

Demand assessment report for incremental capacity between *Hungary* and *Ukraine*

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

FGSZ Ltd.

PJSC Ukrtransgaz

Hungary, Siófok 8600 Tanácsház u. 5.

Ukraine, Kiev 01021 Klovsky uzviz 9/1

General contact information

General contact information

email: info@fgsz.hu

email: businesscooperation@utg.ua

telephone: +36 84 505 999

telephone: +38 044 461 26 77

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A. Non-binding Demand indications

Beregovo DN1400 IP operates between Ukraine and Hungary entry-exit systems with current physical flow direction from Ukraine toward Hungary. Current capacity of the IP is 25,218,126 kWh/h/year which is available in UA>HU direction.

Beregdaróc DN800 IP operates between Hungary and Ukraine entry-exit systems with current physical flow direction from Hungary toward Ukraine. Current capacity of the IP is 7,542,363 kWh/h/year which is available as interruptible one in HU>UA direction.

FGSZ Ltd. received aggregated non-binding demand indications both for existing HU>UA and UA>HU (firm capacity under study) directions.

Beregovo DN1400 and Beregdaróc DN800 IPs are non-EU cross border points. The adjacent TSOs agreed to conduct market survey on the incremental capacity. The application of incremental capacity process for Beregdaróc IPs does not result automatically application of full Commission Regulation (EU) 2017/459 (CAM NC) by Parties.

The following **aggregated non-binding demand indications** for firm capacity have been used as a basis for this demand assessment. Demand indications received by FGSZ Ltd. at Beregdaróc DN800 IP:

From [entry-exit system name] “EXIT CAPACITY”	To [entry-exit system name] “ENTRY CAPACITY”	Gas year	Amount [Please indicate unit: (kWh/h)/y]	Request is submitted to other TSOs [yes, TSO] or [no] (detailed information shall be provided below)	Period when Demand Indication was received* [please include the period according to the numbers 1) - 3)]	Additional Information (e.g. type of capacity, if different from bundled firm freely allocable)
FGSZ Ltd.	PJSC Ukrtransgaz	2018/19	1,177,880	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2019/20	180,670	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2020/21	183,740	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2021/22	187,110	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2022/23	190,820	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2023/24	194,900	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2024/25	199,390	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2025/26	204,330	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2026/27	209,770	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2027/28	215,740	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2028/29	222,320	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2029/30	229,550	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2030/31	237,510	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2031/32	246,260	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2032/33	255,880	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2033/34	266,470	No	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2034/35	278,120	No	2	n/a

From [entry-exit system name] “EXIT CAPACITY”	To [entry-exit system name] “ENTRY CAPACITY”	Gas year	Amount [Please indicate unit: (kWh/h)/y]	Request is submitted to other TSOs [yes, TSO] or [no] (detailed information shall be provided below)	Period when Demand Indication was received* [please include the period according to the numbers 1) - 3)]	Additional Information (e.g. type of capacity, if different from bundled firm freely allocable)
PJSC Ukrtransgaz	FGSZ Ltd.	2018/19	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2019/20	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2020/21	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2021/22	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2022/23	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2023/24	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2024/25	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2025/26	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2026/27	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2027/28	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2028/29	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2029/30	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2030/31	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2031/32	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2032/33	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2033/34	150,000	No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2034/35	150,000	No	2	n/a

Demand indications received by PJSC Ukrtransgaz:

From [entry-exit system name] “EXIT CAPACITY”	To [entry-exit system name] “ENTRY CAPACITY”	Gas year	Amount [Please indicate unit: (kWh/h)/y]	Request is submitted to other TSOs [yes, TSO] or [no] (detailed information shall be provided below)	Period when Demand Indication was received* [please include the period according to the numbers 1) - 3)]	Additional Information (e.g. type of capacity, if different from bundled firm freely allocable)
FGSZ Ltd.	PJSC Ukrtransgaz	2018/19	27 880	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2019/20	30 670	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2020/21	33 740	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2021/22	37 110	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2022/23	40 820	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2023/24	44 900	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2024/25	49 390	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2025/26	54 330	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2026/27	59 770	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2027/28	65 740	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2028/29	72 320	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2029/30	79 550	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2030/31	87 510	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2031/32	96 260	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2032/33	105 880	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2033/34	116 470	Yes	2	n/a
FGSZ Ltd.	PJSC Ukrtransgaz	2034/35	128 120	Yes	2	n/a

