

**Consultation document**  
**on the procedure initiated in 2019 for**  
**incremental capacity**  
**in the form of a capacity upgrade at the**  
**interconnection point Greifswald at the**  
**border between the Russian Federation and**  
**THE**

**10<sup>th</sup> August 2020**



This report comprises a joint analysis of the need for new capacities to be created by the following company:

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## I. Introduction

After completion of Phase 1 of the procedure initiated in 2019 pursuant to the Regulation (EU) 2017/459 (Network Code on Capacity Allocation Mechanisms in Transmission Networks; hereinafter "NC CAM") for creating new capacities at the market area border between the Russian Federation and the Trading Hub Europe (THE) the involved transmission network operators (FNB) started the planning phase for the corresponding projects (Phase 2).

As presented in the report on the market demand analysis 2019 (published on 21 October 2019), a permanent need for additional capacities exists for the market area border Russia-THE on the German side in the form of a capacity upgrade of dynamically allocable capacities (DZK) to freely allocable capacities (FZK). The market demand reports on the basis of the received market demands are accessible to the public on the website of FNB Gas e. V.<sup>1</sup> The conclusion of the market demand report was that NEL Gasttransport GmbH (NGT) will start a project for the new creation of capacity. Besides the non-binding enquiry for new capacity to be created in the form of a capacity upgrade as presented above, a high number of further enquiries for new capacity to be created were received by the German FNB. The various possible combinations of the enquiries lead to a multitude of modelling variants, which must be carried out as a basis of the technical studies. This resulted in the adjustment to the original time schedule and the postponement of the consultation of this document.

The planned amalgamation of the German Entry-Exit-Systems for the joint German market area THE as of 1 October 2021 also has an influence on the existing capacity that is to be taken into consideration. Only approved technical capacity within the meaning of Section 9 Para. 4 S. 1 German Regulation on Access to Gas Supply Networks [*Verordnung über den Zugang zu Gasversorgungsnetzen - GasNZV*] (hereinafter "Basic Capacity") can be taken into consideration in the procedure for creating new capacities.

Within the scope of this project for new capacity to be created in the form of a capacity upgrade, technical studies were conducted for the affected network interconnection point at the market area border for which the project was initiated. Both financial aspects as well as the network topology are taken into consideration hereby. After completion of the technical study NGT began the process of designing the offer level for the marketing of the capacity product, which is required for the capacity upgrade.

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<sup>1</sup> To be found under: <https://www.fnb-gas-capacity.de/zyklen/incremental-capacity-zyklus-2019-2021/marktnachfrageberichte/>



This consultation report is a report of the NGT.

## **II. Project proposal**

### **1. Measures on the German side of the borders**

A technical study was conducted at the market area border Russia-THE on the basis of the non-binding enquiries presented in the report on the market demand analysis. At the entry to the THE an enquiry was made to upgrade 8,691,845 kWh/h of a DZK currently booked at the Interconnection Point (or „IP“) Greifswald into an FZK. A more detailed breakdown of the requested capacities as well as the at least equivalent existing capacities at interconnection points, FNB, products and GWJ can be seen from Annex 2.

The enquiry was made from the GWJ 2025/2026 up to and including the GWJ 2039/2040. However, due to extensive expansion measures for the realisation of the capacity upgrade the provision of the capacity is only possible from the GWJ 2027/2028.

In total 63 scenarios were analysed in the technical studies of this cycle for new capacity to be created, which are respectively based upon another combination of non-binding requested capacities. The expansion measures were developed under the presumption that all non-binding requested capacities are booked and the economic test is carried out successfully. In this document only the measures of the maximum scenario are described in the text, which are also caused by the requested capacities listed above. All expansion measures of the maximum scenario can be seen from Fig. 1. A most detailed breakdown of costs does not take place at this point. The basis of the listed expansion measures is principally the infrastructure contained in the draft document for the network development plan Gas 2020-2030 (published on 1 July 2020; hereinafter "NEP") including the network expansion measures, which result from the "basic variant". The investment costs concern initial estimates. In addition to the cost of the investment, there are operating costs for propellant, which are necessary in order to operate the compressors. The annual costs are stated below for the maximum scenario. Besides the Commodity, these costs also include the natural gas tax as well as the CO<sub>2</sub> costs.

