CNMC

COMISIÓN NACIONAL DE LOS MERCADOS Y LA COMPETENCIA

CONSULTATION DOCUMENT. IMPACT ASSESMENT OF THE REGULATION ESTABLISHING THE TARIFF STRUCTURE AND THE PRICE METHODOLOGY TO SET UP TRANSMISSION, REGIONAL NETWORK AND REGASIFICATION TARIFFS OF NATURAL GAS (ABSTRACT OF TRANSMISSION TARIFFS)

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IMPACT ASSESMENT OF THE REGULATION ESTABLISHING THE TARIFF STRUCTURE AND THE PRICE METHODOLOGY TO SET UP TRANSMISSION, REGIONAL NETWORK AND REGASIFICATION TARIFFS OF NATURAL GAS (ABSTRACT OF TRANSMISSION TARIFFS)

I. SUBJECT MATTER

According to article 92(1) of Law 34/1998, a Regulation ("Circular") shall establish the tariff structures and the reference price methodology to set up transmission tariffs, regional network tariffs and regasification tariffs, as well as the transparency requirements that must be met with the publication of prices.

This document is the Impact Assessment of the Circular and its objective is to describe the price methodology and to explain the decisions taken in this regard.

II. BACKGROUND

Directive 2009/73/CE of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC establishes as one of the main elements for the creation of an internal market in natural gas markets the implementation of a system of transmission network access tariffs. Recital 23 and article 41 of the Directive determine the need to adopt measures to "ensure transparent and non-discriminatory tariffs for access to transport" and that National Regulatory Authorities shall have duty to fix or approve, in according with transparent criteria, transmission or distribution tariffs or their methodologies. The Directive also contains provisions concerning monitoring of tariffs on a non-discriminatory basis and ensuring that there are no cross-subsidies between transmission, distribution, storage, LNG and supply activities.

Regulation (EC) 2009/715 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) 2005/1775 aims at setting non-discriminatory rules for access conditions to natural gas transmission systems with a view to ensuring the proper functioning of the internal market in gas.

Article 13 of the aforementioned Regulation establishes that tariffs, or the methodologies used to calculate them, shall comply with the principles of transparency and non-discrimination among users, will avoid cross-subsidies and provide incentives for investment maintain or create interoperability for transmission networks and facilitate efficient gas trade. Additionally, tariffs for networks shall be set separately for every entry point into or exit point out of the transmission system. Lastly, the Regulation indicates that where differences in tariff structures or balancing mechanisms would hamper trade across transmission systems, and notwithstanding Article 41(6) of Directive 2009/73/EC, transmission system operators shall, in close cooperation with the relevant

national authorities, actively pursue convergence of tariff structures and charging principles, including in relation to balancing.

Regulation (UE) 2017/460, of 16 March 2017, established a network code on harmonised transmission tariff structures for gas, for the purpose of setting the rules to harmonise the transmission tariff structures for gas. National regulatory authorities, according to this Regulation, shall establish the reference price methodology and shall publish the information required, including all the structural aspects. National regulatory authorities, in accordance with Article 30 of Regulation (EU) 2017/460, shall publish, in conjunction with transmission tariffs, the following information:

1. Information on parameters used in the applied reference price methodology.

2. Allowed revenues of the transmission system operators, as well as the information related to changes in the allowed revenues from one year to the next year and the following parameters:

    a) Types of assets included in the regulated asset base.
    b) Cost of capital and its calculation methodology.
    c) Capital expenditures, including the methodologies to determine the initial value of the assets, the methodologies to re-evaluate the assets, the explanations of the evolution of the value of the assets and the depreciation periods and amounts per asset type.
    d) Operational expenditures.
    e) Incentive mechanisms and efficiency targets.

3. The transmission services revenue and the following ratios:

    a) Capacity-commodity split
    b) Entry-exit split
    c) Intra-system/cross-system split.

4. Explanation of the following:

    a) The difference in the level of transmission tariffs for the same type of transmission service applicable for the prevailing tariff period.

    b) The estimated difference in the level of transmission tariffs for the tariff period and for each tariff period within the remainder of the regulatory period.

5. A simplified tariff model, updated regularly, accompanied by the explanation of how to use it, enabling network users to calculate the transmission tariffs applicable for the prevailing tariff period and to estimate their possible evolution beyond such tariff period.

Additionally, the aforementioned Regulation (EU) 2017/460 establishes in article 10, that at the same time that the final consultation process is carried out

according to article 26, the National Regulatory Authority will launch a consultation with regard to the principles of an effective compensation mechanism among system operators and its impact on tariff levels. The inter-transmission system operator compensation mechanism shall be applied in accordance with Article 41(6)(a) of Directive 2009/73/EC and published together with the consultation responses received.

On the other hand, article 28 indicates that at the same time as the final consultation carried out in accordance with Article 26(1), the national regulatory authority shall conduct a consultation with the national regulatory authorities of all directly connected Member States and the relevant stakeholders on:

a) The level of multipliers;

b) If applicable, the level of seasonal factors;

c) The levels of discounts applicable to standard capacity products for interruptible capacity and the entry points from LNG facilities, and at entry points from and exit points to infrastructure developed with the purpose of ending the isolation of Member States.

Royal Decree-Law 1/2019, of 11 January, adopting urgent measures in order to assign the National Markets and Competition Commission (CNMC) the duties requested by Directive 2009/12/EC and Directive 2009/73/EC of the European Parliament and the Council of 13 July 2009 concerning common rules for the internal market in electricity and natural gas, amended Law 3/2013, of 4 June, for the creation of CNMC; Law 34/1998, of 7 October, on the hydrocarbons sector; and Law 18/2014, of 15 October, on the approval of urgent measures for growth, competitiveness and efficiency, in order to transfer the duties conferred to the National Regulatory Authority by European Law.

To this effect, Law 3/2013, 4 June, empowered CNMC with the duty to establish by Circular, after public consultation and following criteria of economic efficiency, transparency, objectivity and non-discrimination the structure and the methodology to calculate network tariffs of access services devoted to cover the associated revenue of the use of transmission and distribution network and LNG facilities.

Article 92 of Law 34/1998, of 7 October, on the hydrocarbons sector, points out that access tariffs will include the costs incurred by the use of facilities in a way to optimise the use of infrastructure and that could be differentiated by pressure levels, types of consumption and contract duration.

Additionally, it points out that these prices must comply with the principle of economic and financial sustainability of the gas system and must be sufficient to cover the costs for the use of the transmission and distribution network and LNG facilities. Finally, as a general fact, network tariffs and general costs of the system

will be fixed annually assigning the responsibility to approve network tariffs concerning transmission and distribution networks tariffs in the CNMC.

Article 59 of Law 18/2014, 15 October, on the approval of urgent measures for growth, competitiveness and efficiency, lays down that CNMC will determine the methodology for the calculation of network tariffs to transmission and distribution network and LNG facilities abiding by the principle of economic and financial sustainability of the gas system. Tariffs must be also sufficient to cover the associated costs for the use of facilities.

The methodology for the calculation of transmission tariffs fixed in this Regulation ("Circular") consists on the definition of explicit rules in order to assign LNG, transmission and distribution costs in an objective, transparent and non-discriminatory manner and following efficiency criteria in the use of infrastructures. To this effect, different tariffs are established considering the different services rendered and the affected infrastructures. Moreover, the structure of tariffs is settled taking into account the cost drivers considered for each service provided, individually considered.

VII. CONTENT AND TECHNICAL ANALYSIS

1. Previous Considerations

1.1 Typology of considered costs

Reflection of costs is a basic regulatory principle for setting regulated prices. Tariffs and charges should be sufficient (should allow full recovery of costs) and they should be the result of a cost allocation process that optimizes the use of resources and maximizes social welfare.

In network activities with increasing returns of scale, economic theory shows different methods to set prices that ensure full coverage of costs. Regarding other methodologies based on marginal or incremental costs and Ramsey price allocation of the infrastructure sunk costs, average cost methodologies allow price calculation based on information accessible for the regulator.

It should be noted that cost allocation based on a marginal cost methodology, typical of expanding systems, provides a cost efficiency signal, although it is not exempt of certain problems as the infrastructure sunk cost allocation based on information available by the regulator.

Allocation based on average costs is justified by the lack of information for the calculation of marginal costs of the infrastructures and also for the difficulty when calculating coefficients that allow achieving the sufficiency of the costs in a transparent and objective way. It is also justified because in meshed and mature systems as the Spanish gas system, that also shows excess of capacity, the investment costs imposed by incremental demand is short, as demand growth do

not imply additional investment costs. From this perspective, costs allocation requires the application of scale factors to obtain sufficient allocation, which means discretion in the decision [1].

As an alternative to marginal costs, tariffs can be established based on average costs. This alternative is done estimating of the total costs of the assets (valuing the existing asset base, either using the historical or replacement cost), and dividing the estimated cost by the variable that induces the expected cost in a reference period. The main disadvantage of the use of average costs is that they do not reflect the incremental costs caused by users' decisions but an average of the total investment costs incurred in the past that does not necessary coincide with the optimal investment decisions to cover the forecasted demand. However, the main advantage is that average costs based tariffs are easy to implement and allow recovering all the recognized costs of the activity, with no need of further adjustments.

In the Spanish gas system, with extensive infrastructure development in recent years, the investment cost currently imposed by incremental demand is reduced because the increases in demand do not involve significant additional investments. From this perspective, the use of long-term marginal cost may not be the best alternative for the determination of the regulated price, also taking into consideration the complexity that would be involved in calculating it.

In the current context, the best option to set the regulated price is the use of the average cost complemented by the introduction of efficiency signals in the use of the infrastructure. This is because, on one side, the principle of causality of costs

[1] From an economic perspective, if the existence of market competence is not feasible, the alternative is to set a regulated price that, if possible, achieves a minimum efficiency loss in relation to what would have been obtain in a perfectly competitive market. The solution to achieve a similar result to the obtained in perfect competition is to set a price equal to the marginal cost.

The regulatory period of tariffs and charges may have implications on whether the cost reflected by marginal prices are short or long term costs. The distinction between these two concepts is due to the flexibility required to respond to a demand increase, more than the time horizon. These costs are difficult to quantify, and mistakes in their measurement could lead to non-cost reflective tariffs and charges.

Tariffs based on short-term marginal costs could be very volatile, being low when the increase in the use of a certain asset does not require additional investments, and being high if the asset is close to its full capacity of use. Additionally, long-term marginal costs correspond to those operational and capital costs incurred in the long term to respond to an increase of demand over a long period. Setting tariffs based on long-term marginal costs is done in practice through the average long-term incremental cost, which is the unit cost of expanding the existing capacity necessary to cover the expected increase in long-term demand.

The main advantage of the use of these costs is the setting of a price signal for users, since they are aware of the cost of an incremental consumption decision. Therefore, an efficient level of consumption is achieved.

In practice, one of the main difficulties that arise when using long-term marginal costs is that there may be various configurations of the gas system that meet the target of supplying an increase of demand, so it is also necessary to simulate the gas system and the supply requirements of the peak demand.

It is also important to highlight the relevance of the expected growth of demand: if a significant increase is forecasted compared to current demand, it would mean that long-term marginal costs would be close to average costs; however, if the increase of demand is small, it would imply that marginal costs would be close to zero.

Finally, in activities with increasing returns of scale, such as gas infrastructures, if the price set is equal to the marginal cost, the regulated company will not recover all of its costs. This situation would force to implement tariff adjustments to allow the recovery of non-marginal costs of the system. These adjustments should be made not to distort the decisions of users.

is considered in each tariff and, on the other side, network tariffs are calculated taking into account that the designed capacity per pressure level is established considering the demanded capacity of the users connected in this pressure levels and below.

1.2 Scope of Regulation (UE) 2017/460

The Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and Regulation (EC) 2009/15 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) 2005/1775 establish in the Article 2 that 'transmission' means 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.

The Article 59 of Law 34/1998 establishes that the primary transmission network consists on those high-pressure pipelines with a maximum design pressure of 60 bar or above, distinguishing between the trunk network and the local influence network.

The trunk transmission network includes interconnected primary transmission pipelines essential for the operation of the system and security of supply, excluding the part of the primary transmission pipelines used for the local supply of natural gas. In any case, it includes the international connections of the Spanish gas system with other systems, connections with production facilities or with basic underground storage facilities, with LNG facilities, compression stations and auxiliary elements necessary for its operation.

The local influence network, or not trunk, are the primary transmission pipelines (design pressure equal to or greater than 60 bar) used for the local supply of natural gas.

Finally, the secondary transmission network is formed by the pipelines with maximum design pressure between 60 and 16 bar.

After the amendment of Law 18/2014, local influence networks and secondary transmission networks are assimilated to distribution, therefore Article 60(5) provides for the possibility of establishing a differentiated remuneration scheme for local influence networks and Article 63(3) establishes that secondary transmission facilities that do not have by that time the approval for executing the project, will be considered distribution facilities for the purposes of the remuneration system.

Considering the definition of transmission given in the Directive and the Regulation and the distinctions established in Law 34/1998, it is considered that only the trunk transmission network is in the scope of Regulation (EU) 2017/460. Therefore, users of interconnection points shall only contribute to support the allowed revenues associated with the trunk transmission network, while national customers, should face the allowed revenues for the trunk transmission network and in addition the local influence and secondary transmission network[2].

Next table shows the forecasted allowed transmission revenues for 2020, according to the methodology of Law 18/2014. In 2020 the allowed transmission revenue amount 808,2 M€, of which 71,3% correspond to trunk transmission network, 19,8 correspond to local influence networks y el 8,9% correspond to secondary transmission network.

Table 1. Forecasted allowed transmission revenues for year 2020, estimated according to the methodology established in Law 18/2014

Allowed transmission revenues (€)	2020 forecast	% over total
Truck network	**576.024.033**	***71,3%***
Investment costs	417.843.927	51,7%
Operational costs	139.052.576	17,2%
Operating Gas	19.127.531	2,4%
Local influence network	**159.848.403**	**19,8%**
Investment costs	104.551.679	12,9%
Operational costs	53.116.989	6,6%
Operating Gas	2.179.736	0,3%
Secondary transmission network	**72.323.323**	**8,9%**
Investment costs	53.511.623	6,6%
Operational costs	17.615.988	2,2%
Operating Gas	1.195.711	0,1%
Total	**808.195.759**	**100,0%**

Source: CNMC

[2] In this context, within the scope of the reports to be prepared in accordance with Article 27 of Regulation (EU) 2017/460, ACER has indicated to Germany and Italy the need to revise the definition of transport networks and distribution in order to make them compatible with European regulations.

1.3 Consideration of short-term multipliers in the forecasted capacity

The allocation methodology of the "Circular" establishes the capacity components of the corresponding tariffs for the yearly standard capacity product and, additionally, the multipliers, which have to be applied to obtain the corresponding fixed charge for standard capacity products of less than one-year duration.

Incomes resulting from applying tariffs to an activity will depend both on the duration of the contracts and on the short-term multipliers applied to products with less than one year duration. It is necessary to consider this in the calculation of the forecasted capacity in order to avoid excessive collection.

Therefore, the forecasted contracted capacity will be calculated according to the following formula:

$$Q_{s,n} = \sum_{i=1}^{m} \frac{Q_i^d \times D_d}{\sum D} \times C_d$$

Where:

- $Q_{s,n}$: forecasted contracted capacity for service s in year n.
- Q^d_i: forecasted contracted capacity for service s of the contract or group of contracts i with duration d in year n.
- D_d: duration in days of contracts of type i, except for intraday product, which is established in hours.
- D: number of days of the year, which will take the value of 365 or 366 in leap years. In the case of intraday products, the duration of the contract is established in hours, so D will take the value of 8760 or 8784 instead of 365 or 366, respectively.
- C_d: short-term multiplier applicable to contracts with duration d.

  For the above purposes, in case of interruptible products, the multiplier will be the result of considering both short-term multiplier and the discount of the interruptible product over the firm capacity product.

2. General Principles

The methodology for the fixing of access tariffs to the gas infrastructure is based on the following principles:

a) **Sufficiency**. The tariffs of each of the activities must guarantee the recovery of the revenue corresponding to such activity, in compliance with the forecasts made

b) **Efficiency.** The tariffs calculated with the methodology of this Circular, must allocate the infrastructure costs to each tariff group according to the causality

principle, avoiding cross-subsidies between tariff groups and encouraging efficiency in supply.

c) **Non-discrimination** among infrastructure users with the same characteristics, regardless of whether they are located within or outside the national territory**.**

d) **Transparency and objectivity**. The criteria for allocating the allowed revenue to infrastructure, the input information and the parameters applied in the methodology are explicitly defined in this Circular and are public.

e) The allocation methodology will promote **competition and efficient gas trade.**

3. Information required for the application of the methodology

This section summarizes the information required for the setting of the tariffs applicable to regasification, transmission and distribution, the details of which are set out in Annex I. In particular, the methodology for allocating the allowed revenues for transmission, distribution and regasification activities for 2020 and calculating the corresponding tariffs requires the following information:

- Transported natural gas demand, for each entry and exit points, distinguishing between conventional demand and demand for electricity generation
- Annual average contracted capacity, used and invoiced, disaggregated by entry system and exit point.
- Volume of natural gas, contracted capacity and invoiced capacity for customers with standard products of less than one-year duration;
- Contracted capacity and gas volume injected/withdrawn, for each underground storage.
- Forecast for number of customers, contracted capacity and consumption, for each tariff group.
- Daily load profiles for transported demand (combined cycles, conventional thermal power and conventional customers) and daily demand load profiles for customers with remote metering installed.
- Information on the costs of transport facilities for the period 2008-2011 distinguishing between primary and secondary pipelines, regulating and metering stations and compressor stations, according to the analytical accounts.
- Allowed revenues for transport activity, for each type of network: trunk, local influence and secondary networks.
- Part of the allowed revenues that shall be recovered through capacity-based transmission tariffs.

In addition, for the estimation of reference prices according to the capacity weighted distance methodology, the following information is required in accordance with Article 8 of the tariff code:

- Simplified network model
- Forecasted contracted capacity at each entry point or cluster of entry points and at each exit point or cluster of exit points;
- Where entry points and exit points can be combined in a relevant flow scenario, the shortest distance of the pipeline routes between an entry point or a cluster of entry points and an exit point or a cluster of exit points;
- Combinations of entry points and exit points, where some of them may be combined in a given flow scenario;
- The entry-exit split referred to in Article 30(1)(b)(v)(2) will be 50/50.
- Transported natural gas, for each entry point and exit point of the system, distinguishing between conventional demand, demand for electricity generation and injections from underground storage
- Annual average contracted capacity, used and invoiced, for each entry and exit point.

4. Allocation of the allowed revenues for the transmission network

4.1 Allowed revenues

Tariff calculation will include the revenues associated to the investment costs and the operating costs of the trunk transmission network forecasted for the period, as well as the amendments of the revenues of previous periods not included in the tariffs of the corresponding period, other costs associated to the transmission network not included in the previous periods and the income deviations of previous periods. Additionally, the premium resulting from capacity auctions at VIPs will be taken into account, if necessary.

