

Consultation Document
to the Incremental Capacity Process 2017
for the Market Border Area between Russian
Federation and GASPOOL

19th of October 2017



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

FLUXYS Deutschland GmbH

Elisabethstraße 11
40217 Düsseldorf
Germany

Tel.: +49 (0) 211 230945-01
info.fluxysnel@fluxys.com
Fax: +49 (0)211 230945-09



Gasunie Deutschland Transport Services GmbH

Pelikanplatz 5
30177 Hannover
Germany

Tel.: +49 (0) 511 640 607 0
webinfo@gasunie.de
Fax: +49 (0)511 640 607 1001



GASCADE Gastransport GmbH

Kölnische Str. 108-112
34119 Kassel
Germany

Tel.: +49 (0) 561 934-0
kontakt@gascade.de
Fax: +49 (0)561 934-1208



NEL Gastransport GmbH

Kölnische Str. 108-112
34119 Kassel
Germany

Tel.: +49 (0)561 934-0
kontakt@nel-gastransport.de
Fax: +49 (0)561 934-2222



ONTRAS Gastransport GmbH

Maximilianallee 4
04129 Leipzig
Germany

Tel.: +49 (0)341 27111-0
capacity@ontras.com
Fax: +49 (0)341 27111-2004



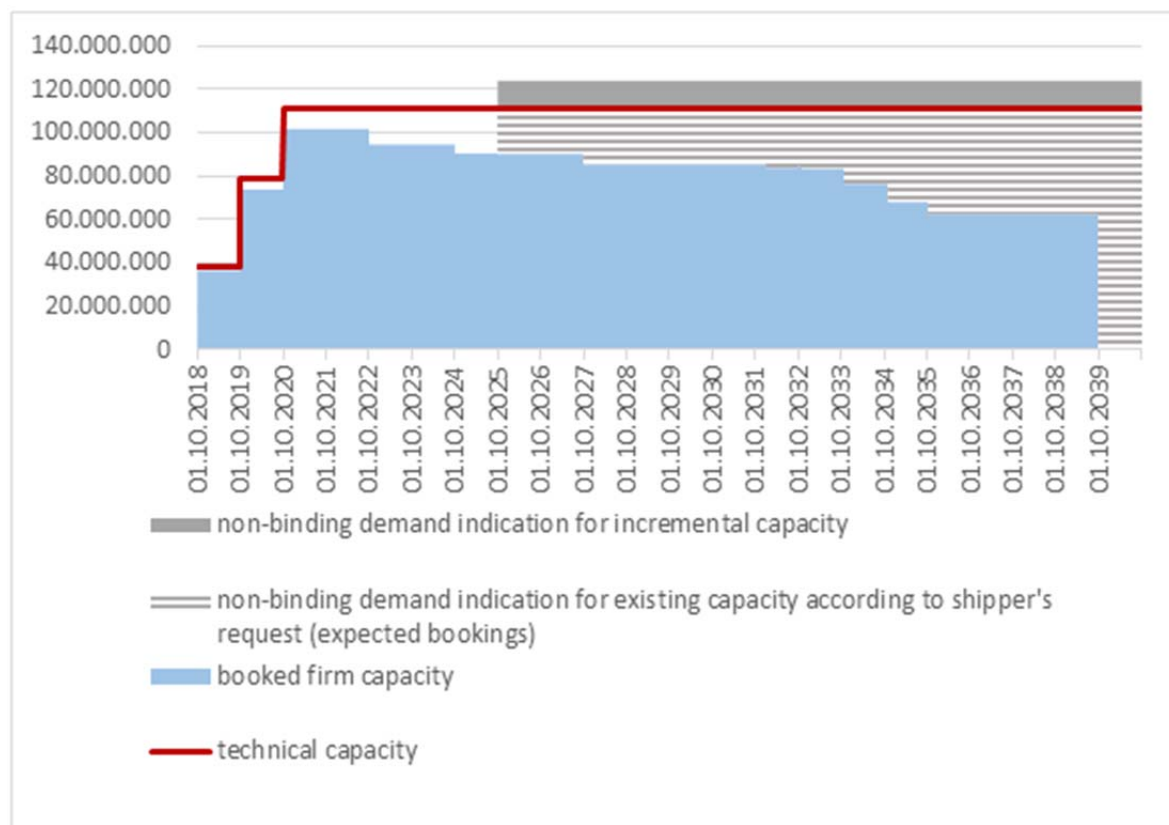
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1. Introduction