## Incremental Capacity Zyklus 2019-2021 – Ausbau

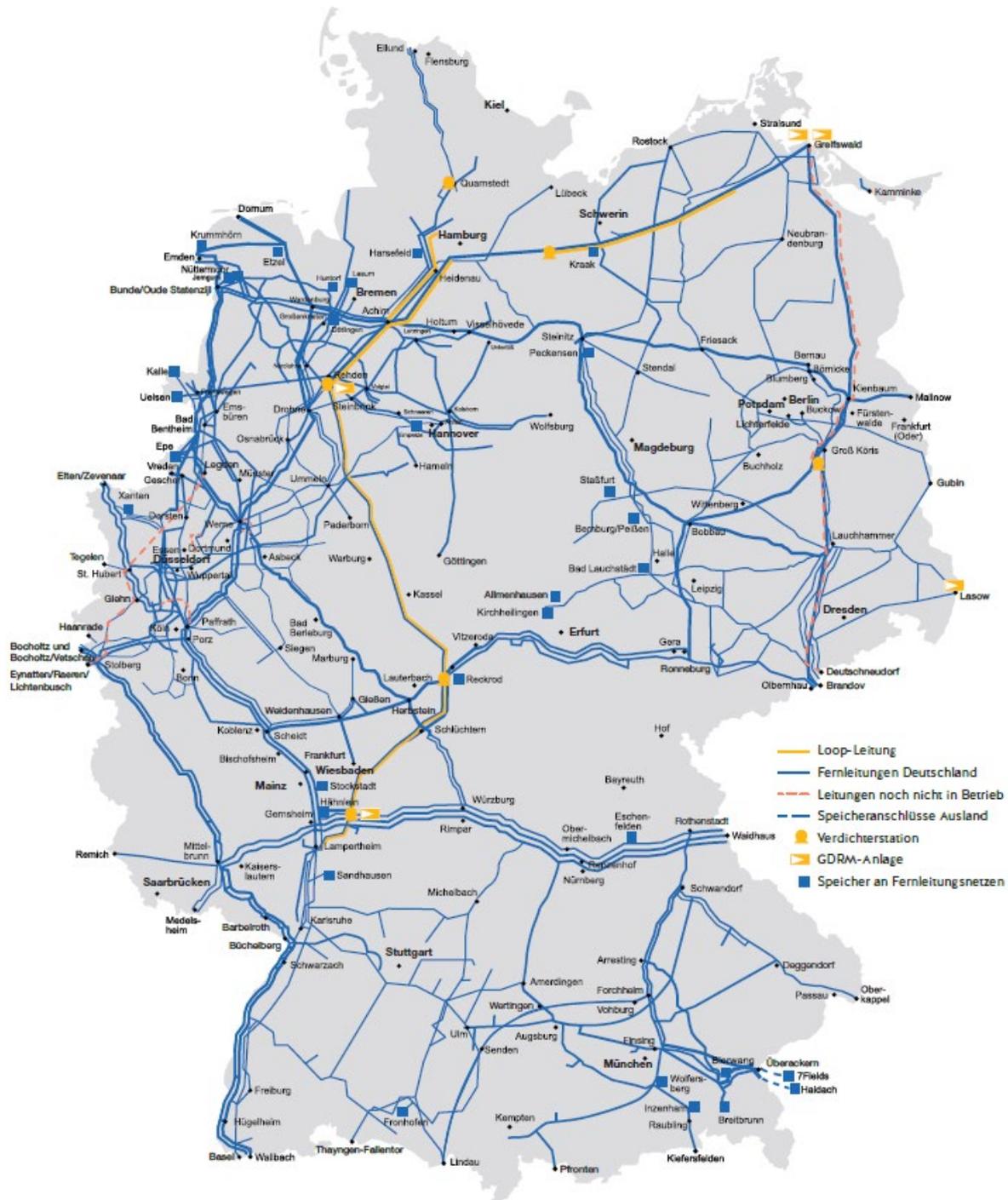


Fig. 1: Expansion measures for the maximum scenario



The Greifswald landing station is to be extended. The measures for this purpose are already included in the NEP (GDRM-Annex Greifswald landing station – Annex extension 3, ID-No. 632-01). In total there are thus no additional investments here.

The following measures are necessary on the NEL pipeline east of the Achim shut-off station: A compressor station with a compressor capacity of approx. 75 MW. This is already included in the NEP with a compressor capacity of 50 MW (VDS NEL (middle), ID No. 633-01). The additional investments amount to approx. €m 65. A loop pipeline with a length of approx. 118 km in DN 1400 is to be erected east of the compressor station. The investments amount to approx. €m 500. A loop pipeline with a length of approx. 72 km in DN 1400 is to be erected west of the compressor station, which ends on the Achim shut-off station. The investments amount to approx. €m 305. In total, the additional investments on this section of the pipeline amount to approx. €m 870. The annual costs for propellant for this section are approx. €m 19.6.

Alternatively, a variant was examined with two compressor stations: One station with approx. 99 MW, of which a compressor capacity of 50 MW is already included in the NEP (VDS NEL (centre), ID-No. 633-01), and a further station with 99 MW near Buchholz. The additional investments for this variant were approx. €m 360 compared to the NEP. The annual operating costs here were as a max. approx. €m 210. This variant is not being further pursued at present. The FNB reserve the right to come back to this variant with the concrete design of the measures within the scope of the creation of the NEP Gas 2022-2032.

