenue compensation mechanisms. Exempted infrastructures, whose revenues are not approved by regulators, should not benefit from similar mechanisms, in the absence of appropriate oversight on the benefits the infrastructures' operators could gain.
- (192) Within their assessment on the proportionality of the measure, NRAs would have to justify why it would be detrimental to the infrastructure benefiting from the mechanism to recover its own costs by itself. In particular, NRAs would have to assess the benefits (security of supply, market competitiveness, etc.) of such a mechanism against the risks associated with it (cross-subsidy between gas consumers, inefficient infrastructure, distorted competition between gas suppliers).
- (193) The Agency considers that, where it is established that a compensation mechanism is necessary, the corresponding costs should by default be allocated to domestic consumers (either directly in their bill or via a non-transmission exit tariff) and not to cross-border IPs. In this way, the integration of the gas market would not be hampered. Where a cost-benefit study shows that the concerned facility benefits consumers in other market areas, the Agency considers that the concerned NRAs should coordinate to set up a common compensation mechanism.
- (194) Without calling into question the support mechanism for security of supply, as stated in the Article 194 of the Treaty on the Functioning of the EU⁴⁶ or in the Regulation (EU) No 1938/2017⁴⁷ concerning measures to safeguard the security of gas supply, the Agency considers that it would be desirable to develop a stronger European coordination to assess which assets could become stranded in the European gas system in a context of the energy transition. The regulatory authorities

⁴⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012E/TXT&from=EN>

⁴⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1938&from=EN>

could regularly carry out analyses, in line with the provisions of Regulation (EU) No 1938/2017 on security of gas supply, at European or regional level to determine which infrastructures are still needed to ensure supply security, even if they can no longer cover their costs on their own, in order to prevent a race to the bottom, where an ever increasing part of the costs of under-used facilities would be socialised. NRAs should, ideally, do this work in the same way as they assess TSOs' investment proposals, since both issues raise the same conceptual challenges and impact the market and its functioning in the same manner.

6.5.3.2. L-gas to H-gas conversion and biogas promotion

- (195) A part of the same guidelines should apply to the levies used to promote the production of biogas or to convert existing L-gas networks to H-gas. In particular, the corresponding costs should be allocated to domestic consumers (either directly in their bill or via a non-transmission exit tariff) and not to cross-border IPs, as cross-border trade should not be impacted by this instrument.
- (196) Without calling into question the support mechanism for biogas production, which responds to well-understood political objectives, the Agency considers that it would be desirable to develop an approach at a European level for measuring the economic effectiveness of this kind of mechanism in line with its appropriateness in reducing greenhouse gas emissions. Such a quantitative tool would allow different technological solutions of decarbonisation to compete fairly across European energy markets, provided that this approach can be applied to competing technologies.

7. Other implementation issues

- (197) In this chapter, the Agency presents its assessment of a number of key implementation issues, which in particular cases impacted the compliance with the NC TAR, and provides guidance where relevant. These issues cover: the scope of application of the NC TAR, volume risk, benchmarking, revenue reconciliation, biogas, inter-transmission system compensations in one MS and across MSs, and capacity overrun fees.

7.1. Scope of application of the NC TAR: Access to networks

- (198) The Agency observed that in several consultations and motivated decisions specific services were excluded from the scope of the NC TAR.
- (199) The scope of application of the NC TAR is closely linked to the scope of Article 13 of Regulation (EC) No 715/2009. Article 13 of this regulation is entitled 'Tariffs for access to networks' and it refers to '*tariffs for network access*'. As customary in Union law, the scope of application of the NC TAR must be interpreted within the scope of Article 13, while also taking into account the higher-level legislative context, *in casu* provided by Regulation (EC) No 715/2009 and Directive 2009/73/EC.
- (200) The purpose of the requirements enshrined in Article 13 of Regulation (EC) No 715/2009 is to ensure that transmission tariffs are set at a level corresponding to the costs of an efficient operator and that they do not discriminate between network users. As stated in Recitals 1, 7 and 8 of Regulation (EC) No 715/2009, these requirements have been put into place to ensure competition and the well-functioning of the internal market for gas – two of the core objectives pursued by the Union law on gas markets (notably the Third Energy Package and its corresponding Network Codes). These objectives cannot be achieved in the presence of excessive or discriminatory pricing of the regulated services of the TSO.
- (201) If the scope of Article 13 of Regulation (EC) No 715/2009 is interpreted too narrowly, there is a risk that services provided by TSOs to network users under the same or equivalent conditions, namely the '*network access services*', would only be partially regulated by the principles enshrined in the article. However, if the scope of network access services is broadly interpreted, this would decrease the very risks of excessive or discriminatory pricing to network users, which Article 13 sought to address, as all the services would be included in the tariffs and reviewed by the NRAs.

7.1.1. ACER guidance

- (202) The Agency is of the view that the scope of Article 13 of Regulation (EC) No 715/2009 should be interpreted broadly in order to ensure its *effet utile*. Consequently, the scope of the referenced article should be understood to include not only services which enable network users to gain '*access to the natural gas transmission networks*', but may also include services which are provided *on the occasion of* accessing natural gas transmission networks or *in connection with* such access. The decision as to whether a given service falls under Article 13 of Regulation (EC) No 715/2009 may require a case-by-case assessment by the respective NRA, taking into account the need for a consistent application of EU legislation across MSs.

- (203) Subsequently, and pursuant to Article 4 of the NC TAR, services that fall under the scope of the NC TAR should be considered as either transmission or non-transmission services.

7.1.2. Connection services

- (204) In some MSs, connection services⁴⁸ are not charged as a non-transmission tariff. In particular, the Agency is aware of this being the case in CZ, FR, EL, ES, IE, SE, SI. This is because users in these jurisdictions are charged for the cost of establishing a new connection, which varies case by case. It is therefore not always possible to set an *ex-ante* tariff.
- (205) In the case of connections services, the Agency considers that those could be set *ex-ante*, as is the case in several countries. However, the Agency recommends the NRAs when adopting this setting to:
- Clarify the charging principles;
 - Clarify whether the services are charged to the beneficiaries;
 - Clarify whether the assets that are charged *ex-ante* are not included in the RAB, as such a situation would lead to double-charging. The TSO shall not charge the service first to the beneficiaries, and then claim it as part of the allowed revenue allocated using the RPM.

7.1.3. Balancing action services

- (206) Balancing action costs, such as buying and selling gas for balancing purposes and the related income/losses from daily imbalance charges, are outside of the scope the NC TAR, according to Article 3(15) of the NC TAR. These services fall under the neutrality principle set out in Article 29 of the Commission Regulation (EU) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks ('NC BAL')⁴⁹, which foresees that the TSO is neutral in terms of balancing actions, and its underlying revenues and losses are returned (compensated) to (by) the network user community.

7.1.4. Competitive services provided by TSOs

- (207) Services provided by TSOs that face competition (e.g. engineering, consultancy), for which the NRA sets neither regulated charges nor the level of allowed revenue, are out of the scope of the NC TAR.
- (208) The Agency recommends that:
- The NRA assesses whether the monopoly condition of the TSO could result in a market advantage in the provision of the competitive service. Such an advantage could distort the competitive market. The Agency recommends a case-by-case assessment as described in paragraph (202) above.
 - Specific regulatory accounting rules, set by the NRA, shall apply to make sure that there is no cross-subsidy between the competitive and the regulated activities, whereby the regulated activities would not be used to (partially) finance the competitive ones.

⁴⁸ Service of connecting a new consumer to the transmission network.

⁴⁹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0312&from=EN>

7.1.5. Services provided in the context of competition: Wobbe Quality Adaptation service (Netherlands)

- (209) In the Netherlands, the Wobbe Quality Adaptation ('WQA') service is provided to convert gas quality to the parameters applicable in the TSO network. This service is, however, different from other quality conversion services for which the TSO is responsible according to the Dutch Gas Act, such as blending, injecting nitrogen or administratively swapping high-calorific and low-calorific gases.
- (210) The WQA is intended to convert gas that does not meet the entry specifications and turn the so-called 'off-spec gasses' into gasses that meet the entry specification requirements. This service is not an exclusive task of the TSO, Gasunie Transport Services ('GTS'); other operators could also perform it. Furthermore, some network users, like the gas producers, can decide whether they want to adapt the Wobbe quality themselves, or entrust a third party or GTS to do so.
- (211) With respect to this service, the Agency considers the following.
- (212) First, the Wobbe Quality Adaptation service is provided to network users on the occasion of using GTS's transmission network.
- (213) Second, the purpose of the service is to ensure that gas injected by network users meets the minimum quality requirements for system use. Hence, where a network user wants to inject gas that does not meet the minimum quality requirements of the system, the service becomes a precondition to enable access. In this regard, the service meets the legal standard of enabling network users to gain 'access to the natural gas transmission networks'.
- (214) The fact that network users could perform the WQA themselves (provided they have or can acquire the necessary technical means) or rely on third party service (the availability of which has not been established) appears to be of limited significance, given the privileged competitive position which GTS enjoys as the sole operator of the Dutch gas transmission system.
- (215) Therefore, unless it is proven that the WQA service is offered in competition further to a case-by-case assessment by ACM, the Agency is of the view that the WQA service should be considered as falling within the scope of Article 13 of Regulation (EC) No 715/2009 and constitutes a non-transmission service in the meaning of the NC TAR. Consequently, this service would have to be priced in accordance with the general requirements of the NC TAR and should be consulted upon in accordance with Article 26 of the NC TAR.
- (216) In this way, it would be possible to verify that the WQA tariff reflects the costs incurred by GTS and that these costs are properly charged to the beneficiaries of this service (in accordance with Article 4(4) of the NC TAR). In these conditions, potential competitors would be ensured that GTS does not benefit from its position to offer this service.

7.1.6. Security of supply: Peak Supply service (Netherlands)

- (217) In the Netherlands, the Peak Supply service consists of several elements, including the supply of gas, the provision of storage services and the provision of transmission services, to gas suppliers in the Netherlands. It aims at ensuring that the supply to households and small businesses is

feasible on extremely cold winter days. The TSO contracts storage capacity and volume plus transmission capacity to supply gas to household consumers on very cold days on behalf of the suppliers of household consumers. The suppliers of household consumers are obliged to pay to GTS for the costs incurred. Thus, these suppliers are not free to contract such services as they may see fit.

- (218) To ensure the supply of gas to household consumers even on the coldest days, the government has given GTS the task to contract storage capacity and volume and to reserve the required transmission capacity. If the temperature drops below a threshold of an effective daily average temperature of -9 °C, GTS will use the contracted storage to inject gas into the network and the reserved transmission capacity to deliver the required gas at the exit points to domestic users.
- (219) The Peak Supply service relates to services provided by GTS exclusively on the basis of a Public Service Obligation. The costs of these services are passed through directly to the respective gas suppliers. These services are labelled as:
- Provision of storage services;
 - Supply of gas.
- (220) The Agency notes that even though these services could be considered to fall outside of the scope of Article 13 of Regulation (EC) No 715/2009 and the NC TAR, the costs of these services as charged to gas suppliers should remain fully regulated to prevent monopoly pricing. Consequently, the service should be priced in accordance with the general requirements of the NC TAR and should be consulted upon in accordance with Article 26 of the NC TAR.
- (221) It should be noted that the Agency did not assess the compliance of the Peak Supply service with unbundling requirements under Directive 73/2009/EC. Based on the NRA's input, the Agency is aware that this service has been used only once in the period 2010-2020.

7.2. Volume risk and asset splits

- (222) The entry-exit system is a market access model that allows network users to book gas capacity independently at entry and exit points. In this way, gas transmission is materialised through zones and inside the zone, irrespective of contractual paths. The concept of transit shall not be distinguished within gas transportation, is the starting point of Regulation (EC) No 715/2009. In an entry-exit system, transmission tariffs therefore should not be calculated on the basis of contract paths, as of 3 September 2011⁵⁰.
- (223) The NC TAR prescribes the allocation of revenues based on several key principles: the aggregation of all transmission costs into a single 'basket' (Article 3(2) of the NC TAR), the application of a single RPM to this 'basket' of costs (Article 6(3) of the NC TAR), and the reconciliation of all under/over recoveries to all points via a single regulatory account (Article 19 of the NC TAR). The allocation of costs to specific entry-exit points (i.e. for the purpose of allocating cost related to transit flows) can potentially breach these principles as specific costs are only allocated to a limited number of points.

⁵⁰ Article 13(1) of Regulation (EC) 715/2009.

- (224) While the concept of transit is abandoned by the Regulation (EC) No 715/2009, there are two references related to it in the NC TAR:
- Article 7(d): [the RPM] shall ensure that significant volume risk related particularly to transports across an entry-exit system is not assigned to final customers within that entry-exit system.
 - Recital (6): Transmission system operators in certain entry-exit systems transport significantly more gas into other systems than for consumption into their own entry-exit system. Consequently, reference price methodologies should include safeguards required to shelter such captive customers from risks related to large transit flows.
- (225) The NC TAR is not clear about what this 'volume risk' is. This notion, however, can be interpreted as related to the long-term underutilisation of the system. The risk referred to in the NC TAR would then be that transit flows are lower than expected or lower than in the past, so that the share of the revenues covering the costs of the pipelines used by transit flows cannot be borne by transit users, but may need to be financed by domestic users instead.
- (226) Long-term fluctuations in transit flows can result from changing supply routes or changing demand or flow patterns across the EU. In such cases, infrastructure assets are exposed to a risk of underutilisation, in other words volume risk.

