Consultation document

Implementation of the network code on harmonised transmission tariff structures

Vienna, 31/01/2019

Contents

The tariffs published here are consulted according to Regulation (EU) 2017/460 (TAR NC). Please note that the tariffs published here represent indicative, non-binding tariffs that are provided for information purposes and might change as different inputs will be used for the new tariff period.

1 Description of the proposed reference price methodology (Article 26(1)(a) TAR NC)

1.1 Description of the proposed reference price methodology

The reference price methodology (RPM) applied to calculate the indicative tariffs for the Austrian entry-exit system is the virtual point-based approach (variant B) described by the Agency for the Cooperation of Energy Regulators (ACER) in its documents "Revised chapter on Cost Allocation and determination of the reference price of the draft Framework Guidelines on rules regarding harmonised transmission tariff structures"[1] and "Tariff Methodologies: Examples. Illustrating the document: Public Consultation on Draft Framework Guidelines on rules regarding harmonised transmission tariff structures for gas".[2]

In accordance with Article 6(3) TAR NC, the RPM is applied jointly by all transmission system operators within the Austrian entry-exit system to all entry and exit points.

Due to the structural characteristics of the systems and the prevalent flow patterns in the Market Area East, the Baumgarten interconnection point (IP) emerges as single dominant node, which can be clearly identified as reference Virtual Point (VP).

In anticipation of Regulation (EU) 2017/460 (TAR NC), this RPM (with Baumgarten IP as the reference VP) is already jointly applied in the current tariff period (starting in 2016) and has already proven to be an accepted, transparent and cost-reflective reference price methodology for the Austrian entry-exit system.

The transmission service revenues are to be recovered through capacity-based transmission tariffs.

The virtual point-based RPM in Austria's Market Area East is based on the following calculations, methodologies and specifications:

1) Each entry and exit point's distance to the VP is determined based on the measured distance along the pipeline system.[3] These distances are used for all consecutive steps in the

[1] https://www.acer.europa.eu/Official_documents/Public_consultations/Documents/Revised%20chapter.pdf#page=11

[2] https://www.acer.europa.eu/Official_documents/Public_consultations/Documents/TARIFF_METHODOLOGIES_EXAMPLES.pdf#page=24

[3] Due to the fact that the exit in Baumgarten is exclusively used for flows from the western border, its distance is set to the distance from Oberkappel to Baumgarten (242 km).

allocation of influenceable costs.[4] For non-influenceable costs[5], the distances are modified to account for the fact that the TSOs' system shares of non-influenceable costs are related to the different system configurations. Therefore, for all TAG and GCA points related to transportation on the TAG system distances are weighted with the relative share of non-influenceable costs of this system (and of course the same applies for points relating to transportation on the GCA system) to increase cost-reflectivity.[6]

2) Capacity-based transmission tariffs for exits into storage facilities are discounted by 50%.[7] This applies for freely allocable capacity (FZK) and all capacity products based thereon.
3) The discount for capacity-based transmission tariffs for dynamically allocable capacity (DZK) is maintained at 10%.
4) Entry and exit clustering of homogenous points and certain groups of entry points and groups of exit points– as in the current tariff period – is continued, taking into account their geographic vicinity and the creation of a level playing field for competition on the Austrian gas market. The clusters' distances to the VP correspond to the capacity-weighted average of the respective points' distances to the VP. The following clusters are proposed:
    a. One entry cluster comprising all entry points;
    b. An exit cluster "domestic" comprising all exit points to the distribution area except for exit points to the distribution area in Carinthia (which is not connected to the rest of the distribution-level grid);
    c. An exit cluster "Carinthia" comprising exit points to the distribution area in Carinthia;
    d. An exit cluster "east" comprising the exit points Baumgarten, Petrzalka and Mosonmagyarovar;
    e. An exit cluster "west" comprising the exit points Oberkappel and Überackern; and
    f. An exit cluster "storage" comprising the storage exit points 7-fields and MAB.
5) In order to determine the entry-exit split, each point's distance to the VP is weighted with its technical capacity, separately for entry and exit. The entry-exit split is then calculated as the ratio between the weighted entry and exit distances to the VP.
6) Based on this entry-exit split, costs (i.e. the revenues to be collected) are allocated to the aggregates of entry – and exit points.