From [entry-exit system name] “EXIT CAPACITY”	To [entry-exit system name] “ENTRY CAPACITY”	Gas year	Amount [Please indicate unit: (kWh/h)/y]	Request is submitted to other TSOs [yes, TSO] or [no] (detailed information shall be provided below)	Period when Demand Indication was received* [please include the period according to the numbers 1) - 3)]	Additional Information (e.g. type of capacity, if different from bundled firm freely allocable)
PJSC Ukrtransgaz	FGSZ Ltd.	2018/19		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2019/20		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2020/21		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2021/22		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2022/23		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2023/24		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2024/25		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2025/26		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2026/27		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2027/28		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2028/29		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2029/30		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2030/31		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2031/32		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2032/33		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2033/34		No	2	n/a
PJSC Ukrtransgaz	FGSZ Ltd.	2034/35		No	2	n/a

* The following standardised period shall be used for indicating the receiving date of the demand indication:

- 1) later than eight weeks after the annual yearly capacity auction in the previous incremental capacity cycle, that have not been considered previously;
- 2) within eight weeks after this year's yearly capacity auction (0 – 8 weeks after yearly auction in year);
- 3) later than eight weeks after this year's yearly capacity auction, but that will be considered in this incremental capacity cycle (9 – 16 weeks after yearly auction in year).

There was **no condition** attached by the network users to **non-binding demand indications**.

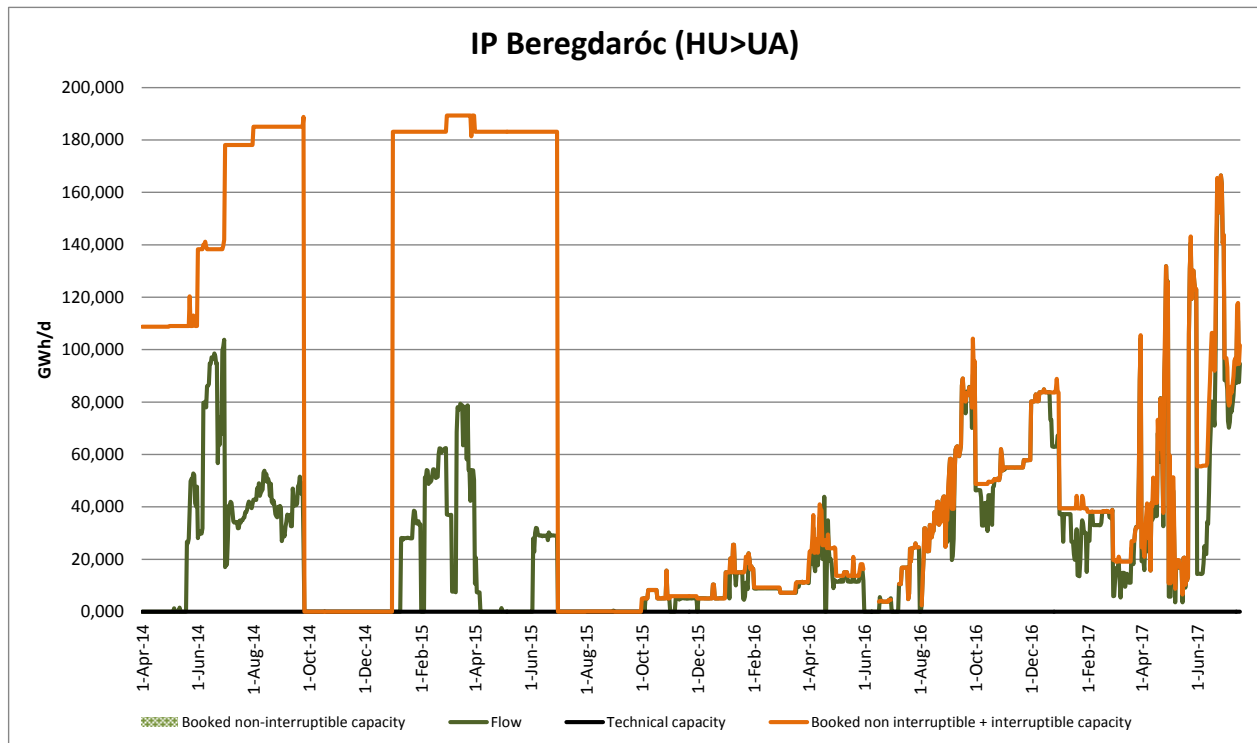
B. Demand assessment

For Beregdaróc DN800 IP the highest demand indicated for 2018/2019, than there is decreasing demand level between 2019/2020 and 2034/35 (180,000 -280,000 kWh/h/year). The demand assessment concluded that the expected amounts is required in HU>UA flow direction, which is not sufficient for incremental project. The project was studied as part of the National Development Proposal 2016-2025 (NDP 2016-2025) of FGSZ Ltd. The project with sufficient demand level would strengthen security of supply in Ukraine and connects potential Croatian LNG source via Hungary with Ukraine as final market.