The following measure is necessary on the NEL pipeline west of the Achim shut-off station: A loop pipeline with a length of approx. 67 km in DN 1400 is to be erected. Of this 52 km in DN 1400 are already included in the NEP (NEL pipeline West, ID No. 634-01). The additional investments amount to approx. €m 118. In total the additional investments on this section of the pipeline amount to approx. €m 118.

The following expansion measures are necessary on the MIDAL pipeline: The Rehden compressor station must be extended by a compressor capacity of approx. 48 MW. The



investments amount to approx. €m 261. A GDRM plant with a plant capacity of 2.2 million Nm<sup>3</sup>/h is to be additionally erected in Rehden. The investments amount to approx. €m 17. A loop pipeline with a length of approx. 260 km in DN 1400 is to be erected from Rehden to Reckrod. Of this 61 km are already included in the NEP (MIDAL pipeline middle north, ID No. 627-01; MIDAL pipeline middle south, ID No. 628-01). The additional investments amount to approx. €m 905. A compressor station with a compressor capacity of 84MW is to be erected near Reckrod. This is already included in the NEP with a compressor capacity of 36 MW (VDS Reckrod, ID No. 629-01). The additional investments amount to approx. €m 150. A loop pipeline with a length of approx. 200 km in DN 1400 is to be erected from Reckrod to Lampertheim. Of this 115 km in DN 1000 are already included in the NEP (Wirtheim-Lampertheim pipeline, ID No. 609-01). The additional investments amount to approx. €m 535. A compressor station with a compressor capacity of approx. 46 MW is to be erected near Herchenrode. The investments amount to approx. €m 170. In addition, a GDRM plant with a plant capacity of approx. 4 million Nm<sup>3</sup>/h is to be erected in Herchenrode. The investments amount to approx. €m 31. In total the additional investments on this section of the pipeline amount to approx. €m 2,069. The annual costs for propellant for this section are approx. €m 33.