Table 2 details the revenues of transmission activity associated to the trunk transmission network foreseen for 2020, resulting from applying the calculation methodology established in Law 18/2014. In particular, in 2020 the expected allowed revenues for the trunk transmission network is 576 M€, of which 72.5% corresponds to investment costs, 24.1% to operational costs and 3.3% to the revenues for the operating gas.

Table 2. Allowed revenues for the transmission network foreseen for 2020

Allowed trunk transmission revenues (€)	2020 forecast	% of the total
Investment Costs	417.843.927	72,54%
Operational Costs	139.052.576	24,14%
Operating Gas	19.127.531	3,32%
Total	**576.024.033**	**100,00%**

Source: CNMC

4.2 Transmission and non-transmission services

The Article 4 of Regulation (UE) 2017/460 sets up a given service shall be considered a transmission services where both of the following criteria are met:

a) the costs of such service are caused by the cost drivers of both technical or forecasted contracted capacity and distance;

b) the costs of such service are related to the investment in and operation of the infrastructure which is part of the regulated asset base for the provision of transmission services.

Regarding non-transmission services, the regulation establishes that the corresponding allowed revenue shall be recovered by non-transmission tariffs that shall be cost-reflective, non-discriminatory, objective and transparent.

Consequently, the following services associated with transmission have been considered:

- **Entry to transmission network**: it includes the right to use the facilities needed for transporting gas from the point of entry to the transmission network to the virtual point of the transmission network.
- **Exit from transmission network**: it includes the right to use the facilities needed for transporting gas from the virtual point of the transmission network to the point of exit to the transmission network.

The transmission network does not provide other service not related to transmission. This mean that non-transmission services have not been considered.

4.3 Cost drivers and transmission network tariff structure

Article 4(3) of Regulation (UE) 2017/460 sets up transmission services revenue shall be recovered by capacity-based transmission tariffs. As an exception, part of the transmission services revenue may be recovered by commodity-based transmission tariffs when costs are mainly driven by the quantity of the gas flow.

Considering the above, it has been considered two cost drivers: the contracted capacity (because the design of the network is determined, mainly, by the capacity of injection demanded) and volume (because the operating gas cost depends on the energy transported).

Taking into account the cost drivers for transmission, the following transmission tariffs structure is defined:

a) **Entry to transmission network tariff**: it consists of a fixed charge for contracted capacity, expressed in €/(MWh/day)/year, and a variable charge for volume, expressed in €/MWh.

b) **Exit from transmission network tariff**: it consists of a fixed charge for contracted capacity, expressed in €/(MWh/day)/year, and a variable charge for volume, expressed in €/MWh.

4.4 Allocation of allowed revenues to the transmission services

According to Regulation (UE) 2017/460, the transmission allowed revenue shall be recovered through entry and exit transmission tariffs. The allowed revenues for transmission services to be recovered through capacity-based transmission tariffs corresponds to the allowed revenues for investment and operating costs. The allowed revenues for transmission services to be recovered through commodity-based transmission tariffs corresponds to operating gas.

On the other hand, it is considered the entry-exit split should be 50%-50%, in line with the feedback received from stakeholders in the previous public consultation about methodology and with the mentioned Regulation (UE) 2017/460, which establishes such value for the purpose of comparison with the contrast methodology.

Finally, according Article 4(3)(a) of the Regulation, the commodity-based transmission tariffs shall be set in such a way that it is the same at all entry points and the same at all exit points. Therefore, the operating gas cost is allocated by service proportionally to the demand injected and extracted from the transmission network.

Table 3. Allocation of allowed revenues to transmission services. Year 2020

Allowed transmission revenues (€)	2020 forecast	% of the total
Investment costs	417.843.927 (A)	72,5%
Operating costs	139.052.576 (B)	24,1%
Operating gas	19.127.531 (C)	3,3%
Total	**576.024.033**	**100,0%**

Entry		Exit	
Capacity [(A) + (B)] * 50%	Commodity (C) * (D)	Capacity [(A) + (B)] * 50%	Commodity (C) * (E)
208.921.963		208.921.963	
69.526.288		69.526.288	
	9.602.783		9.524.748
278.448.251	**9.602.783**	**278.448.251**	**9.524.748**

Transported gas through the trunk network (MWh)	2020 forecast	% of the total
Volume of gas injected into the transmission network	360.834.759	50,2% (D)
Volume of gas withdrawn from the transmission network	357.902.522	49,8% (E)
Total	**718.737.281**	**100,0%**

Source: CNMC

4.5 Tariffs associated to each service provided by the trunk transmission infrastructure calculation

In accordance with Regulation (EC) No 715/2009, the tariffs for network users shall be set separately for each entry point or exit point of the transmission system. Particularly, the Regulation provides in its Article 13 that *Tariffs for network users shall be […] set separately for every entry point into or exit point out of the transmission system. Cost-allocation mechanisms and tariffs setting methodology regarding entry points and exit points shall be approved by the national regulatory authorities*."

Therefore, under the mentioned Regulation, the methodology to set up transmission tariffs should be entry-exit methodology. However, there are several methodologies that allow the set-up of entry-exit transmission tariffs. As an illustration, it is indicated that the most used methodologies in the European countries are the postal methodology(Germany, Croatia, Denmark, Slovakia, Estonia, Greece, Holland, Hungary, Northern Ireland, Lithuania, Poland[3], Romania and Sweden), the distance to the virtual point methodology (Austria[4]), the capacity weighted distance methodology (Belgium, the Czech Republic, France, Italy, Portugal[5]) and the matrix methodology (Slovenia, Ireland and United Kingdom).

[3] Poland applies the postal methodology, with the exception of the Poland West Europe transit gas pipeline for which the capacity-weighted distance methodology is applied.

[4] The description of the distance to the virtual point methodology is that it is presented in the pre-consultation published by the regulatory authority dated 01-31-2019.

[5] Capacity weighted by modified distance, in order to contemplate the use of the network

The methodologies above mentioned are those included in the public consultations[6] that countries are carrying out in accordance with article 26 of Regulation 2017/460.

The postal methodology consists in applying the same price to all entries and the same price to all exits, regardless of location. It is the simplest of the methodologies and guarantees stability and predictability of rates, by imposing the same price on all entry points and all exit points regardless of the network topology and gas flows. However, it has certain disadvantages with regard to the reflection of costs and location signals to network users.

The capacity weighted distance methodology is based on the principle that the transmission tariff of each point of entry or exit must be established taking into account the contribution to the total system cost of that point. In particular, the capacity weighted distance methodology establishes the capacity charge of an entry point based on the distance of that entry point to each of the exit points by weighing the distances by the contracted or demanded capacity in each of the exit points considered. Similarly, the capacity charge of an exit point is a function of the distance from this exit point to each of the entry points considered weighted by the capacity contracted or demanded at each entry point. This methodology has the advantage of providing differentiated price signals at the entries and exits and, consistently, reflects the costs better. However, it presents greater price variability, depending on the capacity used.

The distance to a virtual point methodology is similar to capacity weighted distance methodology, although the price relation is obtained by weighing the distance to the virtual balance point by capacity. The virtual point can be calculated mathematically or it can be established geographically. This methodology has the advantage of better reflecting costs, insofar as it takes into account the network topology. The main drawback derives from the definition of the virtual point, since it allows a certain degree of freedom in its application.

Finally, under the matrix methodology the entry and exit transmission tariffs are calculated as the result of an optimization[7] process which minimizes the difference between network charges paid by users and the costs allocated to the different entries and exits (path costs). In this way, the cost of access to the network is determined by the location of the injection point and gas outlet of the transmission network. The main advantage of this methodology is the reflection of costs, because both the topology of the network and the physical flow of the

[6] ACER publishes at its website links to the public consultations the National Regulatory Authorities are carrying out in compliance with Article 26. Available at https://acer.europa.eu/es/Gas/Framework%20guidelines_and_network%20codes/Paginas/Harmonised-transmission-tariff-structures.aspx

[7] The optimization consists on minimizing the sum of the squares of the difference between the sum of entry and exit capacity charges for each path and the corresponding actual path cost.

gas are taken into account. The main drawback derives both from the complexity of its implementation and the price sensitivity to the flow scenario considered.

The choice of one or another methodology depends, fundamentally, on the characteristics of the transmission network (whether it is a meshed network or not), on the characteristics of the gas flows (predominant gas flow pattern vs gas flow pattern unpredictable), the information available for the regulator (the information requirements of each of the methodologies differ from each other) and the objectives that the regulator wishes to achieve (for example, equity vs. efficiency, transparency vs. cost reflection , need to provide location signals, etc.).

In the Spanish case, in which the transmission network is meshed and has a significant excess of capacity, it is considered that the methodology that best reflects the costs is the capacity-weighted distance, to the extent that it introduces price signals differentiated without the need to implement a complex and difficult model to understand for agents, such as the matrix methodology. The reference price methodology proposed is the methodology defined in Article 8 of the tariff network code.

The following points describe in detail the adopted methodology.

4.5.1 Transmission tariffs for yearly standard capacity products for firm capacity

As indicated, capacity weighted distance methodology establishes that capacity-based transmission tariffs for an entry point shall be derived from the distance between such entry point and each exit point weighting the mentioned distances by the forecasted contracted capacity at each exit point. Correspondingly, capacity-based transmission tariffs for an exit point shall be derived from the distance between such exit point and each entry point weighting the mentioned distances by the forecasted contracted capacity at each entry point.

The capacity weighted distance methodology requires hence to determine previously (i) entry points to transmission network, (ii) exit points to transmission network (iii) minimum distance between each entry point and each exit point of the transmission network and (iv) the forecasted contracted capacity for each entry and exit point.

According to the network code on harmonised transmission tariff, entry and exit points can be physical points or be combined in clusters, therefor, the transmission network used to determine the capacity charge may differ from the physical network, meaning a simplified transport network may be used.

A simplified transmission network makes it easier to apply the CWD methodology, as the number of distances to calculate is reduced, but if it is simplified excessively, it may not reproduce appropriately the real transmission network and therefore, not reflect the costs related to such network.

In addition, the simplification of transmission network requires making decisions about: (i) the procedure to calculate the distance between entry and exit points considered, and (ii) the allocation of the injections and withdraws from the physical points to the virtual points considered, which allows a certain degree of freedom in its application.

Considering the above and the evolution of current computing techniques, it has been decided to contemplate the physical network. In particular, the existing transmission network[8] at the time of preparation of this report has been considered with the following simplifications.

Consequently, according to the infrastructures in use, the following **entry points to the transmission system** have been considered:

1) International interconnection points with third countries by pipeline (Tarifa, Almería, Badajoz, Tuy, Biriatou and Larrau),
2) Entry points from LNG facilities [9]: Barcelona, Huelva, Cartagena, Bilbao, Sagunto y Mugardos.
3) Entry points from production facilities: Marismas, Poseidón, Viura and Planta de biogás de Madrid.
4) Entry points from underground storage facilities: Serrablo, Gaviota, Yela and Marismas.

On the other hand, the considered **exit points** are:

1) Bidirectional international interconnection points of Badajoz, Tuy, Biriatou and Larrau.
2) Exit points to underground storage facilities: Serrablo, Gaviota, Yela y Marismas.
3) Each exit point to the transmission network to the regional network (local influence transmission network, secondary transmission network and distribution network).
4) Exit points to each LNG facility.

Once the transmission network model and the entry and exit points have been defined, the calculation of the **minimum distance**[10] between each entry point

[8] Defined as "*Orden IET/2434/2012, de 7 de noviembre, por la que se determinan las instalaciones de la red básica de gas natural pertenecientes a la red troncal de gas natural*".

[9] Provided that is the case Musel LNG facility is put in operation it will be considered as another entry and exit point.

[10] For this purpose, the information required for its calculation has been requested the Technical Manager of the Gas System GTS. In particular, the GTS has provided the distance of each connection point of the transmission network to all connection points adjacent to it. It must be emphasized that according to the information provided by the GTS, the only non-bidirectional pipeline in the transmission network is the pipeline between the compression stations of Córdoba and Almendralejo.

and each exit point of the transmission network has been carried out using the Dijkstra[11] algorithm.

The **forecasted contracted capacity at each entry point** has been calculated with the following hypothesis (see Annex I for additional details):

a) Based on the forecasted gas volume to be introduced into the system for year 2020, the forecasted entries of natural gas for 2019 are maintained for 2020, with the exception of the entry through Tarifa where it has been considered it partially recovers the decrease registered in 2019. The volume of LNG is obtained by differences.

b) Forecasted contracted capacity for the international interconnection points result from the hypothesis that the load factor of 2019 is preserved.

c) For estimating the contracted capacity at all LNG facilities entry points, the load factor forecasted for 2019 is maintained. The distribution by LNG facility results from considering both the load factor of each LNG facility and that there will be a higher balance between LNG facilities because of the implementation of the single storage tank model.

d) Forecasted contracted capacity for virtual entry points (VIP Pirineos and VIP Ibérico) is disaggregated for each physical point according to their technical capacities.

e) Contracted capacity for entry points from underground storages has been estimated considering the real daily withdrawal profile and the effect of the corresponding multipliers for the short-term standard capacity products.

The **forecasted contracted capacity at each exit point** has been calculated according to the following hypothesis (see Annex I for additional details):

a) In the case of virtual interconnection points with France and Portugal, the contracted capacities have been disaggregated according to the technical capacities of each physical point.

b) In the case of contracted capacity for exit points to underground storages, forecasts are based on the real injection profile.

c) For exits to LNG facilities, zero contracted capacity has been forecasted considering the characteristics of the service.

d) Regarding the forecasted contracted capacity exits to national customers. it has been disaggregated for each group of customers considering the information available for the CNMC. Particularly, forecasted contracted capacity for customers supplied by networks of pressure higher than 4 bar and customers supplied by networks of design pressure lower than 4 bar

[11] The Dijkstra algorithm is an iterative algorithm that provides the shortest path from a particular initial node to all other nodes in the graph, when all distances are positive.

and in tariff group 3.5, for who individualized information is available[12], is based on the last complete year available information (2018) of invoiced capacity. For other customers, contracted capacity has been estimated at each exit point based on the load factor of each tariff group and the registered consumption for such customers in each municipality[13].

e) The corresponding multipliers have been applied to the forecasted short-term standard capacity products.

Table 4 and Table 5 show the forecasted contracted capacity for each entry point and for each exit point respectively.

[12] It shall be noted that for this group of customers with remote metering installed (consumption higher than 5GWh/year), on one side individualized information in the Settlements Database of the gas sector (SIFCO) is available, and on another, the Technical Manager of the Gas System, GTS, has provided the exit point from where they are supplied.

[13] It is noted that for this group of customers information regarding municipalities supplied from the transmission-distribution network is available in the Settlements Database of the gas sector (SIFCO), and the relationship between exit point of the transmission network and municipality is published at GTS's website: (available at: http://www.enagas.es/enagas/es/Gestion_Tecnica_Sistema/CalidadGas/OtraInformacionCalidadNueva)

Table 4. Forecasted contracted capacity and volume at each entry point the transmission network. Year 2020

Entry point	Forecasted contracted capacity (MWh/día)	Volume (MWh)
International interconnection points	**676.005**	**214.487.621**
CI Tarifa	206.644	61.878.662
CI Almería	256.994	90.634.611
VIP Pirineos	191.415	57.155.226
VIP Ibérico	20.953	4.819.122
LNG facilities	**459.099**	**138.587.446**
Barcelona	147.472	44.613.527
Cartagena	39.777	12.182.952
Huelva	104.838	30.649.708
Bilbao	101.014	32.215.071
Sagunto	35.621	9.575.757
Mugardos	30.378	9.350.431
Underground storage facilities	**26.533**	**5.896.369**
Serrablo	11.111	2.479.781
Gaviota	8.943	1.928.719
Marismas	3.590	826.594
Yela	2.889	661.275
Production facilities	**6.435**	**1.863.322**
Marismas	178	44.472
Poseidon	284	35.439
Viura	5.673	1.685.871
PB Madrid	299	97.540
TOTAL ENTRIES	**1.168.072**	**360.834.759**

Source: CNMC

Table 5. Forecasted contracted capacity and volume at each exit point the transmission network. Year 2020

Exit point	Forecasted contracted capacity (1) (MWh/día)	Volume (MWh)
International interconnection points	**139.543**	**10.157.482**
VIP Pirineos	130.599	7.249.498
VIP Ibérico	8.944	2.907.984
LNG facilities	**-**	**-**
Barcelona	-	-
Cartagena	-	-
Huelva	-	-
Bilbao	-	-
Sagunto	-	-
Mugardos	-	-
Underground storage facilities	**40.851**	**7.595.090**
Serrablo	10.932	2.031.807
Gaviota	23.686	4.402.249
Marismas	3.065	580.516
Yela	3.168	580.516
Exit to national customers (2)	**1.720.196**	**340.149.950**
P > 60 bar	739.532	138.051.141
16 bar < P ≤ 60 bar	118.992	33.539.210
4 bar < P ≤ 16 bar	387.644	99.246.126
P ≤ 4 bar	474.029	69.313.473
TOTAL EXITS	**1.900.590**	**357.902.522**

Source: CNMC
Notes:
(1) Excluding the capacity of customers supplied from LNG satellite facilities
(2) For illustrating purposes national exit points have been aggregated by pressure level to which customers are connected.

As previously indicated, the capacity weighted distance methodology is limited to determining the capacity charge of the entry and exit points of the trunk transmission network. That is, the transmission services revenues to be recovered through capacity-based transmission tariffs correspond to the investment and the operating costs (see section 4.1). In accordance with Article 8(1)(e) of Regulation (EU) 2017/460, 50 % of such costs will be recovered through the entry charge to the transmission network and 50 % through the exit charge of network (see Table 6).

Table 6. Allowed revenues for transmission services to be recovered from capacity-based transmission tariffs. Year 2020

Allowed revenues for transmission services to be recovered from capacity-based transmission tariffs (€)	2020 forecasted	% of the total	Transmission reveneues to be recovered through capacity-based transmission tariffs	
			Entry [(A) + (B)] * 50%	Exit [(A) + (B)] * 50%
Investment costs	417.843.927 (A)	75,0%	208.921.963	208.921.963
Operating costs	139.052.576 (B)	25,0%	69.526.288	69.526.288
Total	**556.896.502**	**100,0%**	**278.448.251**	**278.448.251**

Source: CNMC

Table 7 and Table 8 show capacity-based tariffs for each of the considered entry and exit point of the transmission network calculated according to article 8(2) of Regulation (EU) 2017/460, following the adjustments foreseen in Article 6(4) of the tariff code (for further details see section 3 of Annex II). In particular, the following adjustments to the prices resulting from the CWD methodology have been made:

- The entry and exit prices for virtual international interconnections points (VIP Pirineos and VIP Ibérico) have been calculated in accordance with the procedure specified in Article 22(b) of the tariff code.
- Considering that the LNG facilities are managed jointly by the GTS without the suppliers having the capacity to decide on the use of a specific facility, it has been decided to apply the same reference prices to all entry points from and exit to LNG facilities, in accordance with the procedure established in article 22(b) of the tariff code.
- Considering that (i) underground storage facilities are not indented to compete with international interconnection points, (ii) underground storage facilities involve less investment in transmission infrastructure, as they contribute flattening the demand profile and (iii) gas injected into underground storage from the transmission network must first pay the entry tariff and gas withdrawn from underground storage would be charged the exit tariff at the exit point, a discount of 100 % is established on capacity-based transmission tariffs at entry points from and exit points to underground storage facilities.
- A single national exit point has been considered.