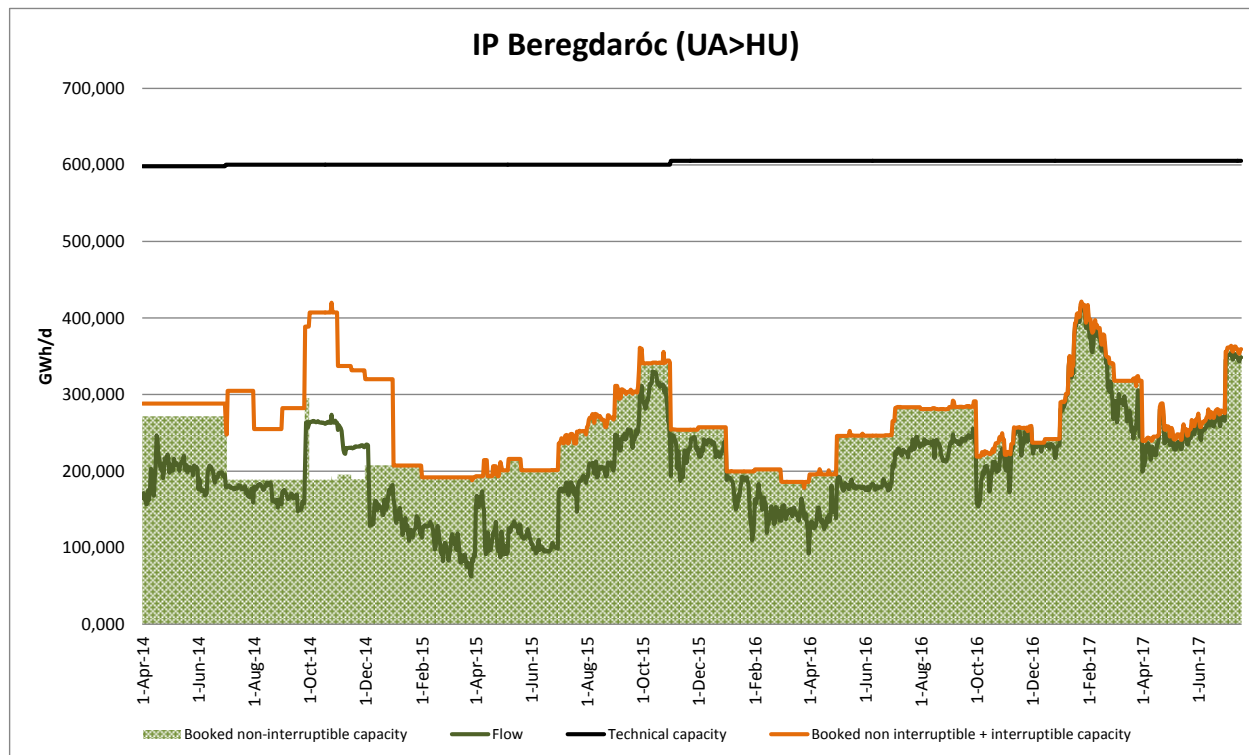
For Beregovo DN1400 IP the indicated demand is 150,000 kWh/h/year, there is no need for further investment on incremental capacity.

i. Historical usage pattern

For Beregdaróc DN800 (HU>UA) the latest transmission trend shows further growing capacity demand (see below):

