

NATIONAL TEN-YEAR NETWORK DEVELOPMENT PROPOSAL PUBLIC CONSULTATION 2019



A MOL-CSOPORT TAGJA

NATIONAL TEN-YEAR DEVELOPMENT PROPOSAL

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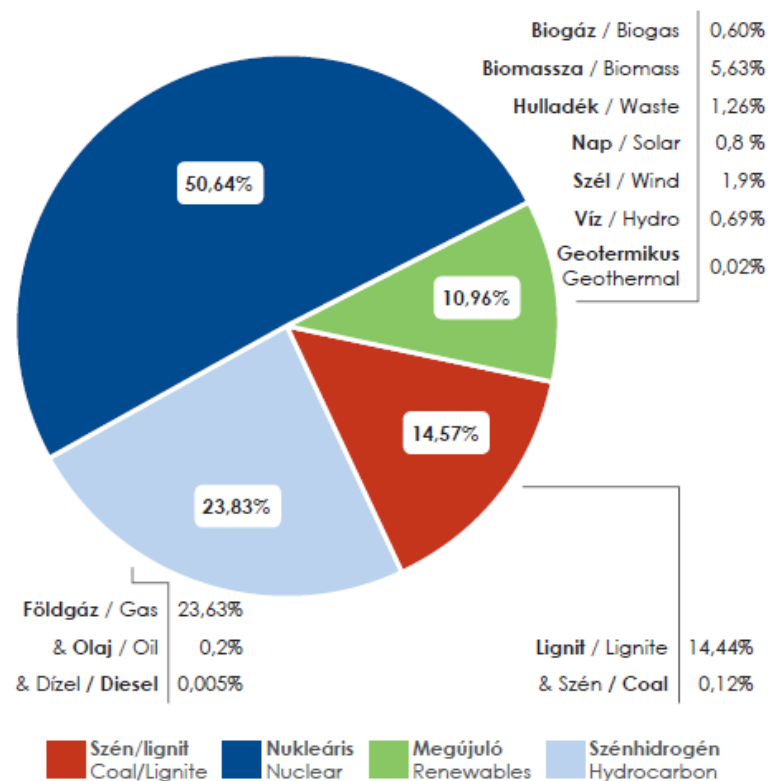
Regulatory background

- New Business and Commercial Code is applicable as of 1st of October 2019
 - It regulates the data provision of network users and system operators in detail.
 - Point 3.3.6.: "As regards to the preparation and approval of the 10-year development proposal of the interconnected natural gas system, the relevant provisions of the Gas Supply Act and the Implementation Decree shall be applied."
- Pursuant to Article 96 (5) of the Implementation Decree of Act XL of 2008 on natural gas supply (Gas Supply Act), *"The transmission system operator shall send the results of the coordinated capacity review pursuant to Article 82 (2) of the Gas Supply Act and the 10-year development plan to the Office by 31st December each year."*
- The new Implementation Decree is expected to be adopted in the first quarter of 2020, and the deadline for the preparation of the development proposal will be 31st May.

DOMESTIC PRIMER ENERGY CONSUMPTION AND ELECTRICITY GENERATION PRODUCTION

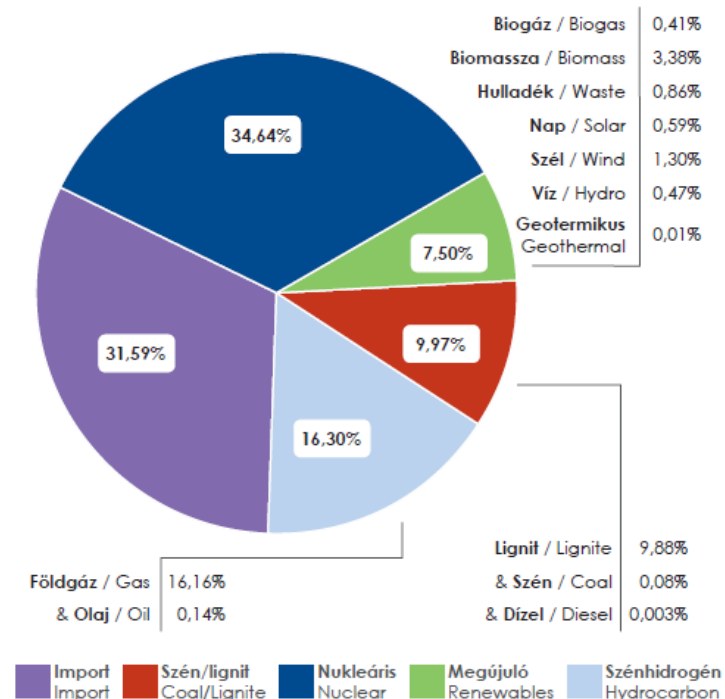
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**A TERMELT HAZAI VILLAMOS ENERGIA
MEGOSZTLÁSA 2018**
SOURCES OF DOMESTIC ENERGY
PRODUCTION 2018



Nuclear power and fossil fuels dominate the domestic power production.