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[4] Influenceable costs are CAPEX plus influenceable operating costs (according to the methodology pursuant to section 82 Natural Gas Act 2011).
[5] Non-influenceable operating costs are costs for energy, CO2 emissions, the market area manager and regulation (according to the methodology pursuant to section 82 Natural Gas Act 2011).
[6] The cost allocation steps described below are the same for both cost components (influenceable and non-influenceable costs), albeit different distances are used (see above).
[7] In accordance with section 74(1) Natural Gas Act 2011, there are no capacity-based transmission tariffs for entry from storage.

7) The base tariff for entry is determined as follows: multiply the distance ratios[8] of all entry points/clusters by their respective forecasted contracted capacities and sum up the resulting products to get the divisor; then divide the costs allocated to the aggregate of all entry points by the divisor.[9]
8) This base tariff for entry is then multiplied by each point's/cluster's distance ratio to obtain each entry cluster's tariff before adjustments and rescaling.
9) The base tariff for exit is determined as follows: multiply the distance ratios[10] of all exit points/clusters by their respective forecasted contracted capacities and sum up the resulting products to get the divisor; then divide the costs allocated to the aggregate of all exit points by the divisor.[11]
10) This base tariff for exit is then multiplied by each point's/cluster's distance ratio to obtain the exit cluster's tariff before adjustments and rescaling.
11) The following adjustments in accordance with Article 6(4)(a) TAR NC are applied:
    a. A special benchmark exit tariff for Murfeld in order to meet the competitive level of a competing transportation route;
    b. A general benchmark that results in limiting the maximum tariff increase compared to the current tariff period in order to safeguard existing contracts and tariff stability as well as to avoid market distortion. The current limit is set to 10%.
    c. Rescaling in accordance with Article 6(4)(c) TAR NC at all entry and exit points by multiplying by a constant. Rescaling is required to reflect the effects of storage discounts, the application of a special benchmark in Murfeld and the application of a general benchmarking (currently 10% maximum tariff increase).

1.2 Parameters used in the applied reference price methodology that are related to the technical characteristics of the transmission system (Article 26(1)(a)(i) TAR NC)

Parameters related to the technical characteristics of the transmission system and used in the applied reference price methodology are:

i. Technical capacity at entry and exit points (marketable firm capacities = TVK)
ii. Forecasted contracted capacities in two sub-sets:

[8] The distance ratio is the point/cluster-specific distance divided by the distance of the most distant point from the VP (see table "Pipeline distances from reference VP expressed in km").
[9] Please note: in accordance with the methodology pursuant to section 82 Natural Gas Act 2011 for transmission systems of Austrian gas transmission system operators (TSO's) Article III.1., reference capacities are considered for the allocation of influenceable costs. These reference capacities are normally higher than forecasted contracted capacities and thus lead to lower transmission tariffs.
[10] The distance ratio is the point/cluster-specific distance by the distance of the most distant point.
[11] Please note that chapter III.1 of the methodology pursuant to section 82 Natural Gas Act 2011 provides for calculated capacities to be used in allocating influenceable costs. These reference capacities are normally higher than forecasted contracted capacities and thus lead to lower transmission tariffs.

a. For the consideration of non-influenceable costs: actual forecasted contracted capacities on an average yearly basis
b. For the consideration of influenceable costs: reference capacities in accordance with chapter III.1 of the methodology pursuant to section 82 Natural Gas Act 2011,[12] i.e. the higher of the following two: the historical booking situation and actual forecasted contracted capacities

Entry (kWh/h)