Due to the multitude of non-binding enquiries for new capacity to be created, depending on the booking behaviour in the annual auctions 2021 respectively within the scope of the alternative allocation mechanism, this leads to interactions for the borders RU-THE and THE-TTF with regard to the allocated project costs. Depending on the additional capacity to be made available on a network section, synergies or dyssynergies may arise. Synergies essentially arise in this case through economies of scale. The larger respectively the standard diameter of a loop pipeline is chosen, the lower the specific transport costs will be, as a rule, with the same relative capacity utilisation. Dyssynergies primarily arise from leapfrogging investments, e.g. if only the combined additional capacity requirements for several enquiries trigger, for example, a dimensioning leap in a pipeline measure. The cost allocation per expansion measure is carried out broken down according to the provided capacity. The dependencies of the projects are shown in Annex 1 to this consultation document.



The costs that are to be compared with the bookings that are submitted binding will therefore only be known finally after execution of the annual auctions and the alternative allocation mechanism.

## 2. Offer level

In the economic test pursuant to Art. 22 NC CAM it will be examined for an offer level whether the cash value of the total proceeds by bookings of new capacity to be created in the marketing in July 2021 ("Proceeds") at least correspond with the product of the f-factor with the cash value of the estimated increase in the admissible proceeds of the FNB, corresponding with the offer level ("Costs"). In this process, however, there is only one offer level depending on the project proposal and therefore no competing offer levels.

### *Product design*

Pursuant to Art. 3 No. 5 NC CAM an offer level refers to the amount of the existing<sup>2</sup> and the new capacity to be created. In conjunction with Art. 29 Para. 1 NC CAM an offer level must, if applicable, include several bundled standard capacity products (for example with several relevant IPs). The relevant capacities will be published in May 2021 as far as possible bundled standard products for each GWJ, IP, FNB and product. The offer level is published on the website [www.fnb-gas-capacity.de](http://www.fnb-gas-capacity.de). In this case the offer level comprises FZK in the amount of the already booked DZK, which is to be upgraded, as well as the capacity, which after the originally booked period of time will no longer exist as DZK, but from now on is only available as FZK still. It is necessary in this case that an enquiry is made for both capacities to the full extent in order for the economic test to be passed.

### *Marketing horizon*

As the offer level includes new capacity to be created, the offer levels can be offered and booked including the existing capacities pursuant to Art. 11 Para. 3 S. 2 NC CAM for a period of up to 15 years after the forecast start of the operational use of the new capacity products. Here this corresponds with the period of time from the GWJ 2027/2028 up to and including GWJ 2041/2042.

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<sup>2</sup> The terms „available “ and „existing“ are used synonymously in the NC CAM.



#### *Allocation methodology with existing products*

In the marketing of the annual capacities in 2021, NGT will market the existing capacity outside of the offer levels for the following five years. As, in this case, it concerns an upgrade of already existing booked capacities, it is not necessary to book existing capacities.

#### *Amount of the capacity to be offered*

For the already existing capacities that are to be upgraded the FZK will be offered in the scope of the existing booking value so that the capacity can be upgraded in full. For the capacities, for which an enquiry is made after the original booking period, the reservation quota of 20% pursuant to Art. 8 Para. 8 NC CAM as well as stipulation of the BNetzA BK7-15-001 (hereinafter „KARLA Gas“) will be taken into consideration.

#### *Concrete offer level*

The offer level 1 can be seen from Annex 2 and is designed so that it passes the economic test if 100% of the offered capacities are booked binding.

### **3. Alternative allocation mechanisms**

In the current procedure NGT has decided to use the standard auction procedure for the allocation of new capacity to be created in 2021.

### **4. Provisional time planning**

The projects described above will be initiated after completion of the annual auctions in July 2021. Operational readiness of all technical measures is envisaged for the 1 October 2027– under the presumption that the economic test conducted after the auctions is successful.