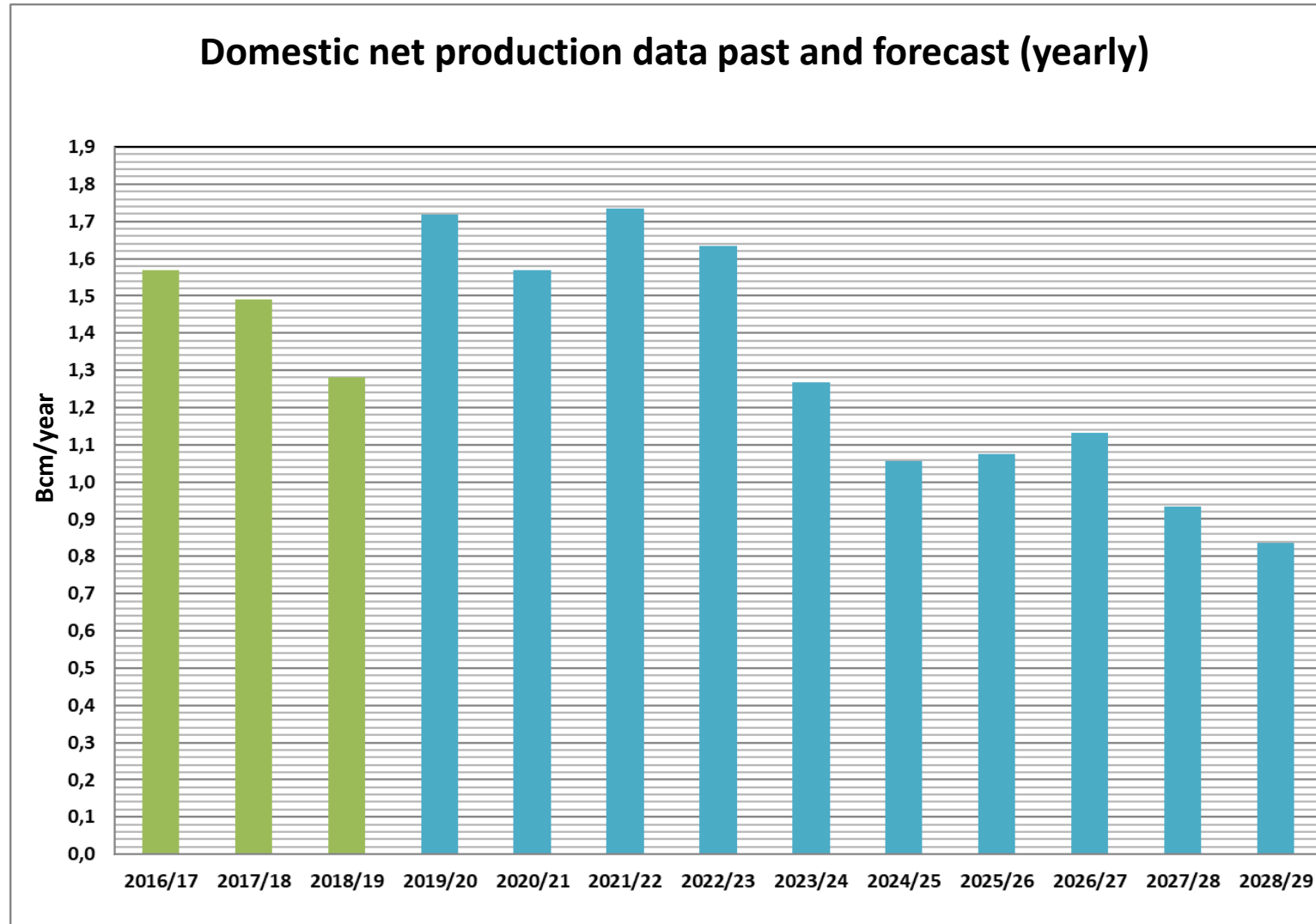
**A TELJES BRUTTÓ VILLAMOSENERGIA-FELHASZNÁLÁS
FORRÁSMEGOSZTLÁSA 2018**
SOURCES OF THE TOTAL GROSS
ELECTRICITY CONSUMPTION 2018



Source: Data of Hungarian Electricity System 2018

DECREASING GAS PRODUCTION AND FIELD DEVELOPMENTS OF INDIGENOUS E&P COMPANIES REPRESENT DOMESTIC PRODUCTION

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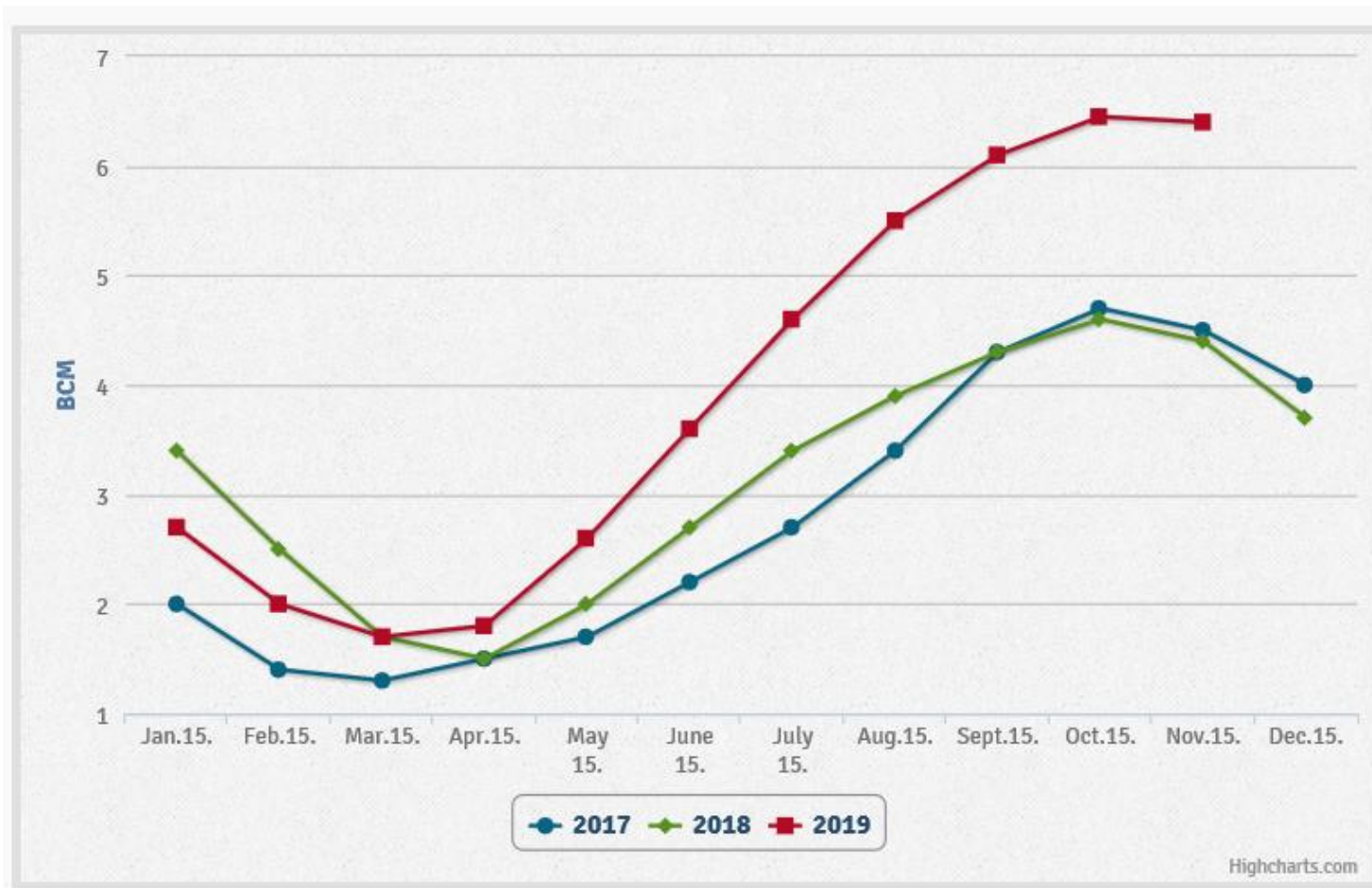