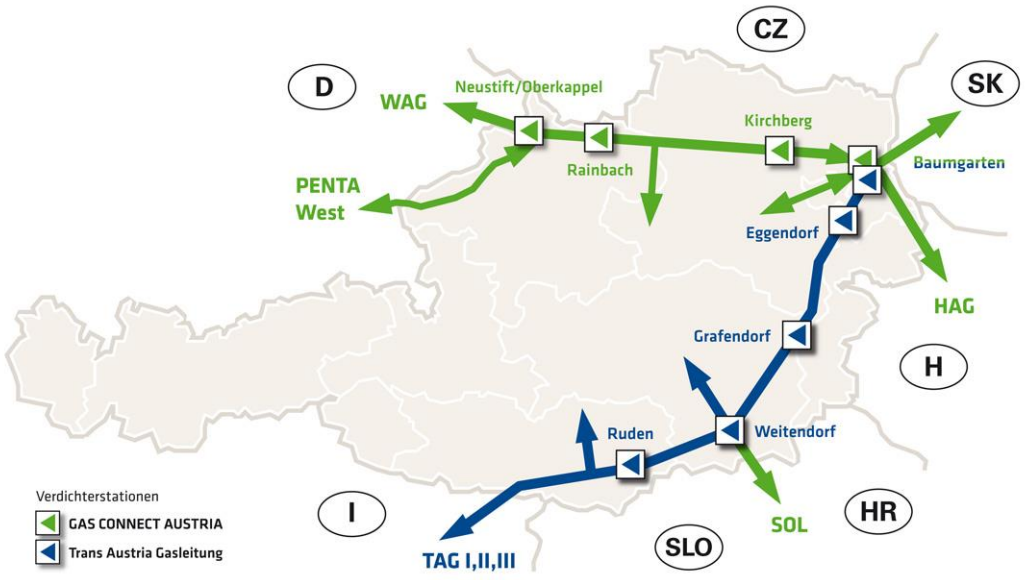
Point/cluster	Technical capacity (TVK)	Forecasted contracted capacities FZK	Forecasted contracted capacities DZK	Reference capacities FZK	Reference capacities DZK
Arnoldstein	17,377,622	0	531,335	0	531,335
Baumgarten	96,080,396	81,872,004	0	81,872,004	0
Oberkappel	10,349,306	9,651,006	0	9,651,006	0
Überackern	4,750,155	1,393,155	3,357,000	1,393,155	3,357,000
Storage MAB	7,273,500	5,749,393	0	5,749,393	0
Storage 7-fields	2,950,825	2,950,825	0	2,950,825	0
Mosonmagyarovar	0	0	0	0	0
Murfeld	0	0	0	0	0
Petrzalka	0	0	0	0	0
Distribution area	4,031,159	4,031,159	0	4,031,159	0

[12] https://www.e-control.at/documents/20903/388512/ECA_Methode_2017-2020_EN.pdf/7e830468-2bb3-94ec-7297-8426057fdf7d

Exit (kWh/h)

Name	Technical capacity (TVK)	Forecasted contracted capacities FZK	Forecasted contracted capacities DZK	Reference capacities FZK	Reference capacities DZK
Arnoldstein	50,014,969	48,558,893	0	48,558,893	0
Baumgarten	10,272,000	5,436,471	0	5,436,471	0
Mosonmagyarovar	6,378,300	6,378,300	0	6,378,300	0
Murfeld	4,688,610	3,382,424	0	3,382,424	0
Oberkappel	15,660,325	15,660,327	0	15,660,327	0
Petrzalka	1,119,000	0	0	0	0
Überackern	7,553,250	265,539	6,468,514	265,539	6,468,514
Storage MAB	7,273,500	5,749,393	0	5,749,393	0
Storage 7-fields	2,950,825	2,950,825	0	2,950,825	0
Distribution area 1	31,999,754	25,004,944	7,014,292	25,004,944	7,014,292
Distribution area Carinthia	471,871	471,871	0	471,871	0

iii. Structural representation of the Market Area East: transmission network, power of compressor stations and diameter of pipelines



For further details please refer to:

a. TAG pipeline system: https://www.taggmbh.at/en/transmission-system/tag-pipline-system/
b. GCA pipeline system: https://www.gasconnect.at/en/network-information/our-network-in-detail/

iv. Length of pipelines

Punkt	Entfernung (Trassenlänge) vom Referenzpunkt Baumgarten (km)
Arnoldstein	382
Baumgarten	0
Mosonmagyarovar	46
Murfeld	238
Oberkappel	242
Petrzalka	36
Überackern	337
Storage MAB	2
Speicher 7-fields	334
Auersthal	24
Kirchberg	78
Gr. Göttfritz	133
Rainbach	185
Bad Leonfelden	202
Arnreith	222
Baumgarten-PVS2	1
Eggendorf	72
Grafendorf	137
St. Margarethen	180
Weitendorf	211
Sulmeck-Greith	231
Ettendorf	269
Waisenberg	300
Ebenthal	321
Finkenstein	361

1.3 Value of proposed adjustment at entry and exit points to storage facilities (Article 26(1)(a)(ii) TAR NC)

Pursuant to section 74(1) Natural Gas Act 2011, there are no capacity-based transmission tariffs at entry points from storage. The discount applied at exit points to storage facilities is 50%, in accordance with Article 9(1) TAR NC.

