

**Consultation Document**  
**for the Incremental Capacity Process 2017**  
**for the Market Border Area between**  
**GASPOOL and TTF**

**19th of October 2017**

This report is a joint assessment of the potential for incremental capacity projects conducted by

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## I. Introduction

Having concluded the phase 1 of the incremental in 2017, as laid down in Regulation (EU) 2017/459 (Network Code on Capacity Allocation Mechanisms; below referred to as “NC CAM”), the affected TSOs on the GASPOOL – TTF entry-exit system border initiated the project design phase (phase 2). The demand assessment report for incremental capacity 2017 (published 27<sup>th</sup> of July 2017) shows a sustained demand on both sides of this particular market area border.

For the entry-exit-systems the following conclusion for the (non)-initiation of an incremental capacity project/process is drawn:

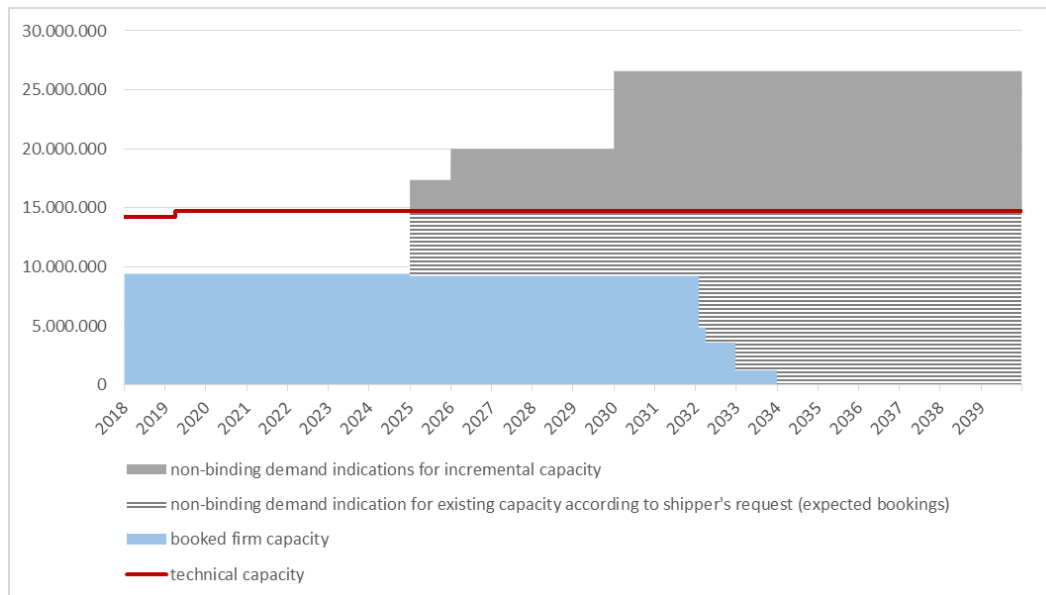


Figure 1: GASPOOL side of the entry-exit system border (Exit GASPOOL)

The above shown chart clearly indicates that the sum of both booked capacity and demanded incremental capacity is higher than the technical capacity available at the market area border.