Source: Ten Years Development Proposal 2019

DOMESTIC USAGE OF NATURAL GAS STORAGE

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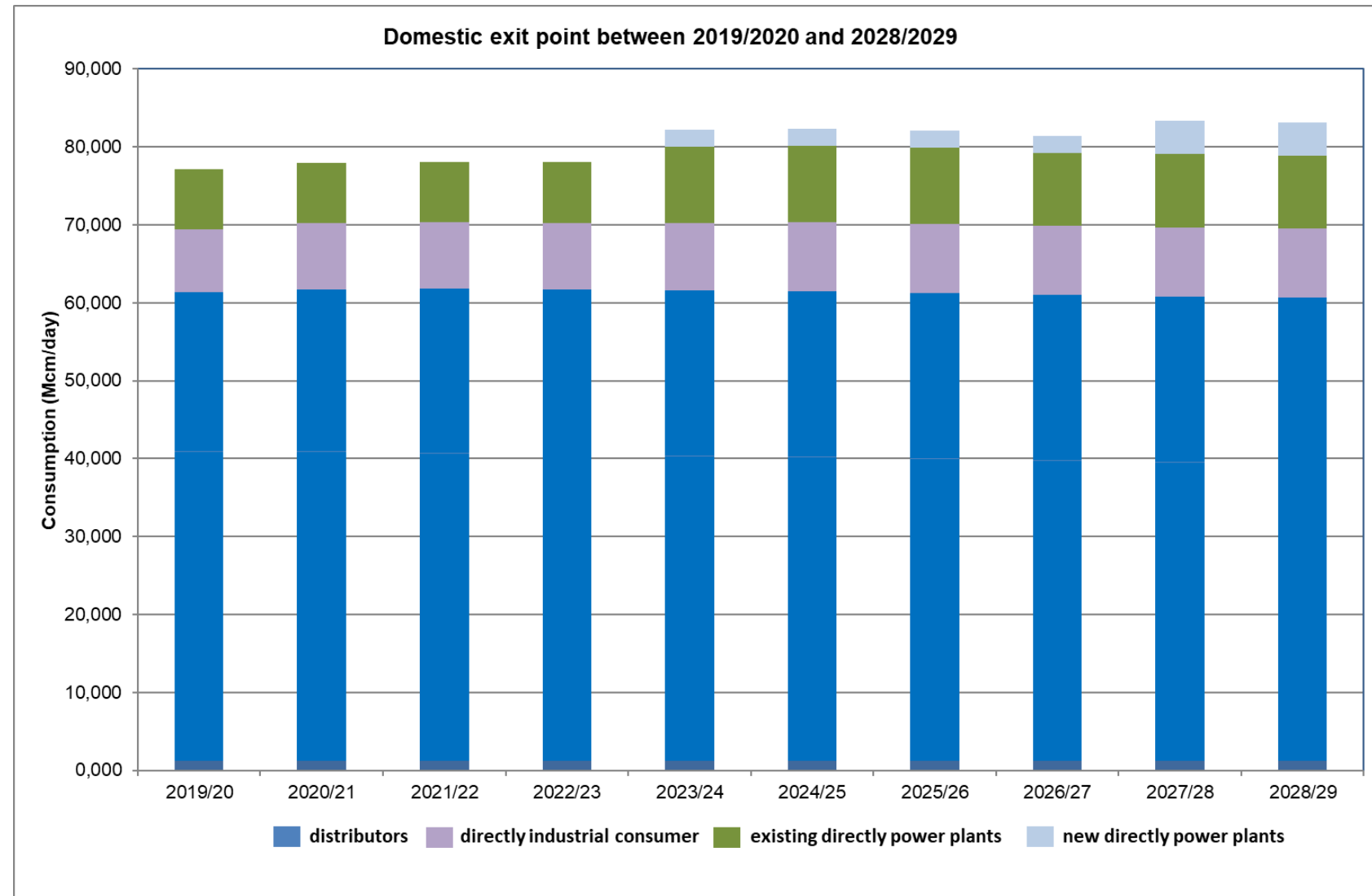
Trend of stock levels in Hungarian natural gas storage



Source: <http://mekh.hu/trend-of-stock-levels-in-hungarian-natural-gas-storage-facilities>