Table 7. Capacity-based transmission tariff at entry points of the trunk transmission network. Year 2020

Entry point	Forecasted contracted capacity (MWh/day)	Entry capacity-based transmission tariff (€/MWh/day/year)	Total revenues (€)	Variation over average tariff (%)
VIP Francia	191.415	202,01	38.668.099	-17,2%
VIP Portugal	20.953	334,41	7.006.779	37,1%
CI Tarifa	206.644	290,97	60.126.358	19,3%
CI Almería	256.994	262,45	67.447.070	7,6%
LNG facilities	459.099	226,86	104.151.556	-7,0%
Poseidón	284	281,79	80.051	15,5%
Marismas	178	273,39	48.796	12,1%
Viura	5.673	153,48	870.641	-37,1%
PB Madrid	299	163,43	48.900	-33,0%
TOTAL	**1.141.539**	**243,92**	**278.448.251**	**0,0%**

Source: CNMC

Table 8. Capacity-based transmission tariff at exit points of the trunk transmission network. Year 2020

Exit point	Forecasted contracted capacity (MWh/day)	Exit capacity-based transmission tariff (€/MWh/day/year)	Total revenues (€)	Variation over average tariff (%)
National	1.720.196	148,22	254.969.078	-1,0%
LNG facilities (1)	-	176,24	-	17,7%
VIP Francia	130.599	167,58	21.885.204	11,9%
VIP Portugal	8.944	178,22	1.593.969	19,0%
TOTAL	**1.859.739**	**149,72**	**278.448.251**	**0,0%**

Source: CNMC

It is noted that the fixed capacity charge for entry points resulting from the application of the CWD methodology are lower than the fixed capacity charge for entry points resulting from applying the postal methodology for entries from VIP France, the LNG facilities, Viura and Biogas Madrid production facilities, and higher at the other entry points.

Moreover, the fixed capacity charge for exit points resulting from the application of the CWD methodology are higher than the fixed capacity charge resulting from the postal methodology for the exit points of VIP France and Portugal and to LNG facilities, and lower for exits to national customers.

Customers whose annual consumption does not exceed 5 GWh are not required to have equipment capable of measuring the maximum demanded throughput over a given period, therefore the fixed capacity charge is replaced by a fixed charge per customer resulting from the ratio of the revenues to be recovered through each tariff group[14] over the number of customers that make up such tariff group (see Table 9).

Table 9. Fixed charge per customer for exits from the trunk network calculation. Year 2020

Tariff	Volume (kWh)	Nº customers (A)	Forecasted contracted capacity (MWh/day) (B)	Exit capacity-based transmission tariff (€/MWh/day/year) (C)	Allowed revenues to be recovered through capacity-based transmission tariffs (€) (D) = (B) * (C)	Fixed term for exit transmission tariff (€/customer and year) (D)/(A)
D.1	C ≤ 3.000	3.374.272	32.259	148,22	4.781.499	1,42
D.2	3.000 < C ≤ 15.000	4.050.275	203.396	148,22	30.147.583	7,44
D.3	15.000 < C ≤ 50.000	308.655	50.187	148,22	7.438.698	24,10
D.4	50.000 < C ≤ 300.000	52.127	39.460	148,22	5.848.781	112,20
D.5	300.000 < C ≤ 1.500.000	21.266	83.332	148,22	12.351.585	580,82
D.6	1.500.000 < C ≤ 5.000.000	3.148	47.346	148,22	7.017.614	2.229,27

Source: CNMC

Finally, as stated above, the variable charge should be determined in such a way that it is the same at all entry points and at all exit points, therefore, the operational gas revenues has been allocated to each service proportionately to the injected and withdrawn gas from the trunk transmission network (see Table 10).

[14] Customers have been segmented considering their annual consumption and their load factor. The characterization of customers on the basis of segmentation is presented in Annex III. Each tariff group brings together customers of the same characteristics.

Table 10 . Variable commodity-based transmission tariffs for entry and exit points calculation. Year 2020

	Allowed revenues to be recovered through commodity-based transmission tariffs (€)	
	Entry	Exit
Revenues for operating gas (A)	9.602.783	9.524.748

	Volume (MWh)	
	Entry	Exit
Cost driver (B)	360.834.759	357.902.522

	Commodity charge (€/MWh)	
	Entry	Exit
Commodity charge for transmission tariff (A)/(B)	0,0266	0,0266

Source: CNMC

4.5.2 Transmission tariffs for non-yearly standard capacity products

The Regulation (EU) 2017/460 defines two types of short-term coefficients: multipliers and seasonal factors. The multiplier is the coefficient that reflects the proportionality between a standard product of firm capacity of less than one-year duration and a standard product of firm yearly capacity, while the seasonal factor is the coefficient that reflects the evolution of demand in the year. Both coefficients can be applied together.

Article 13 of the Regulation (EU) 2017/460 establishes the limits to the level of multipliers and seasonal factors, while in Articles 14 and 15 the methodology for calculating tariffs corresponding to standard products with firm capacity of less than one-year duration is defined in the absence of seasonal factors and with seasonal factors, respectively.

Regarding the level of the **multipliers**, the Regulation establishes that the value shall be no less than 1 and no more than 1.5 for quarterly and monthly standard capacity products, and no less than 1 and no more than 3 for daily and intraday standard capacity products, except in duly justified cases.

Regarding the level of **seasonal factors**, the Regulation establishes that the arithmetic mean over the gas year of the product of the multiplier applicable for

the respective standard capacity product and the relevant seasonal factors shall be within the same range as for the level of the respective multipliers.

Regarding the **methodology for calculating short-term tariffs in the absence of seasonal factors**, the Regulation establishes that the price of the short-term product is the result of applying the multiplier to the price of the standard capacity product expressed in days (for the standard products of quarterly, monthly and daily capacity) or hours (for standard intraday capacity products) for the duration of the respective product expressed in days or hours.

Regarding the **methodology for calculating short-term tariffs with seasonal factors**, the Regulation establishes that the tariffs applicable to each period will be the result of applying a differentiated coefficient per period (quarterly, monthly, daily and intraday) to the price of the year standard capacity product expressed in days (for standard products of quarterly, monthly and daily capacity) or hours (for standard products of intraday capacity) for the duration of the respective product expressed in days or hours.

The transmission tariff for monthly standard capacity product will be obtained as a result of multiplying the proportion that represents the month in the computation of the year multiplied by 12 and raised to a power between 0 and 2 and by the corresponding multiplier. The transmission tariffs for quarterly, daily and intraday standard capacity products are obtained as a result of multiplying the monthly coefficients by the corresponding multiplier (quarterly, daily or intraday).

The methodology for calculating tariffs of non-yearly standard capacity products for firm capacity is mandatory at interconnection points with Member States.

The aforementioned methodology is not mandatory at interconnection points with third countries[15], at exit points to final customer, at exit points to the distribution networks, entry points from LNG and production facilities, neither to the entry/exit points from the storage facilities. However, it has been considered appropriate to extend it to these points.

For the calculation of the short-term multipliers that must be applied on the prices of the corresponding yearly product it is necessary, first, to establish the limit of the level of the multipliers. Secondly, analyze whether or not to apply seasonal factors for the calculation of short-term tariffs. Third, if appropriate, calculate the seasonal factors. Finally, fix the tariffs of non-yearly standard capacity products for firm capacity.

I) Level of multipliers

[15] Unless the National Regulatory Authority adopts the decision to apply Regulation (EU) 2017/459 to entry points from third countries or exit points to third countries, or both, in which case the calculation methodology will also apply in those points.

The level of the multipliers must be established in a way that ensures the recovery of the allowed revenues without entailing a barrier to short-term contracting. Consequently, the level of the multipliers for each of the products considered results from the comparison between the billing that would be obtained from contracting yearly capacity with the equivalent from contracting the quarterly, monthly, daily and intraday capacity. The multiplier corresponds to the average of the multipliers that result from the comparison for the years 2015, 2016, 2017 and 2018.

The intraday multiplier results from the comparison of the billing that a customer would obtain in the event of formalizing a daily contract and the billing that would obtain from combining daily and intraday contracts of different duration.

Table 11. Multiplier of non-yearly standard capacity products for firm capacity

Non-yearly product	Level of multipliers for entry points	Level of multipliers for exit points
Quarterly	1,20	1,20
Monthly	1,30	1,30
Daily	1,60	1,60
Within-day (1)		
1 hour	36,30	51,99
2 hours	25,75	47,96
3 hours	18,14	47,29
4 hours	13,90	46,27
5 hours	11,27	46,19
6 hours	9,52	45,77
7 hours	8,52	19,48
8 hours	7,77	6,24
9 hours	7,03	4,47
10 hours	6,33	3,96
11 hours	5,81	3,72
12 hours	5,42	3,55
13 hours	5,11	3,49
14 hours	4,73	3,46
15 hours	4,30	3,42
16 hours	3,93	3,35
17 hours	3,48	3,27
18 hours	3,15	3,21
19 hours	2,97	3,12
20 hours	2,84	3,00
21 hours	2,76	2,80
22 hours	2,66	2,43
23 hours	2,49	2,05
24 hours	1,60	1,60

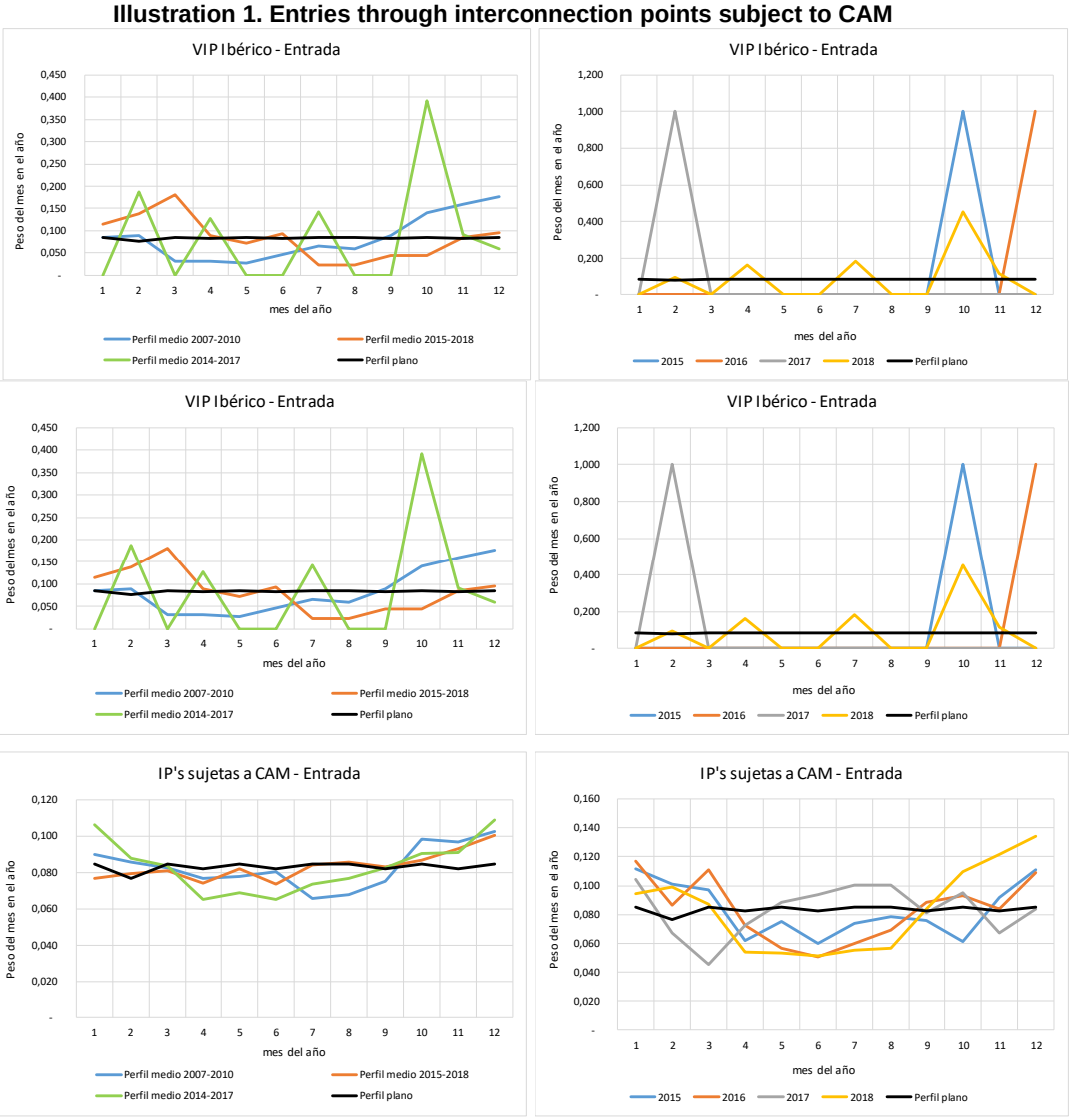
Source: CNMC
(1) Depend on contract duration

II) Analysis of the seasonality

The following illustrations show the profile of each of the entry and exit points, in order to analyze whether or not to apply seasonal factors in combination with the multipliers. For each entry and exit point, the average profile of three periods of four years each and the profile of the last four years with complete information (2015, 2016, 2017 and 2018) are presented. Additionally, the profile for different types of points is presented: Entrances and exits through interconnection points subject to CAM (VIP Pyrenees and VIP Portugal),

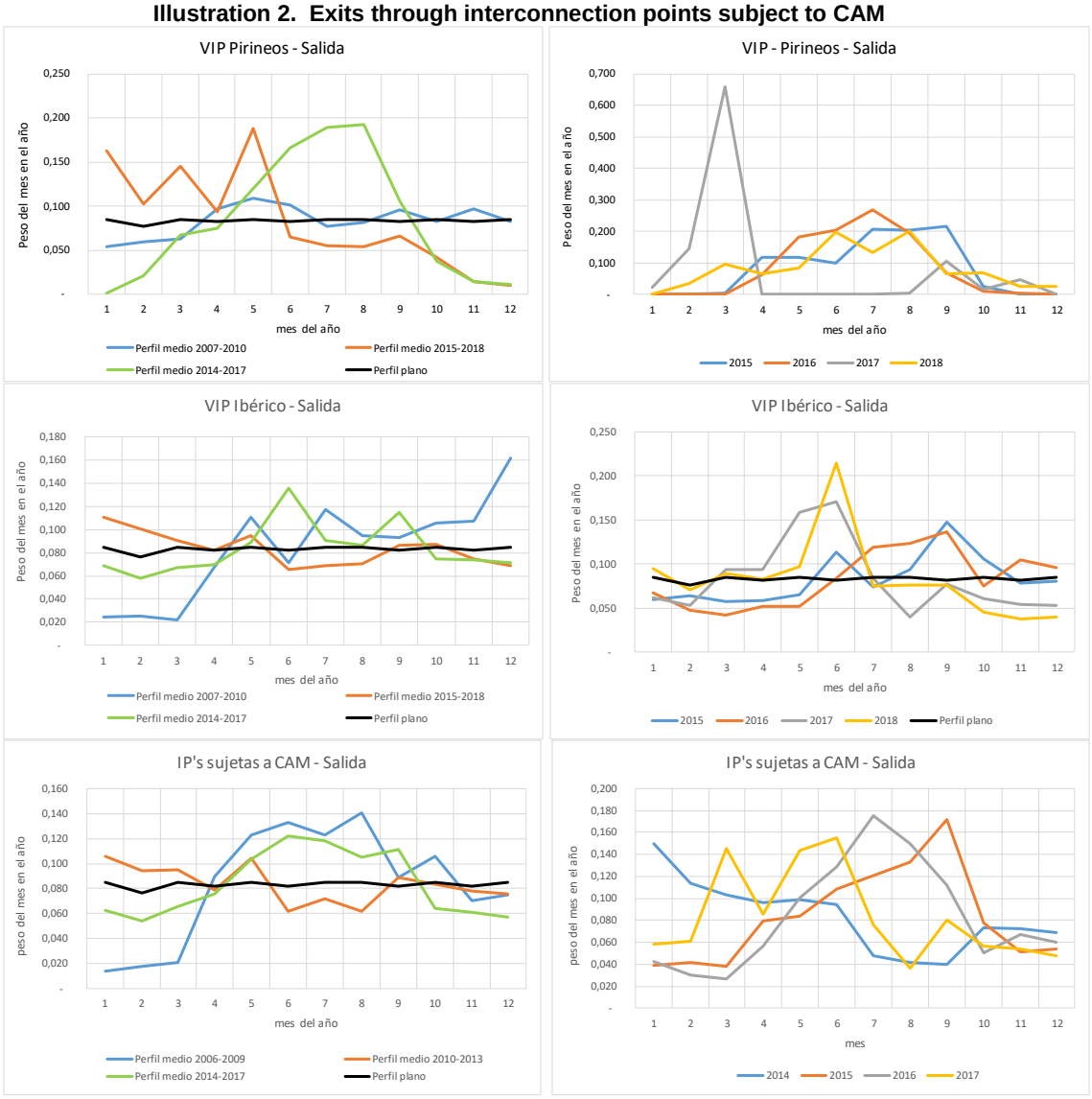
entry points through interconnection points not subject to CAM (Tarifa and Almería) and entry points from LNG facilities. Finally, the profile for all entry points and all exit points is presented, excluding interconnection points subject to CAM, for which the tariff code prevents from grouping with other entry points.