Having concluded the phase 1 of the incremental capacity process in 2017, as laid down in Regulation (EU) 2017/459 (Network Code on Capacity Allocation Mechanisms; below referred to as “NC CAM”), the affected TSO on the market area border between GASPOOL and the Russian Federation initiated the project design phase (phase 2). The demand assessment report for incremental capacity 2017 (published on 27th of July 2017) shows a sustained demand for new capacity on this particular market area border. More details on the demand assessment can be found in the above mentioned demand assessment report.

Following conclusion for the initiation of an incremental capacity project is drawn at the border between GASPOOL and the Russian Federation:



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

For the technical studies at the Russian Federation-GASPOOL (RU-GP) market area border the demand indications of the demand assessment report have been taken into account. The additional requested entry capacity at the concerned market area border is 13.191.273 kWh/h for the maximal amount. This capacity has been requested as a restricted

capacity towards the NCG market area and/or the TTF market area. In the same incremental capacity cycle exit capacities towards TTF (11.872.146 kWh/h with restriction to Greifswald/Lubmin 2) and towards NCG (7.793.333 kWh/h with restriction to Greifswald/Lubmin 2) were requested.

According to Article 21 of the Amendment to the German “Gasnetzzugangsverordnung” (GasNZV) the two German market areas GASPOOL and NCG have to be merged by the 1st of April 2022. As a result the non-binding demand indication for the market area border GASPOOL-NCG received by the GASPOOL TSOs (restricted allocable Exit capacity; allocation restriction to border RU-GP) and the NCG TSOs (freely allocable Entry capacity) are not valid anymore. Non-binding demand indications, according to the incremental capacity process, can only be stated at borders between market areas. As this market area border will not exist anymore latest after the 1st April 2022 these demand-indications will not be evaluated. In addition, the demand-indication for the market area border RU-GP received by the Gaspool TSOs (restricted allocable Entry capacity; allocation restriction to Exit capacity at border GP-NL and GP-NCG) will only be evaluated in respect to the allocation restriction to Exit capacity at the border GP-NL. An evaluation of the allocation restriction to Exit capacity at the border GP-NCG will also not be performed (since the market area border will cease to exist, latest after 1st April 2022). A subsequent adaption of the capacity type of the received demand-indication, e.g. to free allocable capacity, is not part of the incremental capacity process. Also such an alternative assessment of demand for free allocable capacity at the border of the Russian Federation to a merged German market area (for demand indications after 1st April 2022) is currently not possible for the following reasons. Until now different capacity calculating methodologies are applied in the market areas GASPOOL and NCG for the determination of especially flexible allocable capacity at relevant interconnection points within the respective market area. To implement the German market area merger it will be therefore necessary to develop first a joint capacity model valid for the merged German market area. With the joint capacity model the resulting flexible allocable capacity can then be determined at interconnection points in the merged market area. Only then an eventual amount of needed incremental, free allocable capacity could be correctly calculated and the necessary, most efficient grid expansion measures to create these incremental capacities could be identified. Both factors are also key components in the economic test. Therefore, an optional assessment of non-binding demand for free allocable capacity at the border of the Russian Federation to a merged German market area is not possible within this incremental capacity cycle and also above and beyond the obligations of NC CAM. Due to its complexity the development of the required joint capacity model will not be finished in time to be used during the current incremental capacity cycle. The experience of previous market

merger in Germany had shown that this step could decrease the freely allocable capacity. Therefore the interconnection points of NCG and GASPOOL have to be aligned in one capacity model upfront to identify the most efficient grid expansion measures for the requested demand indication. For this reason it is not feasible to offer the requested capacities towards NCG at this moment.