DEMAND OF DOMESTIC EXIT POINTS

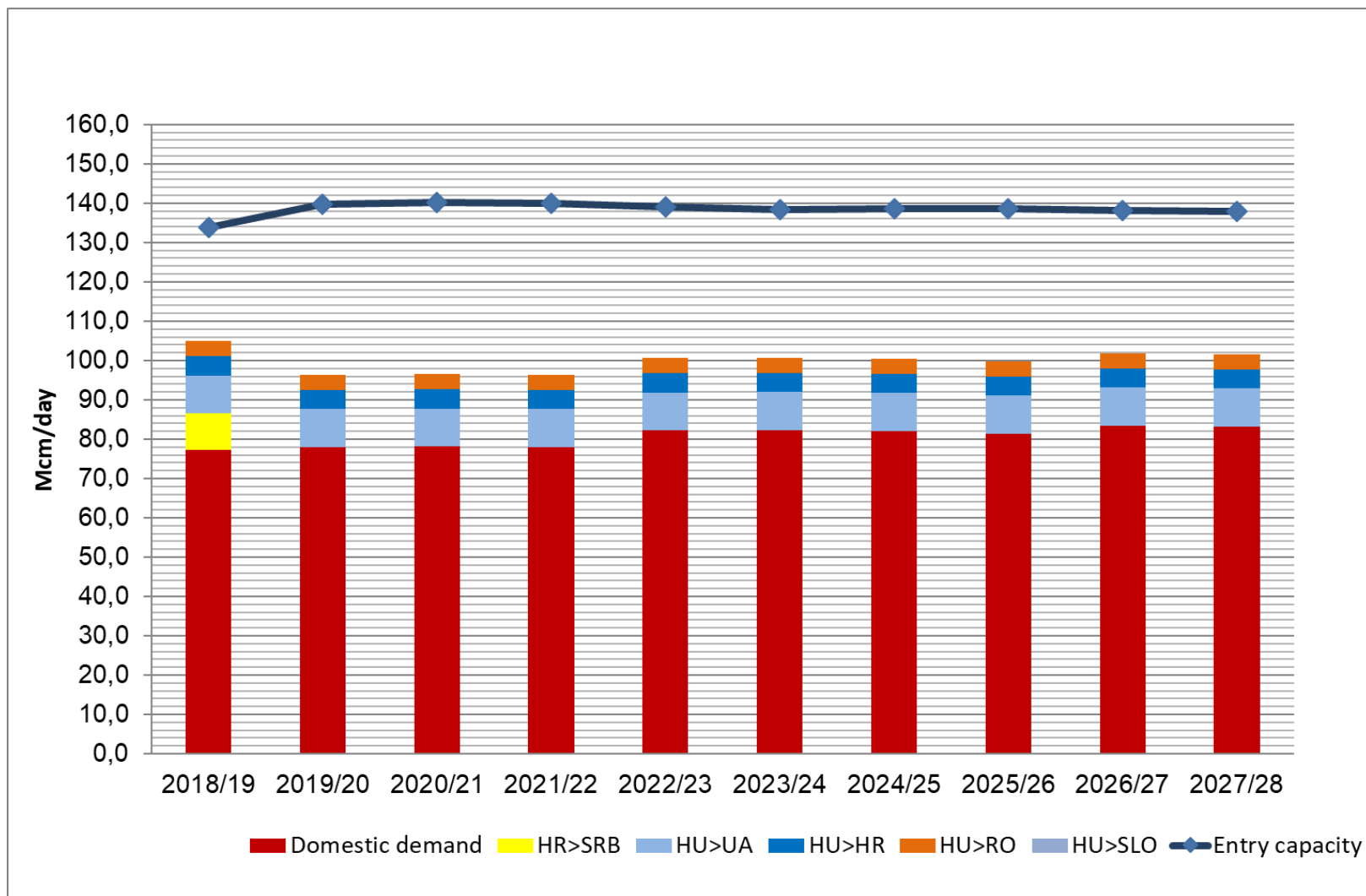
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Source: Ten Years Development Proposal 2019

HUNGARIAN ENTRY AND EXIT CAPACITIES WITH APPROVED DEVELOPMENTS I.

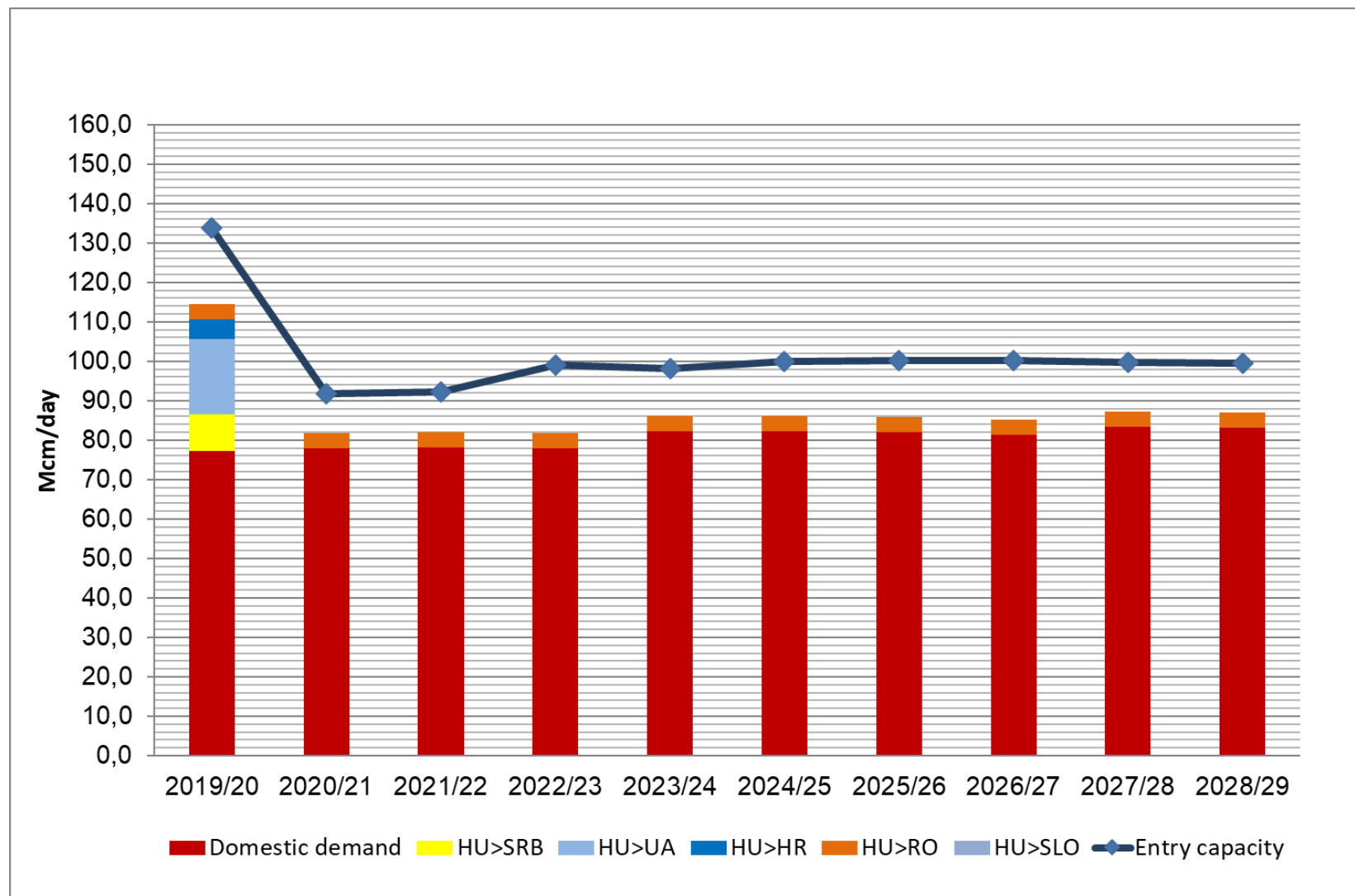
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Source: Ten Years Development Proposal 2019

HUNGARIAN ENTRY AND EXIT CAPACITIES WITH APPROVED DEVELOPMENTS II.