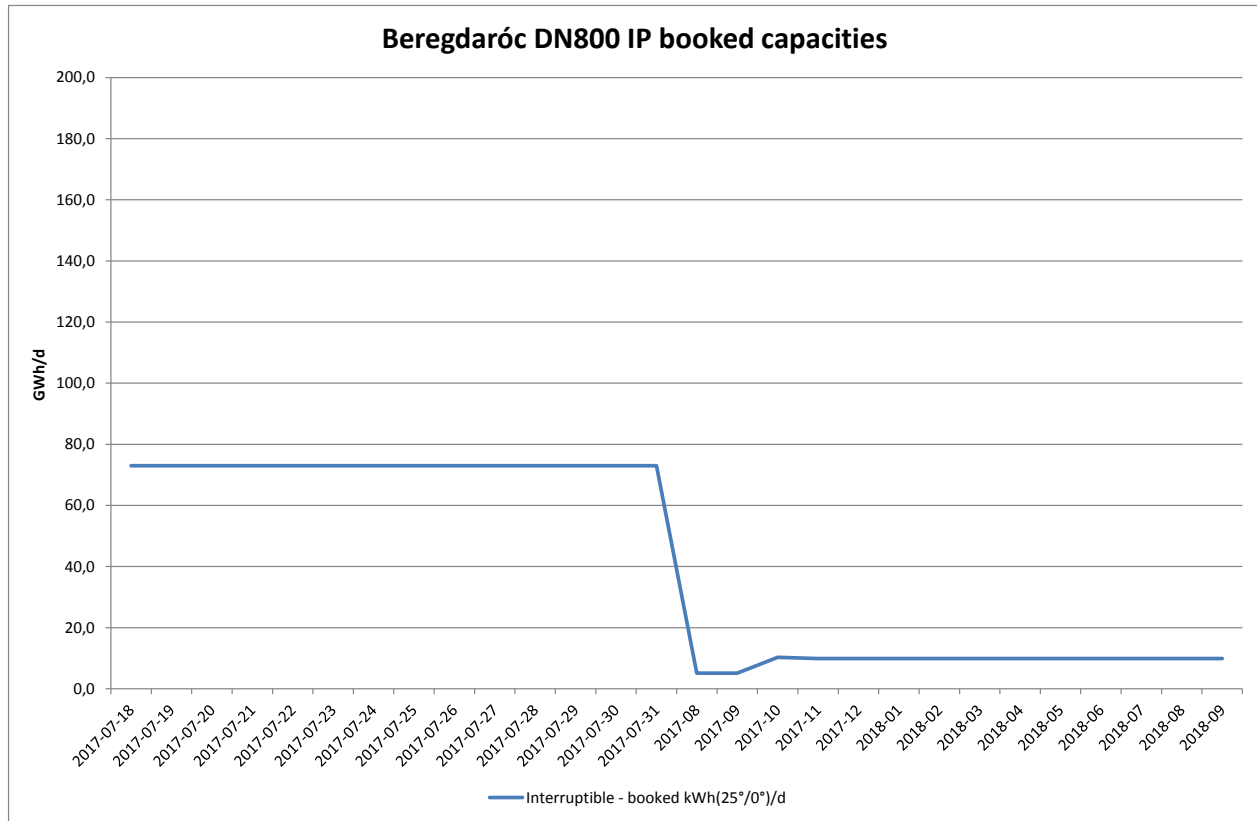


For historical usage pattern for Beregdaróc DN1400 (UA>HU) please see graph below:



ii. Results of current annual yearly auction

Please see below chart on booked capacities on Beregdaróc DN800 IP in direction Hungary to Ukraine:



iii. Relations to GRIPS, TYNDP, NDPs

Incremental capacity for Beregdaróc DN800 (HU>UA) has been already studied in [FGSZ National Development Proposal 2016-2025](#) document. Beregdaróc DN800 (HU>UA) capacity increment project is part of ENTSG TYNDP 2017.

iv. Expected amount, direction and duration of demand for incremental capacity

Based on received demands the expected demand level for HU>UA direction is 1,177,880 kWh/h/year firm capacity for only 2018/19. We also foresee decreasing demand level at 150,000 kWh/h/year for UA>HU direction. Current demand can be delivered on interruptible basis.

C. Conclusion for the (non)-initiation of an incremental capacity project/process

The expected demand level of firm capacity from 2019/2020 is 180,000-280,000 kWh/h/year. The requested volume is not sufficient to conduct technical studies for incremental capacity projects in the framework of CAM NC. FGSZ conducted studies for the incremental capacity project based on capacity demand received before start of the CAM NC incremental capacity process. FGSZ is open for new capacity demand and will study later received capacity demand as it comes sufficient.

D. Provisional timeline

Provisional deadline for further study end of 2017 as part of National Development Proposal 2017. Public consultation on the draft Development Proposal 2017 is planned during November 2017.

E. Interim arrangements for the auction of existing capacity on the concerned IP(s)

According to the CAM NC Auction calendar FGSZ Ltd. offers **interruptible** capacities for network users.

F. Fees

For the incremental capacity cycle addressed by this report, involved TSOs did not introduce a fee for the evaluation and processing of non-binding demand indications.

G. Contact information

FGSZ Ltd.

PJSC Ukrtransgaz

Sándor Bogoly

Andrii Prokofiev

Head of Product and Service Management

Head of Unit of reforming and projects

System Operation and Capacity Trade

Strategy and Business Development Department

+36-84-505-202

+38 044 461 26 77

+36-20-944-0706

sbogoly@fgsz.hu

prokofev-ag@utg.ua

Tanácsház u. 5.

Klovsky uzviz 9/1

8600 Siófok

Kyiv 01021

Hungary

Ukraine