The demand indication for entry capacity (restricted allocable Entry capacity; allocation restriction to Exit capacity at border GP-NL) will be assessed in the magnitude of the requested exit capacities towards TTF (11.872.146 kWh/h; for the purposes of technical study assumed 11,9 GW). For this demand indication suitable solutions could be identified. The measures are still flexible enough to increase capacities towards the NCG market area, if later required.

If the flexibility between TTF and NCG should be the main aim of the shipper in the long-term view the below described technical measure for the capacity enhancement of the entry Greifswald/Lubmin 2 will have influence on following incremental capacity processes. The modelling of the whole demand request (entry capacity towards TTF and/or NCG) in one merged German market area could identify other solutions.

2. Project Proposal

Within the today's GASPOOL market area, there are two technical options to implement the requested capacity. These options are indicated with the blue and yellow arrow in Figure 1: Transportation Scenarios. The corresponding studies concerning the exit capacity GASPOOL – TTF are described in detail in the consultation document for the incremental capacity process starting 2017 between GASPOOL and TTF.

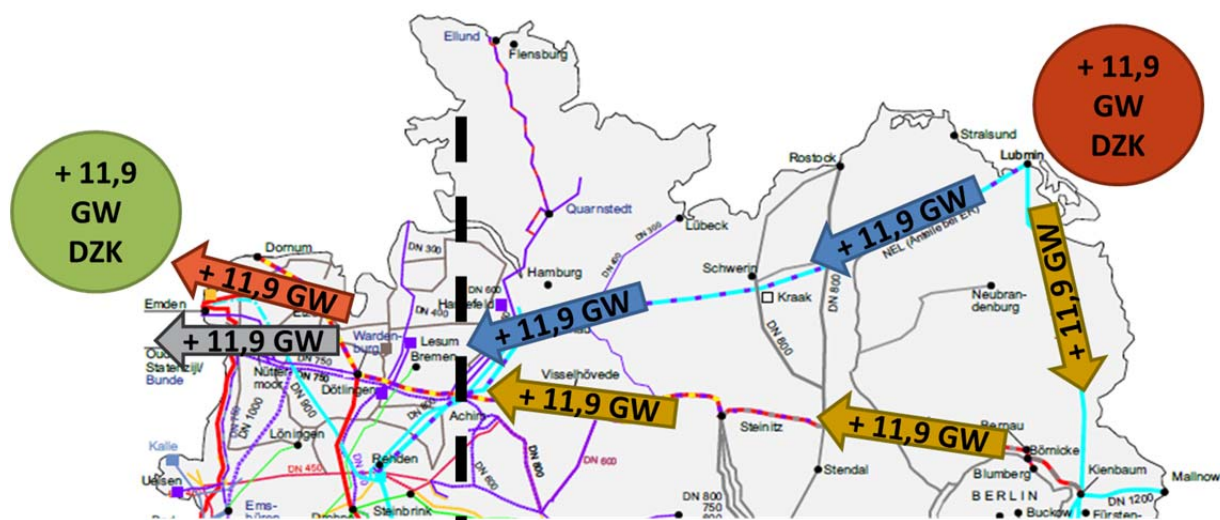


Figure 1: Transportation Scenarios

Transportation via NEL:

The blue arrows show the transport of the requested capacity via the Nordeuropäische Erdgasleitung (NEL). NEL is in joint ownership of NEL-Gastransport, GUD and Fluxys Germany. The grid systems will have to be expanded by the following measures:

1. Compressor station in the Schwerin area
2. Enhancement of gas receiving station Lubmin II
3. Interconnection of Lubmin II and NEL

The costs for these grid expansions will lead to investments that have been estimated with app. 170 mln €.

Transportation via EUGAL-Nord, FGL 306, NETRA:

The yellow arrows illustrate the route of the requested capacity via EUGAL-North, FGL 306 and NETRA. The capacity has to use the existing transmission grids of GASCADE, ONTRAS and GUD. During the more capacity process in 2016, investigations concerning the expansion of this route with a comparable capacity demand were modelled. The results of these investigations have shown that the grid systems have to be expanded at least by the following measures:

1. Compressor Station in Kienbaum
2. Compressor Station in Steinitz
3. Enlargement compressor station Holtum
4. Enlargement of gas receiving station Lubmin II
5. Enlargement EUGAL-North

Even if the total cost estimate for the investments to enhance this route are not yet available it can be assumed that this route will be more expensive than the above described route via NEL.