The further procedure within the scope of the ongoing process cycle can be seen as follows:

<b>Start</b>	<b>End</b>	<b>Description</b>
10.08.2020		Publication of the consultation documents
10.08.2020	10.09.2020	Public consultation
11.09.2020	06.10.2020	Planning of the offer levels by the FNB in close cooperation with the national regulatory authorities
07.10.2020		Submission of the project proposal to the national regulatory authority
07.10.2020	06.04.2021	Processing of the project proposal by the national regulatory authority



07.04.2021		Approval and publication of the necessary parameters by the national regulatory authorities pursuant to Art. 28 Para. 1 NC CAM
08.04.2021	04.05.2021	Adjustment of the offer levels by the FNB to the stipulations of the regulatory authorities
05.05.2021		Publication of the approved parameters, the capacity products and of the sample contract or the sample contracts for the capacities offered within the scope of the network expansion project
05.07.2021		Annual auction; the economic test will be carried out after completion of the annual auction

Table 1: Provisional time planning

The stated dates are provisional and can therefore be subjected to changes still.

With a positive result of the economic test, allocated capacities will subsequently flow into the process for the creation of the German network development Gas 2022-2032 and will be taken into consideration in the scenario framework as well as with with the (national) modelling.

## 5. Supplementary business terms and conditions

A draft of the Supplementary business terms and conditions (SBT) is enclosed with this consultation document as Annex 3.

## 6. Element IND and RP pursuant to NC TAR

No fixed price approach is pursued within the scope of the current cycle for new capacity to be created. The elements IND and RP pursuant to Art. 24 lit. b NC TAR are accordingly not to be described here.

## 7. Economic test

For the economic test pursuant to Art. 22 NC CAM the BNetzA has created and published a calculation tool in order to improve the transparency (hereinafter "BNetzA-Tool"<sup>3</sup>). This was used by the FNB for the calculations presented below.

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<sup>3</sup> To be found under:

[https://www.bundesnetzagentur.de/DE/Sachgebiete/ElektrizitaetundGas/Unternehmen\\_Institutionen/NetzentwicklungundSmartGrid/Gas/IncrementalCapacity/IncrementalCap\\_node.html](https://www.bundesnetzagentur.de/DE/Sachgebiete/ElektrizitaetundGas/Unternehmen_Institutionen/NetzentwicklungundSmartGrid/Gas/IncrementalCapacity/IncrementalCap_node.html)



Pursuant to Subclause 1 of the operative part of the resolution of the BK 9 (ref. no. BK9-17/609) with the title INKA the economic test is carried out for each offer level of a project for new capacity to be created pursuant to Art. 22 NC CAM by the BNetzA. In Part II of the stipulation resolution the BNetzA states that the economic test is an object of the project proposal and all principle questions of the economic test are to be clarified there. The following principle questions of the economic test must be defined still:

1. Derecognition requirement of existing capacity products
2. Economic test of the offer levels

The transmission network operators are therefore planning to apply for the following procedure for the conducting of the economic test at the BNetzA:

#### *1. Derecognition requirement of existing capacity products*

As this booking concerns an upgrade of already existing, booked capacities, the derecognition requirement of existing capacity products ceases to apply as these have been booked already.

#### *2. Economic test of the offer levels*

As in this cycle for new capacity to be created six projects will be analysed for new freely allocable capacity to be created, as described under II.1. there are comprehensive overlappings of the measures, which are necessary in order to be able to offer the capacities at the various market area borders. Therefore, an individual analysis of the enquiries with the associated measures is not target-oriented. The procedure, which the FNB have agreed upon in order to depict all possible booking scenarios, is described below.

In total, in the current cycle an enquiry is made for new capacities to be created at four market area borders. At the market area border to Russia, in addition to new capacity to be created, at the IPs Greifswald and Lubmin II an enquiry was respectively made for a capacity upgrade from existing DZK to FZK. Consequently, in the current cycle offer levels can be booked for the following projects:

1. Poland E-Gas (GCP GAZ-SYSTEM/ONTRAS)
2. Poland TGPS (Mallnow)



3. Russian Federation/The Netherlands (combined in an alternative allocation mechanism)
4. Russian Federation/Greifswald (capacity upgrade)
5. Russian Federation/Lubmin II (capacity upgrade)
6. Denmark

One offer level exists for each of these six projects. An enquiry can be made independently for each of the offer levels and pass the economic test. As a result, all combinations of positive and negative economic tests are conceivable. Which of the aforementioned enquiries are actually made binding can only be determined after the auctions or the evaluation of the alternative allocation mechanism.