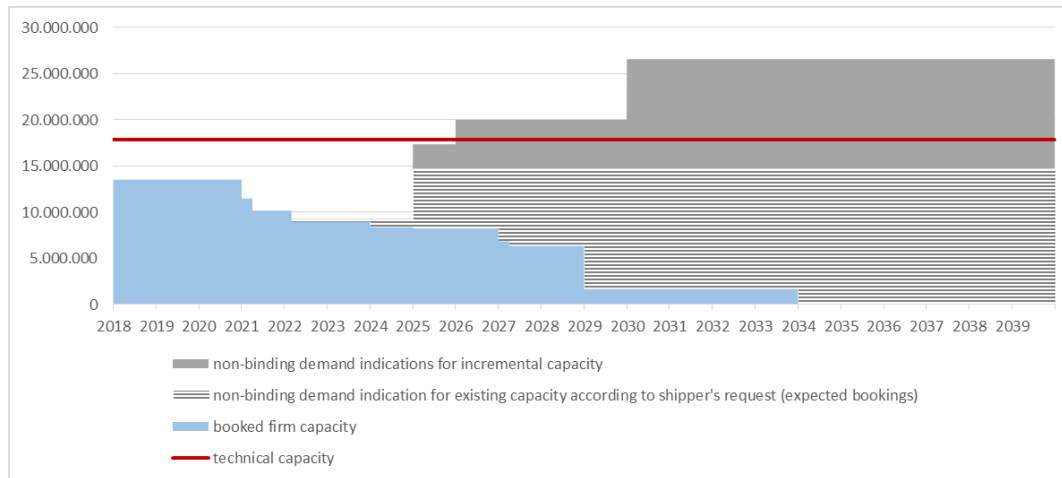


Figure 2: TTF side of the entry-exit system border (entry TTF market area)

The above shown chart clearly indicates that the sum of both booked capacity and demanded incremental capacity is higher than the technical capacity available at the market area border.

For this incremental capacity project the technical studies are conducted for potentially all Interconnection Points (IPs) of the entry-exit system border for which the project was initiated. Thereby economical aspects and aspects of grid topology are taken into account. After finishing the technical studies the involved TSO's started the process of designing coordinated offer level in order to enable bundled products also including the identified incremental capacities.

The present consultation report is a joint report of the TSO's of the GASPOOL market area and TTF market area. For each side of the entry/exit system border the required elements for the market consultation regarding this incremental capacity project and corresponding measures are described in this report. There are some differences in the interpretation of the CAM NC and differences as a result of additional national legislation which will be a topic for possible further alignment after the consultation phase.

## II. German Side of the Market Border GASPOOL-TTF

### 1. Project Proposal

For the technical studies on the GASPOOL-TTF market area border the demand indications of the demand assessment report have been taken into account. In case on increasing demand indication the maximum capacity is leading for the technical studies. The additional requested capacity on the market area border GASPOOL-TTF is 11.872.146 kWh/h for the maximal level. (For the purposes of technical study assumed 11,9 GW)

For the German TSOs, this capacity is regarded as exit capacity. Within the GASPOOL market area, there are two technical options to enable this capacity. These options are indicated with the grey and red arrow in Figure 3: Transportation Scenarios. The corresponding studies concerning the entry capacity Russian Federation – GASPOOL are described in detail in the Consultation document for the incremental capacity process starting 2017 between GASPOOL and the Russian Federation.