7.2.1. ACER guidance

- (227) The mitigation of cross-border volume risk can increase the complexity of the regulatory mechanisms, potentially leading to detrimental effects (e.g. discrimination between network users, a decrease in the competitiveness of a transit route, which would further increase the volume risk, non-justified premia in the TSO revenue, etc.).
- (228) The Agency considers that the introduction of such mechanisms requires additional transparency. The additional information beyond the requirements of the NC TAR for a standard RPM should be made available and serve to:
- assess the applicability of volume risk leading or potentially leading to a situation of underutilisation;
 - provide information to assess the efficiency of the measure (e.g. underlying allowed revenues of the assets engaged).
- (229) The Agency considers that the following requirements should be applicable in cases where specific instruments to deal with volume risk are in place.
- (230) First, in order for volume risk to be relevant, the TSOs should transport significantly more gas into other systems than for the consumption of their own entry/exit system, leading to large transit flows. The Agency considers, as a guiding principle, that volume risk can be justified in cases where at least 50% of the total flows are from transit (so less than 50% is for consumption into the own entry-exit system). This should be the case for on average over a four-year period prior to the time of launching the consultation on the RPM.
- (231) Second, the volume risk should be based on a significant decrease of transit volumes. This should be assessed in terms of historical and forecasted data. The supporting data should make explicit

the assumptions used and should provide a clear analysis of possible termination of contracts and the substitution effect of long-term contracts by shorter term ones.

- (232) Third, the volume risk should be based on costs at risk associated to the infrastructure used for transit flows. This should be assessed in terms of non-depreciated costs from the transit pipelines. This would require:
- The investment stream data (investments per year per asset category since construction until now) of the transit assets and, if applicable, assets in common use and the depreciation period for pipelines, cross-border stations and compressor stations;
 - The distinction and publication of the respective values of cross-border assets and domestic assets used to calculate the allowed or target revenues of the TSO.
- (233) Fourth, where a risk premium is applied to manage the volume risk, the Agency requires the following information:
- An assessment of the proportionality between the volume risk (the value at risk based on both the volumes and the costs at risk), and the risk premium applied;
 - A justification supporting the charges paid by the users.
- (234) Finally, for the application of specific volume risk instruments, the Agency requires an assessment proving that the standard RPMs lead to significantly bigger cross-subsidies. For this purpose, at least a comparison with the CWD is needed, including a comparison of the results of the cost allocation assessment. In case the outcome of the cost allocation assessment would require a justification (result above the 10% threshold of Art. 5(6)), the degree of cross-subsidies suggests that another methodology may be more appropriate.

7.3. Benchmarking

- (235) The NC TAR provides the possibility to apply several secondary adjustments to the RPM: equalisation, rescaling and benchmarking. Several consultations and motivated decisions included the application of benchmarking as described in this section (AT, DE, FINESTLAT merger, SI and SK).

7.3.1. Proposed approaches to benchmarking

- (236) While the equalisation and rescaling adjustments have been implemented in a relatively homogenous way across Europe, NRAs have used the notion of benchmarking to justify very different adjustments to their RPMs and to achieve very different aims.
- (237) One of the main purposes of the NC TAR is to frame the way RPMs are designed. It is therefore undesirable for a secondary adjustment to allow significantly different sorts of modifications with significant impacts.
- (238) The Agency does not question the reality of the problems that NRAs want to solve by using tariff benchmarking, but it cannot lead to a heterogeneous implementation of the NC TAR. This concept needs to be elaborated to reach a common understanding of the issues it can solve and of its possible implementations.

- (239) The notion of benchmarking has been interpreted in the following ways by NRAs:
- Adjustment of a specific IP fee to compete with properly identified alternative transit routes;
 - Adjustment based on a comparison with other IP fees, without identifying competing routes;
 - Adjustment of IPs tariffs to limit tariff volatility (especially where contractual or legal constraints can trigger exit clauses);
 - Adjustments of specific points to set tariffs at the level of potential pipelines that could be built.
- (240) Based on the NC TAR and the EC Staff Working Document on Tariffs for Access to the Natural Gas Transmission Networks, the Agency supports the application of benchmarking as an adjustment to a specific IP tariff to allow the IP to compete with alternative transit routes.
- (241) In the following subsections, the various national applications of benchmarking are presented, showing the variety of current applications.

7.3.2. Benchmarking as applied in DE

- (242) BNetzA applies two benchmarking adjustments⁵¹ pursuant to Article 6(4)(a) of the NC TAR. In both cases, BNetzA argues in its motivated decision that, in the absence of a benchmarking adjustment, a pipeline would have to be built to provide an alternative connection.
- (243) The first one is applied to the IP connecting the end-user Wacker Chemie AG to Bayernets GmbH. This arrangement shall only apply if the Überackern 2 entry point, or the entry point at the underground storage facility Haidach, are used to supply this end-user via the relevant IP.
- (244) The second one is applied to the entry and exit points at the Haidach storage facility⁵², connecting to Bayernets GmbH. In the case of gas being stored, this arrangement shall only be applied if the entry point Überackern 2 is used for this purpose. In the case of gas being withdrawn from storage, this arrangement shall only be applied if the exit point Überackern 2 is used for this purpose.
- (245) The Agency notes that this application of the benchmarking adjustment, as applied by BNetzA, follows the rationale of the guidelines provided in this Report. BNetzA does not refer to the tariffs applicable for competing routes, but rather to the tariffs from an existing route with the tariffs from a potential route.

7.3.3. Benchmarking as applied in SI

- (246) The Slovene NRA, AGEN, applies a benchmarking adjustment to the exit point Šempeter pri Gorici to Italy.
- (247) AGEN argues that there are two routes in competition: AT-SI-IT and AT-IT. The cost of booking the transfer route AT-SI-IT in case of an annual capacity booking on 1 January 2019 amounted to EUR

⁵¹ For details please see decision BK9-18-610-NCG (operative provision 3 and recital 407-428).

⁵² Operated by Astora GmbH & Co. KG and GSA LLC.

0.4526 kWh/day/year⁵³ (this includes the entry to SI and the exit from SI), and the booking of AT-IT transfer route EUR 0.3324 kWh/day/year⁵⁴. The NRA argues that the tariffs derived using the RPM for booking the transfer route AT-SI-IT would be EUR 1.0795 kWh/day/year⁵⁵, which would not be competitive.

- (248) The reference price for the exit point Šempeter pri Gorici is, considering other points, non-competitive, and implementing such tariff would result in even fewer capacity bookings. The exit point Šempeter pri Gorici is located on the transmission route Austria-Slovenia-Italy; the competing direction is Austria-Italy.
- (249) The NRA decided that the tariff applicable at the exit point Šempeter pri Gorici should be near to the current value and not be replaced in the upcoming tariff period by the tariff derived using the RPM. For this purpose, it set a discount of 10% over the exit tariff derived using the RPM (EUR 0.09220 kWh/day/year). This results in a tariff of EUR 0.08298 per kWh/day/year.
- (250) The Agency notes that this application of the benchmarking adjustment, as applied by AGEN, is in line with the guidelines provided in this Report.

7.3.4. Benchmarking as proposed in AT

- (251) E-Control proposed in its final tariff consultation an RPM based on a virtual point-based method ('VPB', variant b) which was accompanied by two benchmarking adjustments.
- (252) First, benchmarking was proposed at the exit Murfeld from AT to SI. The NRA justified this adjustment on the basis of the competition existing between the AT-SI-HR route and the HU-HR route, both to the Croatian entry-exit system. The Agency notes that this application of the benchmarking adjustment, as proposed by E-Control, is in line with the guidelines provided in this Report.
- (253) Second, E-Control proposed capping tariff increases to 10% compared to the preceding tariff period and referred to this as a benchmarking adjustment. The Agency does not consider this to be a benchmarking adjustment as foreseen in Article 6(4)(a) of the NC TAR, which focuses on reaching competitive prices at a given entry or exit point. Instead, the Agency understands this instrument as a feature of the RPM applied in view of the potential volume risk foreseen by the NRA. E-Control proposed a 10% cap on tariff increases to mitigate the risk of long-term contracts being terminated.

⁵³ Calculated as follows: Baumgarten entry EUR 0.0321 kWh/day/year + Murfeld exit EUR 0.1388 kWh/day/year + Ceršak entry EUR 0.1148 kWh/day/year + Šempeter exit EUR 0.0922 kWh/day/year + Gorizia entry EUR 0.0748 kWh/day/year = EUR 0.4526 kWh/day/year. Tariffs valid on 1 January 2019.

⁵⁴ Calculated as follows: Baumgarten entry EUR 0.0321 kWh/day/year + Arnoldstein exit EUR 0.1929 kWh/day/year + Tarvisio entry EUR 0.1074 kWh/day/year = 0.3324 EUR/kWh/day. Tariffs valid on 1 January 2019.

⁵⁵ Tariff for AT-SI-IT. Reference price prior to the benchmarking adjustment are calculated as follows: Baumgarten entry EUR 0.0321 kWh/day/year + Murfeld exit EUR 0.13875 kWh/day/year + Ceršak entry EUR 0.1159 kWh/day/year + Šempeter exit EUR 0.71798 kWh/day/year + Gorizia entry EUR 0.0748 kWh/day/year = EUR 1.0795 kWh/day/year (tariffs valid on 1 January 2019). The Slovenian tariffs (Ceršak entry and Šempeter) are calculated after rescaling and before the benchmarking adjustment.

7.3.5. Benchmarking as proposed in SK

- (254) The Slovak NRA, ÚRSO, proposes in the motivated decision a benchmarking adjustment to reference prices at all exit points of the system. ÚRSO applies benchmarking based on the average tariffs of competing routes involving several EU networks (AT, CZ, DE, HU, IT and PL).
- (255) The Agency notes that it has not been able to fully assess the RPM applied in the SK motivated decision, due to missing transparency on the input parameters to the RPM. ÚRSO explains that the application of benchmarking results in a decrease of the reference prices at exits from EUR 179.4 MWh/day/year to EUR 166.7 MWh/day/year.
- (256) The Agency provided several recommendations in its report on the SK tariff consultation, which are relevant for the application of benchmarking. These points are also summarised as part of the Agency guidance for applying benchmarking in the sub-section below.
- (257) The Agency notes that, as a result of the application of benchmarking, the amount collected by the TSO is systematically lower than the target revenue. In the Report on the final tariff consultation, the Agency noted that the target revenue figure used as an input for the RPM was not established by the NRA. The Agency has not been able to review the state of both these issues at the time of the publication of the NRA motivated decision and of this Report, hence it has not been possible to assess the application of the benchmarking adjustment applied by ÚRSO.

7.3.6. Benchmarking as proposed for the FINESTLAT market integration

- (258) The NRAs of Finland, Estonia and Latvia agreed to set a flat tariff of EUR 142.77 MWh/day/year at all external entry points of the joint FINESTLAT system. This tariff was previously negotiated by the TSOs of the respective networks. The tariff is justified as a benchmarking adjustment.
- (259) The NRAs use as a benchmark tariff the average yearly entry capacity product tariff of all EU countries (with the exception of the Baltic States and Finland) for which an uncertainty margin is applied (standard error).
- (260) The reference price at the entry points is calculated in such a way that the wider objective of the FINESTLAT single natural gas transmission entry-exit system joining the EU common market is taken into account.
- (261) The tariff set at entries aims at preventing a race to the bottom where TSOs of the FINESTLAT region would decrease their entry tariff to attract more flows on their networks. In reality, the concept of benchmarking here serves to realize a kind of equalisation at a regional level. In parallel, an ITC mechanism shares the revenues collected at the entries between TSOs, according to the consumption on their respective networks.
- (262) At last, the common reference price at the entry points is set at a level that is deemed adequate by NRAs to favour the completion and the integration of the FINESTLAT region in the European gas market.

- (263) The Agency has not yet been able to assess the compliance of this approach to benchmarking, as it is related to a number of other elements which are part of the applied RPMs and, more broadly, of the proposed market merger (e.g. ITC mechanism). The Agency notes that these options are not always fully compliant with the NC TAR, and that addressing such mechanisms, is a preliminary step to assess the proposed benchmarking approach.

7.3.7. Agency guidance

- (264) The Agency already issued recommendations regarding the benchmarking adjustments in the Slovakian, Latvian, Estonian and Austrian reports. Although some of these adjustments proposed by the NRAs respond to legitimate problems (regional market integration, avoiding inefficient investment, etc.), the Agency considers that some of them do not correspond to the concept of benchmarking as codified in the NC TAR⁵⁶.
- (265) The Agency considers that explanatory guidelines, such as the EC Staff Working Document on Tariffs for Access to the Natural Gas Transmission Networks⁵⁷, provide sufficient guidance for the implementation of the relevant EU law for tariff benchmarking in case of pipeline-to-pipeline competition. If these guidelines are not followed, the TSO or NRA shall provide an appropriate justification for the alternative benchmarking approach proposed, according to Article 6(4) of the NC TAR, which foresees benchmarking to apply to unique points, namely 'at a given entry or exit point'. The Agency proposes four consecutive steps to apply the benchmarking adjustment⁵⁸.
- (266) First, the assessment should check whether there is effective pipeline-to-pipeline competition, according to Article 13(1) and Recital (8) of Regulation (EC) No 715/2009⁵⁹. The existence of pipeline-to-pipeline competition should be assessed at least by taking into account the expectation that competing systems provide a real choice for transmission users. The assessment should include evidence of effective pipeline-to-pipeline competition, and to which points this applies.
- (267) Second, the assessment should identify the tariffs of such alternative routes. This step implies identifying the competitive level of reference prices. The Agency notes that benchmarking, pursuant to Article 6(4)(a) of the NC TAR, shall be based on comparative values that can be soundly reasoned. The benchmarking adjustment should be based on competing alternative routes only, by including the relevant competing pipelines in its analysis and excluding those that are not in scope, following the analysis described in the previous step.
- (268) Third, the assessment should determine the level of cost-based tariffs in the system. This is a requirement according to Article 13(1) and Recital (8) of Regulation (EC) No 715/2009 and Article 6(4) of the NC TAR. The fact that benchmarking is applied as an adjustment to the reference prices resulting from the RPM, implies that the starting point for the application of benchmarking shall be

⁵⁶ In the case of AT there are two types of benchmarking applied (see Section 7.3.4).