Conclusion:

Considering the above described transportation routes, the involved TSO advice to transport the requested capacities by using the NEL-Pipeline route. In comparison of the different investments, the blue route represents the most favorable solution. The additional capacity made available in the NEL offers further potential, in combination with other expansion measures south of Rehden to increase the exchange capacities between GASPOOL and NCG if required.

3. 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.

Period from	Period to	Free available capacity [kWh/h] considering 20 % reservation quote	Expansion-Level [kWh/h] from demand request considering 20 % reservation quote	Total Offer [kWh/h]
01.10.2025	30.09.2027	0	9.520.000	9.520.000
01.10.2027	30.09.2032	3.297.408	9.520.000	12.817.408
01.10.2032	30.09.2033	3.642.425	9.520.000	13.162.425
01.10.2033	30.09.2034	5.073.425	9.520.000	14.593.425
01.10.2034	30.09.2035	11.765.338	9.520.000	21.285.338
01.10.2035	30.09.2036	20.457.183	9.520.000	29.977.183
01.10.2036	30.09.2039	26.057.183	9.520.000	35.577.183
01.10.2039	30.09.2040	88.689.987	9.520.000	98.209.987

4. Alternative Allocation Mechanism

Not applicable.

5. Provisional Timeline

All above mentioned projects will be initialized after the PRISMA auction in June 2019. All technical measures will be ready for operation on 1st of October 2025 if the economic test, performed after the yearly capacity auction 2019, leads to a positive result.

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 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.

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.

6. Supplementary Terms and Conditions

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

7. IND and RP according NC TAR

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

8. 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/DE/Sachgebiete/ElektrizitaetundGas/Unternehmen_Institutionen/NetzentwicklungundSmartGrid/Gas/IncrementalCapacity/IncrementalCap_node.html). The BNetzA Tool filled out for the assessed offer level is attached in Appendix II 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) NC CAM, 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%.

Since the envisaged introduction of “Horizontaler Kostenwälzung” in 2018 has been cancelled by the BNetzA during the court (Oberlandesgericht Düsseldorf) discussions on 11.10.2017 and there is no information in place regarding the design of future VIP (to be implemented according to NC CAM) pricing at the respective border, therefore an average reference price weighted with the capacity shares of involved transmission system operators has been used as assumption for the performed calculations. The specific reference price of each TSO, considered in the calculation of weighted average, is preliminary reference price estimated at the current point of time for 2018 only for the purposes of this consultation (2,759 €/KWh/h/a).

The weighted average reference price was used uninflated for the assessment of the present value of all expected commitments of network users for contracting respective capacity for all respective years (2025-2049). A probable future increase of reference price was not taken into account.

For the purposes of economic test according to Article 22 CAM NC, the existing capacity within each offer level is assumed to be fully booked during the yearly capacity auction, in which the incremental capacity has been offered for the first time. The incremental capacity is expected to be booked as described below.

The f-factor proposed as follows:

- a) Technical capacity set aside in accordance with Article 8(8) NC CAM and assessed in-line with the currently valid decision from BNetzA BK7-15-001 (KARLA Gas) amounts 20% of the incremental technical capacity included into the offer level – 2.380.000 KWh/h.

As described in the introduction the offer level, assessed in this consultation document, considers new Entry capacity in the amount of the requested max Exit capacities towards TTF as from 2030/31 (11.872.146 kWh/h, for the purposes of technical study assumed at 11.900.000 KWh/h). The incremental capacity demand towards TTF indicated from 2025/26 to 2030/31 is lower than the incremental capacity included in the described offer level. Therefore the expected Entry bookings

during this period of time were estimated in-line with the demand indication for Exit capacity towards TTF.