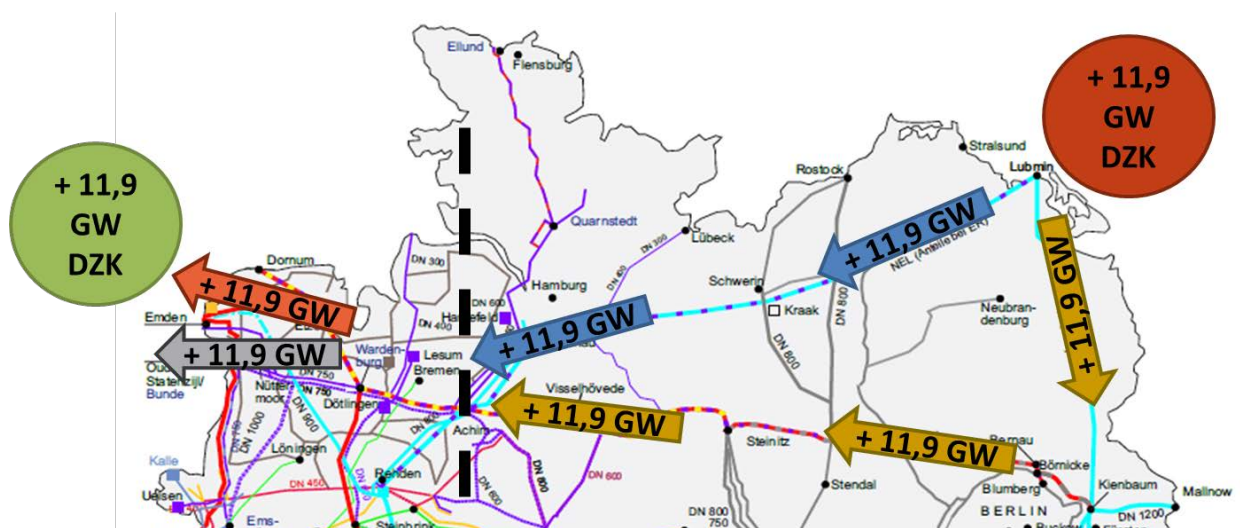


Figure 3: Transportation Scenarios

#### Transportation via GASCADE:

The grey marked arrow illustrates the transport of the requested capacity via Bunde using the transmission grid of GASCADE. To enable to requested capacities, the existing transportation grid, will have to be expanded by the following measures:

1. Compressor Station in Bunde
2. Loop-Pipeline (app. 70 km)

These grid expansions will lead to investments in the magnitude of 250 mln €.

#### Transportation via GUD<sup>1</sup>:

The red marked arrow shows the transport via Emden and the transmission grid of Gasunie Germany. The results of the calculation for increasing the technical capacity in the Gasunie Germany grid has shown that investments with an amount of app. 16,1 mln € are necessary. The table below describes the measures in detail:

Project Nr.	Description
1	Increasing the capacity between NEL and GUD-system via metering station Embsen
2	Piping to reverse the flow in the existing pipeline system Folmhusen-Emden in the vicinity of Rysum*
3	Increasing the capacity and reverse flow of the existing metering station Folmhusen
4	New metering station to deliver capacity towards GTS via Emden
<b>Investment</b>	<b>13.900.000 €</b>
5	Piping to reverse the flow of the existing compressor station in Holtum
1	Increase of the capacity between NEL and GUD-system at Embsen
<b>Investment</b>	<b>16.100.000 €</b>

\*Sections with Thyssengas participation, due to shared assets („co-ownership”) in the section Folmhusen-Emden.

#### Transportation via NCG:

The market areas GASPOOL and NCG will be merged in 01.04.2022 (GasNZV § 21). Consequently, the GASPOOL TSOs invited NCG to participate in the technical studies since there will be a joint market area Germany in 2025. However there is no combined capacity model of GASPOOL and NCG in place yet and it is not feasible to set up this model during the project design phase of the incremental cycle 2017. So the measures to transport restrictedly allocable capacity from the Russian Federation – GASPOOL towards the Netherlands via the NCG market area cannot be identified. The interconnection points of NCG and GASPOOL have to be aligned in one capacity model upfront. It should be noted that the route via NCG towards Netherlands in any cases increases the bottleneck between

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<sup>1</sup> and – due to shared assets (“co-ownership”) in the section between Folmhusen and Emden – Thyssengas

GASPOOL and NCG. Additionally the market area conversion from L-Gas to H-Gas is not concluded in 2025, so the existing L-Gas infrastructure cannot be used for these capacities.

#### Conclusion:

With regards to the three described transportation routes, GASPOOL TSOs advice to enable the requested capacities using the grid expansion of GUD. Since the joint capacity model of GASPOOL and NCG is not established yet, the transportation route via NCG cannot be compared to the GASPOOL expansions. Nevertheless the investments for the GUD expansion are regarded very favorable to enable the requested capacities.

## **2. Offer Level**

Due to the fact, that the grid enhancements build on one another, it is possible to offer the requested capacity in two offer level.

The table below sums up the offer level, taking into account Art. 8 (8) NC CAM and the currently valid decision of BK7-15-001 (KARLA Gas) and therefore considering reservation quotes of 20 % for existing and incremental capacity.

#### Offer Level I

Period from	Period to	Free available capacity considering 20 % reservation quote; KWh/h	Expansion-Level I from demand request considering 20 % reservation quote; KWh/h	Total Offer Level I; KWh/h
01.10.2025	30.09.2033	2.534.691	5.840.000	8.374.691
01.10.2033	30.09.2034	10.479.115	5.840.000	16.319.115
01.10.2034	30.09.2040	11.772.544	5.840.000	17.612.544

#### Offer Level II

Period from	Period to	Free available capacity considering 20 % reservation quote; KWh/h	Expansion-Level II from demand request considering 20 % reservation quote; KWh/h	Total Offer Level II; KWh/h
01.10.2025	30.09.2033	2.534.691	9.520.000	12.054.691
01.10.2033	30.09.2034	10.479.115	9.520.000	19.999.115
01.10.2034	30.09.2040	11.772.544	9.520.000	21.292.544



### 3. Alternative Allocation Mechanism

Not applicable.