In order to guarantee an efficient network expansion, the FNB have depicted all possible combinations of enquiries and determined the need for expansion respectively necessary for this. The overview of all 63 combinations is listed in Annex 1. The costs of a necessary expansion measure including operating costs will be allocated to the enquiries causing this measure respectively in the ratio of the requested capacity. The cash value of the total of these pro rata costs on individual measures produces the total admissible increase in the upper proceeds limit (hereinafter "EOG"), which are assumed for a project in the economic test.

32 scenarios of combinations are derived for each enquiry with enquiries at the other market area borders. Each of these scenarios has following specific parts, which are listed in Annex 4:

1. f-factor
2. Cash value of the estimated increase in the EOG
3. Obligatory minimum surcharge

When conducting the economic test with the Tool of the Federal Network Agency it must first of all be determined which of the 63 booking scenarios has occurred in order to subsequently enter the three parts listed above in the tool for the economic calculation.

As project described here concerns a capacity upgrade capacity is analysed, which has been booked already. The proceeds through the marketing of the capacity upgrade therefore only flow with 10% into the economic test as the discount on DZK products is



10% compared to FZK. With a conversion of DZK into FZK merely additional proceeds are therefore generated hereby in the amount of 10% of the FZK tariff so that only these additional proceeds were also taken into consideration here. From the time, from which the initially booked capacity has no longer been booked and is marketed regularly as new capacity to be created, this will flow into the economic test to the full extent, by taking the reservation quota into consideration.

### **a. f-factor**

Pursuant to Art. 27 Para. 3 NC CAM the consultation among others comprises the details regarding the scope of the user promises, expressed as an estimate of the f-factor applied pursuant to Art. 23, which is proposed by the FNB after the consultation and is subsequently approved by the national regulatory authorities concerned.

The f-factor for each offer level is stipulated by the national regulatory authorities by taking the following aspects into consideration (Art. 23 Para. 1 NC CAM):

- a) the quantity of technical capacity, which will be withheld pursuant to Art. 8 Para. 8 and 9;
- b) the positive external effects of the project for new capacity to be created on the market or the transmission network or both;
- c) the term of the binding promises of the network users for the requested capacity compared to the commercial useful life of the plant;
- d) the expected continued existence of the demand for the capacity, which is created by the project for new capacity to be created, after the end of the time horizon used as a basis in the economic test.

For the economic test pursuant to Art. 22 NC CAM the BNetzA has created and published a calculation tool in order to improve the transparency (hereinafter referred to as "BNetzA-Tool" <sup>4</sup>). The result of the completed BNetzA-Tool with the data relating to the offer levels analysed here is enclosed with this consultation document as Annex.

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<sup>4</sup> To be found under:

[https://www.bundesnetzagentur.de/DE/Sachgebiete/ElektrizitaetundGas/Unternehmen\\_Institutionen/NetzentwicklungundSmartGrid/Gas/IncrementalCapacity/IncrementalCap\\_node.html](https://www.bundesnetzagentur.de/DE/Sachgebiete/ElektrizitaetundGas/Unternehmen_Institutionen/NetzentwicklungundSmartGrid/Gas/IncrementalCapacity/IncrementalCap_node.html)



The BNetzA-Tool contains mathematical evaluations for the determination of the f-factor. The f-factor is produced hereby from the ratio of the cash value of the binding promises of network users to the contracting of capacities over the time horizon of the first annual auction, in which the respective new capacities to be created were offered, pursuant to Art. 22 Para. 1 lit. a NC CAM at the cash value of all expected promises of network users to the contracting of the respective capacities.