⁵⁷ In particular its Section 2.2.5.

⁵⁸ These steps are based on EC Staff Working Document on Tariffs for Access to the Natural Gas Transmission Networks under Article 3 of Regulation 1775/2005 and have been initially published for the Slovak tariff consultation report (http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/Agency%20report%20-%20Analysis%20of%20the%20consultation%20document%20for%20Slovakia.pdf)

⁵⁹ If this is not the case, Article 6(4)(a) of the NC TAR for benchmarking shall be referred.

the reference prices compliant with the requirement of cost-reflectivity, pursuant to Article 7(b) of the NC TAR. The cost-based tariffs should therefore refer to efficiently incurred cost and should be derived according to the proposed RPM.

- (269) Fourth, benchmarking should be applied to IPs only. According to Article 6(4)(a) of NC TAR, benchmarking shall consist in an adjustment applied at a *'given entry or exit point'*. The Agency notes that this has to be interpreted as applying benchmarking at cross-border points only (and possibly only at points related to a certain route), as pipeline-to-pipeline competition mostly affects the utilisation of a system for transit purposes.

7.4. Inter-TSO compensation mechanisms

- (270) The NC TAR refers, in Articles 10 and 11, to an application of the RPM which requires the implementation of an inter-TSO compensation mechanism ('ITC').

7.4.1. Scope of application of ITCs

- (271) Article 10 of the NC TAR refers to *'rules for entry-exit systems within a Member State where more than one transmission system operator is active'*. The Article foresees two different applications of the RPM: either *i)* the same RPM is applied jointly by all TSOs within an entry-exit system within a MS, or *ii)* the RPMs (the same or different ones) are applied separately by each TSO within an entry-exit system. In the latter case, Article 10(3) foresees the application of an ITC to avoid cross-subsidisation between TSOs.
- (272) A number of MSs have set up ITCs:
- AT: E-Control proposed to apply an RPM jointly to Gas Connect Austria ('GCA') and Trans Austria Gasleitung ('TAG') together with an ITC to ensure the redistribution of collected revenues in the Austrian gas system;
 - BE-LUX have implemented a common entry-exit zone with an ITC between the concerned TSOs, Fluxys Belgium and Creos. The Agency notes that LUX is currently exempted from the application of the NC TAR⁶⁰;
 - DE: The joint application of the same RPM within one entry exit system requires an ITC. This mechanism guarantees that each of the 17 TSOs earns its revenue cap;
 - ES: CNMC has proposed to apply an RPM jointly to transmission companies (Enagás Transporte, S.A.U., Enagás Transporte del Norte, S.A.U., Planta de Regasificación de Sagunto, S.A. and Reganosa) together with an ITC to ensure the redistribution of collected revenues in the Spanish gas system. In the public consultation launched in February 2020, the proposal is to include the ITC mechanism in the general settlement procedure⁶¹;
 - FR: With the elimination of the North-South link as a bookable point, which was located within the GRTgaz system, the associated revenues have to be recovered from other points of the French system, including the Pirineos VIP, which is in the Teréga's zone. The ITC consists of Teréga paying back to GRTgaz a part of revenues collected at the Pirineos VIP;

⁶⁰ According to Article 49 of Directive 2009/73/EC and Article 2(2) of the NC TAR, Luxembourg is exempted from the application of the NC TAR.

⁶¹ In Spain, a settlement mechanism is in place that applies to the revenue from regasification, transmission and distribution. Any under- or over-recoveries related to any of these activities are distributed to all activities.

- The Baltic MSs and Finland (FINESTLAT and LT) have ongoing discussions for setting a zone merger that will involve common elements for the setting of network tariffs, including an ITC applied to the revenue collected at entry points of the zone. EE, FI and LV have already implemented the market merger;
- HU: An ITC was proposed at the time of launching the final tariff consultation. However, shortly after the entry into force of the new ITC, the two TSOs operating in the HU network merged⁶²;
- IT: The joint application of the same RPM within one entry exit system requires an ITC. This mechanism guarantees that each TSO earns its share of allowed revenue;
- NL: The BBL Interconnector and GTS implemented an inter-TSO compensation. This ITC will transfer 25% of BBL's revenues not stemming from long term contracts to GTS. After that, between 2021-2024, BBL will pay a compensation equal to 25% of its entire revenues. The inter-TSO compensation will first be included in the tariffs for the period 2022.

- (273) Based on Article 10(3) of the NC TAR, an effective ITC is established with the aim to:
- Prevent detrimental effects on the transmission services revenue of the transmission system operators involved;
 - Avoid cross-subsidisation between intra-system and cross-system network use.
- (274) Article 11 of the NC TAR refers to '*Rules for entry-exit systems covering more than one Member State where more than one transmission system operator is active*'. The article does not make reference to an ITC, leaving open the possibility of broader means for cooperation, which may not lead to an ITC or the application of the same RPM. Yet, the principles of Article 10 of the NC TAR do apply and if an ITC is established, the principles described under Article 10 can be implemented under Article 11.
- (275) The Agency suggests that an ITC shall be set up in cases where several TSOs set tariffs jointly, either by implementing a single RPM or by removing intra-zone IPs. For this reason, the Agency understands that the same issues trigger an ITC implementation within as well as across MSs. Consequently, the same consultation requirements that are applicable under Article 10(5) of the NC TAR should be applicable under Article 11 of the NC TAR. The requirement to consult the ITC is consistent with the requirement to consult on the RPM and the overall transparency requirements of the NC TAR.

7.4.2. Scope of application of ITCs between MSs and interconnectors

- (276) As mentioned in the list above, the Agency remarks that a further case of an ITC has been implemented between GTS and BBL. The Agency's report on the NL final consultation invited ACM to consider whether the implementation of an ITC would be appropriate. This is because in 2018 GTS had removed the Julianadorp exit IP connecting the NL network to the BBL interconnector. The revenues associated with this point were socialised to all other points of the network, thus generating a cross-subsidy between users of the BBL interconnector and users of the rest of the Dutch network. The Agency encouraged ACM to assess the effect of the removal of the Julianadorp IP on cross-subsidisation, paying attention to the effect on different network users.

⁶² The merger happened in October 2019, a couple of days after the entry into force of the new ITC.

- (277) The Agency acknowledges that an ITC has been proposed for this point as a voluntary mechanism. By the end of 2020, the first compensation will be paid by BBL. This will be equal to 25% of BBL's revenues not stemming from long-term contracts. After that, between 2021-2024, BBL will pay a compensation equal to 25% of its entire revenues. The amount of the ITC will therefore vary from year to year, as it is dependent on BBL's revenue flows.
- (278) Regarding the procedure for setting the mechanism, ACM has clarified to the Agency that the ITC is based on negotiations between BBL, GTS and representative organisations of shippers. There is no direct link between the ITC and the missing revenue from Julianadorp.
- (279) The Agency acknowledges that it is not clear how the NC TAR requirements on the application of an ITC apply to the Dutch network after Brexit. At the same time, the Agency notes that the requirement to implement an ITC, pursuant to Article 10(3) of the NC TAR, follows the potential cross-subsidisation effect resulting from entry-exit zones where TSOs may under-recover or over-recover. An ITC is a necessary tool to correct this recovery of revenue. The Agency understands that this is the case for the Dutch entry-exit zone. The application of the same RPM to a TSO and an interconnector, or the removal of a point, can potentially lead to cross-subsidisation between both entities. For this reason, the Agency understands that the obligation to implement an ITC under Article 10(3) is also applicable to entry-exit systems covering one MS and an interconnector, or where an entry-exit zone expands beyond the borders of a MS. Consequently, the same consultation requirements that are applicable under Article 10(5) should be followed to implement an ITC.
- (280) In addition, the Agency understands that the NRA has the competence to set such a mechanism. According to Article 41(6)(a) of Directive 2009/73/EC, underpinned by Recitals (30), (32) and (33) of the same Directive, Article 13 of Regulation (EC) 715/2009 and Article 27(4) of the NC TAR, the NRA has the competence to set the tariffs, or the methodologies used to calculate them. As an ITC is an integral part of such a methodology, the competence to decide on whether an ITC should be established also lies with the NRA.

7.4.3. Agency guidance on the rules for setting compensations between TSOs

- (281) Article 10 of the NC TAR provides several guidelines for the implementation of an ITC, which should aim at:
- Preventing detrimental effects on the transmission services revenue of the TSOs involved;
 - Avoiding cross-subsidisation between intra-system and cross-system network use.
- (282) In order to assess the compliance of the RPM with the requirement in Article 7 of the NC TAR, and to assure the consistency with the requirements on the ITC, the Agency has provided the following three steps as guidelines for setting up ITC mechanisms in case of a regional market.
- (283) First, the transmission assets jointly used within the regional market zone and their associated costs should be identified to ensure an acceptable level of cost-reflectivity at a regional level. Such an assessment should be based on a forecast of the flows across the merged market zone, and these costs should be logged into the ITC mechanism.

- (284) Second, the ITC mechanism should ideally aim at allocating these costs in a manner that is in line with the distribution of the benefits of the market integration. In this way, the ITC mechanism would be sustainable, as it could be used both to allocate the costs of the existing infrastructure and to provide revenues for new investments. In addition, the cost-reflectivity principle promoted by the NC TAR would be safeguarded, since this kind of mechanism would allow to allocate efficient costs (and exclude sunk costs of over-dimensioned infrastructures) to the beneficiaries.
- (285) Third, adjust the domestic exits of each TSO within the regional market, to allow them to recover their allowed or target revenue from domestic users, after the contribution of cross-border users to the ITC mechanism has been established.

7.5. Biogas discount to transmission

- (286) The Agency identified in the national consultations that both BE and DE proposed a 100% discount for biogas entry points to the network. In the case of BE, this discount was eliminated in the motivated decision, while BNetzA made it applicable for its final tariffs.
- (287) The German motivated decision has been justified on the basis of the lower costs associated with entries from biogas (as they are close to demand centres, compared to IPs), and on the basis of climate change mitigation policies.
- (288) While the application of climate change mitigation policies is a desirable outcome, the NC TAR requires that the same RPM shall be applied to all entry and exit points in a given entry-exit system according to Article 6(3) of the NC TAR, and does not allow for any adjustments other than those listed in Article 6(4) of the NC TAR. The Agency invited NRAs to consider if the support to renewable gasses could be met in a different way than a discount on the entry tariff, to become compliant with the relevant legal requirements.
- (289) The Agency advocates to develop an approach at a European level, after evaluating whether this measure was effective in supporting decarbonisation and climate change mitigation policies.

7.6. Revenue reconciliation

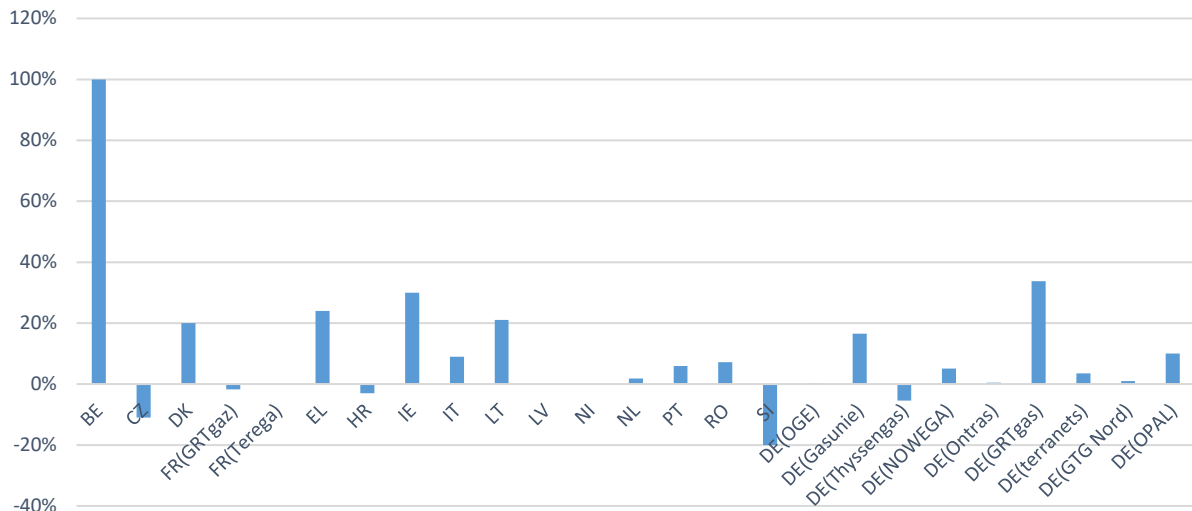
- (290) The reconciliation of the TSO revenue is a relevant and crucial aspect of its tariffication system.

7.6.1. Information regarding the reconciliation of the regulatory account

- (291) Article 30(1)(b)(iv) of the NC TAR requires that the NRA/TSO publishes the following information regarding the reconciliation of the regulatory account. This information should be published before the tariff period:
- The actually obtained revenue, the under- or over-recovery of the allowed revenue;
 - The part thereof attributed to the regulatory account;
 - If applicable, sub-accounts within such regulatory account;
 - The reconciliation period and the incentive mechanisms implemented.

- (292) Figure 8 below shows the regulatory account as a share of the allowed revenue per MS and TSO⁶³. The Agency notes that the regulatory account of the BE TSO is exceptionally large compared to the other TSOs.

Figure 8: Regulatory account as a share of the allowed revenue, per MS/TSO.



Note I: Positive (negative) values represent over-recovery (under-recovery) of allowed revenues.

Note II: The following TSOs have not published the value of the regulatory account: Gascade, Fluxys TENP, Bayernets, Ferngas, Fluxys Deutschland, NEL

- (293) Regarding the BE case, the Agency highlighted that according to Article 17 of the NC TAR, under- and over-recoveries should be minimised and significant differences between the tariffs of two consecutive tariff periods should be avoided. Additionally, Article 20(3) of the NC TAR requires that the reconciliation aims at reimbursing to the TSO the under-recovered amount and at returning to the network users the over-recovered amount. The Agency notes that CREG has laid out a scheme to gradually reconcile the regulatory account down to EUR 100 million by the end of the regulatory period.