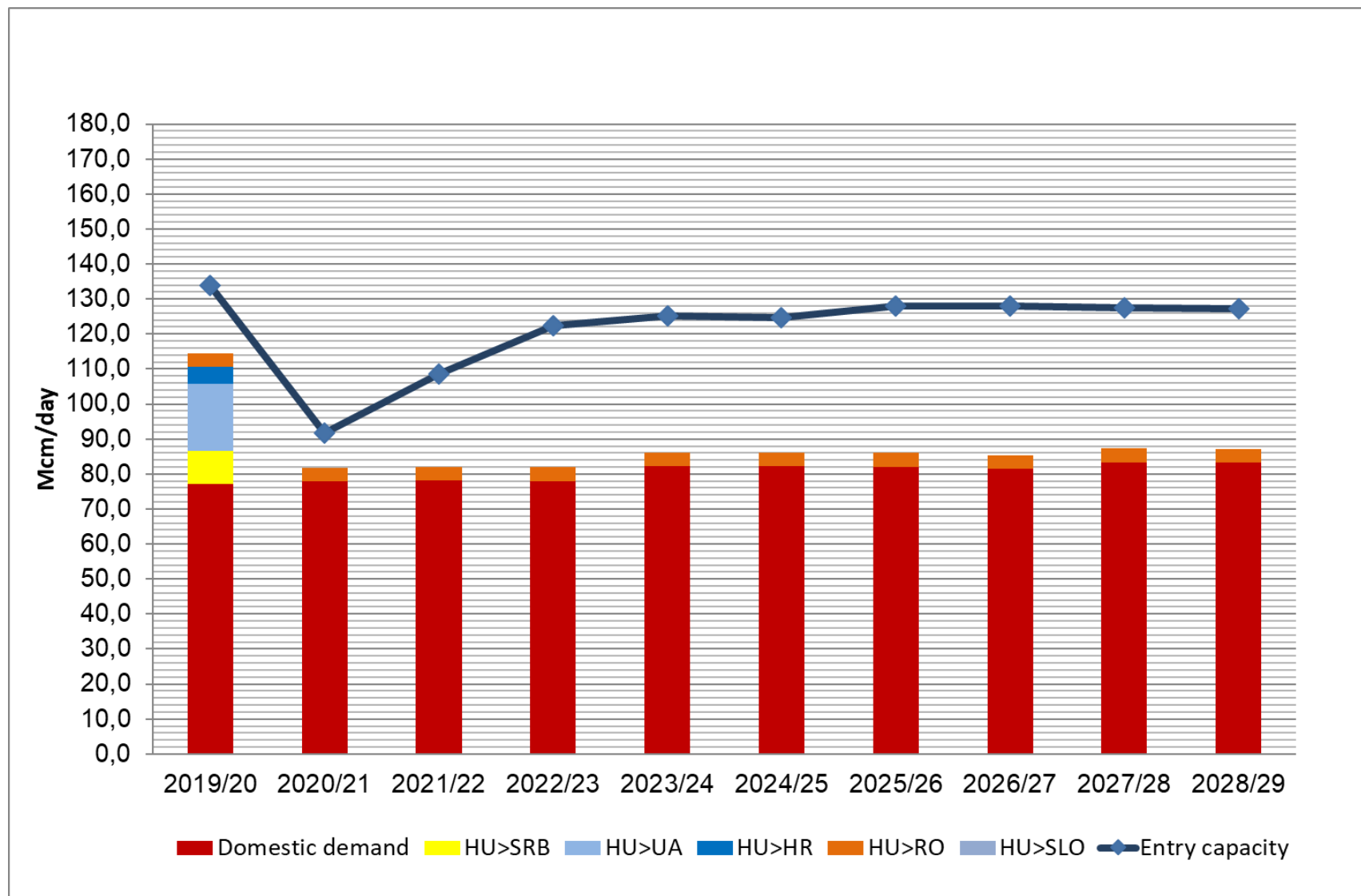
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Source: Ten Years Development Proposal 2019

HUNGARIAN ENTRY AND EXIT CAPACITIES WITH APPROVED DEVELOPMENTS III.

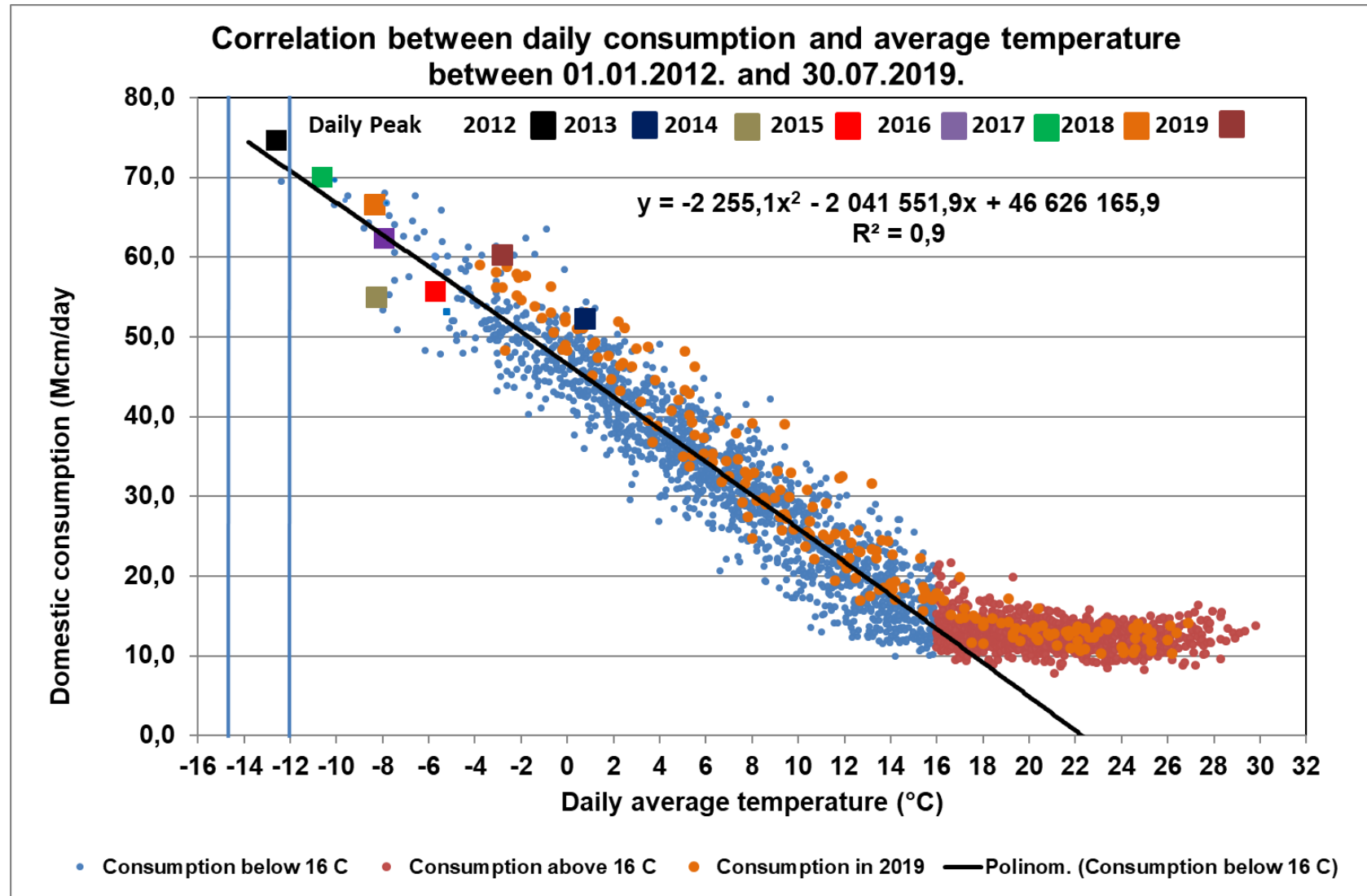
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Source: Ten Years Development Proposal 2019