Illustration 1. Entries through interconnection points subject to CAM



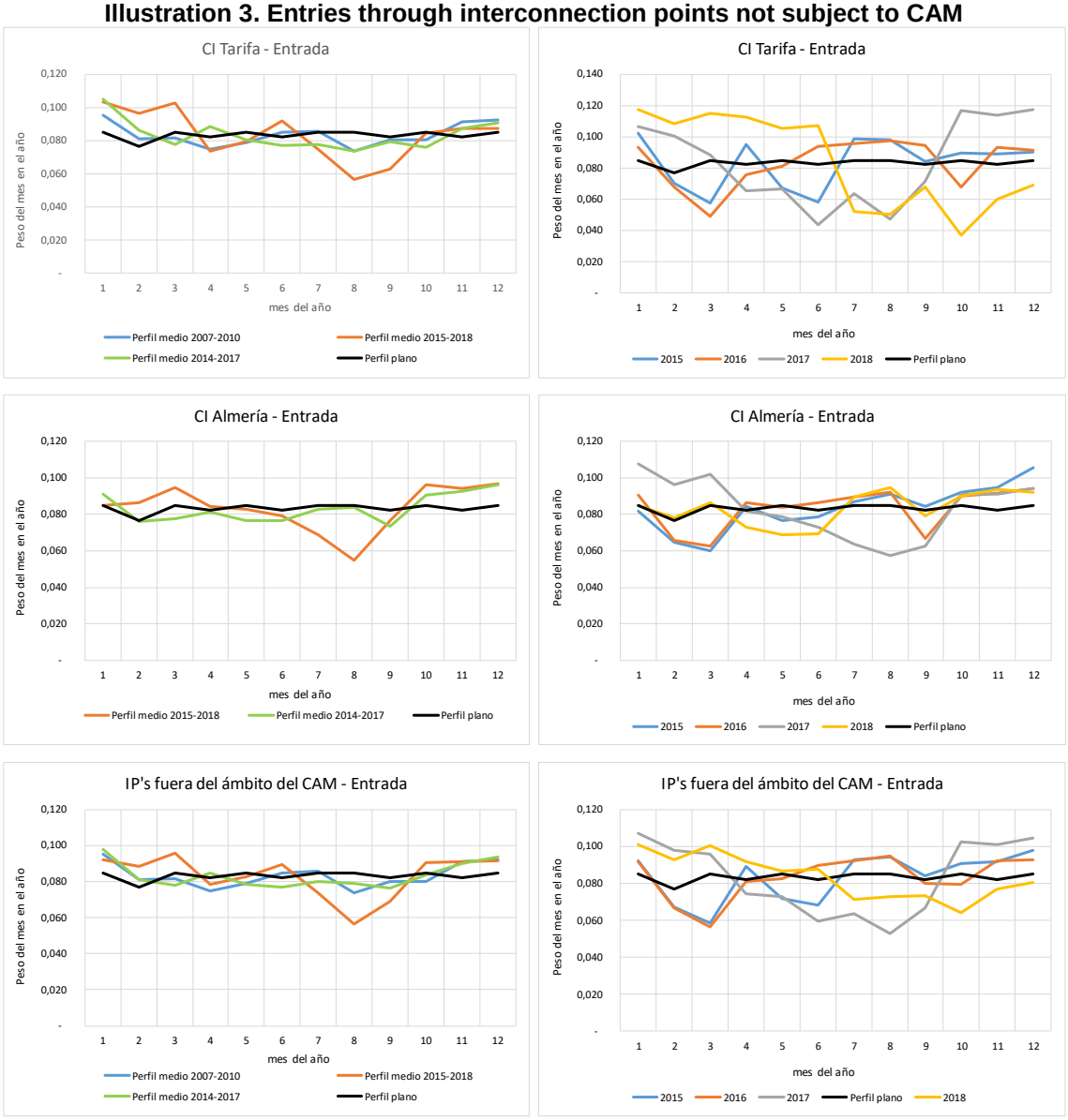
Source: CNMC

Illustration 2. Exits through interconnection points subject to CAM



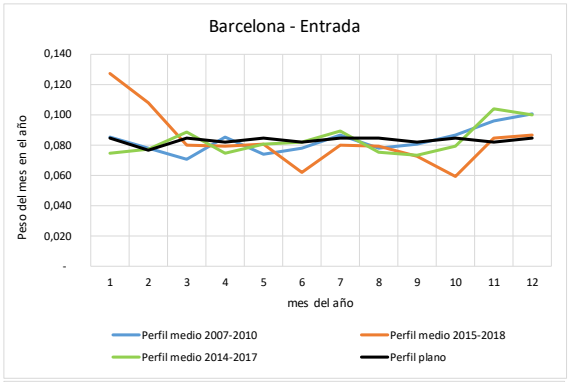
Source: CNMC

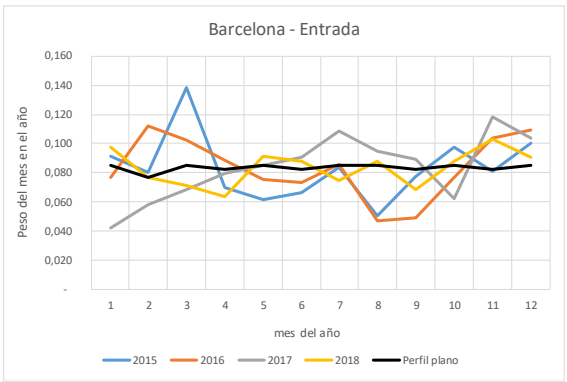
Illustration 3. Entries through interconnection points not subject to CAM

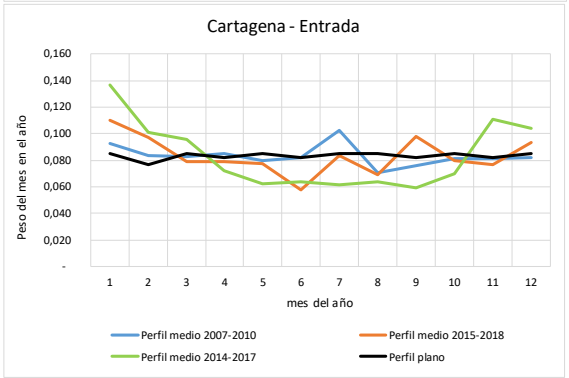


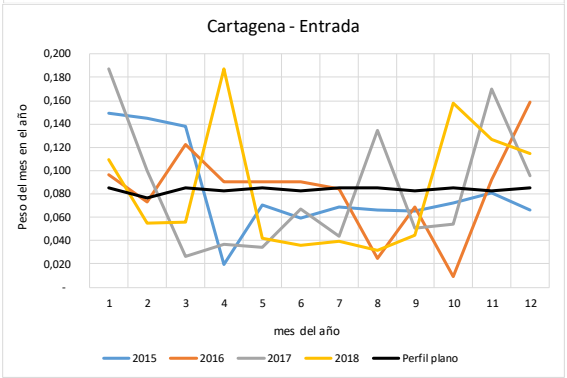
Source: CNMC

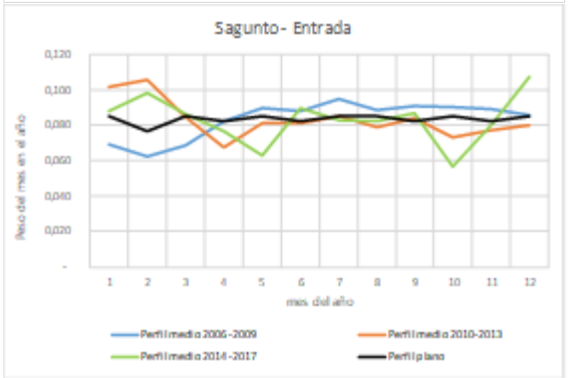
Illustration 4. Entries from LNG facilities

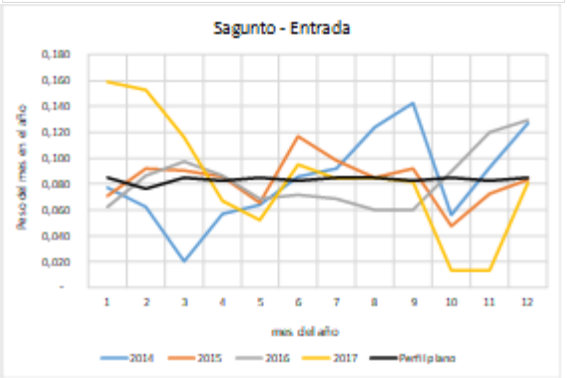


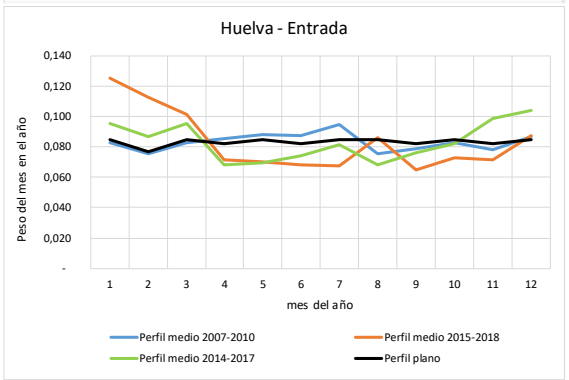


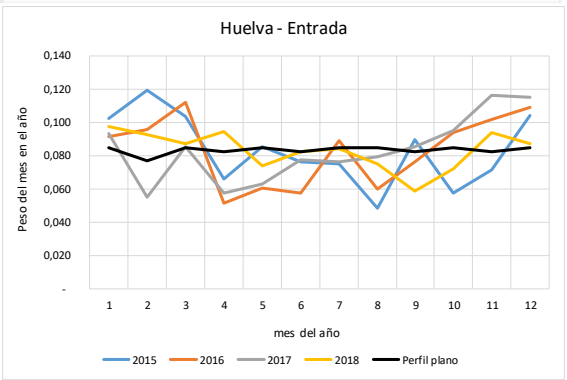


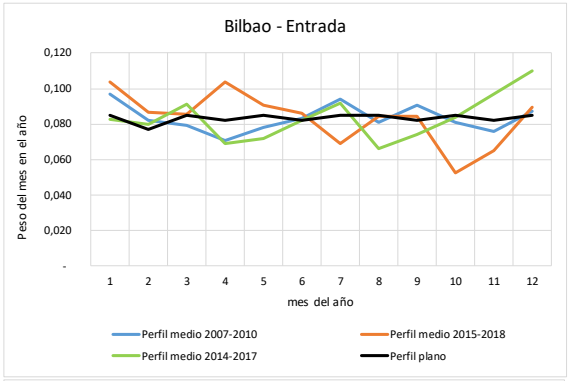


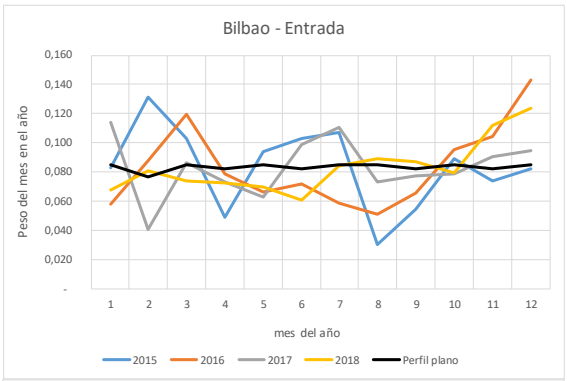


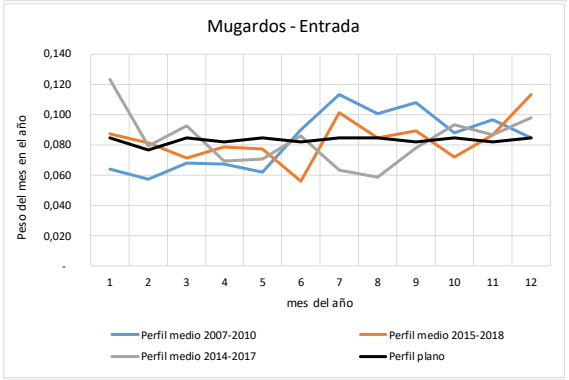


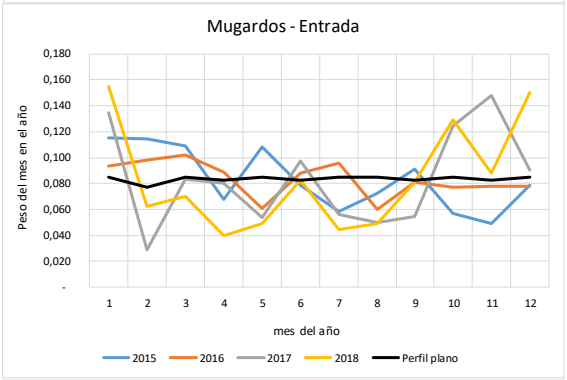


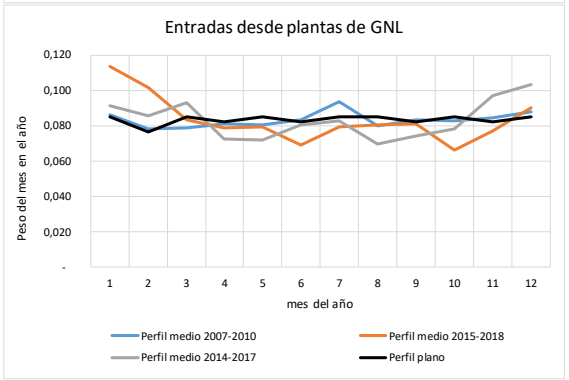


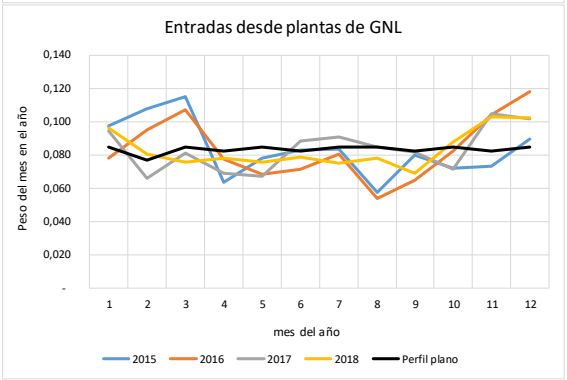






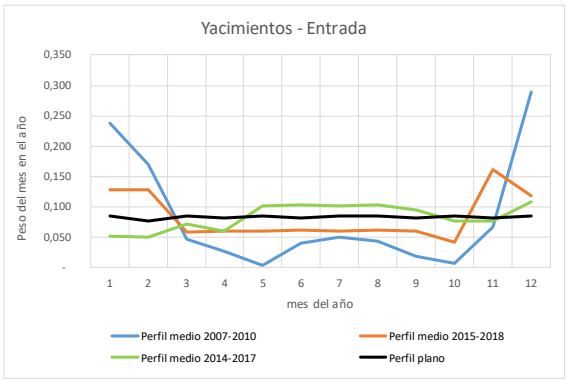


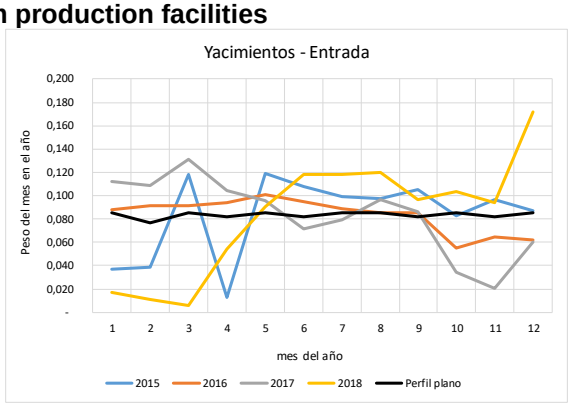




Source: CNMC

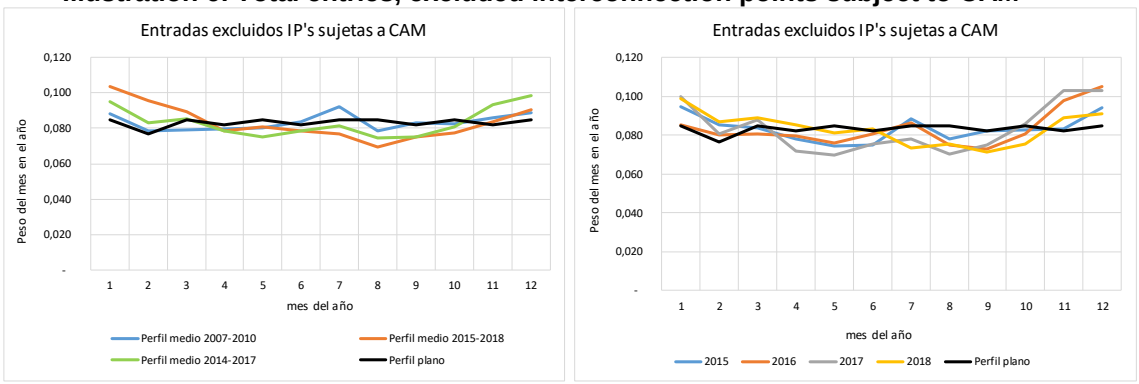
Illustration 5. Entries from production facilities





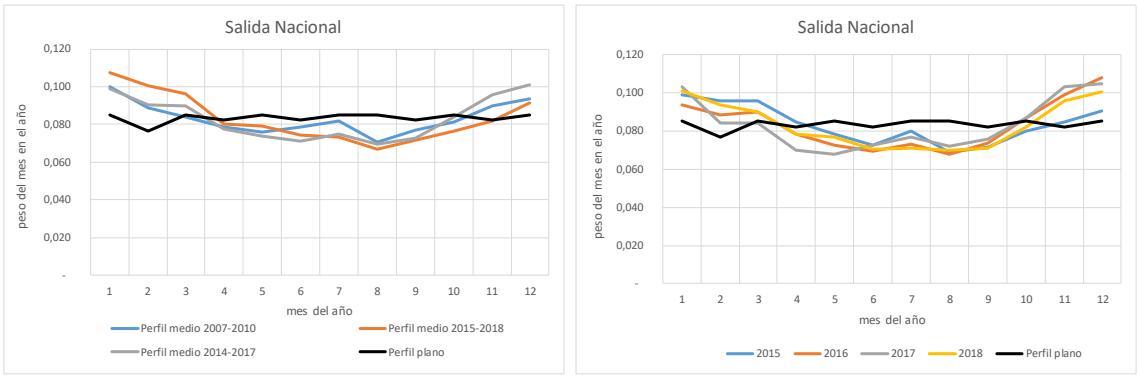
Source: CNMC

Illustration 6. Total entries, excluded interconnection points subject to CAM



Source: CNMC

Illustration 7. Exits to national customers



Source: CNMC

It is noted that, with the exception of the exit to national customers, there is no clear seasonality at the entry points or exit points.

Consequently, only seasonal factors for standard capacity products of less than one-year duration with exit to national customers will be considered.

III) Seasonal factors applicable to the exits towards national customers calculation

According to Regulation (EU) 2017/460, the seasonal factors will be based on the expected flow corresponding to each month, unless the amount of gas flow in a month is equal to 0 where in such a case the expected contracted capacity will be taken.

The applicable seasonal factor for the calculation of the monthly standard capacity product will be obtained as a result of multiplying the proportion that represents the month in the computation of the year by 12 raised to a power between 0 and 2 and by the corresponding multiplier.

The seasonal factor for the calculation of quarterly, daily and intraday standard capacity product are obtained as a result of multiplying the monthly coefficients by the corresponding multiplier (quarterly, daily or intraday).

In particular, seasonal factors will be determined according to the following formulas:

a) Monthly coefficient

$$C_{M,m} = [(Q_{m,a} \times 12)^{n}] \times M_M$$

Where:

$C_{M,m}$: is the seasonal factor to be applied to yearly capacity-based transmission tariff to obtain the monthly standard capacity tariff of the month m.
If the arithmetic mean of the monthly coefficients exceeds the value of the multiplier, they must be adjusted.

$Q_{m,a}$: is the proportion that represents month m in the year a.

n: power, it will take a value between 0 and 2. The value of 1.5 has been taken, so that no coefficient is lower than one.

M_M: monthly multiplier;

b) Quarterly coefficient

$$C_{T,t} = C_{T0,t} \times M_T$$

Where:

$C_{T,t}$: is the seasonal factor to be applied to yearly capacity-based transmission tariff to obtain the quarterly standard capacity tariff, of the quarter t.
If the arithmetic mean of the quarterly coefficients exceeds the value of the multiplier, they must be adjusted.