7.6.2. Reconciliation mechanisms for non-transmission services

- (294) The reconciliation of non-transmission services is an important aspect of the overall design of the tariff methodologies in order to avoid cross-subsidisation across users of the network.
- (295) The NC TAR does not set requirements for neither the final consultation nor the motivated decision to describe the mechanisms for the reconciliation of the regulatory account. At the same time, the Agency considers that an assessment of such mechanism is key for proving the compliance of the RPM with the requirements of cost-reflectivity and avoidance of cross-subsidisation and of the non-transmission services with the principles of cost-reflectivity, as stated in Articles 7 and 4(4) respectively.

⁶³ According to Article 17(3) of the NC TAR, no reconciliation shall occur under a price cap regime. TSOs operating under a price cap regime are therefore not represented in the figure.

- (296) The reconciliation of non-transmission revenue should be conducted in a way that minimises the cross-subsidisation with the rest of TSO revenue, mainly with the transmission revenue that is allocated using the RPM.
- (297) The NC TAR prescribes several principles for the reconciliation of the regulatory account, which are applicable also to the reconciliation of non-transmission services. Article 19 of the NC TAR foresees that the under- or over-recovery shall be attributed to the regulatory account and each transmission system operator shall use one regulatory account.
- (298) Furthermore, based on Article 17(3) of the NC TAR, non-transmission services revenue may be reconciled where the TSO functions under a non-price cap regime applying the following principles:
- The under- or over-recovery of the transmission services revenue shall be minimised having due regard to necessary investments;
 - The level of transmission tariffs shall ensure that the transmission services revenue is recovered by the TSO in a timely manner;
 - Significant differences between the levels of transmission tariffs applicable for two consecutive tariff periods shall be avoided to the extent possible.
- (299) Following these articles, the Agency recommends that non-transmission services are reconciled using sub-accounts to avoid cross-subsidies between the specific beneficiaries of the non-transmission services and all the network users.

7.7. Cost allocation assessment

- (300) The NC TAR foresees two instruments to assess the cost-reflectivity and the level of cross-subsidisation resulting from the proposed RPM: the comparison with the CWD methodology and the cost allocation assessment ('CAA'). In the case of the CAA, the assessment aims at indicating the degree of cross-subsidisation between intra-system and cross-system users⁶⁴.
- (301) The CAA compares, for the categories of intra-system and cross-system users respectively, the ratio between the revenue collected from a category of network users and the cost drivers attached to this category. The NC TAR is relatively flexible in terms of choice of cost drivers⁶⁵.
- (302) When choosing the cost drivers for the CAA, the Agency finds it relevant to distinguish between the physical cost drivers of the network, which relate to the physical characteristics of the network that make it possible to extrapolate its cost (technical capacity, distance), and the cost driver of the RPM, which is the charging unit for the use of the network (e.g. contracted capacity).

⁶⁴ Article 3(8) of the NC TAR: '*intra-system network use*' means transporting gas within an entry-exit system to customers connected to that same entry-exit system.

Article 3(9) of the NC TAR: '*cross-system network use*' means transporting gas within an entry-exit system to customers connected to another entry-exit system.

⁶⁵ For the capacity based charges: technical or forecasted booked capacity, and optionally combined with distance. For the commodity based charges: amount of gas flows and optionally combined with distance.

- (303) The Agency notes that in the consultations, the CAA was often calculated using the cost driver of the RPM. In many cases this was often only the cost driver of booked capacity. Without taking into account the distance, the CAA can only reflect marginal differences that exist in the level of bookings (e.g. forecasted bookings at entries and at exits or for domestic points and IPs), or the impact of adjustments on the various groups of users (for instance, a given category can benefit more from a discount granted to interruptible capacities or to storage facilities).
- (304) The Agency notes that physical cost drivers should be taken into account for the CAA calculation, in order to provide information about the degree of cross-subsidisation between intra-system and cross-system users related to the physical reality of the network (and not only to the cost drivers used to charge users).
- (305) The Agency recommends that the CAA is calculated in the following way:
- When performing the capacity-based CAA pursuant to Article 5(1) of the NC TAR, the NRA/TSO shall select from the list of cost drivers presented in Article 5(1)(a) of the NC TAR the cost drivers more closely related to the proposed RPM. For example, if the RPM uses capacity and distance as cost drivers, the CAA should use capacity and distance as cost drivers⁶⁶;
 - As a best practice, the Agency recommends the NRA/TSO to complete this calculation pre- and post- the application of adjustments;
 - As a best practice, the NRA/TSO shall additionally include for the capacity-based CAA referred to in Article 5(1)(a) of the NC TAR, the CAA result for the CWD methodology computed pursuant to Article 26(1)(a)(vi) of the NC TAR, using as cost drivers forecasted contracted capacity and distance. This should allow assessing the relevance of distance as a cost driver in cases where distance is not a cost driver to the proposed RPM.
- (306) The Agency understands that the requirement of justifying the result of the CAA is relevant for the CAA calculated for the RPM and the adjustments used to derive the final tariffs. At the same time, the Agency notes that the comparisons of the proposed CAA calculation provide relevant insights for the assessment of the methodology.

7.8. Capacity overrun fees

- (307) The NC TAR does not refer to capacity overrun fees, however the Agency understands that these fees are proposed in a number of consultations (CZ, ES, FR, HR, IE). These fees can be defined as an additional tariff or as a penalty applied when a shipper uses more capacity than it has booked.
- (308) The Agency understands that this subject is hybrid, at the limit of the NC TAR and the NC BAL. Capacity overrun usually happens at domestic exits when actual consumption exceeds shippers' forecasts. In this case, a charge paid for the imbalances can serve as a penalty paid via transmission tariffs, which explains why NRAs deal with these issues through the NC BAL.

⁶⁶ Should the RPM use cost drivers others than capacity and distance, the CAA could be additionally calculated based on these cost drivers. This assessment could provide a more accurate assessment of the cross-subsidisation effect resulting from the RPM.

- (309) In cases where overrun fees are determined by the transmission tariff and not as a balancing charge, the Agency understands that these penalties are part of the transmission revenue, but they cannot be anticipated.
- (310) The Agency recommends as a best practice that:
- When setting these penalties, in particular if they apply at cross-border IPs, the NRAs should follow a reasoning, similar to the one used for short-term multipliers, as the capacity used in excess of the booked capacity can be considered to have been booked in the very short term. They should strike the right balance not to be detrimental to market integration, while at the same time providing an incentive for shippers not to jeopardise the security of the system;
 - The collected revenue should be given back to the network users by taking the collected revenues into account when calculating the regulatory account (minus possible costs associated to the use of capacity that could not be anticipated). Otherwise, TSOs would have a perverse incentive to artificially create congestions that would generate additional revenue for them. It should be noted that, in cases where NRAs deal with these situations through the NC BAL, this risk is controlled by the principle of financial neutrality of the TSOs and the collected revenues are given back to the network users.

8. Transparency requirements regarding the determination of allowed and target revenues

8.1. Publication requirements

- (311) NC TAR required greater transparency on the methodologies, initial values, parameters and the consistent publication of the key inputs underpinning the allowed and target revenues of the gas TSOs.
- (312) Allowed and target revenues are calculated for a given regulatory period, which generally lasts between three to five years. The allowed and target revenues are subject to national regulation in the EU and ensure that the regulated asset base of the gas TSOs, which amounts to a total of approximately EUR 60 billion for the value of transmission assets in the EU(calculated for 21 Member States⁶⁷), is paid for in a transparent and efficient manner.
- (313) Improved transparency regarding the determination of TSOs' revenues was one of the main concerns of market stakeholders during the development of the NC TAR. Since the NC TAR came into force in April 2017, NRAs have responded to this demand by publishing more information and significantly improving the explanations provided on their methodology of determining TSOs' allowed and target revenues.
- (314) The table below summarises the extent to which each MS has achieved a consistent publication of values and of the methodology used in the calculation of TSOs' revenue (Article 30(1)(b)(iii) of the NC TAR) with a view to identify best practices. The data collection is recent to the publication date of this Report and reviews whether the NC TAR and the Agency's *Article 34 Report*⁶⁸ has triggered additional improvements.
- (315) The table reviews the currently applicable revenue methodologies in the EU MSs in terms of transparency and publication requirements, and provides a high-level assessment of the accessibility of its key components.

⁶⁷ A few countries are not taken into account for different reasons (no RAB is published in Slovakia; the Estonian NRA did not answer to this questionnaire; the British and Bulgarian tariff decision processes were not finalized at the time of publication of this Report).

⁶⁸ https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20Methodologies%20Target%20Revenue%20of%20Gas%20TSOs.pdf

Country	Regulatory period (from-to)	Published by (NRA/TSO)?	Description of the methodology	Values of the parameters	Values of costs and expenditures	Comments and missing elements
Austria	2020 - 2024	NRA				The methodology to determine the initial (opening) value of the assets is not provided.
Belgium	2020 - 2023	TSO				Some detailed parameters and values are not provided (costs of equity, cost of debt, detailed values per asset type ⁶⁹).
Bulgaria	2017 - 2020	TSO				The evolution of the value of the assets is not explained.
Croatia	2017- 2021	TSO				
Czech Republic	2016 - 2020	NRA				Some parts of the methodology to determine the TSO's revenue are only available in Czech language. Detailed values per asset type are not provided.
Denmark	2019-2022	TSO				A non-profit principle applies to the Danish TSO, by law. Therefore, some parameters are not applicable in the calculation of the calculation of the TSO's revenue.
France	2020 - 2023	NRA				
Germany	2020	TSO				The required information is not published for one TSO (among 17) for legal and transitory reasons. Some financial parameters are not relevant in the German case (e.g. the WACC, cost of equity and actual costs of debt are calculated separately instead of a common forecasted rate). Detailed values per asset type are not provided by all TSOs.
Greece	2019 - 2022	TSO				Detailed values per asset type are not provided.
Hungary	2017 - 2021	NRA				The methodology to determine the TSO's revenue is partially published. Some parameters and values are missing (cost of debt, cost of equity, detailed values per asset type).
Ireland	2017 - 2021	TSO				
Italy	2020 - 2023	TSO				
Latvia	2020 - 2022	TSO				Some data are published only in Latvian (in particular the WACC calculation).
Lithuania	2019 - 2023	NRA				Detailed values per asset type are not provided.
Netherlands	2017 - 2021	NRA				
Poland	2020 - 2022	TSO				Detailed values per asset type are not provided.
Portugal	2020 - 2023	NRA				Detailed values per asset type are not provided.
Romania	2019 - 2024	TSO				The detailed WACC calculation is not explained.
Slovakia	2017 - 2021	TSO				Most of the transparency requirements regarding the calculation of the TSO's revenue are not met, while Article 30 of the NC TAR was supposed to be implemented by 1 st October 2017. According to the Slovakian NRA, the missing data will be published in December 2021 ⁷⁰ .
Slovenia	2020 - 2021	TSO				Detailed values per asset type are not provided.
Spain	2021 - 2026	NRA				
Sweden	2019 - 2022	TSO				

⁶⁹ Aggregated values of main types of assets (pipelines, compressors...) used by NRAs to determine the TSO's revenue.

⁷⁰ 30 days before the next tariff period, as provided by Article 32 of the NC TARp

8.2. Best practices and next steps

- (316) The implementation of the NC TAR has greatly improved the transparency concerning the calculation of TSO revenues in Europe.
- (317) In most countries, the methodology and parameters of the calculation are published in an adequate manner, even if some details are sometimes missing (e.g. detailed values per asset type used by NRAs to determine TSOs' revenue). It is also positive to note that in several countries the level of detail of the information published exceeds the requirements of the network code in order to create clarity and increase the understanding about the regulatory regime.
- (318) The Agency has nevertheless identified some shortcomings, which shows that there is still some room for improvement in transparency:
- In several countries, some information is published only in the national language;
 - The description of the methodology is not always complete;
 - The values of some parameters are missing or are partially published;
 - The initial values of the assets and their evolutions are not always explained;
 - The choice of the parameters to be published in a slightly adapted⁷¹ manner to offer the same standard of transparency when a particular method of calculating the TSOs' allowed revenue is used.
- (319) The Agency, based on its summary table above, highlights the following best practices in terms of the publication of the allowed revenues: Croatia, Denmark, France, Ireland, Italy, the Netherlands, Spain and Sweden.
- (320) In the case of Slovakia, the Agency maintains the recommendation from its Article 34 Report⁷² published on 30 October 2018 and suggests to assess the current methodology against cost-based tariffs. The Slovakian NRA and TSO should include detailed cost data in their publications under Article 30 of the NC TAR, and clarify their role in their tariff setting⁷³. Overall, the current Slovak approach strongly deviates from the requirements of the NC TAR and from the practices applied in the EU MSs in general. According to the Slovakian NRA, the Slovakian TSO will publish all relevant information under Article 30 of the NC TAR thirty days before the next tariff period (starting on 1 January 2022) to reflect how infrastructure costs underlie tariff setting.
- (321) The Agency encourages to eliminate the publication shortcomings and supports the better alignment of the publication practices towards the highest level of transparency.

⁷¹ German TSOs' revenue calculation does not use a theoretical WACC set by the NRA, but builds on actual costs of capital, determined during a reference year prior to the regulatory period and based on accounting data.

⁷² See paragraph 28 of the document:

https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Report%20Methodologies%20Target%20Revenue%20of%20Gas%20TSOs.pdf

⁷³ According to the Slovak NRA – ÚRSO, the Slovakian TSO will publish all relevant information under Article 30 of the NC TAR thirty days before new tariff period starts, as of 1 January 2022, to reflect how cost-based drivers reflect the tariff setting.