### 4. Provisional Timeline

All above mentioned projects will be initialized after the PRISMA auction in June 2019. All technical measures will be ready for operation at 1<sup>st</sup> of October 2025 if the economical test is passed after the auction.

The following steps of the incremental process can be described as follows:

Start Date	End Date	Description
19.12.2017	19.3.2018 – 1.9.2018	Planning of offer levels by TSOs in close cooperation with NRAs
19.3.2018 – 1.9.2018	19.9.2018 – 1.3.2019	Approval and publication of the necessary parameters acc. to Article 28 (1) NC CAM by NRAs
19.9.2018 – 1.3.2019	1.5.2019	Adjustment of the offer levels according to NRA decision by the TSOs
1.5.2019		Publication of the approved parameters and of a template of the contract(s) related to the capacity to be offered for the incremental project
1.7.2019		Yearly auction/economic test

The stated dates have provisional character and are therefore subject to change.

If the economic test was positive, the project will feed into the national development process for the national development plan NEP Gas 2020-2030 and will be considered in its scenario framework and the (national) modelling.

### 5. Additional General Terms and Conditions

The draft of the additional GT&C is as Appendix I attached to this consultation document.

### 6. IND and RP according NC TAR

Since there is a floating price regime in Germany, the fixed price is not applicable.

### 7. F-Factor

According to Article 27 (3) NC CAM the consultation shall cover the level of user commitments, expressed as an estimate of the f-factor in accordance with Article 23, which,

after having consulted with the transmission system operators, is proposed and subsequently approved by the concerned national regulatory authorities.

The f-factor for each offer level shall be set by the national regulatory authority, taking into account the following (Article 23 (1) NC CAM):

- a) the amount of technical capacity set aside in accordance with Article 8(8) and (9);
- b) positive externalities of the incremental capacity project on the market or the transmission network, or both;
- c) the duration of binding commitments of network users for contracting capacity compared to the economic life of the asset;
- d) the extent to which the demand for the capacity established in the incremental capacity project can be expected to continue after the end of the time horizon used in the economic test.

For the sake of transparency and for the purposes of economic test according to Article 22 NC CAM, the BNetzA created and published a calculation tool (BNetzA Tool; [https://www.bundesnetzagentur.de/EN/Areas/Energy/Companies/GridExpansion/Gas/IncrementalCapacities/IncrementalCap\\_node.html](https://www.bundesnetzagentur.de/EN/Areas/Energy/Companies/GridExpansion/Gas/IncrementalCapacities/IncrementalCap_node.html)). The BNetzA Tool filled out for the assessed offer level is attached to this consultation document.

The BNetzA Tool includes mathematical assessment of a possible f-factor according to points a), c) and d). The f-factor is calculated as rate of the present value of binding commitments of network users for contracting capacity within the time horizon of the first yearly capacity auction, in which the incremental capacity has been offered, according to Article 22 (1) (a), compared to the present value of all expected commitments of network users for contracting respective capacity. The BNetzA Tool uses the last known reference price inflated to the respective year as a respective estimated reference price according to the Article 22 (1) (a) (i) NC CAM. Since the calculation of the increase in the allowed revenue of the transmission system operator associated with the incremental capacity included in the respective offer level does not take inflation into account, the inflation index of the reference prices was also set at 0%.

According to Article 19 (9) NC CAM the virtual interconnection point (VIP) will be established on the German side of the border as from 1 November 2018. Since the VIP tariffs are under negotiation and not known yet, the last known lowest reference price (GASCADE 2018 incl. 10% DZK discount) was used as proxy for the calculation of f-factor for the consultation purposes.

For the purposes of economic test, the existing capacity within each offer level is assumed to be fully booked. The incremental capacity is expected to be booked as described below.