Discounts at 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 in respect of their gas transmission systems, are not applicable.

1.4 Allowed revenue (Article 30(1)(b)(i) TAR NC)

The allowed revenue of the transmission system operator is the average allowed cost during each year of the tariff period, set according to the methodology pursuant to section 82 Natural Gas Act 2011. In more concrete terms, E Control has issued the official decisions V MET G 01/13, V MET G 03/13 and V MET G 02/13 to set the TSOs' allowed cost. The value for the current tariff period can be found here.

For the purpose of this consultation document, the following indicative values are used as allowed costs of the TSOs:

GCA total costs €	141.996.100
GCA non-influenceable costs €	10.636.400
GCA influenceable costs €	131.359.700

TAG total costs €	312.268.900
TAG non-influenceable costs €	97.065.300
TAG influenceable costs €	215.203.600

1.5 Inter TSO compensation mechanism (Article 10(3) TAR NC)

As a consequence of the two TSOs jointly applying the same RPM in the Market Area East, there is a systematic difference between the revenues based on tariffs in the ordinance multiplied by the capacities in the official cost decision (forecasted revenues) and the allowed cost of each TSO as stated in the individual official cost decision. The surplus of one TSO thereby amounts to the shortfall of the other TSO and thus determines the compensation amount to be paid. This compensation is determined before the start of the tariff period, fixed in the Austrian gas system charges ordinance and to be paid in equal shares on a monthly basis.

2 Transmission tariffs level and estimation

2.1 Value of indicative reference price (Article 26(1)(a)(iii) TAR NC) and difference in the level of transmission tariffs for the same type of transmission service (Article 30(2)(a)(i) and Article 30(2)(a)(ii) TAR NC)

The following indicative capacity-based transmission tariffs, expressed in EUR/kWh/h, result from applying the RPM with the input parameters described in chapter 1.

GCA

Point	capacity-based tariff EUR/kWh/h	VO 2017 tariff EUR/kWh/h	absolute difference EUR/kWh/h	relative difference
FZK Entry Baumgarten	0,85	0,77	0,08	10%
FZK Entry Oberkappel	1,43	1,30	0,13	10%
FZK Entry Überackern	1,43	1,30	0,13	10%
FZK Entry Moson	0,85	0,77	0,08	10%
FZK Entry Murfeld	1,21	1,10	0,11	10%
FZK Entry Petrzalka	0,85	0,77	0,08	10%
FZK Exit Baumgarten	1,24	1,12	0,12	10%
FZK Exit Oberkappel	3,32	3,44	-0,12	-3%
FZK Exit Murfeld	2,23	3,33	-1,10	-33%
FZK Exit Moson	1,24	1,12	0,12	10%
FZK Exit Petrzalka	1,24	1,12	0,12	10%
FZK Exit distribution area	0,53	0,53	0,00	0%
FZK Entry distribution area	0,00	0,00	0,00	
FZK Exit Überackern	3,32	3,44	-0,12	-3%
DZK Entry Überackern (Oberkappel)	1,29	1,17	0,12	10%
DZK Exit distribution area (Baumgarten)	0,48	0,48	0,00	0%
DZK Exit distribution area (Oberkappel)	0,48	0,48	0,00	0%
DZK Exit Überackern (Oberkappel)	2,99	2,99	0,00	0%
ÜA Sudal (Überackern ABG)	0,14	0,14	0,00	0%
ÜA ABG (Überackern Sudal)	0,14	0,14	0,00	0%
Exit storage 7-fields	0,44	0,40	0,04	10%
Entry storage 7-fields	0,00	0,00	0,00	
Entry storage MAB	0,00	0,00	0,00	
Exit storage MAB	0,44	0,40	0,04	10%

TAG Point	capacity-based tariff EUR/kWh/h	VO 2017 tariff EUR/kWh/h	absolute difference EUR/kWh/h	relative difference
FZK Entry Baumgarten	0,85	0,77	0,08	10%
FZK Entry Arnoldstein	1,43	1,30	0,13	10%
FZK Exit Arnoldstein	5,09	4,63	0,46	10%
FZK Exit distribution area	0,53	0,53	0,00	0%
FZK Exit distribution area Carinthia	4,62	4,20	0,42	10%
DZK Entry Arnoldstein (distribution grid)	0,68	0,62	0,06	10%

2.2 Explanation of the differences between tariff in the current and next tariff period (Article 26(1)(d) TAR NC)

The difference in the level of transmission tariffs for the same type of transmission service applicable for the current tariff period and for the tariff period for which the information is published is explained below.