(322) The Agency already recommended, as a good practice, in its Article 34 Report to change the list in Article 30(1)(b)(iii) of the NC TAR, so that the publication by the NRAs or TSOs becomes better structured and more informative. The suggested structure is shared below once more, and the Agency invites the NRAs or TSOs to follow this structure in the future to provide a more comprehensive publication of the revenues and their methodologies as follows:

- (1) A description of the methodology, including at least a description of:
 - (a) The overall methodology, such as revenue-cap, hybrid, cost-plus or tariff benchmarking;
 - (b) The methodology to set the regulated asset base;
 - i. Methodologies to determine the initial (opening) value of the assets;
 - ii. Methodologies to re-evaluate the assets;
 - iii. Explanations of the evolution of the value of the assets;
 - (c) The methodology to set the cost of capital;
 - (d) The methodology to determine the TOTEX or, if applicable, OPEX and CAPEX;
 - (e) The methodology to determine the efficiency of the cost, if applicable;
- (2) The values of the parameters:
 - (a) Cost of equity and cost of debt or weighted average cost of capital in percentages;
 - (b) Depreciation periods in years;
 - (c) Efficiency targets in percentages;
 - (d) Inflation indices;
- (3) The values of costs and expenditures that are used for setting the allowed or target revenue in the local currency and in Euro of:
 - (a) The regulated asset base per asset type.
 - (b) The depreciation per asset type;
 - (c) The cost of capital;
 - (d) Operational expenditures.

(323) In the second half of the year 2020, the Agency will focus its work on the allowed and target revenues as requested by the Madrid Forum of October 2019 and may publish additional data in this context.

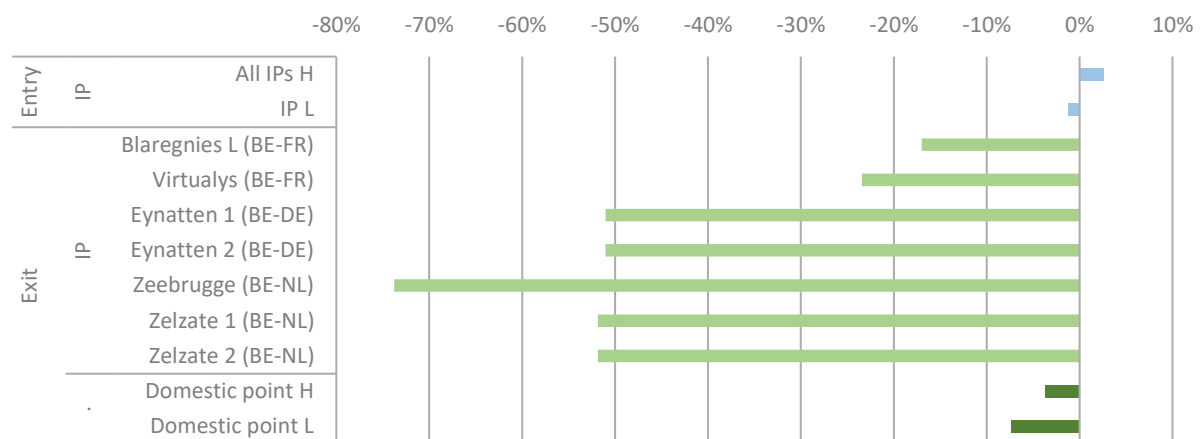
Annex I: Percentage variation in transmission tariffs

1. Disclaimer

- (324) The following Annex provides a comparison, per Member State, between the tariffs calculated following the implementation of the NC TAR rules and the tariffs applicable in the preceding tariff period in an analysis that is limited in breadth and scope. The analysis builds on the tariffs published in the relevant motivated decisions.
- (325) The implementation of the NC TAR rules can impact transmission tariffs in several ways, including the following:
- i. a change in the applied RPM,
 - ii. changes in the transmission revenues that are an input to the RPM,
 - iii. changes in contracted capacity that is an input to the RPM
 - iv. changes in the entry-exit split,
 - v. changes in the capacity-commodity split,
 - vi. adjustments pursuant to Article 6(4), if applicable,
 - vii. changes in the reconciliation of under- and over-recovery of revenues,
 - viii. market mergers
- (326) The importance of these changes will vary from country to country, depending on the specifics of the methodology applied. The Agency considers that most of these changes were well reflected in the Agency Reports and are identified in the country sheets, available in the second volume of this Report.
- (327) The changes in the RPM, resulting from the application of the NC TAR are just one factor potentially leading to tariff changes. When a new RPM is introduced, for some entry- and/or exit points the tariffs will increase and for some points the tariffs will decrease. In the graphs of, for example, Portugal and Belgium, one can experience that all tariffs decrease. In the graphs of, for example, Denmark, the Netherlands, and Latvia one can see the opposite: all tariffs increase. These effects are not solely the result of the implementation of a new RPM, instead they are the result of multiple factors. It is not possible to draw conclusions about the changes in tariffs solely relating to the implementation of the RPM; a number of factors external to the NC TAR can be relevant to this analysis. To limit the complexity of this comparison, this Annex has a limited breadth, and should be read together with the findings identified in the country sheets, available in the second volume of this Report.
- (328) This Annex includes tariffs applicable for a limited number of MSs that finalised their motivated decisions before the publication of this Report or are close to issue their motivated decision and agreed to be included in the analysis. These are the following MSs: BE, CZ, DE, DK, EE, FR, EL, HR, HU, IE, IT, LV, LT, NL, PL, PL Yamal, PT, RO, SI, SK. This means that the analysis is limited in scope.
- (329) The comparison represents entry points (IPs and LNG), and exit points (domestic exits and IPs) separately for each entry-exit system included in the analysis. The figures present absolute variation in percentage per entry and exit point within a given MS.

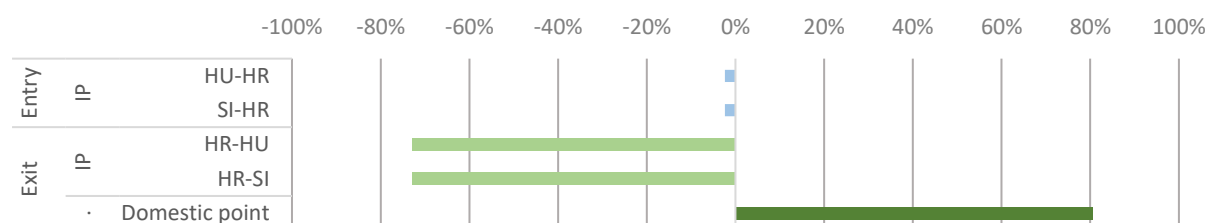
- (330) As explained above, and given that more features should be controlled in this analysis, the Agency adds for each country analysis as explanatory note the following items:
- the change transmission revenue⁷⁴,
 - the change in the capacity-commodity split
 - the tariff year when of the first tariffs calculated based on the NC TAR, and the preceding year (where tariffs were not calculated based on the NC TAR).
- (331) The Agency underlines that the full assessment of the tariff methodology is the best way to understand the evolution of tariffs.
- (332) The following MSs could not be included in the comparison as they have not yet published a motivated decision pursuant to Article 27(5) of the NC TAR, nor could provide tariff values that would be reasonably stable and hence acceptable for this analysis: BG, ES, FI, GB.

2. Belgium, 2019 - 2020



- (333) Change in the allowed/target revenue for transmission services: -8.2%. This change factors in the reconciliation of the regulatory account for tariffs applicable for 2020.
- (334) The capacity-commodity split changed from 95% - 5% (2019) to 97% - 3% (2020).

3. Croatia, 2020 - 2021



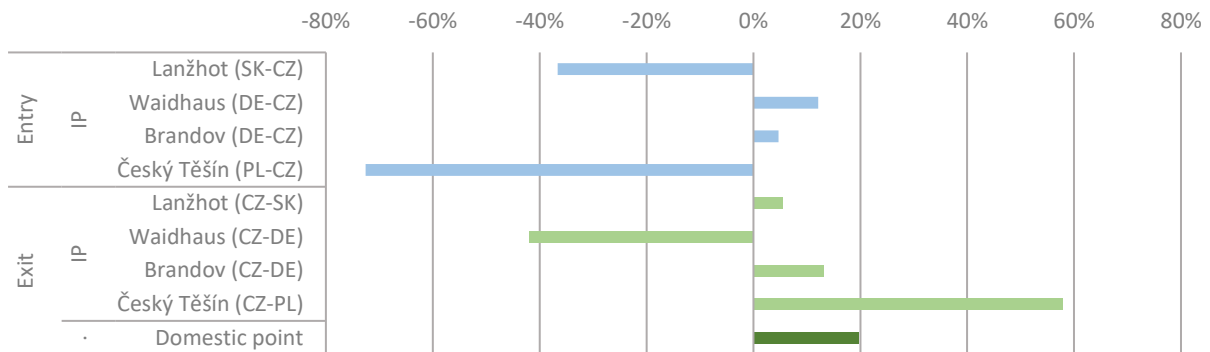
- (335) There is no entry from LNG in 2020. In 2021 the entry tariff for the LNG entry is 4.98 €/kWh/h/y.

⁷⁴ In some cases, the only the change in allowed or target revenue is reported. The transmission revenue includes capacity, and where relevant commodity revenue.

(336) Change in the allowed/target revenue for transmission services: 2.37%.

(337) The capacity-commodity split changed from 90% - 10% (2019) to 100% capacity tariffs (2020).

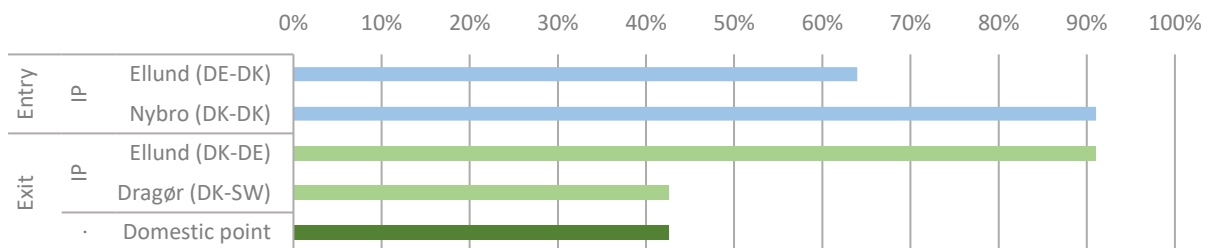
4. Czech Republic, 2019 - 2020



(338) Change in allowed/target revenue: 46.89%.

(339) The capacity-commodity split changed from 97% - 3% (2019) to 93% - 7% (2020).

5. Denmark, 2019 - 2020



(340) Change in the total cost base: 10%.

(341) The capacity-commodity split changed from 49.6% - 50.4% (2019) to 70% - 30% (2020).

6. Estonia, 2018 - 2020

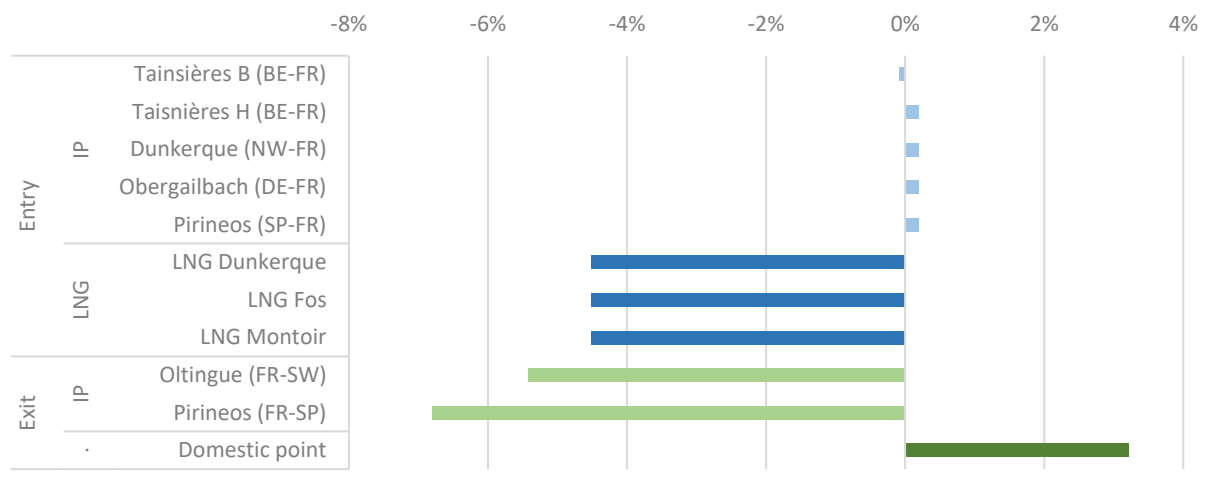
(342) Up to 1 January 2020 there were only commodity based exit tariffs at domestic points and tariffs at IPs with RU and LV. The 2019 tariff Price for the exit to RU was 0.035 €/MWh, and tariff for domestic exit points was 2.461 €/MWh.

(343) Starting on 1 January 2020, the NRA applies capacity based tariffs at the points to RU with RU (Narva, Värskä and Luhamaa). The Agency has not been able to confirm whether tariffs at domestic points are capacity based. The exit tariff to RU is 0.00652 €/MWh, and the tariff for domestic exits is 0.05552 €/MWh.

(344) Tariffs at IPs within the FINESTLAT zone are set to zero (Paldiski-Inkoo EE-FI and Karksi EE-LV).

(345) Change in allowed/target revenue: 74%.