CORRELATION BETWEEN DOMESTIC CONSUMPTION AND TEMPERATURE I.

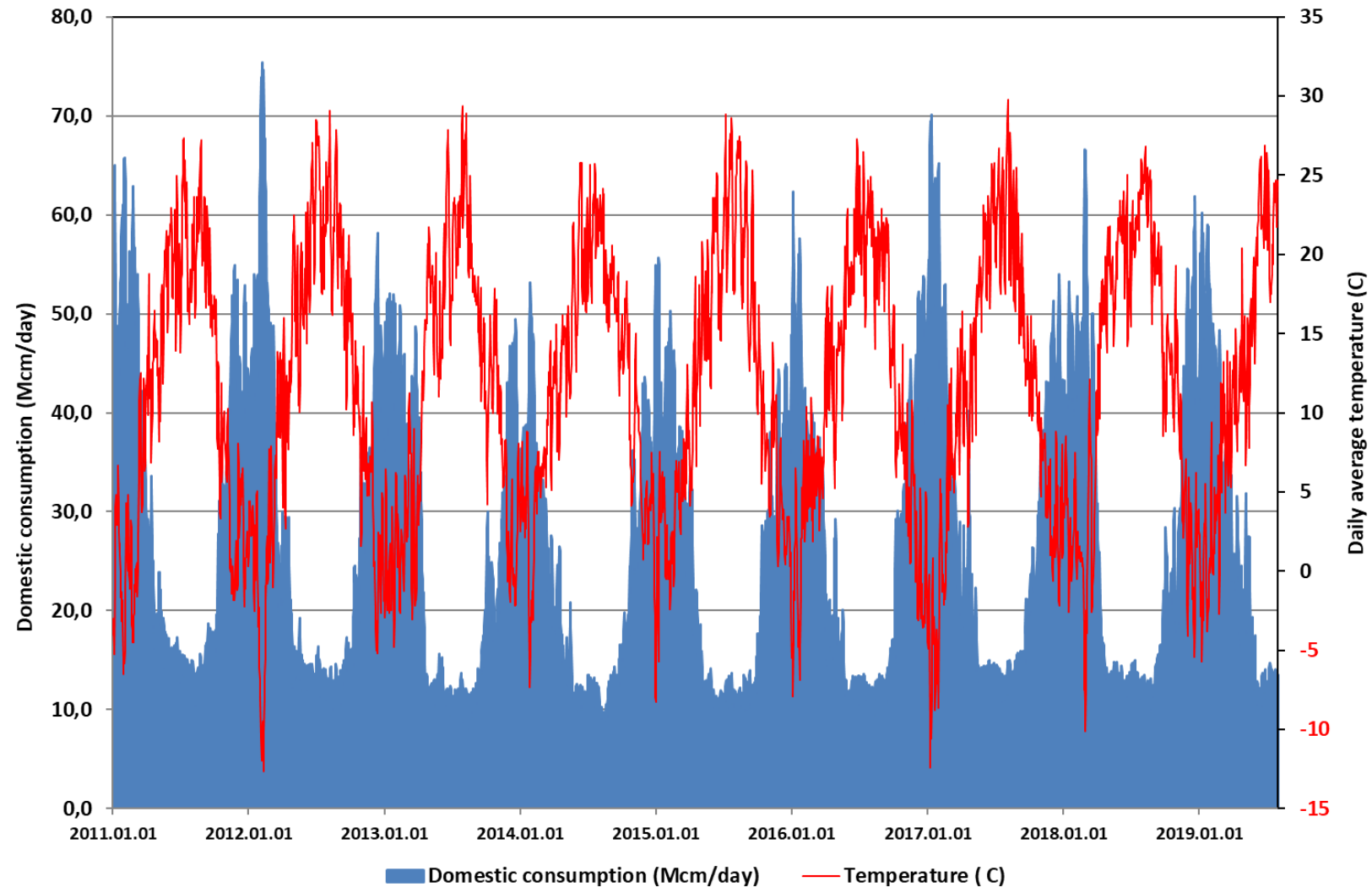
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Source: Ten Years Development Proposal 2019

CORRELATION BETWEEN DOMESTIC CONSUMPTION AND TEMPERATURE II.