The f-factor proposed as follows:

- a) Incremental capacity set aside in accordance with Article 8 (8) CAM NC and assessed in-line with the currently valid decision from BNetzA BK7-15-001 (KARLA Gas) amounts 20% of the technical incremental capacity included into respective offer level:

- Reservation Offer Level I: 1.460.000 KWh/h
- Reservation Offer Level II: 2.380.000 KWh/h

From 2025/26 to 2029/30 incremental capacity, offered in the annual capacity auction 2019, is higher than those indicated in the non-binding request. For that reason the reserved capacity is assumed to be fully booked on the short term basis starting from 2030/31 (to 2039/40).

- b) Additional positive externalities have not been assessed.
- c) According to Article 11 (3) when offering incremental capacity, the offer levels may be offered in yearly capacity auctions for a maximum of 15 years after the start of operational use.
- Since from 2025/26 to 2029/30 incremental capacity, offered in the annual capacity auction 2019, is higher than those indicated in the non-binding request, it is assumed that shipper will perform bookings in-line with the demand indication.
  - From 2030/31 to 2039/40 incremental capacity, offered in the annual capacity auction 2019, is assumed to be fully booked.
  - The start of operation use is foreseen for the year 2025.

Economic life of the asset was assumed in-line with the regulatory as well as ordinary depreciation period. Since one part of the investment concerns the compressor stations, the regulatory depreciation period was set according to Attachment 1 to § 6 (5) of "Gasnetzentgeltverordnung" (GasNEV) for compressor stations at 25 years. The start of operational use is foreseen for the year 2025, the last year of depreciation is 2049. From 2039/40 to 2048/49, 75% of the total technical incremental capacity is assumed to be booked on the long- and short-term basis.

- d) The time horizon of the economic life of the asset and the economic test is 2049. No bookings were taken into account after 2049.

Offer Levels and corresponding estimated bookings

From	To	Offer Level 0, bookable existing capacity, KWh/h	Incremental capacity I, taking into account reservation quote of 20%, KWh/h	Total Offer Level I, KWh/h	Estimated bookings of incremental capacity, assumed for the economic test	Incremental capacity II, taking into account reservation quote of 20%, KWh/h	Total Offer Level II, KWh/h	Estimated bookings, of incremental capacity assumed for the economic test
01.10.2025	30.09.2026	2.534.691	5.840.000	8.374.691	2.638.255	9.520.000	12.054.691	2.638.255
01.10.2026	30.09.2030	2.534.691	5.840.000	8.374.691	5.276.509	9.520.000	12.054.691	5.276.509
01.10.2030	30.09.2032	2.534.691	5.840.000	8.374.691	5.840.000	9.520.000	12.054.691	9.520.000
01.10.2032	30.09.2033	2.534.691	5.840.000	8.374.691	5.840.000	9.520.000	12.054.691	9.520.000
01.10.2033	30.09.2034	10.479.115	5.840.000	16.319.115	5.840.000	9.520.000	19.999.115	9.520.000
01.10.2034	30.09.2040	11.772.544	5.840.000	17.612.544	5.840.000	9.520.000	21.292.544	9.520.000
01.10.2040	30.09.2049				5.475.000			8.925.000

The proposed f-factor for Offer Level I, calculated in the BNetzA Tool, amounts 0,67.

The proposed f-factor for Offer Level II, calculated in the BNetzA Tool, amounts 0,63.

## 8. Received additional Demand Indication

No additional demand indications received after 6th of June.

## 9. Impact on Usage of Gas Infrastructure

No negative impact is expected on the usage of the existing gas infrastructure in Germany.

### **III. Dutch Side of the Market Border GASPOOL-TTF**

#### **1. Project proposal**

The requested capacity in the demand assessment stage is in line with the capacity and timing foreseen in the Dutch “Netwerk Ontwikkelingsplan 2017” (NOP 2017). The capacity is requested slightly later than foreseen in the TYNDP 2017 (TRA-N-873).

The measures of this project proposal which are required on the Dutch side to accommodate the requested capacity plus 10% reservation quota for the short term auction consist of a system connection between GASPOOL (GUD) and TTF at the Gasunie location Rysum. This location where the gas enters the TTF market area is determined in coordination with the German TSO’s, see German project proposal. The transport capacity from location Rysum to the rest of the network is sufficient to transport the additional capacity.