Though in principle the same RPM is applied for both tariff periods, tariffs deviate for the following reasons:

i. In order to safeguard tariff stability and existing contracts and to avoid market distortion the RPM sets limits to tariff increases from one tariff period to the next (as was already done in 2016) and therefore promotes a gradual approach. As a result thereof, entry tariffs increase from the current to the next tariff period in order to converge towards the calculated entry-exit split. The gradual convergence of effective tariffs on theoretical tariffs depends on the overall development of the cost base, the booking situation, discounts, and special benchmark tariffs. Depending on the development of the factors above, it is possible that theoretical tariffs effectively apply from the next but one regulatory period onwards.

ii. The application of a special benchmark exit tariff for Murfeld in accordance with Article 6(4)(a) TAR NC leads to a significant tariff decrease for the otherwise non-competitive exit tariff and via rescaling to a small effect on other entry and exit points.

iii. Due to the substantial price increase for energy costs, non-influential costs are forecasted to be significantly higher in the next tariff period than currently.

2.3 Simplified tariff model (Article 30(2)(b) TAR NC)

See attached excel model

3 Transmission service revenue (Article 30(1)(b)(iv) TAR NC)

The “transmission service revenue” is equal to the “allowed revenue” according to chapter 1.4. The regulated services that are provided by the transmission system operators within the entry-exit system for the purpose of transmission are fully recovered through capacity-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 results in an entry-exit split of 20:80.

The breakdown between the revenue from intra-system network use at both entry and exit points and the revenue from cross-system network use at both entry and exit points results in an intra-system/cross-system split of 7:93.

4 RPM assessments (Article 26(1)(a) TAR NC)

4.1 Cost allocation assessment (Article 26(1)(a)(iv) TAR NC)

According to Article 5 TAR NC, the authority shall perform an assessment to verify that the proposed RPM prevents cross-subsidies between network uses. The assessments that were carried out confirm that the proposed tariffs are cost reflective and are based on the cost drivers set out in Article 5(1) TAR NC.

The cost drivers considered for the calculation are:

i. forecasted contracted capacity; and
ii. distance

The capacity cost allocation comparison index amounts to 9.95% thus the TAR NC does not require a justification.

	TEST results	
Ratio intra	**8,076**	*EUR/(km*MWh/h)*
Ratio cross	**7,310**	*EUR/(km*MWh/h)*
CAA cap.	**9,95%**	

4.2 Choice of the reference price methodology (Article 26(1)(a)(v) TAR NC)

The structure of the Market Area East is characterised by

i. a non-meshed network
ii. with a dominant node in Baumgarten where the main transmission systems connect and most gas flows are dispatched and routed.

These are ideal conditions for variant B (the virtual point-based approach)[13] as the RPM for the Austrian entry-exit system. This method is already in place in Austria for the current tariff period and has proven to be accepted, transparent and cost-reflective.

The entry-exit split is a result of the methodology and therefore in line with the methodology's cost allocation on the basis of capacity and distance as cost drivers.

In order to maintain tariff stability and avoid market distortion, clustering and equalisation of homogeneous points are retained unchanged from the current tariff period.

In addition, a maximum tariff increase of 10% applies, ensuring tariff stability, safeguarding existing contracts and avoiding market distortion.

In order to further increase cost-reflectivity, non-influenceable costs are allocated to reflect actual (and future) utilisation of fuel energy-related costs at the causal points.

For the exit at Murfeld, a benchmark tariff (against the route to the Croatian entry-exit system via Mosonmagyarovar) is created so that the resulting values meet the competitive level of reference prices on a competing route.[14]

The cost allocation assessment according to Article 5 TAR NC confirms that the RPM is cost reflective and that the cost drivers and transmission revenues are coherent, i.e. that there is no noticeable cross-subsidisation.