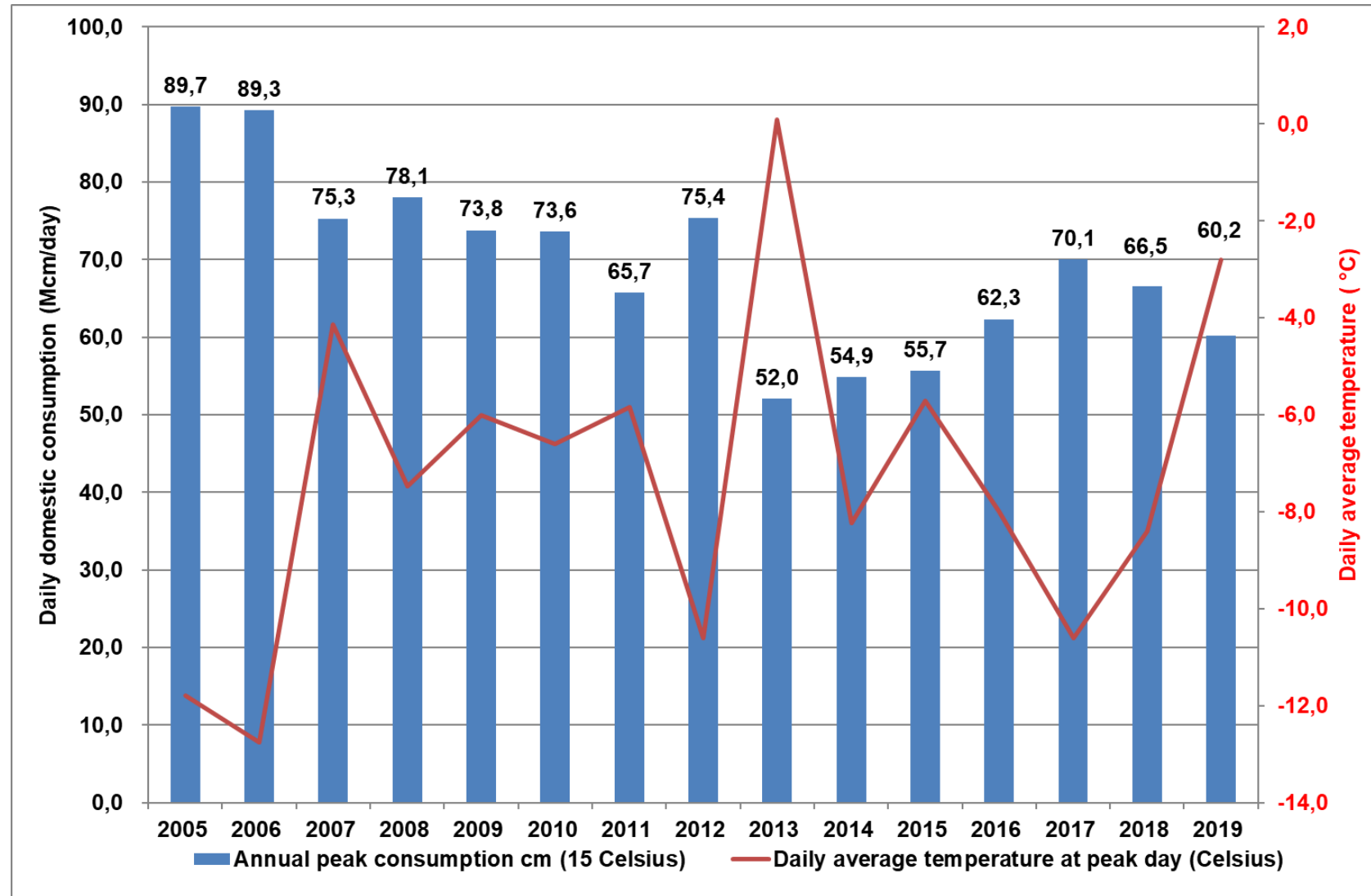
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Source: Ten Years Development Proposal 2019

DAILY DOMESTIC PEAK CONSUMPTION

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Source: Ten Years Development Proposal 2019

CAPACITY DEMAND SURVEY AT INTERCONNECTION POINTS

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- In August 2019, FGSZ Ltd. launched a non-binding capacity demand assessment procedure based on the provisions of CAM NC.
- System users have requested capacity for the Hungarian / Austrian, Hungarian / Croatian, Hungarian / Romanian, Hungarian / Slovenian and Hungarian / Slovakian interconnection points.
- In three cases, the incremental capacity process has to be initiated:
 - HU>AT direction (max. 100 000 cm/h, 120 000 cm/h)
 - HU>SK direction (max. 600 000 cm/h)
 - HU>SI direction (max. 50 000 cm/h, max. 190 000 cm/h, max. 230 000 cm/h, max. 362 000 cm/h)
- There was no demand for the Hungarian / Croatian border point that could be satisfied only by expansion of the existing infrastructure.

PROJECTS IN THE DEVELOPMENT PROPOSAL 2019

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- Already realized developments of approved or conditionally approved projects
- Ongoing developments
- Projects proposed for implementation in the next 3 years to increase security of supply
- Project proposed for implementation in the next 3 years
 - Ensuring firm capacity from Hungary to Ukraine
- Conditional projects to be developed in the following 3 years
 - RO-HU transmission corridor 2nd stage
 - Establishment of Serbian-Hungarian entry capacity
- Conditional projects to be developed in the 4th – 10th years
 - Ensuring capacity demands in the direction of HU>AT
 - HU>SK gas transmission corridor
 - Slovenian-Hungarian interconnector