Since from 2025/26 to 2029/30 the Entry incremental capacity, offered in the annual capacity auction 2019, is higher than the expected capacity bookings, the reserved capacity is assumed to be fully booked on the short term basis only starting from 2030/31 (to 2039/40).

- b) Additional positive externalities have not been assessed.
- c) According to Article 11 (3) NC CAM 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. Following assumptions regarding shipper commitments were taken into account for this period of time:
- From 2025/26 to 2029/30 the estimated bookings are expected in-line with the demand indication for Exit capacity towards TTF.
 - From 2030/31 to 2039/40 incremental capacity, offered in the annual capacity auction 2019, is assumed to be fully booked.

Economic life of the asset was assumed in-line with the regulatory as well as ordinary depreciation period. The main part of the investment concerns the compressor station. The regulatory as well as ordinary depreciation period for compressor station according to Attachment 1 to § 6 (5) of “Gasnetzentgeltverordnung” (GasNEV) is 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 Level and estimated bookings:

From	To	Bookable Existing Capacity, taking into account reservation quote of 20%, KWh/h	Incremental Capacity, taking into account reservation quote of 20%, KWh/h	Total Offer Level, KWh/h	Estimated bookings of incremental capacity, assumed for the economic test, KWh/h
01.10.2025	30.09.2026	0	9.520.000	9.520.000	2.638.255
01.10.2026	30.09.2027	0	9.520.000	9.520.000	5.276.509
01.10.2027	30.09.2030	3.297.408	9.520.000	12.817.408	5.276.509
01.10.2030	30.09.2032	3.297.408	9.520.000	12.817.408	9.520.000
01.10.2032	30.09.2033	3.642.425	9.520.000	13.162.425	9.520.000
01.10.2033	30.09.2034	5.073.425	9.520.000	14.593.425	9.520.000
01.10.2034	30.09.2035	11.765.338	9.520.000	21.285.338	9.520.000
01.10.2035	30.09.2036	20.457.183	9.520.000	29.977.183	9.520.000
01.10.2036	30.09.2039	26.057.183	9.520.000	35.577.183	9.520.000
01.10.2039	30.09.2040	88.689.987	9.520.000	98.209.987	9.520.000
01.10.2040	31.12.2049				8.925.000

The f-factor calculated in the BNetzA Tool under these assumptions amounts to 0,63. The allocation of all incremental capacity (estimated bookings) at the reference price as described above taking into account the calculated f-factor will not generate sufficient revenues for a positive outcome of the economic test. In such cases Article 33 of Reg. 460/2017 (NC TAR) foresees, that a mandatory minimum premium may be applied in the first auction in which the incremental capacity is offered. The minimum mandatory premium calculated for the assumed amount of bookings at estimated reference prices amounts 1,92 €/kWh/h/a. Since the minimum mandatory premium can be applied only in the first yearly capacity auction, in which the incremental capacity has been offered, and the f-factor is calculated in BNetzA Tool as a rate of the present value of binding commitments of network users for contracting capacity within the first yearly capacity auction compared to the present value of all expected commitments, the application of minimum mandatory premium causes the iterative adjustment of calculated f-factor to 0,83.

The calculation is performed at the very early stage of the incremental process and contains a lot of assumptions which will probably change during the process. In case any changes in the current assumptions occur, the minimum mandatory premium can be adjusted accordingly.

9. Received additional Demand Indication

No additional demand indications have been received after 6th of June 2017.

10. Impact on Usage of Gas Infrastructure

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

11. Contact Information

Fluxys Deutschland GmbH

Alessandro Brunoni

+49 211 42090922

Alessandro.brunoni@fluxys.com

Gasunie Deutschland Transport Services GmbH

Ksenia Berezina

+49 511 640 607 2831

Ksenia.berezina@gasunie.de

GASCADE Gastransport GmbH

Michael Walkus

+49 561 934 2968

Michael.walkus@gascade.de

NEL Gastransport GmbH

Michael Walkus

+49 561 934 2968

Michael.walkus@gascade.de

ONTRAS Gastransport GmbH

René Döring/Uwe Thiveßen

+49 341 27111 2771/2163

capacity@ontras.com