[13] https://www.acer.europa.eu/Official_documents/Public_consultations/Documents/Revised%20chapter.pdf#page=11

[14] See chapter 1.1 no. 1)

4.3 Comparison against the capacity-weighted distance RPM (Article 26(1)(a)(vi) TAR NC)

According to Article 26(1)(a)(vi) TAR NC, in case that the proposed reference price methodology deviates from the capacity-weighted distance reference price methodology a comparison between these two reference price methodologies must be made.

The parameters for the capacity-weighted distance reference price methodology are as follows:

i. the part of the transmission services revenue to be recovered from capacity-based transmission tariffs;
ii. the forecasted contracted capacity at each entry point or a cluster of entry points and at each exit point or a cluster of exit points;
iii. 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;
iv. the combinations of entry points and exit points, where some entry points and some exit points can be combined in a relevant flow scenario;
v. the entry-exit split referred to in Article 30(1)(b)(v)(2) TAR NC shall be 50/50.

For further details regarding the calculation methodology please refer to Article 8 TAR NC.

The following table compares the indicative tariffs ('capacity-based tariff'), the tariffs of the current tariff period ('VO 2017 tariff') and the charges, expressed in EUR/kWh/h, that would result from the application of the capacity-weighted distance RPM ('CWD tariff'):

GCA

Point	capacity-based tariff EUR/kWh/h	VO 2017 tariff EUR/kWh/h	CWD tariff EUR/kWh/h
FZK Entry Baumgarten	0,85	0,77	2,26
FZK Entry Oberkappel	1,43	1,30	2,26
FZK Entry Überackern	1,43	1,30	2,26
FZK Entry Moson	0,85	0,77	2,26
FZK Entry Murfeld	1,21	1,10	2,26
FZK Entry Petrzalka	0,85	0,77	2,26
FZK Exit Baumgarten	1,24	1,12	0,52
FZK Exit Oberkappel	3,32	3,44	1,74
FZK Exit Murfeld	2,23	3,33	2,07
FZK Exit Moson	1,24	1,12	0,52
FZK Exit Petrzalka	1,24	1,12	0,52
FZK Exit distribution area	0,53	0,53	0,58
FZK Entry distribution area	0,00	0,00	2,26
FZK Exit Überackern	3,32	3,44	1,74
DZK Entry Überackern (Oberkappel)	1,29	1,17	2,04
DZK Exit distribution area (Baumgarten)	0,48	0,48	0,53
DZK Exit distribution area (Oberkappel)	0,48	0,48	0,53
DZK Exit Überackern (Oberkappel)	2,99	2,99	1,56
ÜA Sudal (Überackern ABG)	0,14	0,14	n.a.
ÜA ABG (Überackern Sudal)	0,14	0,14	n.a.
Exit storage 7-fields	0,44	0,40	0,52
Entry storage 7-fields	0,00	0,00	n.a.
Entry storage MAB	0,00	0,00	n.a.
Exit storage MAB	0,44	0,40	0,52

TAG			
Point	capacity-based tariff EUR/kWh/h	VO 2017 tariff EUR/kWh/h	CWD tariff EUR/kWh/h
FZK Entry Baumgarten	0,85	0,77	2,26
FZK Entry Arnoldstein	1,43	1,30	2,26
FZK Exit Arnoldstein	5,09	4,63	3,13
FZK Exit Verteilergebiet	0,53	0,53	0,58
FZK Exit distribution area Carinthia	4,62	4,20	2,80
DZK Entry Arnoldstein (distribution grid)	0,68	0,62	2,04

The cost allocation assessment based on preliminary CWD tariffs shows that costs allocated intra-system are much higher than costs allocated cross-system, resulting in a cost allocation comparison index of 60.9%. This is because the CWD methodology allocates more costs to entry tariffs, thereby significantly increasing entry tariffs for intra-system use, while the related cost drivers remain unchanged. Entry tariffs are uniformly applied for intra-system and cross-system usage and thus neglect the significant difference in weighted distances between intra-system and cross-system exit points (The difference in capacity-weighted distances between intra-system and cross-system usage can only be reflected by differentiating between intra-system and cross-system exit points.).