The measures for the additional capacity via GASCADE were also limited to a system connection, however the location of this system connection was foreseen at Oude Statenzijl and would result in an investment of approximately 7.1 mln € (cost estimate an accuracy of of  $\pm 25\%$  at a P50 level). No measures were determined for the NCG option, because the NCG TSO’s did not provide GTS with the relevant transport conditions.



Figure 4: Location Rysum, entry of the incremental capacity into the TTF market area

The system connection at the Rysum location consist of:

- short pipeline at the GTS location
- Isolation coupling
- Remotely operated actuator on an existing valve
- Facilities for telemetry

The cost estimate of the entire project has been determined to be approximately 0.5 mln €. In this cost estimate an accuracy of  $\pm 25\%$  has been determined. The estimate has been determined on a P50 level. The price level includes an indexation to 2024. The cost estimate is valid for both offer levels because the measures on the Dutch side are the same for both offer levels. The capacity of the offer levels is described in the next paragraph.

The current indicative planning of the project is given in the next table:

Milestone	Date
Ordering materials	01-10-2023
Start construction	01-02-2025
Ready for Operation	01-04-2025
Final Handover	15-09-2025

## 2. Offer Level

The offer levels presented in the table below are based on the capacities which result from the measures which will be taken by both GTS and GUD if the economical test is successful. GTS only has one measure and therefore would only need one offer level. The reason that GTS presents two offer levels is caused by the fact that GUD has two offer levels based on two sets of measures. In the table the different offer levels are presented.

Where offer level 0 the existing bundled available capacity is a reservation quota for the short term auctions of 20% has been taken into account.

For the incremental capacity offered via offer level 1 and 2, a reservation quota for the short term auctions of 10% is taken into account of the demand indication.

Period from	Period to	Offer Level 0 Existing Available Capacity, KWh/h	Total Offer Level I; KWh/h	Total Offer Level II; KWh/h
1-10-2025	30-9-2026	2.534.691	9.104.691	13.244.691
1-10-2026	30-9-2030	2.534.691	9.104.691	13.244.691
1-10-2030	30-9-2032	2.534.691	9.104.691	13.244.691
1-10-2032	30-9-2033	2.534.691	9.104.691	13.244.691
1-10-2033	30-9-2034	10.479.115	17.049.115	21.189.115
1-10-2034	30-9-2040	11.772.544	18.342.544	22.482.544

## 3. Alternative allocation mechanism

Gasunie Transport Services B.V., the Dutch TSO, did not request approval of the national regulatory authority, the Autoriteit Consument en Markt, to use alternative allocation mechanisms based on article 30 NC CAM because GTS did not receive any conditional demand indications.

#### 4. Provisional timeline

The involved TSOs have conducted the technical studies and planned the consultation of the draft project proposal according to the following provisional timeline:

Start Date	End Date	Description
27.7.2017		Start of design phase
27.7.2017	19.10.2017	Technical studies by TSOs
19.10.2017		Publication of consultation documents
19.10.2017	19.12.2017	Public consultation

The result of the public consultation of the draft incremental projects will feed into the planning of the offer levels by the TSOs in close cooperation with the involved national regulatory authorities. The following process can be described as follows:

Start Date	End Date	Description
19.12.2017	19.3.2018 – 1.9.2018	Planning of offer levels by TSOs in close cooperation with NRAs
19.3.2018 – 1.9.2018	6 months later	Approval and publication of the necessary parameters acc. to Art. 28 Para 1 NC CAM by NRAs
19.9.2018 – 1.3.2019	1.5.2019	Adjustment of the offer levels according to NRA decision by the TSOs
1.5.2019		Publication of the approved parameters and of a template of the contract(s) related to the capacity to be offered for the incremental project
1.7.2019		Yearly auction/economic test

The stated dates have provisional character and are therefore subject to change.

#### 5. Additional conditions

According to article 27 (2) sub e) NC CAM the TSOs shall publish for consultation the general rules and conditions that network users must accept to participate and access capacity in the binding capacity allocation phase of the incremental capacity process. Attached in Appendix II the “General conditions for booking of Incremental Capacity” of Gasunie Transport Services B.V. are given. These general conditions supplement the Transmission Service Conditions of Gasunie Transport Services B.V. and shall be applicable to the incremental capacity that will be contracted by shippers.