$C_{T0,t}$: is the initial value of the coefficient of the quarter t. It will be taken an initial value, either the arithmetic mean of the respective seasonal factors applicable for the three relevant months, or a value no less than the lowest and no more than the highest of the coefficients applicable to the three corresponding months.

M_T: quarterly multiplier;

c) Daily coefficient

$$C_{D,m} = C_{M,m} \times M_D$$

Where:

$C_{D,m}$: is the seasonal factor to be applied to yearly capacity-based transmission tariff to obtain the daily standard capacity tariff, of the month m.
If the arithmetic mean of the daily coefficients exceeds the value of the multiplier, they must be adjusted.

$C_{M,m}$: is the coefficient to be applied to yearly capacity-based transmission tariff to obtain the monthly standard capacity tariff, of the month m.

M_D: daily multiplier;

d) Within-day coefficient

$$C_{I,m,h} = C_{M,m} \times M_{Ih}$$

Where:

$C_{I,m,h}$: is the coefficient to be applied to yearly capacity-based transmission tariff to obtain the within-day standard capacity tariff, of the month m for a contract of h hours.
If the arithmetic mean of the within-day coefficients exceeds the value of the multiplier, they must be adjusted.

$C_{M,m}$: is the coefficient to be applied to yearly capacity-based transmission tariff to obtain the monthly standard capacity tariff, of the month m.

M_{Ih}: is the level of the within-day multiplier for a contract of h hours;

It is considered that the expected gas flow for the regulatory period will present a profile similar to the average profile recorded in the 2015-2018 period by the demand of national customers, according to the information available in the settlement database.

Table 12 shows the procedure for calculating the monthly seasonal factors to be applied to the prices of the standard yearly capacity product to obtain the price corresponding to the standard monthly capacity product.

Table 12 Seasonal factor for monthly standard capacity product calculation

Monthly multiplier (M_M)	1,30

Month	Proportion that represents month m in the year a $Q_{m,a}$	Initial monthly coefficients $C_{M,m} = (Q_{m,a} \times 12)^{1,5} \times M_M$	Adjusted monthly coefficients $C_{M,m} \times CA$
January	10,2%	1,78	1,76
February	9,1%	1,49	1,47
March	8,7%	1,40	1,39
April	7,5%	1,11	1,10
May	7,1%	1,03	1,02
June	7,2%	1,03	1,02
July	7,5%	1,11	1,10
August	7,1%	1,01	1,00
September	7,4%	1,08	1,07
October	8,3%	1,29	1,28
November	9,7%	1,64	1,63
December	10,2%	1,78	1,77
Average seasonal factors (P)		**1,31**	**1,30**

Adjustment coefficient ($CA = M_M / P$)	0,992

Source: CNMC

As indicated, the seasonal factor for quarterly, daily and intraday standard capacity products are obtained as a result of multiplying the monthly seasonal factor by the corresponding multiplier, adjusting them if necessary.

In the seasonal factor for quarterly products, the average monthly prices have been taken as the initial value of each quarter.

The following tables show the procedure for calculating the quarterly, daily and intraday seasonal factors. For the illustrative purposes in the case of within-day seasonal factors it has been taken a 10-hours contract, although the procedure is performed for all possible durations of the within-day contracts.

Table 13. Seasonal factor for quarterly standard capacity product calculation

Quarterly multiplier (M_T)	1,20

Quarter	Initial value (average of the months of the quarter) $C_{T0,t}$	Initial quarterly coefficients $CT_{,t} = C_{T0,t} \times M_T$	Adjusted quarterly coefficients $C_{M,m} \times CA$	Orden ETU/1977/2016
Q1	1,541	1,85	1,42	1,910
Q2	1,045	1,25	0,96	1,210
Q3	1,054	1,27	0,97	1,080
Q4	1,560	1,87	1,44	1,360
Average seasonal factors (P)		1,56	1,20	1,390

Adjustment coefficient ($CA = M_T / P$)	0,77

Source: CNMC

Table 14. Seasonal factor for daily standard capacity product calculation

Daily multiplier (M_D)	1,60

Month	Monthly seasonal factor $C_{M,m}$	Initial caily coefficients $C_{D,m} = C_{M,m} \times M_D$	Adjusted daily coefficients $C_{D,m} \times CA$
January	1,76	2,82	2,17
February	1,47	2,36	1,81
March	1,39	2,22	1,71
April	1,10	1,75	1,35
May	1,02	1,63	1,25
June	1,02	1,63	1,26
July	1,10	1,75	1,35
August	1,00	1,60	1,23
September	1,07	1,71	1,31
October	1,28	2,06	1,58
November	1,63	2,61	2,00
December	1,77	2,83	2,17
Average seasonal factors (P)		2,08	1,60

Adjustment coefficient ($CA = M_D / P$)	0,77

Source: CNMC

Table 15. Seasonal factor for a standard capacity product of a duration of 10 hours calculation

Winthin-day multiplier for 10-hours contract (M_I)	3,55

Month	Monthly seasonal factor $C_{M,m}$	Initial Within-day coefficients for 10-hour contract $C_{I,m} = C_{M,m} \times M_I$	Adjusted Within-day coefficients $C_{I,m} \times CA$
January	1,763	6,264	4,82
February	1,473	5,236	4,03
March	1,386	4,926	3,79
April	1,096	3,896	3,00
May	1,019	3,620	2,78
June	1,021	3,627	2,79
July	1,096	3,896	3,00
August	1,000	3,554	2,73
September	1,067	3,791	2,92
October	1,284	4,564	3,51
November	1,629	5,789	4,45
December	1,766	6,276	4,83

Average seasonal factors (P)	4,620	3,55

Adjustment coefficient ($CA = M_D / P$)	0,769

Source: CNMC

IV) Transmission tariffs for non-yearly standard capacity products of firm capacity calculation

As mentioned, only seasonal factors will be considered in the calculation of transmission tariffs for non-yearly standard capacity products of firm capacity at the exit to national consumers. Consequently, transmission tariffs for non-yearly standard capacity products applicable to all entry and exit points, with the exception of exits to national consumers and local networks, will be determined in accordance with the methodology established in Article 14 of the Regulation (EU) 2017/460, while transmission tariffs for non-yearly standard capacity products of firm capacity at the exit to national consumers will be determined in accordance with the methodology established in Article 15 of Regulation (EU) 2017/460.

In particular, the price of the corresponding short-term product applicable to all entry and exit points, with the exception of exits to national consumers and distribution networks, shall be determined in accordance with the following formulas:

a) Quarterly, monthly or daily standard capacity products:

$P = (M \times P_A / 365) \times D$

Where:

P: quarterly, monthly or daily capacity transmission tariff
M: quarterly, monthly or daily multiplier
P_A: capacity transmission tariff for yearly standard capacity product
D: is the duration of the respective capacity contract, in days

For leap years, the figure 365 will be replaced with the figure 366.

b) Within-day standard capacity products:

$P = (M \times P_A / 8760) \times H$

Where:

P: Within-day capacity transmission tariff
M: Within-day multiplier
P_A: capacity transmission tariff for yearly standard capacity product
H: is the duration of the within-day contract expressed in hours

For leap years, the figure 8760 will be replaced with the figure 8764.

Capacity transmission tariffs for non-yearly standard capacity products of firm capacity at the exit to national consumers shall be determined in accordance with the following formulas:

a) Monthly standard capacity products:

$$P_{M,i} = (C_{M,m} \times P_A / 365) \times D$$

Where:

$P_{M,m}$: Monthly capacity transmission tariff corresponding to month m
$C_{M,m}$: Seasonal factor to be applied to yearly capacity transmission tariff to obtain the monthly standard capacity transmission tariff, corresponding to month m
P_A: Capacity transmission tariff for yearly standard capacity product;
D: is the duration of the monthly capacity transmission tariff, expressed in days.

b) Quarterly standard capacity products

$P_{T,t} = (C_{T,t} \times P_A / 365) \times D$

Where:

$P_{T,t}$: Quarterly capacity transmission tariff corresponding to quarter t
$C_{T,t}$: Seasonal factor to be applied to yearly standard capacity product to obtain the quarterly standard capacity transmission tariff, corresponding to quarter t
P_A: Capacity transmission tariff for yearly standard capacity product;
D: Duration of the quarterly capacity transmission tariff, expressed in days.

c) Daily standard capacity products

$P_{D,m} = (C_{D,m} \times P_A / 365) \times D$

Where:

$P_{D,m}$: Daily capacity transmission tariff corresponding to month m
$C_{D,m}$: Seasonal factor to be applied to yearly capacity-based transmission tariff to obtain the daily standard capacity transmission tariff, of the month m.
If the arithmetic mean of the daily coefficients exceeds the value of the multiplier, they must be adjusted
$C_{M,m}$: Seasonal factor to be applied to yearly capacity transmission tariff to obtain the monthly standard capacity transmission tariff, corresponding to month m:
P_A: Capacity transmission tariff for yearly standard capacity product
D: is the duration of the daily capacity transmission tariff.

d) Within day standard capacity products

$P_{I,m,h} = (C_{I,m} \times P_A / 8.760) \times h$

Where:

$P_{I,m,h}$: within day capacity transmission tariff corresponding to month m in a contract of h hours of duration;
$C_{I,m,h}$: Seasonal factor to be applied to yearly capacity transmission tariff to obtain the within day standard capacity transmission tariff, corresponding to month m in a contract of h hours of duration;
P_A: Capacity transmission tariff for yearly standard capacity product;
h: is the duration of the within day capacity transmission tariff, expressed in hours.

For leap years, the figure 8760 will be replaced with the figure 8764.

4.5.3 Transmission tariffs for standard interruptible capacity products

The Article 16 of Regulation (EU) 2017/460 establishes the calculation procedure for determining reserve prices for interruptible capacity products for interconnection points. In particular, the national regulatory authority may decide to apply an ex-post discount or an ex ante discount. The ex-ante discount will depend on the probability of interruption and the ex post discount, which can only be used at the interconnection points where the capacity interruption is due to physical congestion, consists of compensation equivalent to three times the reserve price for daily standard capacity products for firm capacity.

The CNMC has decided that an ex-post discount should be applied to all entry and exit points.

4.6 Reconciliation of revenues

According article 10 and articles 17, 18, 19 and 20 of the Tariff network code regarding the compensation between transmission operators operating in the same entry-exit system, and the conciliation of revenues and incomes, it is necessary to establish the following aspects prior to conduct a public consultation:

1st Allowed revenues of each transmission operator
2nd Incomes received by each transmission operator
3rd Difference between allowed revenues and incomes received by each transmission operator
4th Definition of the regulatory account for each transmission operators in which the above aspects are reflected.
5th Compensation mechanism between system operators
6th Destination, if necessary, of the premium obtained in the capacity auction at the virtual interconnection point.

There are two possible scenarios when establishing the relation between regulated incomes and regulated payments among different agents. One possibility is that the prices set to customers correspond to prices charged by the companies, either directly or by third agents. Another possibility is the creation of a reserve for economic compensation, ruled by the Regulatory Authority, in which all incomes are deposited and from where all payments are made to the agents. In the slang of tariff systems this is called “settlement system”. Spanish system is currently organized this way.

The determination of the economic flows between the agents is carried out through the settlement system, to assign them the incomes of the system based on their allowed revenues. As a result, a matrix of payments and deposits is calculated, specifying the paying agents and the agents with collection rights.

In the regulatory account of each agent, the revenues considered are those invoiced until the settlement month, as well as the allowed settlement costs (linked with the operation of the gas system), obtaining the net settlement income. The amount for each agent is calculated according to the net total incomes of the system, considering the proportional share of their allowed revenues over the total revenues. Taking into account the calculated amount and the net income of each agent, the amount to be settled is determined. This amount is reflected in the regulatory account of each agent, so the deficit or surplus of the regulatory account is the difference between the allowed revenues and the sum of the net settlement income and the amount settled.

Settlement process is done on an annual basis, and it is approved through a definitive settlement every year. In addition, fourteen monthly provisional payments on account of the definitive settlement are made. The first twelve provisional settlements are carried out with the available information until every month of the year and the last two provisional settlements include the invoices made in the first two months of the following year corresponding to gas flows from the year of the settlement.

For all the above, and given the current settlement system is an adequate mechanism for the purpose of complying with the obligations derived from the Tariff Network Code, it is necessary to include in the Circular the general principles of the settlement mechanism, in order to enable the development of the system in the corresponding informative Circular (see section 7).

4.7 Cost allocation assessments

The network code on harmonised transmission tariff structures for gas (NC TAR) Commission Regulation (EU) 2017/460 of 16 March 2017, establishes that the national regulatory authority shall carry out a consultation on the cost allocation methodology and assessment, in order to demonstrate that the proposed methodology complies with the requirements set out in article 13 of Regulation Nº 715/2009 and article 7 of NC TAR.

Additionally, where the proposed reference price methodology is other than the Capacity Weighted Distance, in accordance with article 26(1)(a), the national regulatory authority shall include a comparison between the reference prices subject to consultation and those of the Capacity Weighted Distance methodology.

Finally, the national regulatory authority shall publish the following ratios set out in Article 30(1)(b)(v):

– the breakdown between the revenue from capacity-based transmission tariffs and the revenue from commodity-based transmission tariffs

- the breakdown between the revenue from capacity-based transmission tariffs at all entry points and the revenue from capacity-based transmission tariffs at all exit points
- the breakdown between the revenue from intra-system network use at both entry points and exit points and the revenue from cross-system network use at both entry points and exit points.

In the following sections it is assessed whether the proposed methodology complies with the requirements set out in NC TAR, as well as the aforementioned ratios are published.

4.7.1 Assessment of compliance with the requirements set out in article 13 of Regulation Nº 715/2009 and article 7 of NC TAR

Article 13 of Regulation Nº 715/2009 requires that tariffs, or the methodologies used to calculate them, shall be transparent and non-discriminatory, set separately for every entry point into or exit point out of the transmission system, shall neither restrict market liquidity nor distort trade across borders of different transmission systems while at the same time shall avoid cross-subsidies between network users

In addition to the above requirements, the reference price methodology shall comply with the requirements set out in article 7 of NC TAR. It shall aim at:

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

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

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

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

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

The above requirements correspond to the general principles set out in the reference price methodology for transmission, distribution, LNG and storage facilities established in Article 3 of the “Circular” and detailed in section 2 of this Consultation document.

The reference price methodology proposed in this public consultation is the Capacity Weighted Distance (CWD), set out in Article 8 of Regulation (EU) 2017/460, with an allocation of 50% of the revenue from capacity-based transmission tariffs at all entry points and 50% at all exit points. This reference prices shall be calculated separately for each entry point and for each exit point,

in a transparent way and ensuring non-discrimination and preventing cross-subsidisation between network users. The cost allocation assessments (CAA) proposed in Article 5 indicate the degree of cross-subsidisation between intra-system and cross-system network use. The calculations for the cost allocation comparison indexes do not exceed 10 percent.

Finally, it has been published the Simplified tariff model (Modelo transporte.xls), including an explanation about the use of the document, in order to allow network users to calculate the applicable tariffs until the end of the tariff period.

Following the reasoning provided previously the CNMC is of the view that the proposed reference price methodology complies with the requirements set out in Article 13 of Regulation Nº 715/2009 and Article 7 of NC TAR.

4.7.2 Comparison with the Capacity Weighted Distance

The proposed reference price methodology is Capacity Weighted Distance, so the comparison is not needed.

4.7.3 Cost allocation assessment relating to the transmission services revenue to be recovered by capacity-based and commodity-based transmission tariffs

In the proposed methodology, the allowed revenues for transmission services to be recovered through capacity-based transmission tariffs corresponds to the allowed revenues for investment costs and operational costs. The allowed revenues for transmission services to be recovered through commodity-based transmission tariffs corresponds to the allowed revenues for operating gas. As a result, the breakdown between the revenue from capacity-based transmission tariffs is 96,68% and the revenue from commodity-based transmission tariffs is 3,32%. (See Table 17).

Table 16. Allowed revenues for transmission services to be recovered from capacity and commodity-based transmission tariffs

	Allowed transmission revenues (€)	% of the total
Capacity	556.896.502	96,68%
Volume	19.127.531	3,32%
Total	**576.024.033**	**100,00%**

Source: CNMC

4.7.4 Cost allocation assessment relating to the transmission services revenue to be recovered by entry-exit points

In the proposed methodology, 50% of the referred allowed revenues shall be recovered from capacity-based transmission tariffs at entry points and 50% through capacity-based transmission tariffs at exit points, in accordance with Article 8(1)(e) of Regulation (EU) 2017/460 and with the agent responses to the consultation on "Regulation x/2013, of x of xxxxx, of CNMC, establishing the methodology to calculate network tariffs for access to gas infrastructures".

The allowed revenues for operating gas are set in such a way that it is the same at all entry points and at all exit points, in accordance with Article 4(3)(a) of Regulation (EU) 2017/460.

As a consequence of the above, 50,01% of the referred allowed revenues shall be recovered through transmission tariffs at entry points and 49,99% through transmission tariffs at exit points. (see Table 17).

Table 17. Allowed revenues for transmission services to be recovered from entry-exit transmission tariffs

		Allowed transmission revenues (€)	% of the total
Entry	Capacity	278.448.251	50,01%
	Volume	9.602.783	
Exit	Capacity	278.448.251	49,99%
	Volume	9.524.748	
Total		**576.024.033**	**100,00%**

Source: CNMC

4.7.5 Cost allocation assessment relating to the transmission services revenue between intra-system and cross-system network users

The cost allocation assessment shall indicate the degree of cross-subsidisation between intra-system and cross-system network uses, in accordance with Article 5 of Regulation (EU) 2017/460. The capacity cost allocation comparison index, which is defined in percentage, is calculated as a ratio between the average cost paid by intra-system (national) and cross-system (non-national) network users, according to the following formula:

$$Comp = \frac{2 \times |Ratio_{Nacional} - Ratio_{No\ nacional}|}{Ratio_{\ Nacional} + Ratio_{No\ nacional}} \times 100\%$$

Where:

Comp: Comparison index
Ratio $_{National}$: Is the average revenue obtained from capacity and commodity tariffs charged for intra-system use (national) at entry and exit points.
Ratio $_{Non\text{-}national}$: Is the average revenue obtained from capacity and commodity tariffs charged for cross-system use (non-national) at entry and exit points

For the purpose of estimating the revenue obtained from tariffs charged to non-national users at all entry points, it is considered that the amount of allocated capacity for cross-system network use at all entry points is equal to the capacity for cross-system network use at all exit points, in accordance with Article 5 of Regulation (UE) 2017/460.

As indicated in Article 5(6), where the results of the capacity, or respectively commodity cost allocation comparison indexes, exceed 10 percent, the national regulatory authority shall provide the justification for such results.

According to the cost driver considered in the reference price methodology proposed and taking into account the characteristics of the natural gas transmission network, it has been considered two cost drivers: the forecasted contracted capacity at entry and exit points and the distance.

Table 18 and Table 19 show the results of the capacity cost allocation indexes. The results of the comparison indexes are below 10%, the limit indicated in article 5(6) of Regulation (UE) 2017/460.