5 Discounts, multipliers and seasonal factors (Article 28 TAR NC)

5.1 Level of multipliers (Article 28(1)(a) TAR NC)

Gas networks are designed to transport at peak conditions during the whole year, but they are not usually utilised at full capacity all the time. Multipliers allow for charging for short-term peak usage of the system, with the following positive effects:

i. avoiding cross-subsidies from uses with a high load factor to uses with a lower load factor;
ii. incentivising long-term capacity bookings;
iii. optimising efficient revenue recovery;
iv. promoting an efficient use of the system.

The following level of multipliers is proposed for the entire Market Area East, taking into account the limits set by the TAR NC:

Year	Quarter	Month	Day	Within-day
1.00	1.15	1.30	1.50	2.00

5.2 Level of seasonal factors (Article 28(1)(b) TAR NC)

The use of seasonal factors can further enhance multipliers by reflecting differences in the seasonal use of the capacity. Seasonal factors in particular:

i. promote efficient capacity utilisation at times of peak demand by providing incentives to shift gas flows away from high-demand periods and reduce the risk of potential congestion;
ii. reduce the negative impact that profiled capacity bookings may have on TSO revenue stability; and
iii. increase security of gas supply by allowing different reserve prices in winter and summer, thereby encouraging gas supplies well in advance of the peak demand period.

The authority proposes introducing seasonal factors at Arnoldstein exit point. Usage and booking profile at this point clearly indicate a variation of demand depending on the consumption during each month of the year. The TAR NC provides for the following aspects to be taken into account when setting seasonal factors:

i. the impact on facilitating the economic and efficient utilisation of the infrastructure;
ii. the need to improve the cost-reflectivity of reserve prices.

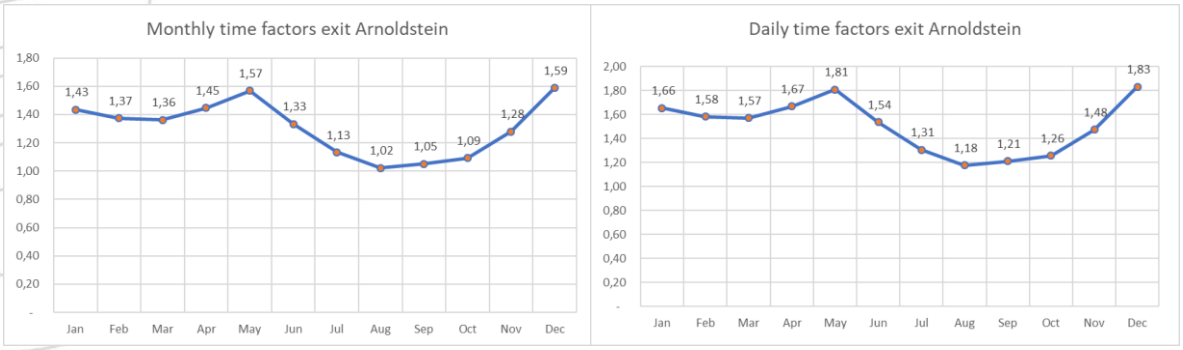
To fulfil these requirements, it is appropriate to introduce a price variation at Arnoldstein exit point according to the demand level of each month. This will incentivise short-term bookings during periods when demand is lower and give a higher value to capacity when demand is higher.

Seasonal factors for Arnoldstein exit point have been calculated in accordance with the requirements set in the TAR NC and using the formula described in Annex M of ENTSOG's Implementation Document for the TAR NC.[15] The average daily profile in the period 2013-2017 has been used as total forecasted flows for each month by considering 30 days of consumption for each month.

Input parameters	Monthly	Daily
Multiplier	1.30	1.50
Limit	1.50	3.00
Power	2	

[15] https://entsog.eu/sites/default/files/entsog-migration/publications/Tariffs/2017/TAR1000_170928_2nd%20Implementation%20Document_Low-Res.pdf#page=238

Exit Arnoldstein



5.3 Level of interruptible discounts (Article 28(1)(c) TAR NC)

According to Article 16(4) TAR NC, the national regulatory authority may decide to apply an ex-post discount, whereby network users are compensated after the actual interruptions incurred. Such ex-post discounts may only be used at interconnection points where there was no interruption of capacity due to physical congestion in the preceding gas year. As this condition for applying ex-post discounts was not fulfilled at the interconnection points Entry Oberkappel and Entry Überackern in the gas year 2017/18, an ex-ante discount needs to be applied at these interconnection points instead.