The most recent currently known reference price is estimated in the BNetzA-Tool as estimated reference price pursuant to Art. 22 Para. 1 lit. a Subclause i NC CAM and is updated until the respective year. As with the determination of the increase in the upper proceeds limit of the respective FNB by the new capacities to be created contained in the respective offer level the inflation is not taken into consideration, the inflation index for the reference prices was also estimated with 0%.

The proposed f-factor was determined as follows:

- a) According to Art. 8 Para. 8 NC CAM as well as pursuant to BNetzA regulation BK7-15-001 (KARLA Gas) technically available capacity will be withheld in the amount of 20% based on the new technical capacity to be created in the respective offer level. It is assumed here that the withheld capacities within the scope of the marketing of the capacities will accordingly be used in full in the following years and will accordingly also be booked.
- b) Further positive external effects were not examined.
- c) Pursuant to Article 11 Para. 3 NC CAM offer levels can be offered for new capacities to be created within the scope of the annual auctions for a maximum period of 15 years from the start of the operational use.

For the period of time from the GWJ 2027/2028 up to and including GWJ 2041/2042 it was assumed that the new capacities to be created that were offered in the annual auction 2021 will be full derecognised.

The start of the operational use is envisaged for the year 2027. The commercial useful life of the plants was estimated in line with the regulatory and normal depreciation durations. The described investments refer to compressor stations as well as to the pipeline construction. Consequently, an average useful life of 45 years is assumed. The



start of the operational use is envisaged for 2027, the end of the operational use is for the time being assumed for GWJ 2071/2072. For the period of time from the GWJ 2041/2042 up to and including the GWJ 2071/2072 it was assumed that the total new technical capacities to be created both will be booked out in the long- as well as the short-term with a rate of 80%.

- d) The decisive year for the determination of the time horizon of the commercial useful life and the economic test is 2072. No bookings were taken into consideration for the period of time from 2072.

The proposed f-factor is oriented to the occurred booking scenario and is contained in Annex 4.

### **b. Reference price**

The current forecast of the reference price is the reference price published in the draft of the BNetzA decision REGENT 2021 for freely allocable capacity of the market area THE for 2023 in the amount of € 3.78/(kWh/h)/annum. This reference price is merely used for the economic test and is not a part of the contract.

### **c. Cash value of the estimated increase in the EOG**

The cash value of the estimated increase in the EOG depends on the inflation as well as the amount and the time distribution of the costs, which are allocated to the project. The costs are dependent on the other projects for new capacity to be created. The cash value of the estimated increase in the EOG is presented in Annex 4.

### **d. Obligatory minimum surcharge**

Analogue to the f-factor and to the cash value of the estimated increase in the EOG the obligatory minimum surcharge also depends on which measures become necessary due to the marketing of new capacity to be created on 5 July 2021. Which obligatory minimum surcharge is to be applied for the corresponding booking scenario can be derived from Annex 4. Its amount is assessed in each scenario to the extent that the economic test can only be passed with a full booking of the capacity included in the offer level. This should also guarantee that the transport customer must not over-compensate the estimated increase in the EOG.



## **8. Non-binding market requests received after expiry of the deadline**

After expiry of the deadline for the non-binding enquiry for new capacity to be created pursuant to Art. 26 Para 6 NC CAM a further request has been received. The request referred to new FZK to be created from Denmark to Germany in the amount of 7,088,000 kWh/h of GWJ 2021/2022 up to and including GWJ 2041/2042. The late enquiry was not taken into consideration in the current cycle for new capacity to be created.

## **9. Implications on the use of the existing gas infrastructure**

The new capacity to be created is not expected to lead to any continuing, substantial fall in the use of other non-depreciated gas infrastructure in the market area THE or in neighbouring infeed/outlet systems or along the same gas transport route.



### **III. Contact data**

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