Table 18. Cost allocation assessment relating to the transmission services revenue to be recovered by capacity-based transmission tariffs between intra-system and cross-system network users before adjustments of article 6(4) of Regulation (UE) 2017/460

System	Entry/Exit	Capacity by distance (MWh/day x km)	Transmission tariffs revenues (€)	Average income (€/MWh/day/year)	
National (Intra-system)	Entrada	759.590.816	245.183.677	0,323	
	Salida	1.299.909.997	255.481.147	0,197	
	Total	**2.059.500.812**	**500.664.824**	**0,243**	(A)
Non-national (Cross-system)	Entrada	112.720.041	33.264.574	0,295	
	Salida	119.566.003	22.967.104	0,192	
	Total	**232.286.044**	**56.231.678**	**0,242**	(B)

Comp = 2*|(A) - (B)| / [(A) + (B)]	**0,42%**

Source: CNMC

Table 19. Cost allocation assessment relating to the transmission services revenue to be recovered by capacity-based transmission tariffs between intra-system and cross-system network users after adjustments of article 6(4) of Regulation (UE) 2017/460

System	Entry/Exit	Capacity by distance (MWh/día x km)	Transmission tariffs revenues (€)	Average income (€/MWh/día/año)	
National (Intra-system)	Entry	759.590.816	245.183.677	0,323	
	Exit	1.299.909.997	254.969.078	0,196	
	Total	**2.059.500.812**	**500.152.755**	**0,243**	(A)
Non-national (Cross-system)	Entry	112.720.041	33.264.574	0,295	
	Exit	119.566.003	23.479.173	0,196	
	Total	**232.286.044**	**56.743.747**	**0,244**	(B)

Comp = 2*|(A) - (B)| / [(A) + (B)]	**0,59%**

Source: CNMC

Table 20 shows the result of the commodity cost allocation index. The result of the comparison index is below 10%, the limit indicated in article 5(6) of Regulation (UE) 2017/460.

Table 20. Cost allocation assessment relating to the transmission services revenue to be recovered by commodity-based transmission tariffs between intra-system and cross-system network users

System	Entry/Exit	Volume (MWh)	Transmission tariffs revenues (€)	Average income (€/MWh/day/year)	
National (Intra-system)	Entrada	350.677.276	9.332.465	0,0266	
	Salida	347.745.040	9.254.430	0,0266	
	Total	**698.422.316**	**18.586.895**	**0,0266**	(A)
Non-national (Cross-system)	Entrada	10.157.482	270.318	0,0266	
	Salida	10.157.482	270.318	0,0266	
	Total	**20.314.965**	**540.636**	**0,0266**	(B)

Comp = 2*|(A) - (B)| / [(A) + (B)]	**0,00%**

Source: CNMC

Finally, Table 21 show the revenues to be recovered by capacity and commodity-based tariffs from intra-system (national) users and cross-system (non-national) users.

Table 21. Revenues from intra-system and cross-system users

System		Capacity transmission revenues (€)	Commodity transmission revenues (€)	Total revenues (€)	Percentage
National (Intra-system)	Entry	245.183.677	9.332.465	254.516.142	44,2%
	Exit	254.969.078	9.254.430	264.223.509	45,9%
	Total	**500.152.755**	**18.586.895**	**518.739.651**	**90,1%**
Non-national (Cross-system)	Entry	33.264.574	270.318	33.534.892	5,8%
	Exit	23.479.173	270.318	23.749.491	4,1%
	Total	**56.743.747**	**540.636**	**57.284.382**	**9,9%**

Source: CNMC

4.8 Analysis of the differences between transmission tariffs

Article 30(2)(a) of Tariff network code establishes in epigraph i) that the publication of transmission tariffs shall be accompanied by an explanation of the difference in the level of transmission tariffs for the same type of transmission service applicable for the prevailing tariff period and for the tariff period for which the information is published.

It is important to notice that currently there is no transmission tariff, but a tariff that includes both transmission and distribution activities. In addition, the methodology for the calculation of current tariffs is not public. In consequence, it is not possible to analyse the differences between tariffs resulting from the application of the Circular and current tariffs

4.9 Expected evolution of transmission tariffs during the regulatory period

Article 30(2)(a) of Tariff network code establishes in epigraph ii) that the publication of transmission tariffs shall be accompanied by an explanation of the estimated difference in the level of transmission tariffs for the same type of transmission service applicable for the tariff period for which the information is published and for each tariff period within the remainder of the regulatory period.

Following tables shows the forecasted evolution of the transmission revenues, of the contracted capacity for each entry point and for each exit point and of the gas volumes demanded at entry and exit points of the transmission network. Tables also show capacity charges and their corresponding commodity charge for each entry and exit point that result from the application of the methodology of the Circular until the end of the regulatory period.

Regarding the forecasts related to the evolution of the transmission revenues in the period 2021-2026, the methodology currently submitted to public consultation is applied (see CIR/DE/006/19), considering the demand forecasts collected in Annex I.

The evolution of the capacity charge of the entry and exit points of the transmission network show similar reductions among them and greater to those derived from the evolution of transmission revenues, motivated by the increase of the forecasted contracted capacity over the regulatory period.

Likewise, the evolution of the capacity charge of the entry and exit points of the transmission network are similar among themselves, without significant differences between entry and exit points. This is because the forecasted scenario does not include significant variations among entry points, neither among exit points.

Finally, moderated reductions of variable charge are forecasted over the regulatory period for entry and exit points because of the demand growth during the regulatory period and the maintained revenues for operating gas.

Table 22.Evolution of the capacity-based transmission tariffs at entry points during the regulatory period

1. Forecasted evolution of allowed transmission revenues

Allowed transmission revenues (€)	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Investment Expenditure	417.843.927	368.905.110	313.679.042	274.075.356	234.468.359	189.107.721	180.167.516
Operational Expenditure	139.052.576	118.331.526	111.680.622	112.035.587	112.307.778	113.339.971	114.196.522
Operating Gas	19.127.531	19.114.359	19.127.531	19.127.531	19.127.531	19.127.531	19.127.531
Total	**576.024.033**	**506.350.994**	**444.487.196**	**405.238.474**	**365.903.668**	**321.575.224**	**313.491.569**
% variation over the previous year		-12,1%	-12,2%	-8,8%	-9,7%	-12,1%	-2,5%

2. Forecasted evolution of the contracted capacity (MWh/day/year) for each entry point

Entry point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
VIP Francia	191.415	191.415	191.415	191.415	191.415	191.415	191.415
VIP Portugal	20.953	20.953	20.953	20.953	20.953	20.953	20.953
CI Tarifa	206.644	206.644	206.644	206.644	206.644	206.644	206.644
CI Almería	256.994	256.994	256.994	256.994	256.994	256.994	256.994
Plantas GNL	459.099	475.565	503.426	534.613	553.570	565.455	588.737
Yac. Poseidón	284	284	284	284	284	284	284
Yac. Marismas	178	178	178	178	178	178	178
Yac.Viura	5.673	5.673	5.673	5.673	5.673	5.673	5.673
PB Madrid	299	299	299	299	299	299	299
Total	**1.141.539**	**1.158.005**	**1.185.866**	**1.217.053**	**1.236.009**	**1.247.895**	**1.271.177**

3. Transmission revenues (€) by entry point

Entry point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
VIP Francia	38.668.099	33.426.972	28.560.010	25.394.546	22.515.015	19.476.338	18.601.225
VIP Portugal	7.006.779	6.054.480	5.175.338	4.597.329	4.074.304	3.523.609	3.367.405
CI Tarifa	60.126.358	51.896.021	44.316.408	39.240.731	34.727.393	30.011.842	28.722.021
CI Almería	67.447.070	58.210.106	49.714.459	44.006.479	38.938.776	33.648.197	32.207.472
Plantas GNL	104.151.556	93.124.109	84.138.440	79.126.379	72.520.506	64.034.251	63.778.244
Yac. Poseidón	80.051	69.108	59.025	52.305	46.304	40.023	38.288
Yac. Marismas	48.796	42.125	35.988	31.893	28.234	24.404	23.346
Yac.Viura	870.641	753.148	644.047	573.721	509.098	440.588	420.516
PB Madrid	48.900	42.250	36.118	32.088	28.438	24.594	23.501
Total	**278.448.251**	**243.618.318**	**212.679.832**	**193.055.471**	**173.388.068**	**151.223.846**	**147.182.019**

4. Entry capacity-based transmission tariff (€/MWh/day)

Entry point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
VIP Francia	202,01	174,63	149,20	132,67	117,62	101,75	97,18
VIP Portugal	334,41	288,96	247,00	219,42	194,45	168,17	160,71
CI Tarifa	290,97	251,14	214,46	189,90	168,05	145,23	138,99
CI Almería	262,45	226,50	193,45	171,24	151,52	130,93	125,32
Plantas GNL	226,86	195,82	167,13	148,01	131,01	113,24	108,33
Yac. Poseidón	281,79	243,27	207,78	184,12	163,00	140,89	134,78
Yac. Marismas	273,39	236,01	201,63	178,68	158,19	136,73	130,80
Yac.Viura	153,48	132,76	113,53	101,14	89,74	77,67	74,13
PB Madrid	163,43	141,20	120,71	107,24	95,04	82,19	78,54
Average transmission tariff	**243,92**	**210,38**	**179,35**	**158,63**	**140,28**	**121,18**	**115,78**

5. Forecasted evolution of the entry capacity-based transmission tariff

Entry point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
VIP Francia		-13,55%	-14,56%	-11,08%	-11,34%	-13,50%	-4,49%
VIP Portugal		-13,59%	-14,52%	-11,17%	-11,38%	-13,52%	-4,43%
CI Tarifa		-13,69%	-14,61%	-11,45%	-11,50%	-13,58%	-4,30%
CI Almería		-13,70%	-14,59%	-11,48%	-11,52%	-13,59%	-4,28%
Plantas GNL		-13,68%	-14,65%	-11,44%	-11,49%	-13,56%	-4,34%
Yac. Poseidón		-13,67%	-14,59%	-11,39%	-11,47%	-13,57%	-4,33%
Yac. Marismas		-13,67%	-14,57%	-11,38%	-11,47%	-13,57%	-4,33%
Yac.Viura		-13,50%	-14,49%	-10,92%	-11,26%	-13,46%	-4,56%
PB Madrid		-13,60%	-14,51%	-11,16%	-11,37%	-13,52%	-4,44%
Average transmission tariff		**-13,75%**	**-14,75%**	**-11,55%**	**-11,56%**	**-13,61%**	**-4,46%**

Source: CNMC

Table 23. Evolution of the capacity-based transmission tariffs at exit points during the regulatory period

1. Forecasted evolution of allowed transmission revenues

Allowed transmission revenues (€)	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Investment Expenditure	417.843.927	368.905.110	313.679.042	274.075.356	234.468.359	189.107.721	180.167.516
Operational Expenditure	139.052.576	118.331.526	111.680.622	112.035.587	112.307.778	113.339.971	114.196.522
Operating Gas	19.127.531	19.114.359	19.127.531	19.127.531	19.127.531	19.127.531	19.127.531
Total	**576.024.033**	**506.350.994**	**444.487.196**	**405.238.474**	**365.903.668**	**321.575.224**	**313.491.569**
% variation over the previous year		-12,1%	-12,2%	-8,8%	-9,7%	-12,1%	-2,5%

2. Forecasted evolution of the contracted capacity (MWh/day/year) for each exit point

Exit point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Nacional	1.720.196	1.743.719	1.778.986	1.830.628	1.858.757	1.875.695	1.865.785
Plantas GNL (1)	-	-	-	-	-	-	-
VIP Francia	130.599	130.599	130.599	130.599	130.599	130.599	130.599
VIP Portugal	8.944	8.944	8.944	8.944	8.944	8.944	8.944
Total	**1.859.739**	**1.883.262**	**1.918.529**	**1.970.171**	**1.998.300**	**2.015.238**	**2.005.327**

3. Transmission revenues (€) by exit point

Exit point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Nacional	254.969.078	223.191.807	195.018.925	177.305.334	159.419.671	139.148.771	135.377.940
Plantas GNL (1)	-	-	-	-	-	-	-
VIP Francia	21.885.204	19.045.988	16.473.204	14.695.775	13.032.670	11.264.927	11.010.014
VIP Portugal	1.593.969	1.380.522	1.187.704	1.054.361	935.728	810.148	794.065
Total	**278.448.251**	**243.618.318**	**212.679.832**	**193.055.471**	**173.388.068**	**151.223.846**	**147.182.019**

4. Exit capacity-based transmission tariff (€/MWh/day)

Exit point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Nacional	148,22	128,00	109,62	96,85	85,77	74,19	72,56
Plantas GNL (1)	176,24	152,21	130,39	115,20	102,06	88,33	86,52
VIP Francia	167,58	145,84	126,14	112,53	99,79	86,26	84,30
VIP Portugal	178,22	154,35	132,79	117,89	104,62	90,58	88,78
Average transmission tariff	**149,72**	**129,36**	**110,86**	**97,99**	**86,77**	**75,04**	**73,40**

5. Forecasted evolution of the exit capacity-based transmission tariff

Exit point	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Nacional		-13,64%	-14,35%	-11,65%	-11,45%	-13,50%	-2,19%
Plantas GNL (1)		-13,64%	-14,33%	-11,65%	-11,40%	-13,46%	-2,05%
VIP Francia		-12,97%	-13,51%	-10,79%	-11,32%	-13,56%	-2,26%
VIP Portugal		-13,39%	-13,97%	-11,23%	-11,25%	-13,42%	-1,99%
Average transmission tariff		**-13,60%**	**-14,30%**	**-11,61%**	**-11,45%**	**-13,52%**	**-2,19%**

Source: CNMC

Table 24. Evolution of the commodity-based transmission tariffs at entry and exit points during the regulatory period

1. Forecasted evolution of allowed transmission revenues

Allowed transmission revenues (€)	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Investment Expenditure	417.843.927	368.905.110	313.679.042	274.075.356	234.468.359	189.107.721	180.167.516
Operational Expenditure	139.052.576	118.331.526	111.680.622	112.035.587	112.307.778	113.339.971	114.196.522
Operating Gas	19.127.531	19.114.359	19.127.531	19.127.531	19.127.531	19.127.531	19.127.531
Total	**576.024.033**	**506.350.994**	**444.487.196**	**405.238.474**	**365.903.668**	**321.575.224**	**313.491.569**
% variation over the previous year		-12,1%	-12,2%	-8,8%	-9,7%	-12,1%	-2,5%

2. Forecasted evolution of gas volume (MWh)

Gas volume (MWh)	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Entry	360.834.759	365.847.194	374.557.120	384.593.815	390.712.796	394.338.157	401.263.778
Exit	357.902.522	362.950.736	371.651.752	381.658.428	387.756.637	391.368.161	398.275.487
Total	**718.737.281**	**728.797.930**	**746.208.872**	**766.252.243**	**778.469.433**	**785.706.318**	**799.539.265**

3. Forecasted evolution of gas volume (%)

Gas volume (%)	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Entry	50,2%	50,2%	50,2%	50,2%	50,2%	50,2%	50,2%
Exit	49,8%	49,8%	49,8%	49,8%	49,8%	49,8%	49,8%
Total	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**100,0%**

3. Transmission revenues (€) by entry/exit

Entry/Exit	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Entry	9.602.783	9.595.162	9.601.002	9.600.403	9.600.083	9.599.917	9.599.510
Exit	9.524.748	9.519.196	9.526.529	9.527.128	9.527.448	9.527.614	9.528.021
Total	**19.127.531**	**19.114.359**	**19.127.531**	**19.127.531**	**19.127.531**	**19.127.531**	**19.127.531**

4. Commodity-based transmission tariffs (€/MWh)

Entry/Exit	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Entrada	0,0266127	0,0262272	0,0256329	0,0249624	0,0245707	0,0243444	0,0239232
Salida	0,0266127	0,0262272	0,0256329	0,0249624	0,0245707	0,0243444	0,0239232
Average transmission tariff	**0,0266127**	**0,0262272**	**0,0256329**	**0,0249624**	**0,0245707**	**0,0243444**	**0,0239232**

5. Forecasted evolution of the commodity-based transmission tariffs

Entry/Exit	2020	Oct 20 - Sep 21	Oct 21 - Sep 22	Oct 22 - Sep 23	Oct 23 - Sep 24	Oct 24 - Sep 25	Oct 25 - Sep 26
Nacional		-1,45%	-2,27%	-2,62%	-1,57%	-0,92%	-1,73%
Plantas GNL (1)		-1,45%	-2,27%	-2,62%	-1,57%	-0,92%	-1,73%
Average transmission tariff		**-1,45%**	**-2,27%**	**-2,62%**	**-1,57%**	**-0,92%**	**-1,73%**

Source: CNMC

4.10 Methodology for transmission tariffs calculation

Article 30(2)(b) of Tariff network code establishes that with regard to transmission tariffs a simplified tariff model, updated regularly, shall be published accompanied by the explanation of how to use it, enabling network users to calculate the transmission tariffs applicable for the prevailing tariff period and to estimate their possible evolution beyond such tariff period.

In compliance, the Circular attaches an Excel file and the corresponding explanations for its use, in which agents can simulate their tariffs during the regulatory period.

7. Settlement system

CNMC is entitled to carry out the settlement of incomes and costs of natural gas system. The settlement of regulated activities of the gas sector is being carried out by the CNMC in accordance with of the eighth additional provision (2) (c) and the fourth transitory provision of Law 3/2013, of June 4, creating The National Markets and Competition Commission, as well as the sixth transitory provision of the Royal-Decree 657/2017, approving the Organic Structure of the The National Markets and Competition Commission.

Following the provisions of the Royal Decree 949/2001, of October 7, CNMC carries out 14 provisional monthly settlements on account of the definitive settlement. Each one of the provisional settlements accumulates and corrects the previous provisional settlement due to an accumulative process used. In addition, temporary deviations between the revenues and costs, if existing, are supported by all the agents subject to settlement, proportionally to their allowed revenues in each monthly settlement.

Article 59 of Law 18/2014, of October 15, established that incomes shall be enough to cover the costs of the gas system and shall be addressed “exclusively to sustain the retribution of regulated activities designed to the supply of gas”.

Article 61 of Law 18/2014 establishes that the yearly deviation will be financed by the agents subject to settlement, proportionally to their allowed revenues.

Articles 10,17, 18, 19 and 20 of the Commission Regulation (EU) 2017/460 of 16 March 2017 establishing a network code on harmonised transmission tariff structures for gas, foreseen the reconciliation of revenues for the transmission operators in case of under- and over-recovery.

In line with the regulation for transmission activity and considering the Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC, and the Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005, the Regulatory Authority must ensure that there are no cross-subsidies between the activities associated with transmission, distribution and LNG facilities.

This Circular develops a tariff methodology for fixing the tariffs of each regulated activity, so each tariff is intended to cover the corresponding costs.

Considering all the above, it is necessary to review the settlement procedure to reflect a settlement by activity. The settlement by activity allows identifying the coverage of the costs of each activity, providing transparency to the procedure.

However, a specific treatment is defined for incomes (either positive or negative) established by the regulation the origin of which is linked to the previous settlement system, due to its integral nature. For these incomes, a distribution by activity will be carried out in an equivalent way as it would have been done in the integral system, that is, proportionally to the allowed revenues of each agent compared to the total revenues of the system (sum of transmission, distribution, LNG facilities and storage revenues).