Ex-ante discounts

According to Article 16(2) TAR NC the calculation of the ex-ante discount is as follows:

$$Di_{ex-ante} = Pro \times A \times 100\%$$

$Di_{ex-ante}$ is the level of an ex-ante discount

A is the adjustment factor that reflects the estimated economic value of the respective interruptible capacity product. E-Control sets this value at 1.0. The underlying considerations are given below.

Pro is the factor for the probability of interruption of interruptible capacity. The underlying considerations are given below.

Calculation of ex-ante discounts does not differentiate between different durations (i.e. within-day up to yearly) of interruptible capacity products. In the authority's view, this is not conflict with Article 16 TAR NC, since the 'type of standard capacity product' does not refer to the duration of a product but to the fact that some Member States use a variety of types of standard capacity products for interruptible capacity. Moreover, an integrated consideration of interruptible capacity with different durations adds to transparency, since transparency data published by TSOs for the information of network users does not provide the level of detail that would be required for such a differentiation.

The probability of interruption is calculated for the IPs which require the application of an ex-ante discount for interruptible capacity (Entry Oberkappel und Entry Überackern). E-Control is of the opinion that a sufficiently reliable forecast of future interruptions can only be derived from historical data (actual interruptions). Since capacity is offered in competing auctions at these interconnection points, E-Control believes that an integrated assessment is required and that in any case, the same level of discount needs to be applied at these IPs. This reflects the fact these IPs connect to the same neighbouring market, i.e. network users could use them interchangeably.

The historical assessment of interruptions is calculated in accordance with the principle set out in Article 16(3) TAR NC for the previous gas year (2017/2018). This resulted in a Pro factor of 0.41% for the IP Oberkappel (entry) during that period.

Since the number of interruptions, the duration of interruptions and the level of interrupted capacity (N, Dint and CAPav.int) according to Article 16(3) TAR NC are solely based on historical data and thus cannot take into account potentially changing future circumstances, E-Control believes that a contingency element must apply. Such an element must reflect the fact that the quality of a capacity product determines the interruption sequence, i.e. interruptible capacity should be interrupted prior to firm dynamically allocable capacity (i.e. DZK with an applicable discount of 10%). This is even more relevant since a discount of 10% applies for DZK and Article 4(2) TAR NC states that transmission tariffs may be set in a manner as to take into account the conditions for capacity products.

Based on the above considerations E-Control concludes that the contingency element should be 12%. The actual probability of interruption corresponds to the higher of either the maximum of this contingency mark-up or the level of the Pro factor as calculated based on historical interruptions.

IP	Direction	Neighbouring Market	Level of ex-ante discount
Oberkappel	Entry	NetConnect Germany	12%
Überackern	Entry	NetConnect Germany	12%

Ex-post discounts

The ex-post compensation paid for each day on which an interruption occurred shall be equal to three times the reserve price for daily standard capacity products for firm capacity.

Currently, the rates for interruptible capacity are the same as those for the corresponding firm capacity. System users are compensated if interruptions occur. Such compensations take the form of reductions of the charge payable for the respective service month.

Taking into account the requirement of the TAR NC, the amount of such reduction to be granted by the transmission system operator (ERm) is calculated by applying the following formula:

$$E_{Rm} = (D_{rf} * 3) * AvgC_{int} \leq F_m$$

Where:

E_{Rm} is the compensation of the interruptible capacity product interruption for a day;

D_{rf} is the reserve price for the firm daily capacity product;

3 is the compensation factor, equal to three times the reserve price for daily standard capacity products for firm capacity.

$AvgC_{int}$ is the average interruptible capacity interrupted in the relevant day, calculated as

$$AvgC_{int} = \left(\frac{\sum_{i=1}^{h_R} c_{diff,i}}{h_R} \right)$$

$c_{diff,I}$ is the actual interrupted capacity of the product calculated as the difference between the hourly capacity offered and the actually available hourly capacity during each hour affected by the interruption;

h_R is the number of hours of a gas day;

i is the relevant hour where an interruption occurs;

F_m is the invoiced fee of the period when the interruption occurred.

6 Non-transmission tariffs (Article 26(1)(c) TAR NC)

Not applicable