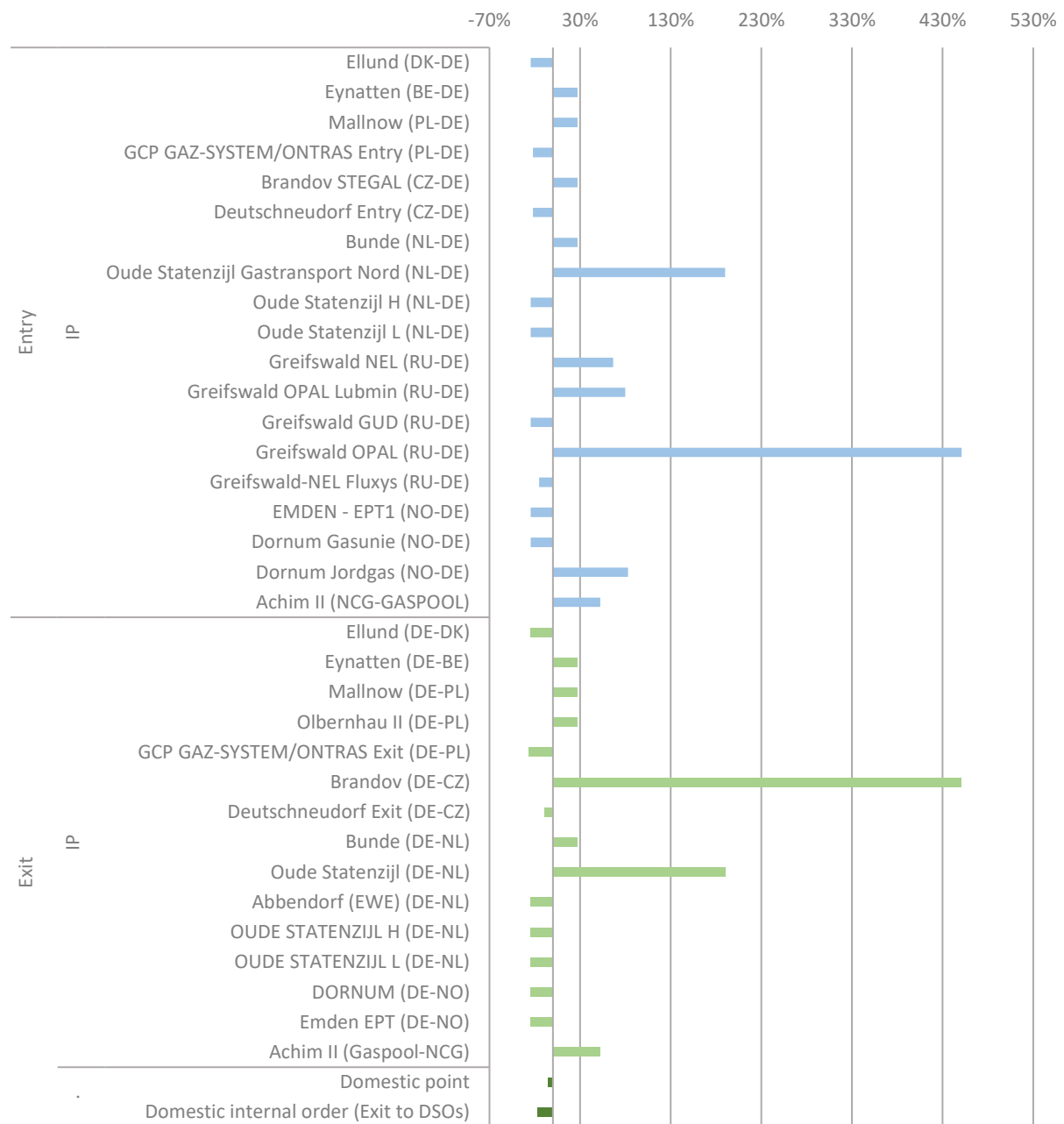
7. France, 2019 - 2020



(346) Change in the allowed/target revenue for transmission services: -1.63%.

(347) No change in the capacity-commodity split (100% capacity tariffs).

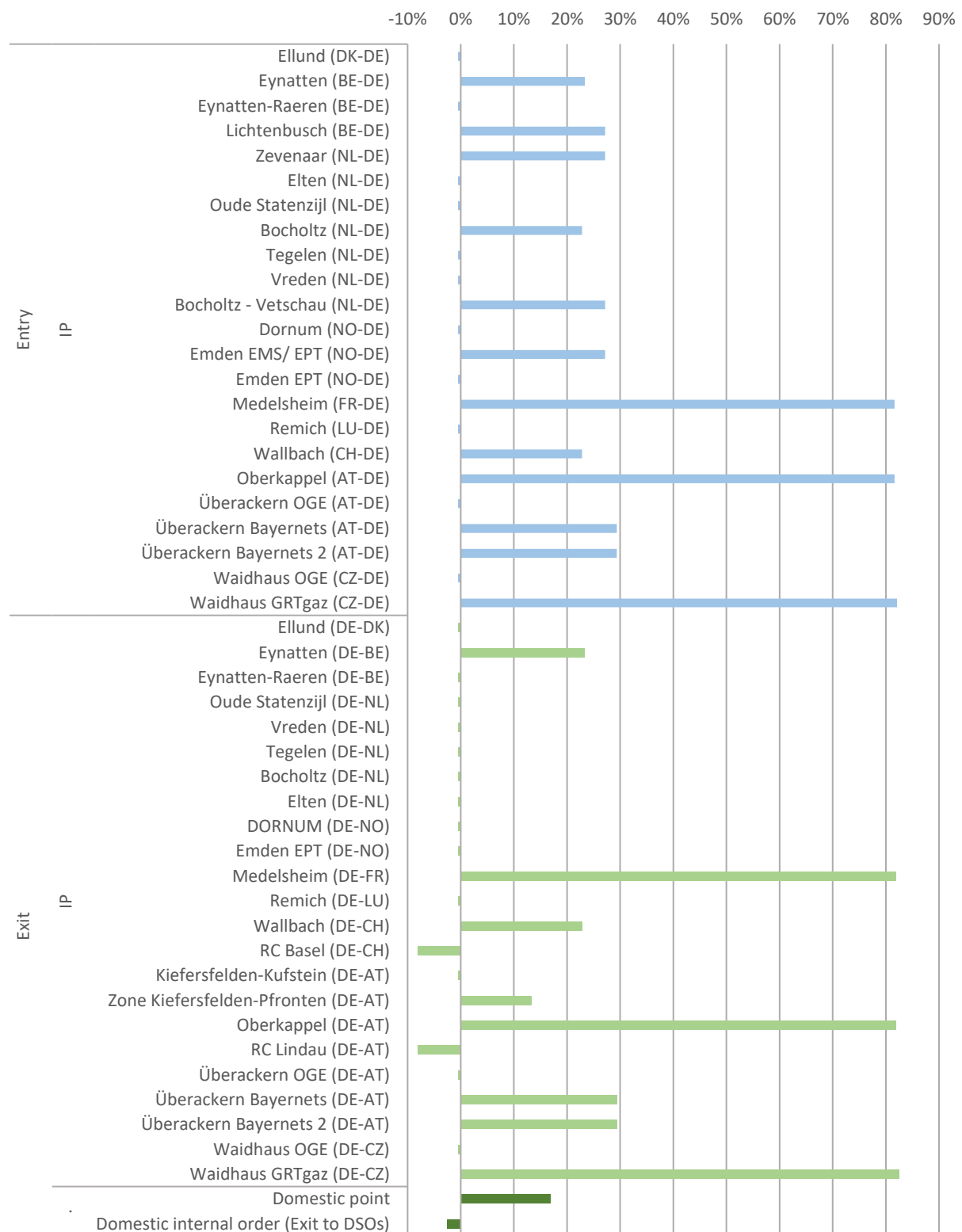
8. Germany (Gaspool), 2019 - 2020



(348) Change in the aggregated allowed/target revenue: 29.20%.

(349) No change in the capacity-commodity split (100% capacity tariffs).

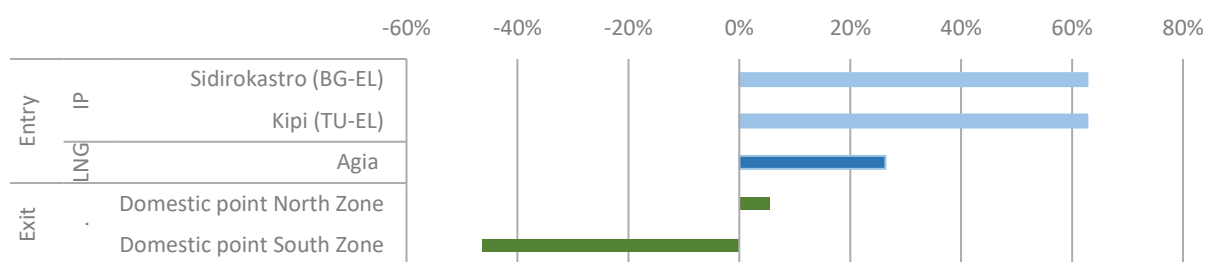
9. Germany (NCG), 2019 - 2020



(350) Change in the aggregated allowed/target revenue of all TSOs: 3.47 %.

(351) No change in the capacity-commodity split (100% capacity tariffs).

10. Greece, 2019 - 2020



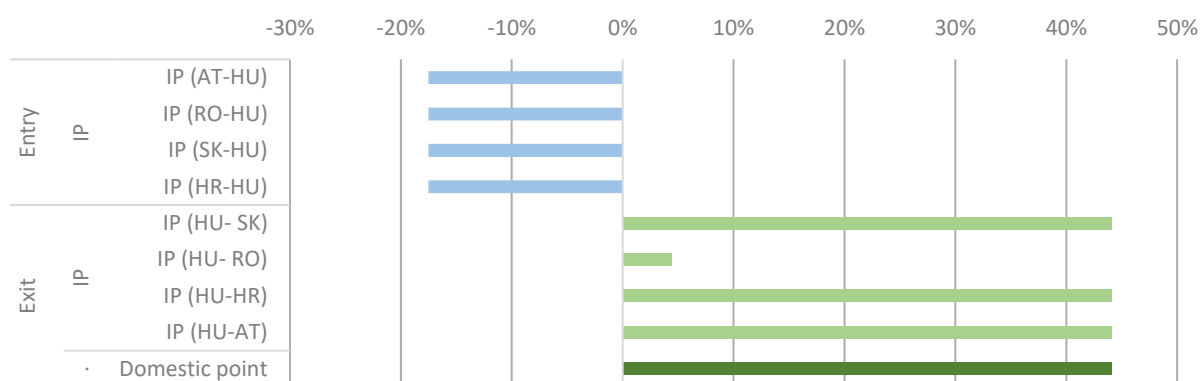
(352) The RPM changes as a result of the implementation of the NC TAR. The RPM applicable in 2020 was based on a two clusters for the North and South Zones.

(353) The RPM additionally equalised the Sidirokastro and Kipi entry points.

(354) Change in the allowed/target revenue for transmission services: -4.65%.

(355) The capacity-commodity split changed from 80% - 20% (2019) to 100% capacity tariffs (2020).

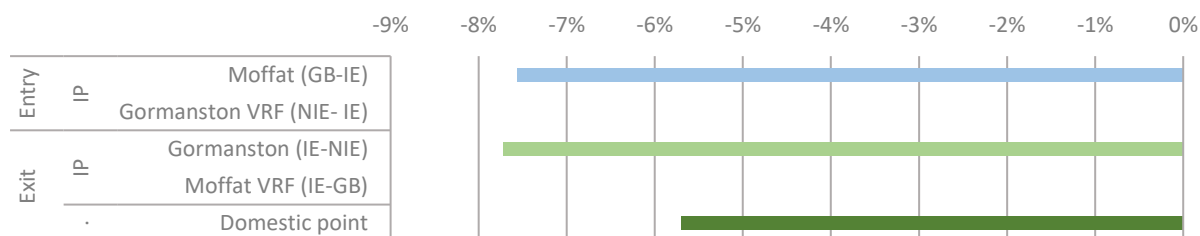
11. Hungary, 2018/2019 - 2019/2020



(356) Change in the allowed/target revenue for transmission services: 30%.

(357) The capacity-commodity split changed from 90% - 10% (2019) to 84% - 16% (2020).

12. Ireland, 2019 - 2020.

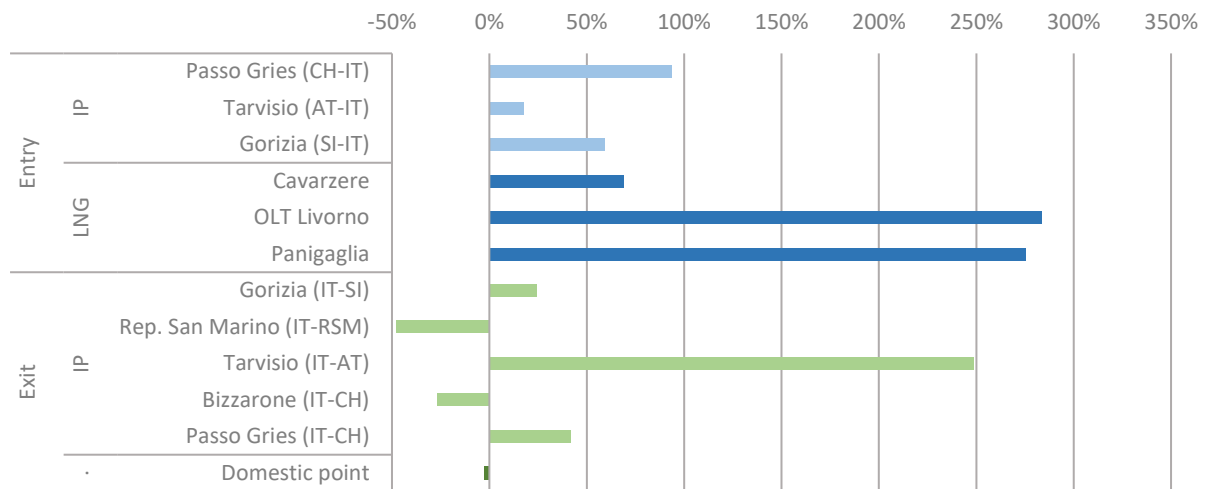


(358) In 2019, the tariff was zero for the IPs Gormanston VRF (entry) and Moffat VRF (exit). In 2020 the tariff were 1.562 and 6.001 €/kWh/h/y respectively.