8. Regulatory period and tariff period

Regarding the duration of the regulatory period, the methodology of the Circular will be valid for six years, according with the regulatory period established in Article 60 of Law 18/2014, of October 15, on the approval of urgent measures for growth, competitively and efficiency of regulated activities.

However, a longer duration of the first regulatory period is proposed, intended to match the next regulatory periods giving the difference between the expected date of application of the methodology establishing the transmission, distribution and regasification tariffs and the methodologies establishing the respective revenues.

Regarding the tariff period, access tariffs for transmission, distribution and regasification infrastructure are established for the gas year, in accordance with Article 91 of Law 34/1998, being valid for one year.

ANNEX II. CAPACITY WEIGHTED DISTANCE METHODOLOGY

ANNEX II. CAPACITY WEIGHTED DISTANCE METHODOLOGY

According to article 26(1)(a)(vi) of Commission Regulation (EU) 2017/460[16] of 16 March 2017 establishing a network code on harmonised transmission tariff structures, where the proposed reference price methodology is other than the capacity weighted distance reference price methodology detailed in Article 8, a comparison against the latter shall be included.

This Annex specifies the parameters and the procedure followed for calculating the capacity-based transmission tariffs according to the capacity weighted distance reference price methodology.

An Excel file named "Modelo Transporte.xls" is published alongside the present document with the following information: (i) forecasted capacities at each entry and exit point for 2020, (ii) distance between each entry and exit point, (iii) the capacity-based transmission tariffs for entry and exit points calculated according to the capacity weighted distance reference price methodology.

1. Parameters for the capacity weighted distance methodology

The capacity weighted distance methodology establishes the capacity-based transmission tariffs for an entry point shall be derived from the distance between such entry point and each exit point weighting the mentioned distances by the forecasted contracted capacity at each exit point. Correspondingly, the capacity-based transmission tariffs for an exit point shall be derived from the distance between such exit point and each entry point weighting the mentioned distances by the forecasted contracted capacity at each entry point. In this way, capacity-based transmission tariffs will be higher the higher the distance between each entry point and each exit point.

The capacity weighted distance methodology requires then to determine previously (i) entry points to transmission network, (ii) exit points to transmission network (iii) minimum distance between each entry point and each exit point of the transmission network and (iv) the forecasted contracted capacity for each entry and exit point.

Nevertheless, it shall be noted that, according to the network code on harmonised transmission tariff, entry and exit points can be physical or be combined in clusters, consequently, previously, it is required to define the transmission network model considered.

[16] Available at : http://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32017R0460&from=EN

1.1. Transmission network model

The transmission network model used to determine the capacity-based transmission tariffs, may differ from the actual physical transmission network, meaning that a simplified transmission network may be used.

Using a simplified transmission network makes it easier to apply the CWD methodology, as the number of distances to calculate is reduced, but if it is simplified excessively, it may not reproduce appropriately the real transmission network and therefore, not reflect the costs related to such network.

In addition, the simplification of transmission network requires making decisions about: (i) the procedure to calculate the distance between entry and exit points considered, and (ii) the allocation of the injections and withdraws from the physical points to the virtual points considered, which allows a certain degree of freedom in its application.

Considering the above and the evolution of current computing techniques, it has been decided to contemplate the physical network. In particular, the existing transmission network[17] at the time of preparation of this report has been considered with the following simplifications.

- The following repeated pipelines have been simplified:
  - Montesa-Tivissa
  - Tivissa-Arbós
  - Arbós-Castellvi de Rosanes
  - Castellvi de Rosanes-Planta de regasificación de Barcelona
  - Tivissa-Mediana de Zaragoza
  - Planta de regasificación de Huelva-Palomares del Río
  - Getafe-Algete
  - Algete-Sanchinarro
  - Santurce-Vergara
- Barcelona LNG facility has two connection points with the transmission network (45 bar and 72 bar), however a single-entry point to the transmission network has been considered.

1.2. Entry points to the transmission network

According to the considered network model and the infrastructure in operation, the following entry points have been considered:

1) International interconnection points with third countries by pipeline (Tarifa, Almería, Badajoz, Tuy, Biriatou and Larrau),

[17] Defined as "*Orden IET/2434/2012, de 7 de noviembre, por la que se determinan las instalaciones de la red básica de gas natural pertenecientes a la red troncal de gas natural*".

2) Entry points from LNG facilities [18]: Barcelona, Huelva, Cartagena, Bilbao, Sagunto y Mugardos.
3) Entry points from production facilities: Marismas, Poseidón, Viura and Planta de biogás de Madrid
4) Entry points from underground storage facilities: Serrablo, Gaviota, Yela and Marismas

1.3. Exit point from the transmission network

On the other hand, the considered exit points are:

1) Bidirectional international interconnection points of Badajoz, Tuy, Biriatou and Larrau
2) Exit points to underground storage facilities: Serrablo, Gaviota, Yela y Marismas
3) Each exit point to the transmission network to the regional network (local influence transmission network, secondary transmission network and distribution network).
4) Exit points to each LNG facility (not physical counterflow)

1.4. Minimum distance between each entry point and each exit point

Once the transmission network model and the entry and exit points have been defined, the calculation of the minimum distance between each entry point and each exit point of the transmission network has been carried out using the Dijkstra[19] algorithm.

For this purpose, the information required for its calculation has been requested the Technical Manager of the Gas System, GTS. In particular, the GTS has provided the distance of each connection point of the transmission network to all connection points adjacent to it. It must be emphasized that according to the information provided by the GTS, the only non-bidirectional pipeline in the transmission network is the pipeline between the compression stations of Córdoba and Almendralejo.

1.5. Forecasted contracted capacity at each entry point distance

The forecasted contracted capacity at each entry point corresponds to the invoiced capacity by entry point included in Annex I of the Consultation Document

It has been considered as best forecast for the contracted capacity the invoiced capacity forecasted for the year 2020, because it has been deemed that as a result of the elimination of the current penalty / discount scheme the agents will

[18] Provided that is the case Musel LNG facility is put in operation it will be considered as another entry and exit point.

[19] The Dijkstra algorithm is an iterative algorithm that provides the shortest path from a particular initial node to all other nodes in the graph, when all distances are positive.

adjust their contracted capacities to those actually used, with the except for the bidirectional interconnection points with Portugal and France for which the contracted capacities have been considered.

The forecasted non-yearly standard capacity by entry point has been affected by the equivalent multipliers, in order to consider its corresponding impact on revenues in the tariff calculation.

In the case of virtual interconnection points with France and Portugal, the forecasted contracted capacity has been disaggregated according to the technical capacities of each physical points that make up the aforementioned virtual interconnection, in accordance with the information provided by the GTS (see Table II.1).

Table II.1.Forecasted contracted capacity for entry points at virtual interconnections

	VIP Ibérico (GWh/d)			VIP Pirineos (GWh/d)		
	Badajoz	Tuy	Total	Larrau	Irún/Biriatou	Total
Forecasted contracted capacity VIP (A)			21			191
Technical contracted capacity (1)	80	0	80	165	60	225
% of total (B)	100%	0%	100%	73%	27%	100%
Physical forecasted contracted capacity (A) * (B)	21	0	21	140	51	191

Source: GTS and CNMC
(1) Technical capacity at Irún/Biriatou includes coordinated and not coordinated capacity

In the case of entries from underground storage (hereinafter, AA.SS.), the contracted capacity by entry point has been estimated with the following hypotheses:

- Storage capacity for 2019 has been forecasted with available data for the first three months of the year, and for the rest of the year the same values as 2018 have been assumed.
- Capacity for 2020 will fluctuate depending on the variations in demand from the previous year to the extent that they determine the quantities to be stored to meet the minimum security stock requirements.
- Withdrawals volume is calculated by applying the same relationship with the storage capacity implicit in the GTS forecasts.
- Capacity is contracted by a single agent.
- Contracted entry capacity corresponds to the one that would minimize the transmission tariff invoice considering proposed multipliers, and calculated assuming that the daily withdrawal from storage facilities profile forecasted 2020 is equal to the real profile of 2018.
- Forecasted contracted capacity is distributed by AA.SS. based on the withdrawals forecasted for the year 2018 provided by the GTS.

It is noted that with the previous hypotheses, contracting daily capacity minimizes the entry to the transmission network invoice.

Table II.2 shows forecasted contracted capacity for each entry point

Table II.2. Forecasted contracted capacity at each entry point for 2020

Entry point	Forecasted contracted capacity CNMC 2020 whitout multipliers	Forecasted contracted capacity (MWh/day)					Forecasted contracted capacity taking into account the multipliers proposed by CNMC (MWh/day)
		Year	Quarter	Month	Day	Within Day	
CI Tarifa	197.379,72	164.620,23	15.214,77	15.121,90	2.422,82	-	206.643,62
CI Medgaz	254.498,45	243.685,59	8.642,31	2.140,24	30,31	-	256.994,09
CI Biriatou CI Larrau	177.803,45	146.872,15	14.882,75	8.519,87	6.580,64	948,04	191.414,73
CI Badajoz CI Tuy	13.196,70	-	-	7.483,41	5.131,80	581,49	20.952,66
PR Barcelona	138.573,30	114.884,62	0,73	18.323,62	5.321,51	42,81	147.471,91
PR Cartagena	34.592,65	15.866,68	11.166,67	6.164,58	1.359,01	35,70	39.777,48
PR Huelva	103.115,33	99.063,81	0,49	2.477,56	1.558,17	15,29	104.837,68
PR Bilbao	92.236,92	67.699,13	100,74	21.988,73	2.303,32	145,00	101.013,58
PR Sagunto	27.118,97	-	-	26.755,94	362,90	0,13	35.620,72
PR Mugardos	26.136,03	10.972,36	4.768,64	10.325,82	69,20	0,00	30.377,89
Yac.Poseidón	214,50	-	-	202,65	11,85	-	284,08
Yac.Viura	5.608,68	5.496,16	-	-	112,52	-	5.672,82
Yac. Marismas	136,25	-	-	136,25	-	-	178,49
PB Madrid	268,61	175,00	-	87,50	6,11	-	299,22
AS Serrablo	7.077,13	-	-	-	7.077,13	-	11.111,10
AS Gaviota	5.696,34	-	-	-	5.696,34	-	8.943,25
AS Marismas	2.286,39	-	-	-	2.286,39	-	3.589,64
AS Yela	1.840,05	-	-	-	1.840,05	-	2.888,88
TOTAL	**1.087.779,47**	**869.335,73**	**54.777,09**	**119.728,09**	**42.170,08**	**1.768,47**	**1.168.071,83**

Source: GTS and CNMC

1.6. Forecasted contracted capacity at each exit point

Likewise, contracted capacity forecasted for each exit point from the transmission network has been estimated based on the invoiced capacity forecasted for each exit point for 2020, with the following hypotheses.

In the case of virtual interconnection points with France and Portugal, the contracted capacities have been disaggregated according to the technical capacities of each physical points that make up the aforementioned virtual interconnection, in accordance with the information provided by the GTS (Table II.3).

Table II.3. Forecasted contracted capacity for exit points at virtual interconnections

	VIP Ibérico (GWh/d)			VIP Pirineos (GWh/d)		
	Badajoz	Tuy	Total	Larrau	Irún/Biriatou	Total
Forecasted contracted capacity VIP (A)			9			131
Technical contracted capacity (1)	134	10	144	165	60	225
% of total (B)	93%	7%	100%	73%	27%	100%
Physical forecasted contracted capacity (A) * (B)	8	1	9	96	35	131

Source: GTS and CNMC

In the case of **exit points to storage facilities**, in the same way as for forecasted contracted capacity by entry point, contracted capacity, has been estimated as to minimize the transmission tariff invoice, assuming that the daily injection profile of year 2018 is maintained and capacity is contracted by a single agent.

It is noted that with the previous hypotheses, contracting daily capacity minimizes the exit to the transmission network invoice to storage facilities.

Referring to **exit to the LNG facilities** (virtual liquefaction), a contracted exit capacity of zero has been considered, attending both the characteristics of the offered product and that there is no historical data series that allows assessing the demand of the service by agents.

In the case of **exit to national customers**, as suppliers do not contract capacity at the exit connection points of the transmission network with the regional network, exit forecasted contracted capacity, excluding customers supplied from LNG satellite facilities[20] has been disaggregated for each exit point with the available information at CNMC.

Particularly, the following information is available:

- Individualized information on the location of the consumption points and invoicing variables of customers supplied by networks of pressure higher than 4 bar and customers supplied by networks of design pressure lower than 4 bar with remote metering installed (annual consumption greater than 5 GWh) in the Settlements Database of the gas sector (SIFCO).
- Demand disaggregated by municipality and tariff group, in SIFCO.
- Daily demand for each exit point for 2017, provided by the GTS.
- List of CUPS (consumption points) with remote metering installed related to each exit point for year 2017, provided by the GTS.

[20] According to article 92 of Act 34/1998, customers supplied from LNG satellite facilities should only defray the costs of the design pressure network that is used for their supply.

- List of municipalities supplied by each exit point of the transmission network, published by the GTS[21].
- Daily individualized load curves for natural gas power plants, thermal power plants, interruptible customers, customers to whom applies the raw material tariff and aggregated load curves by tariff group of customers with remote metering installer other than the aforementioned, provided by transmission system operator and distributor system operators, for year 2017.

Considering the above information, the forecasted contracted capacity at each exit point of the transmission network has been estimated as the sum of the capacity of all the CUPS related to this exit point and the capacity of the rest of the customers supplied from that exit point.

The **contracted capacity of the CUPS related to an exit point** of the transmission network is the invoiced capacity of customers with remote metering installed for the last available year (2018), considering the duration of the standard capacity contracts formalized by the customers, according to the individualized information available in SIFCO.

Forecasted contracted capacity for the rest of the customers supplied from that exit point is estimated using the contracted capacity of the customers connected at a pressure of less than 4 bar and from tariff groups 3.1 to 3.4[22], proceeding as follows:

1º The load factor of each tariff group has been estimated, as the ratio between the maximum volume demanded in one day and the annual consumption recorded, according to the estimated load curves for the referred tariff groups for 2017 (see Table II.4).

Table II.4. Load factors considered for tariff groups 3.1 to 3.4

Tariff group	Load factor (%)
3.1	41,131%
3.2	36,292%
3.3	48,613%
3.4	41,190%

Source: CNMC

[21] Available at: http://www.enagas.es/enagas/es/Gestion_Tecnica_Sistema/CalidadGas/OtraInformacionCalidadNueva

[22] This implies avoiding customers with remote metering installed in the forecast, whose contracted capacity represents 0.5% of the contracted capacity by customers connected to design pressure networks higher than 4 bar and those included in the tariff group 3.5.

2º Contracted capacity has been estimated by tariff group and municipality applying the respective load factor to the customers demand of each tariff group in each municipality supplied from the transmission network, according to the information available in SIFCO.

3º Contracted capacity has been assigned to exit points considering the relationship municipality-exit point published by the GTS on its website.

It is noted that when a municipality is supplied by more than one exit point from the transmission network simultaneously, the demand of the mentioned municipalities has been distributed by exit point based on the measured demand on the day of maximum demand of 2017 (05/12/2017), according to the information provided by the GTS.

Finally, once available the contracted capacity corresponding to 2018 disaggregated by the exit point of the transmission network, pressure level (pressure> 60 bar, between 4-16 bar, between 16-60 bar and < 4 bar) and type of customer (intended for electricity generation or conventional use), contracted capacity for 2020 of national customers connected to the transmission-distribution network disaggregated by pressure level and customer type is distributed by exit point proportionally to the measured capacity of 2018.

Table II.5 shows forecasted contracted capacities for each exit point, with the exception of the national exits where, for illustrating purposes, exit points have been aggregated by pressure of the network to which customers are connected.

Table II.5. Forecasted contracted capacity at each exit point for 2020

	Forecasted contracted capacity at each exit point in the CNMC 2018 report (MWh/day)	Forecasted contracted capacity (MWh/day)					Forecasted contracted capacity for each exit point taking into account the multipliers proposed by CNMC (MWh/day)
		Year	Quarter	Month	Day	Within Day	
International interconnection points	**132.062**	**121.086**	**7**	**10.206**	**585**	**179**	**139.543**
CI Biriatou	123.354	112.580	-	10.104	492	179	130.599
CI Larrau							
CI Badajoz	8.708	8.506	7	102	93	-	8.944
CI Tuy							
LNG facilities	**-**	**-**	**-**	**-**	**-**	**-**	**-**
PR Barcelona							-
PR Cartagena							-
PR Huelva							-
PR Bilbao							-
PR Sagunto							-
PR Mugardos							-
Underground storage facilities	**25.855**	**-**	**-**	**-**	**25.855**	**-**	**40.851**
AS Serrablo	6.919				6.919		10.932
AS Gaviota	14.991				14.991		23.686
AS Marismas	1.940				1.940		3.065
AS Yela	2.005				2.005		3.168
Exit to national customers	**1.633.439**	**1.446.764**	**1.232**	**117.034**	**63.975**	**4.435**	**1.720.196**
P > 60 bar	657.857	486.597	-	104.360	62.646	4.254	739.532
16 bar < P ≤ 60 bar	118.205	116.657	137	1.406	4	-	118.992
4 bar < P ≤ 16 bar	383.462	369.872	1.061	11.047	1.301	180	387.644
P ≤ 4 bar (1)	473.915	473.638	33	220	24	-	474.029
TOTAL	**1.791.356**	**1.567.850**	**1.238**	**127.239**	**90.415**	**4.614**	**1.900.590**

Source: GTS and CNMC
Notes:
(1) Excluding the capacity of customers supplied from LNG satellite facilities

The aforementioned file contains contracted capacities for each exit point of the transmission network and its breakdown by pressure level.

2. Allowed revenues for transmission services to be recovered through capacity-based transmission tariffs.

Capacity weighted distance methodology is limited to determine entry and exit capacity-based transmission tariffs of the transmission network. Meaning, the allowed revenues for transmission services to be recovered through capacity-based transmission tariffs corresponds to the allowed revenues for investment and operating costs.

In accordance with Article (8)(1)(e) of Regulation (EU) 2017/460, 50% of the referred allowed revenues shall be recovered through capacity-based transmission tariffs at entry points and 50% through capacity-based transmission tariffs at exit points (see Table II.6).