## **6. IND and RP according NC TAR**

Gasunie Transport Services B.V., the Dutch TSO, is not going to apply the fixed price approach according to Article 25 (1), sub b, ii Reg. 460/2017 (NC TAR) for this incremental capacity project, because a floating price regime is applied in the Dutch system. Therefore a description of the elements IND and RP according to Article 24(b) NC CAM is not applicable.

## **7. F-Factor**

Within the economic test the f-factor describes the share of the present value of the estimated increase in the allowed or target revenue of the transmission system operator associated with the incremental capacity included in the respective offer level to be covered by the present value of binding commitments of network users for contracting capacity calculated.

Assuming the value of the f-factor has to be chosen between 0 and 1 it is expected that the f-factor has no impact on the outcome of the economic test in this specific case. Based on the principle that the investment costs should be, as much as possible, covered by the project, GTS therefore suggests to use an f-factor of 1. Considerations taken in to account for this suggestion are described further down in this chapter.

GTS furthermore wants to make clear that the f-factor has to be determined for each individual project proposal and that the current f-factor can under no circumstances be a precedent for any future investment project, that enters the incremental capacity process.

The expected value of all user commitments for the current project is higher than the calculated regulatory revenues of the investment, whereas the expected investment costs are limited. GTS expects the value of the contractual commitments based on the results of the annual yearly capacity 2019 auction to exceed the estimated costs of the project.

The value of the user commitments is calculated based on the estimated reference prices and a potential auction premium and a potential mandatory minimum premium multiplied by the amount of contracted incremental capacity; as well as the sum of a potential auction premium and a potential mandatory minimum premium multiplied by the amount of available capacity that was contracted in combination with the incremental capacity.

According to Article 23 Reg. NC CAM the level of the f-factor shall be determined based on the following parameters:

B.7. (a) the amount of technical capacity set aside in accordance with Article 8(8) and (9);

Based on Article 8 (8) NC CAM GTS is going to set aside 10 % of the incremental technical capacity at the concerned interconnection point for the short term additional on the demand indication.

B.7. (b) positive externalities of the incremental capacity project on the market or the transmission network, or both

Positive externalities of a project can lower the height of the f-factor which increases the part of the investments costs that need to be covered through socialization. A description of positive externalities of the proposed project is not required for a positive outcome of the economic test.

B.7. (c) the duration of binding commitments of network users for contracting capacity compared to the economic life of the asset;

Regarding Article 11 (3) NC CAM incremental capacity can be offered for a period of 15 years. The asset is earned back through the regulatory depreciation period. The regulatory depreciation period is determined by ACM in the method decision of GTS and is based upon the economic and technical lifetime of the asset. The regulatory depreciation period for this asset will be 55 years.

B.7 (d) the extent to which the demand for the capacity established in the incremental capacity project can be expected to continue after the end of the time horizon used in the economic test.

Following Article 11 (3) Reg.NC CAM incremental capacity can be offered for a period of 15 years after the start of operational use. After this period there are no initial contracts and the incremental capacity will be offered as a standard capacity product following the rules of NC CAM. Remaining regulatory revenues will be earned back via the regulatory regime.

The current capacity usage levels at the cross border IP's can be seen as a best guess for the continuation of the incremental capacity after the end of the time horizon used in the economic test.

### Impact implementation NC TAR

Currently the implementation process of NC TAR with regard to future entry/exit tariffs to be applied in the reference price methodology of NC TAR is ongoing. For future incremental projects GTS reserves the right to propose a different value for the f-factor than proposed above based upon the to be approved reference price methodology.

### **8. Received additional demand indication**

No additional demand indications were received after 6<sup>th</sup> June 2017. Therefore the original demand indications from the first phase are basis for all studies in the design phase.

### **9. Impact on usage of gas infrastructure**

GTS does not expect the incremental capacity to have a negative impact on the utilization of other non- depreciated gas infrastructure in her entry-exit systems.

#### IV. Contact Information

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