(359) Change in the allowed/target revenue for transmission services: 2.39%.

(360) The capacity-commodity split of 90% - 10% did not change between 2019 and 2020.

13. Italy, 2019 - 2020



(361) To provide a meaningful comparison, the changes in the tariffs for domestic exits are based on weighted averages calculated for 2019 and 2020, given the different scope of the RPM and clustering approaches. The average price paid by domestic users is determined by considering:

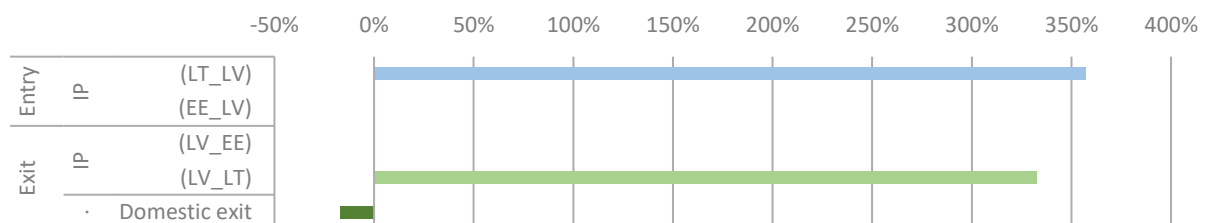
- For 2019: an average, per delivery point, of the costs attributed to national network exit points (NOC North-West, NOR North-East, CEN Central, SOR Central-South-East, SOC Central-South-West, MER – South) and the costs attributed to regional network delivery points;
- For 2020: an average of the domestic exit tariff (which, given the different scope of the RPM, includes both the costs attributed to the national and the regional networks).

(362) Change in the allowed/target revenue for transmission services: 2.97%

(363) The capacity-commodity split changed from 84% - 16% (2019) to 85% - 15% (2020).

(364) The values in paragraphs (362) and (363) have been determined by considering, for year 2019, a monetization of the quantity of gas that had to be provided in-kind by users. From year 2020, such gas is monetized and it is part of the commodity-based transmission revenues.

14. Latvia, 2019 - 2020



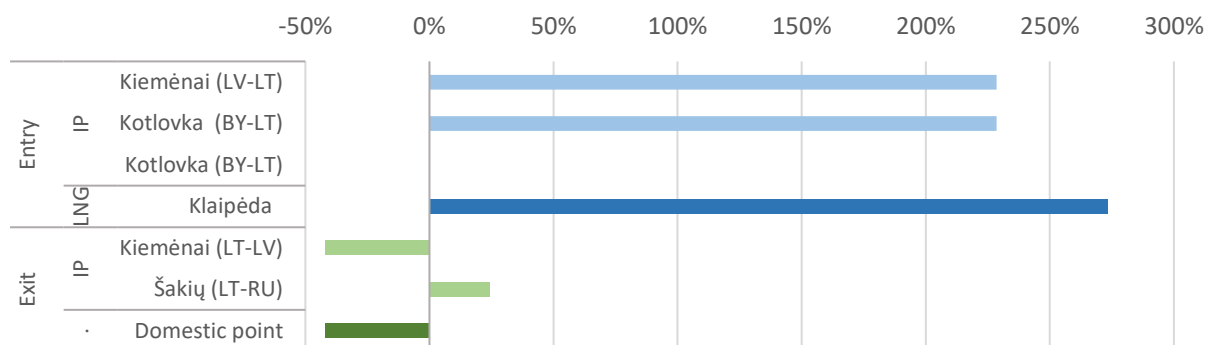
(365) In 2019, the following tariffs at the IP with EE were applicable (in 2020, tariffs from and to EE are zero):

- Entry from EE: 0,001302113 €/kWh/h/y,
- Exit to EE: 0,001374713 €/kWh/h/y.

(366) Change in the allowed/target revenue for transmission services: -13.52%.

(367) The capacity-commodity split changed from 95/5 (2019) to 91/9 (2020).

15. Lithuania, 2019 - 2020.

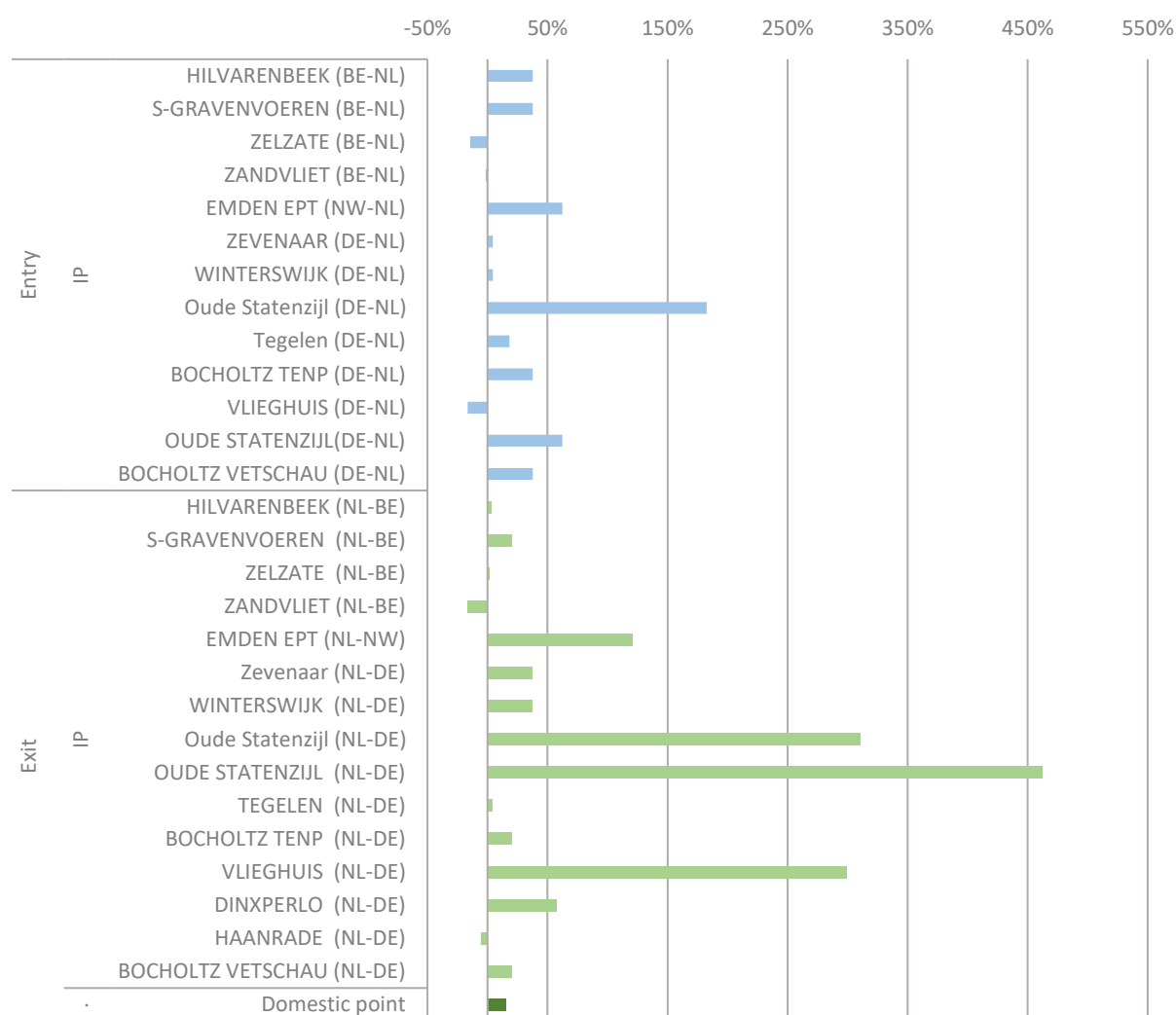


(368) The tariff at Kotlovka (BY-LT) entry point is applicable only for restricted capacity products. This tariff was not applicable in 2019 and in 2020 it is set to 863.04 €/MWh/h/y.

(369) Change in the allowed/target revenue for transmission services: -15.46%.

(370) The capacity-commodity split changed from 71% - 29% (2019) to 90% - 10% (2020).

16. Netherlands, 2019 - 2020

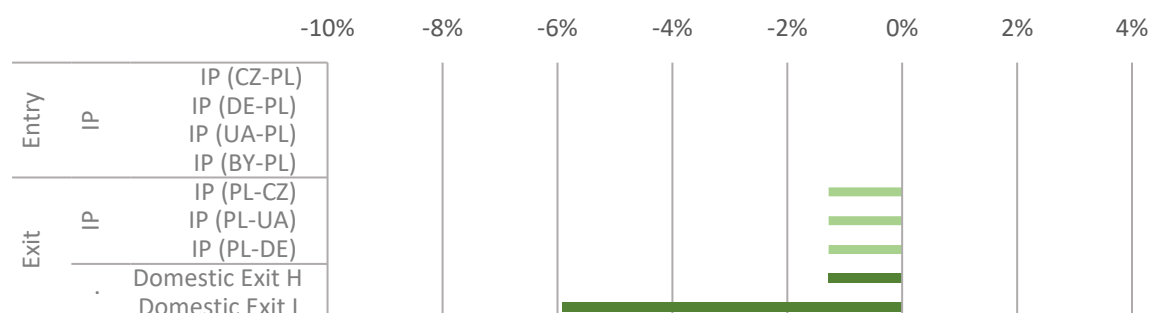


(371) The tariff for domestic exit points in 2019 is calculated as the arithmetic average of all the domestic exits (1.96 €/kWh/h/y). The tariffs for the VIP's of 2019 are a weighted average.

(372) Change in the allowed/target revenue for transmission services: 3.34%

(373) No change in the capacity-commodity split (100% capacity tariffs).

17. Poland, 2019 - 2020

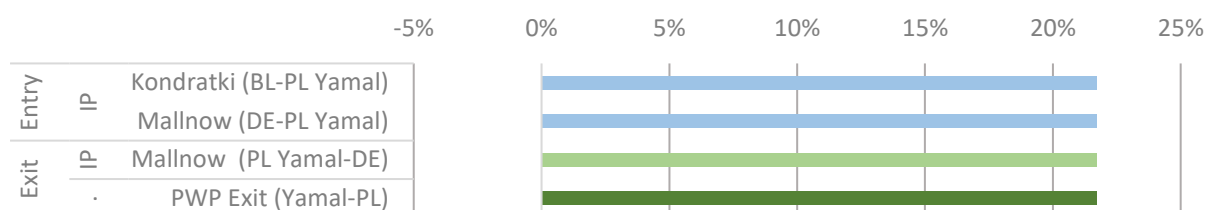


(374) The LNG Tariff price is 0 for 2019 and 2020 because 100% discount is applied (it is only entry tariff to the system not including the cost of LNG regasification).

(375) Change in the allowed/target revenue: 2.71%.

(376) No change in the capacity - commodity split (100% capacity tariffs).

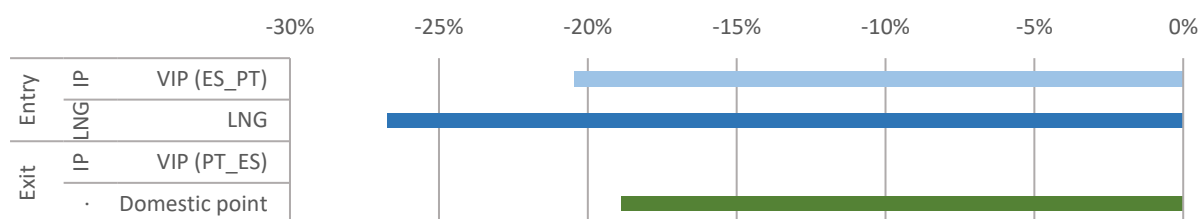
18. Poland Yamal, 2019 - 2020



(377) Change in the indicative allowed/target revenue: 20.51%.

(378) No change in the capacity - commodity split (100% capacity tariffs).

19. Portugal, 2018/2019 - 2019/2020

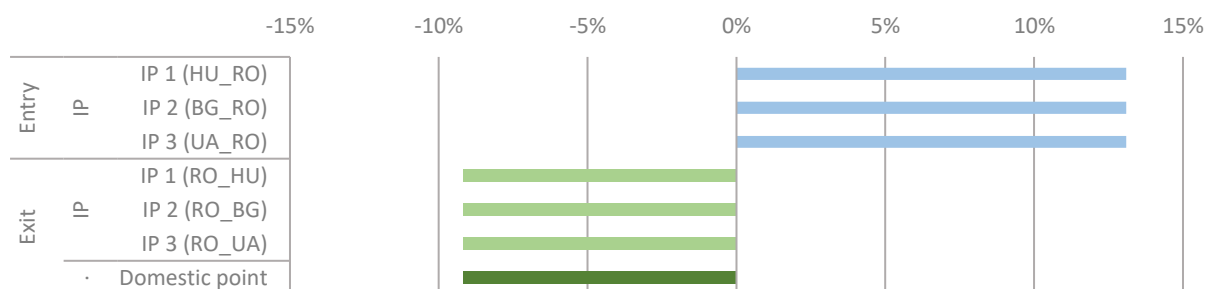


(379) The tariff price of VIP (PT_ES) exit point in tariff period 2018/2019 was equal to zero. This data for 2019/2020 is 0.51 €/kWh/h/y.

(380) Change in the allowed/target revenue for transmission services: -21.16%.

(381) The capacity - commodity split changed from 99% - 1% (2018/2019) to 100% - 0% (2019/2020).