Table II.6. Allowed revenues for transmission services to be recovered through capacity-based transmission tariffs

Allowed revenues for transmission services to be recovered from capacity-based transmission tariffs (€)	2020 forecast	% of the total
Investment expenditure revenues	417.843.927 (A)	75,0%
Operational expenditure revenues	139.052.576 (B)	25,0%
Total	**556.896.502**	**100,0%**

Entry	Exit
Total revenues [(A) + (B)] * 50%	Total revenues [(A) + (B)] * 50%
208.921.963	208.921.963
69.526.288	69.526.288
278.448.251	**278.448.251**

Source: CNMC

3. Calculation of the reference price of the capacity-based transmission tariffs

3.1. Reference price at an entry point to the transmission network

As stablished in Article 8(2) of Regulation (EU) 2017/460, reference prices shall be derived in the following sequential steps:

1. Weighted average distance calculation from each entry point to each exit point

$$AD_{En} = \frac{\sum_{all\ Ex} CAP_{Ex} \times D_{En,Ex}}{\sum_{all\ Ex} CAP_{Ex}}$$

Where:

- AD_{En} is the weighted average distance for an entry point or a cluster of entry points;
- CAP_{Ex} is the forecasted contracted capacity at an exit point; as calculations set out in section 1.6 of present annex;
- $D_{En,Ex}$ is the distance between an entry point and an exit point, as calculations set out in section 1.4 of present annex

2. Weight of cost for each entry point calculation:

$$W_{c,En} = \frac{CAP_{En} \times AD_{En}}{\sum_{all\ En} CAP_{En} \times AD_{En}}$$

Where:

- $W_{c,En}$ is the weight of cost for a given entry point;
- AD_{En} is the weighted average distance for an entry point;

– CAP_{En} is the forecasted contracted capacity at an entry point calculated as calculations set out in section 1.5 of present annex.

3. Part of revenue to be recovered from capacity-based transmission tariffs at each entry point calculation

$$R_{En} = W_{c,En} \times R_{\Sigma En}$$

Where:

– $W_{c,En}$ is the weight of cost for a given entry point

– $R_{\Sigma En}$ is the part of the transmission services revenue to be recovered from capacity-based transmission tariffs at all entry points described in section 2 of present annex;

– R_{En} is the part of the transmission services revenue to be recovered from capacity-based transmission tariffs at an entry point or a cluster of entry points.

4. Capacity-based transmission tariff at each physical entry point

$$T_{En} = \frac{R_{En}}{CAP_{En}}$$

Where:

– T_{En} is the reference price at a physical entry point;

– CAP_{En} is the forecasted contracted capacity at an entry point as established in section 2 of present annex;

– R_{En} is the part of the transmission services revenue to be recovered fromcapacity-based transmission tariffs at an entry point or a cluster of entry points

Table II.7 shows the transmission tariffs at each physical entry point calculated according to the procedure described above.

Table II.7. Capacity-based transmission tariffs resulting from applying capacity weighted distance methodology at each physical entry point

Entry point	Forecasted contracted capacity (CAP_{En})	Weighted distance (AD_{En})	Weight of cost ($W_{C,En}$)	Allowed revenues to be recovered (R_{En})	Entry capacity-based transmission tariff
	Qd (MWh/day)	km	%	€	€/(MWh/day)and year
CI Tarifa	206.644	891	0,212	59.005.860	285,5
CI Almería	256.994	804	0,238	66.190.145	257,6
CI Biriatou	51.044	659	0,039	10.770.779	211,0
CI Larrau	140.371	604	0,098	27.176.712	193,6
CI Badajoz	20.953	1.024	0,025	6.876.202	328,2
CI Tuy	-	1.152	-	-	N/A
PR Barcelona	147.472	611	0,104	28.867.324	195,7
PR Cartagena	39.777	691	0,032	8.805.585	221,4
PR Huelva	104.838	876	0,106	29.421.949	280,6
PR Bilbao	101.014	595	0,069	19.250.656	190,6
PR Sagunto	35.621	531	0,022	6.061.962	170,2
PR Mugardos	30.378	1.007	0,035	9.803.139	322,7
YAC Marismas	178	837	0,000	47.887	268,3
YAC Poseidón	284	863	0,000	78.559	276,5
YAC Viura	5.673	470	0,003	854.416	150,6
BI Madrid	299	501	0,000	47.989	160,4
AASS Serrablo	11.111	604	0,008	2.150.189	193,5
AASS Gaviota	8.943	587	0,006	1.680.569	187,9
AASS Yela	3.590	507	0,002	583.263	162,5
AASS Marismas	2.889	837	0,003	775.067	268,3
TOTAL	**1.168.072**	**744**	**1,000**	**278.448.251**	**238,4**

Source: CNMC
Note: CI: International interconnection, PR: LGN facility, Yac.: Production facility, PB: Biogas production facility and AS: Underground Storage facility

It is observed that, in general, capacity-based transmission tariffs at entry points from the Southern Spain are higher than those applicable to the entries through the East or North of Spain and that the entry points located in the central area of The Peninsula have the lowest capacity prices (see Figure I.1).

Figure I.1. Capacity-based transmission tariffs resulting from applying capacity weighted distance methodology at entry points

Source: CNMC

3.1.1. Adjustments to capacity-based transmission tariffs at entry points resulting from applying CWD

Once capacity-based transmission tariffs for each physical entry point are available, it is necessary to determine the price for virtual interconnection points, in accordance with Article 22(b) of Regulation (EU) 460/2017. In particular, the price of each virtual interconnection point will be calculated by applying the following formula:

$$P_{st,VIP} = \frac{\sum_i^n \left(P_{st,i} \times CAP_i\right)}{\sum_i^n CAP_i}$$

Where:

– $P_{st, VIP}$ is the reserve price for a given unbundled standard capacity product at the virtual interconnection point

– i is an interconnection point contributing to the virtual interconnection point;

- n is the number of interconnection points contributing to the virtual interconnection point;
- $P_{st,\,i}$ is the reserve price for a given unbundled standard capacity product at interconnection point i;
- CAP_i is technical capacity or forecasted contracted capacity, as relevant, at interconnection point.

Additionally, considering that the AA.SS. and the LNG facilities are managed jointly by the GTS without the suppliers having the capacity to decide on the use of a specific facility, it has been decided to apply the same reference prices to all entry points to the transmission network from AA.SS. and LNG facilities, in accordance with Article 12 of Circular. The procedure used for levelling prices is the one used for virtual interconnection points with France and Portugal.

Table II.8 shows capacity-based transmission tariffs resulting from considering entry points from Virtual interconnections, LNG plants and AA.SS.

Table II.8. Capacity-based transmission tariffs resulting from applying capacity weighted distance methodology for each cluster of entry points to the transmission network

Entry point	Forecasted contracted capacity	Entry capacity-based transmission tariff		Total revenues
	Qd (MWh/day)	€/(MWh/day) and year	Variation over average tariff (%)	thousand €
VIP_FR	**191.415**	**198,25**	**-16,8%**	**37.947.491**
VIP_PT	**20.953**	**328,18**	**37,7%**	**6.876.202**
CI Tarifa	206.644	285,54	19,8%	59.005.860
CI Medgaz	256.994	257,56	8,0%	66.190.145
Plantas GNL	**459.099**	**222,63**	**-6,6%**	**102.210.615**
AA.SS	**26.533**	**195,57**	**-18,0%**	**5.189.088**
Yac.Poseidón	284	276,54	16,0%	78.559
Yac. Marismas	178	268,29	12,5%	47.887
Yac.Viura	5.673	150,62	-36,8%	854.416
PB Madrid	299	160,38	-32,7%	47.989
TOTAL	**1.168.072**	**238,38**	**0,0%**	**278.448.251**

Source: CNMC

Bearing in mind that, in accordance with Article 12(3) of the "Circular", a 100% discount is established for capacity-based transmission tariffs entry points from and exit points to storage facilities (See section 4.5.1 of the present document), it is necessary to adjust capacity-based transmission tariffs applicable to the rest

of the entry points, in order to ensure recovery of the allowed revenues (see Table II.9)

Table II.9. Capacity-based transmission tariffs resulting from applying capacity weighted distance methodology for each of entry point to the transmission network after the provided adjustments in Articles 6 and 9 of Regulation (EU) 460/2017

		Before adjustments		After adjustments	
Entry point	Forecasted contracted capacity	Entry capacity-based transmission tariff	Total revenues	Entry capacity-based transmission tariff	Total revenues
	Qd (MWh/day)	€/(MWh/day) and year	thousand €	€/(MWh/day) and year	thousand €
VIP_FR	191.415	198,25	37.947.491	202,01	38.668.099
VIP_PT	20.953	328,18	6.876.202	334,41	7.006.779
CI Tarifa	206.644	285,54	59.005.860	290,97	60.126.358
CI Medgaz	256.994	257,56	66.190.145	262,45	67.447.070
Plantas GNL	459.099	222,63	102.210.615	226,86	104.151.556
Yac.Poseidón	284	276,54	78.559	281,79	80.051
Yac. Marismas	178	268,29	47.887	273,39	48.796
Yac.Viura	5.673	150,62	854.416	153,48	870.641
BI Madrid	299	160,38	47.989	163,43	48.900
TOTAL REVENUES (A)	**1.141.539**	**239,38**	**273.259.163**	**243,92**	**278.448.251**
ALLOWED REVENUES TO BE RECOVERED			**278.448.251**		
Adjustment factor (B)/(A)			**1,0190**		

Source: CNMC

3.2. Reference price at an exit point to the transmission network

Analogously, as stablished in Article 8(2) of Regulation (EU) 2017/460, reference prices shall be derived in the following sequential steps:

1. Weighted average distance calculation from each exit point to each entry point

$$AD_{Ex} = \frac{\sum_{all\ Ex} CAP_{En} \times D_{En,Ex}}{\sum_{all\ En} CAP_{En}}$$

Where:

- AD_{Ex} is the weighted average distance for an exit point or a cluster of exit points;
- CAP_{En} is the forecasted contracted capacity at an entry point; as calculations set out in section 1.5 of present annex;

– $D_{En,Ex}$ is the distance between an entry point and an exit point, as calculations set out in section 1.4 of present annex

2. Part of revenue to be recovered from capacity-based transmission tariffs at each exit point calculation

$$W_{c,Ex} = \frac{CAP_{Ex} \times AD_{Ex}}{\sum_{all\ Ex} CAP_{Ex} \times AD_{Ex}}$$

Where:

– $W_{c,Ex}$ is the weight of cost for a given exit point

– AD_{Ex} is the weighted average distance for an exit point

– CAP_{Ex} is the forecasted contracted capacity at an entry point calculated as calculations set out in section 1.6 of present annex

3. Part of revenue to be recovered from capacity-based transmission tariffs at each exit point calculation

$$R_{Ex} = W_{c,Ex} \times R_{\Sigma Ex}$$

Where:

– $W_{c,Ex}$ is the weight of cost for a given exit point

– $R\Sigma Ex$ is the part of the transmission services revenue to be recovered from capacity-based transmission tariffs at all exit points described in point 2 of present annex;

– R_{Ex} is the part of the transmission services revenue to be recovered from capacity-based transmission tariffs at an exit point or a cluster of exit points.

4. Capacity-based transmission tariff at each physical exit point

$$T_{Ex} = \frac{R_{Ex}}{CAP_{Ex}}$$

Where:

– T_{Ex} is the reference price at a physical exit point;

– CAP_{Ex} is the forecasted contracted capacity at an exit point as stablished in section 1.6 of present annex

– R_{Ex} is the part of the transmission services revenue to be recovered from capacity-based transmission tariffs at an exit point or a cluster of exit points

Table II.7 shows the transmission tariffs per physical exit point calculated according to the procedure described above. It is noted that, for illustrating purposes of the results, national exit points are shown aggregated. However, the result per physical exit point is available in the Excel file published alongside the Consultation Document.

Additionally, Figure II.2 shows the prices that result for national exit points grouped by province. The capacity weighted distance methodology does not allow determining capacity-based tariffs for exit points of the transmission network where exit capacity is zero, such as LNG plants. In order to avoid null prices at any exit point, it has been decided to set the price that would correspond at that exit point in the event that the contracted capacity was 1 MWh / day.

It is observed that capacity-based tariffs at exit points located in the central area of The Peninsula are the lowest, while the highest prices are for the Northwest area.

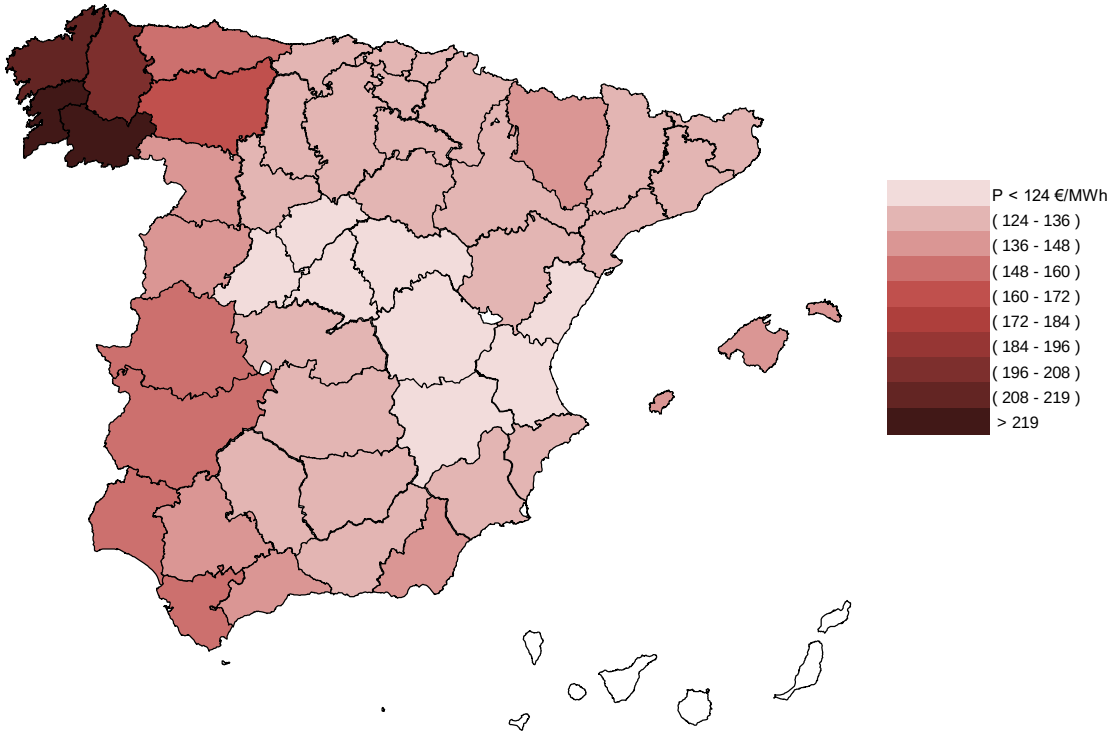
Table II.10. Capacity-based transmission tariffs resulting from applying capacity weighted distance methodology for each physical exit point.

Exit point	Forecasted contracted capacity (CAPEn)	Weighted distance (ADEn)	Weight of cost (WC,En)	Allowed revenues to be recovered (REn)	Exit capacity-based transmission tariff
	Qd (MWh/day)	km	%	€	€/(MWh/day)and year
CI Biriatou	34.826	840	0,021	5.749.940	165,10
CI Larrau	95.772	832	0,056	15.657.958	163,49
CI Badajoz	8.323	855	0,005	1.397.686	167,93
CI Tuy	621	1.324	0,001	161.520	260,05
PR Barcelona	0	891	-	0	188,71
PR Cartagena	0	739	-	0	159,81
PR Huelva	0	943	-	0	211,39
PR Bilbao	0	818	-	0	174,29
PR Sagunto	0	668	-	0	144,82
PR Mugardos	0	1.206	-	0	265,77
AS Serrablo	10.932	803	0,006	1.724.197	157,72
AS Gaviota	23.686	745	0,012	3.465.876	146,33
AS Marismas	3.065	612	0,001	368.382	120,19
AS Yela	3.168	826	0,002	514.359	162,34
Salida nacional (1)	1.720.196	738	0,896	249.408.333	144,99
TOTAL	**1.900.590**	**746**	**1,000**	**278.448.251**	**146,51**

Source: CNMC
Nota: CI: Conexión internacional, PR: Planta de Regasificación, Yac.: Yacimiento, PB: Planta de Biogás y AS: Almacenamiento subterráneo

(1) For illustrating purposes of the results, national exit points are shown aggregated. Results by physical exit point are available in the Excel file published alongside the Consultation Document.

Figure II.2. Exit capacity-based transmission tariffs resulting from applying capacity weighted distance methodology



Source: CNMC
Nota:
(1) For illustrating purposes of the results, national exit points are shown aggregated by province. Results by physical exit point are available in the Excel file published alongside the Consultation Document.

3.2.1. Adjustments to exit capacity-based transmission tariffs resulting from applying CWD

Once the exit capacity-based transmission tariffs for each physical exit point considered in the network model are available, capacity charge for virtual interconnection points of France and Portugal are calculated according to Article 22(b) of Regulation (EU) 460/2017.

Additionally, in accordance with the entry capacity-based transmission tariffs, exit tariffs to AA.SS. and LNG facilities have been levelled.

Finally, bearing in mind that neither suppliers nor customers can select the exit point of the transmission network from which they are supplied, a single exit point to customers connected to local networks has been considered.

The methodology used to level the prices of exits to the AA.SS. and of exits to national customers corresponds to the one established in Article 22(b) of Regulation (EU) 2017/460.

Table II.11 shows resulting exit tariffs for each cluster of exit points considered.

Table II.11. Capacity-based transmission tariffs resulting from applying capacity weighted distance methodology for each cluster of exit points.

Exit point	Forecasted contracted capacity	Exit capacity-based transmission tariff		Total revenues
	Qd (MWh/day)	€/(MWh/day) and year	Variation over average tariff (%)	thousand €
Nacional	1.720.196	144,99	-1,04%	249.408.333
VIP Pirineos	130.599	163,92	11,89%	21.407.899
VIP Ibérico	8.944	174,33	18,99%	1.559.205
AA.SS	40.851	148,66	1,47%	6.072.814
Plantas GNL	-	172,40	17,67%	-
TOTAL	**1.900.590**	**146,51**		**278.448.251**

Source: CNMC

Similarly, to the entry tariffs to the transmission network, a 100% discount has been applied to exits to the AA.SS., so it is necessary to adjust prices of the remaining exit tariffs, in order to ensure the recovery of the transmission network allowed revenues.

Table II.12 shows the transmission tariffs for each exit point of the transmission network resulting from the adjustment provided in Article 9 of Regulation 2017/460. It is observed that the exit capacity tariff to national customers is lower than the average cost, while the exit tariffs for the virtual interconnection points towards France, Portugal and LNG plants, are above the average.

Table II.12. Capacity-based transmission tariffs resulting from applying capacity weighted distance methodology for each exit point of the transmission network after the provided adjustments in Articles 6(4) and 9 of Regulation (EU) 2017/460

		Before adjustments		After adjustments	
Exit point	Forecasted contracted capacity	Exit capacity-based transmission tariff	Total revenues	Exit capacity-based transmission tariff	Total revenues
	Qd (MWh/day)	€/(MWh/day) and year	thousand €	€/(MWh/day) and year	thousand €
Nacional	1.720.196	144,99	249.408.333	148,22	254.969.078
VIP Pirineos	130.599	163,92	21.407.899	167,58	21.885.204
VIP Ibérico	8.944	174,33	1.559.205	178,22	1.593.969
Plantas GNL	-	172,40	-	176,24	-
TOTAL REVENUES	**1.859.739**	**146,46**	**272.375.437**	**149,72**	**278.448.251**
ALLOWED REVENUES TO BE RECOVERED			**278.448.251**		
Adjustment factor			**1,0223**		

Source: CNMC

CNMC

COMISIÓN NACIONAL DE LOS MERCADOS Y LA COMPETENCIA