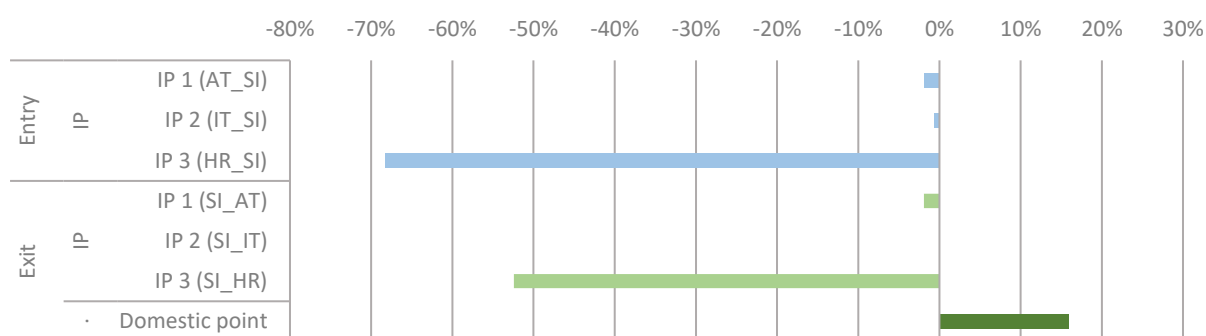
20. Romania, 2018/2019 - 2019/2020



(382) Change in the allowed/target revenue: 18,52%.

(383) The capacity - commodity split changed from 70% - 30% (2019) to 75% - 15% (2020).

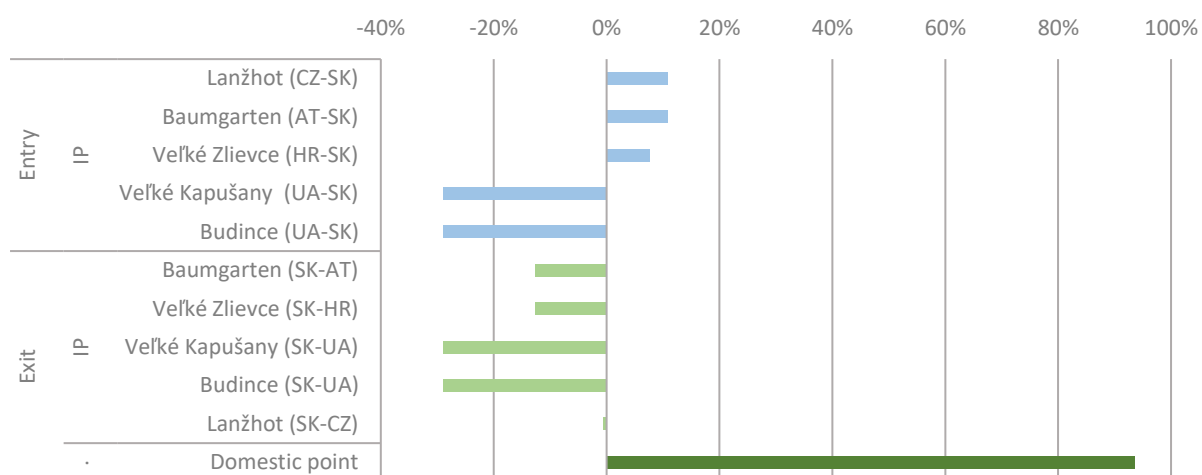
21. Slovenia, 2019 - 2020



(384) Change in the allowed/target revenue for transmission services: 3.83%.

(385) The capacity - commodity split changed from 94% - 6% (2019) to 95% - 5% (2020).

22. Slovakia, 2018 - 2022



(386) The regulatory period extends until 2021. In 2018 the revenue of the TSO approximated EUR 760m. The methodology for calculating the revenue of the TSO will change in 2022. It is estimated that the target revenue for 2022 is EUR 768,1 m.

(387) The capacity - commodity split 72% - 28% (2022).

Annex II: Overview of dates for the final consultation and the motivated decision per Member State

MS	Consultation launch	Consultation closing	ACER Report publication	NRA Decision
NL	5 Mar 2018	28 May 2018	27 Jul 2018	10 Dec 2018
SE	30 Apr 2018	30 Jun 2018	30 Aug 2018	13 Dec 2018
RO	1 May 2018	14 Sep 2018	14 Nov 2018	15 Mar 2019
NI	30 Jun 2018	30 Aug 2018	23 Oct 2018	17 Dec 2018
DK	15 Aug 2018	16 Nov 2018	14 Dec 2018	31 May 2019
PT	17 Aug 2018	17 Oct 2018	14 Dec 2018	18 Mar 2019
PL	28 Aug 2018	31 Oct 2018	14 Dec 2018	29 Mar 2019
PL (Yamal)	28 Aug 2018	31 Oct 2018	14 Dec 2018	29 Mar 2019
SI	31 Aug 2018	31 Oct 2018	14 Dec 2018	29 Mar 2019
CZ	1 Oct 2018	31 Dec 2018	28 Feb 2019	27 May 2019
IUK	4 Oct 2018	3 Nov 2018	3 Jan 2019	BE: 28 Mar 2019 UK: 3 Apr 2019
BE	8 Oct 2018	7 Dec 2018	7 Feb 2019	7 May 2019
EL	10 Oct 2018	11 Dec 2018	28 Mar 2019	30 May 2019
IT	16 Oct 2018	17 Dec 2018	14 Feb 2019	28 Mar 2019
DE	17 Oct 2018	17 Dec 2018	15 Feb 2019	29 Mar 2019
HU	31 Oct 2018	15 Jan 2019	15 Mar 2019	6 Jun 2019
SK	6 Nov 2018	6 Jan 2019	6 Mar 2019	29 May 2019
IE	11 Dec 2018	11 Feb 2019	10 Apr 2019	11 Jun 2019
HR	18 Dec 2018	18 Feb 2019	17 Apr 2019	23 May 2019
BBL	25 Feb 2019	25 Mar 2019	24 May 2019	3 Jun 2019
LT	5 Mar 2019	6 May 2019	4 Jul 2019	10 Oct 2019
EE	27 May 2019	26 Jun 2019	26 Sep 2019	30 Sep 2019
FR	23 Jul 2019	5 Oct 2019	4 Dec 2019	-
LV	9 Aug 2019	9 Oct 2019	7 Dec 2019	18 Dec 2019
AT	8 Nov 2019	8 Jan 2020	6 Mar 2020	-
BG	12 Dec 2019	12 Feb 2020	-	-
GB	23 Dec 2019	24 Feb 2020		
ES	12 Feb 2020	13 Apr 2020	-	-
DE	16 March 2020			
FI	1 April 2020			

Annex III: Overview of the methodologies applied per Member State

MS	Choice of RPM	E/E split	Adjustments	Discounts	Non-transmission charges	Commodity tariffs
Austria	Virtual Point (b)	19.11/80.89	No	Discounts to/from storage points: 50%	No	No
Belgium	CWD	33/67	Equalisation of: <ul style="list-style-type: none"> all entries domestic exits 	Ex-ante discount for interruptible capacity: 20%. 100% discount to and 50% from storage points.	Non-transmission: 20% of allowed revenue. <ul style="list-style-type: none"> Pressure reduction Odourisation Quality conversion Optical fibers along pipelines, Zeeplatform services Hub services 	Capacity-commodity: 95-5 Flow-charge
Czech Republic	CWD	18.8/81.2	Equalisation of: domestic points Rescaling of all entry points and all exit points.	Ex-post discount for interruptible capacity. Discounts to/from storage points: 70%.	No	Capacity-commodity: 93-7 Flow-charge
Croatia	Postage stamp	60/40	Equalisation <ul style="list-style-type: none"> Entry IPs Production Domestic exit points Exit IPs 	Ex-post discount for interruptible capacity. 90% discount to and 100% from storage facilities. Discounts to entry points from LNG: 15%	Non-transmission: 0.4% of allowed revenue. Connection service Non-standard services.	No
Denmark	Postage stamp	50/50	No	Discounts to/from storage points: 100%	Non-transmission: 20% of allowed revenue. Emergency tariff at all domestic exits	Capacity-commodity: 70-30 Flow-based charge.
Estonia	Postage stamp	9/91	Benchmarking at all external entry points to the FinEstLat system to 142.77 EUR/MWh/d/y	No	No	No
France	CWD RPM with flow scenarios	34/66	Equalisation	Discounts for standard capacity products for interruptible capacity: ex-ante. Discounts to/from storage points: 80%	Non-transmission: 54% of allowed revenue. Storage tariff term, paid by domestic consumers only.	No
Germany	Postage stamp	32/68 NCG 38/62 for GASPOOL	Rescaling of all entry and exit points Benchmarking	Ex-ante discount for interruptible capacity Discounts to/from storage points: 75%	Non-transmission: 16, 5% (NCG), 17, 2% (GP) of allowed revenue. <ul style="list-style-type: none"> Market area conversion charge. Biogas charge Meter operation Alternative nomination procedure. 	No
Greece	CWD	50/50	Equalisation <ul style="list-style-type: none"> 2 clusters for exit points 2 clusters for entry points 	Discount to entry points from LNG: 30%	No	Capacity-commodity: 100- 0 (86% - 14% when counting the CRRC - Old Recoverable Difference charged at domestic points)
Hungary	Postage stamp	40/60	Rescaling	90% discount to and 100% from storage facilities. Ex-post discount for interruptible capacity.	Non-transmission: 1, 2% of allowed revenue <ul style="list-style-type: none"> Odourization Title transfer Data services Balancing services Connection to transmission 	Capacity-commodity: 83-16 <ul style="list-style-type: none"> Pressure regulation, own gas use, Other operational costs, and settlement difference (shrinkage).

Ireland	Matrix RPM	33/67	Equalisation of the domestic exit tariffs Rescaling	Discount for virtual reverse flow LNG discounts.	Non-transmission:<0.01% allowed revenue Corrib Linkline. Charge applied to Bellanaboy entry point only.	Capacity-commodity: 90-10. Flow (commodity) charge.
Italy	CWD	28/72	Equalisation of: <ul style="list-style-type: none"> entry points from storage; exit points to storage, domestic exits within 15 km from the national network; domestic exit points over 15 km from the national network. Rescaling	Discounts to/from storage points: 50%. Ex-ante discount for interruptible capacity: 15%.	Non-transmission: 2% of allowed revenue. Metering service charge (CM ^T), covering costs for meter and meter reading on the transmission network. Metering service at end users charge (CM ^{CF})	Capacity-commodity: 86-14 <ul style="list-style-type: none"> Flow-based charge CRRC
Latvia	Postage stamp	17/83	Rescaling of domestic exits. Benchmarking at all external entry points to the FinEstLat system to 142.77 EUR/MWh/d/y	Discounts to/from storage points: 100%.	No	Capacity-commodity: 100-0
Lithuania	Postage stamp	73.3/26.7	Equalisation at entry points Rescaling: Domestic exit point tariffs	Discounts to entry points from LNG: 75%.	Non-transmission: 32% of allowed revenues	Capacity-commodity: 90-10 Flow-based charge at all exit points (Kiemėnai, Šakiai and domestic points)
Netherlands	Postage stamp	40/60	Rescaling	Discounts to/from storage points: 60%.	No	No
Northern Ireland	Postage stamp	N.A. calculated ex-post	No	No	No	Capacity-commodity: 75-25 Flow based charge
Poland	Postage stamp	45/55		Ex-post discount for interruptible capacity. Discounts to/from storage points of: 80%. Discounts to entry points from LNG: 100%.	No	No
Portugal	Modified CWD	28/72	Equalisation of: <ul style="list-style-type: none"> Two IPs (VIP) Domestic/distribution points Rescaling	Discounts to/from storage points: 100%.	No	No
Romania	Postage stamp	50/50	Rescaling	Discounts to/from storage points of 50%. Ex-post discount for interruptible capacity.	Connection services Complementary transmission services	Capacity-commodity: 85-15.
Slovakia	Postage stamp	38/62	Benchmark	Ex-ante discount for interruptible capacity	No	Capacity-commodity:72-28
Slovenia	Matrix	16/84	Rescaling of all entry and exit points Benchmarking	Ex-post discount for interruptible capacity.	Non-transmission: 5% of allowed revenue. <ul style="list-style-type: none"> Metering services Other services 	Capacity-commodity: 95-5. Flow based charge
Sweden	Postage stamp	0/100	No	No	Non-transmission: 13% of allowed revenue. <ul style="list-style-type: none"> Pressure reduction charge Administrative charge Extra area capacity Capacity allocation fee for summer and winter periods. Capacity allocation fee for daily capacity. 	No
IUK	N.A.		N.A.	Ex-ante discount for interruptible capacity: 10%.	No	No
BBL	N.A.		N.A.	Ex-ante discount for interruptible capacity: 10%.	No	Flow based charge

Annex IV: List of abbreviations

Acronym	Definition
ACER, The Agency	Agency for the Cooperation of Energy Regulators
CAA	Cost Allocation Assessment
CAPEX	Capital Expenditures
CRRC	Complementary revenue recovery charge
CWD	Capacity Weighted Distance
DSO	Distribution system operator
EC	European Commission
ENTSOG	European Network of Transmission System Operators for Gas
EU	European Union
GCA	Gas Connect Austria
GTS	Gasunie Transport Services
IP	Interconnection Point
ITO	Independent Transmission Operator
MACL	Market area conversion charge
MS	Member State
NC BAL	Commission Regulation (EU) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks ('NC BAL')
NC TAR	Commission Regulation (EU) 2017/460 of 16 March 2017, establishing a network code on harmonised transmission tariff structures for gas
NCG	NetConnect Germany
NRA	National Regulatory Authority
OPEX	Operational Expenditures
PtG	Power-to-Gas
RAB	Regulated Asset Base
RAB	Regulated asset base
RPM	Reference Price Methodology
TAG	Trans Austria Gasleitung
TPA	Third party access
TSO	Transmission System Operator
VIP	Virtual Interconnection Point
VPB	Virtual point-based variant B methodology
WQA	Wobbe Quality Adaptation service



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