ALREADY REALIZED DEVELOPMENTS OF APPROVED OR CONDITIONALLY APPROVED PROJECTS

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PROJECT DESCRIPTION

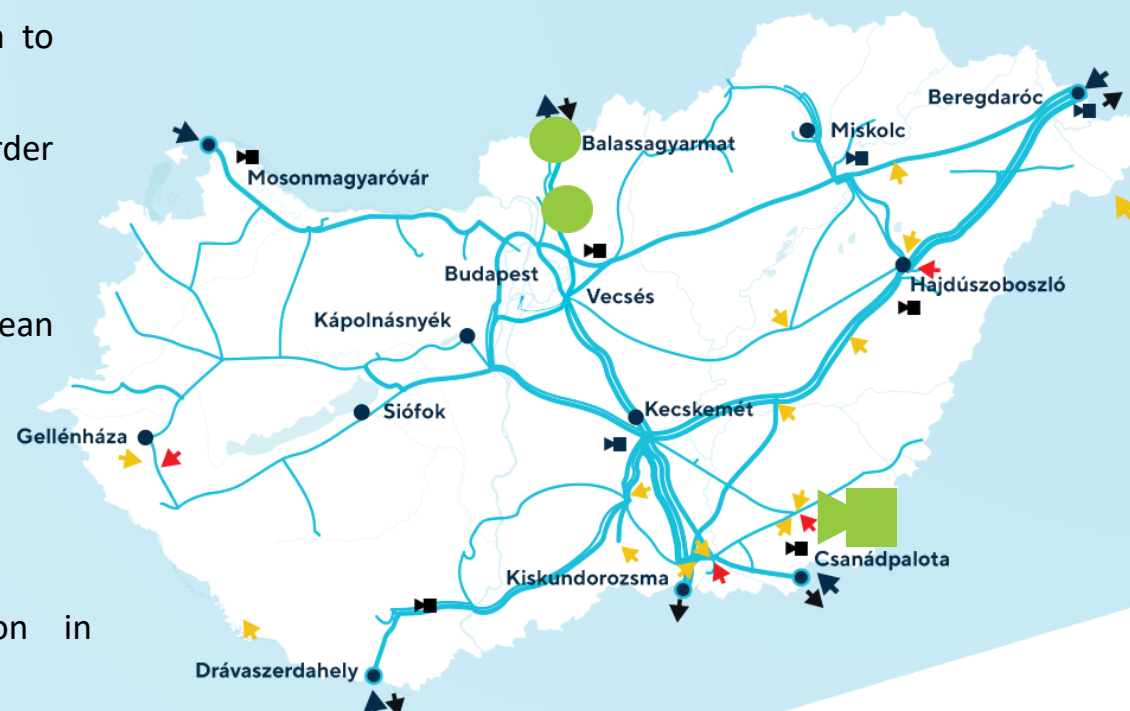
RO-HU project I. phase

- The project ensures the transmission of natural gas from Romania to Hungary.
- Project: Construction of new compressor station at the existing border point in Csanádpalota (2 x 5.7 MW).
- Capacity: 1.75 Bcm/year bi-directional cross border capacity
- The projects fulfils the reverse flow obligation according to European Regulation 1938/2017/EU.
- **The project is completed.**

Automatic change of direction on the Slovak-Hungarian pipeline

- The project ensures firm capacity in both direction.
- The project: Establishment of automatic change of direction in Balassagyarmat.
- Capacity: HU>SK direction 1.75 Bcm/y (NEW);
SK>HU direction 4.4 Bcm/year
- The project was implemented mechanically, the control technology development is in progress.

PROJECT



PROJECT DESCRIPTION

SK>HU capacity increasing up to 800 000 cm/h

- The project ensures 800 000 cm/h (500 000 cm/h firm + 300 000 cm/h interruptible) transmission capacity from Slovakia to Hungary.
- Project: Enhancing Balassagyarmat Metering Station
- **The project is in progress but cannot be implemented on time.**

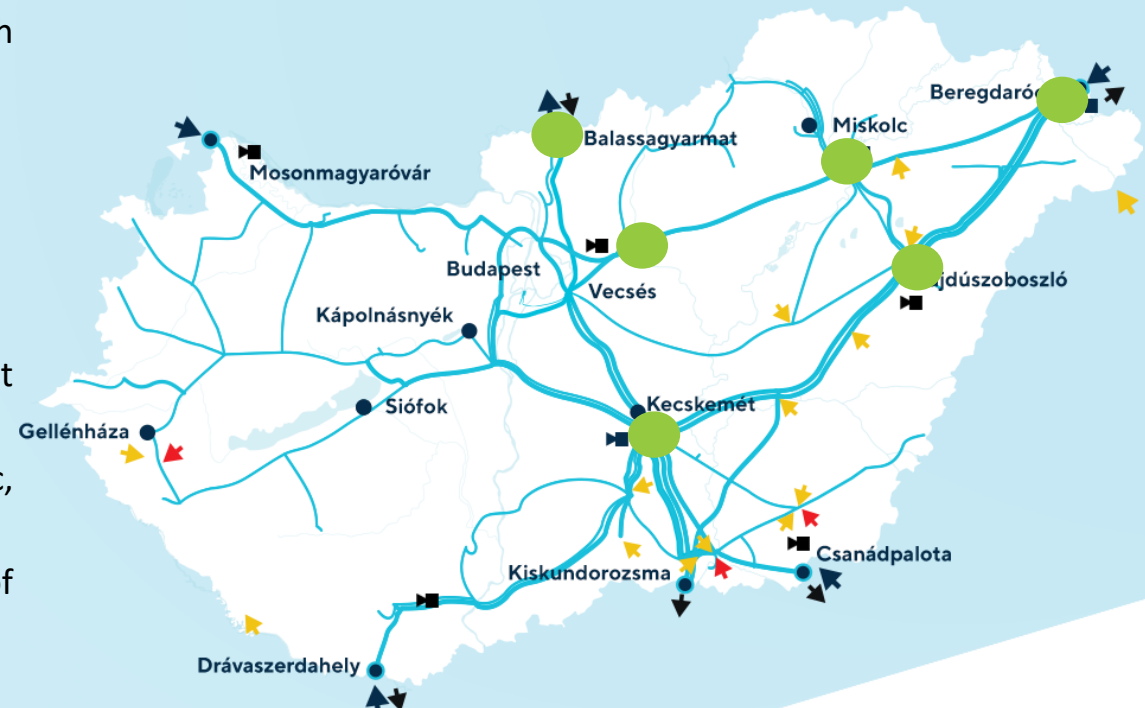
Security of supply of North-Eastern Hungary

- The project ensures transmission in the reverse direction of the current flows.
- Project: modification of Nemesbikk, Hajdúszoboszló, Beregdaróc, Városhőd nodes.
- Expected commissioning date of the project: April 2020 (in case of Városhőd node it is 01/10/2022)

Development of Gödöllő junction point with technological measuring

- The project facilitates the transmission in the direction of SK>HU (800,000 cm/h) and in the direction of HU>SK (600,000 cm/h)
- Expected commissioning date of the project: 01/10/2020

PROJECT



PROJECTS PROPOSED FOR IMPLEMENTATION IN THE NEXT 3 YEARS TO INCREASE SECURITY OF SUPPLY

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There is no project proposed for implementation in the next 3 years to increase security of supply.

PROJECT PROPOSED FOR IMPLEMENTATION IN THE NEXT 3 YEARS

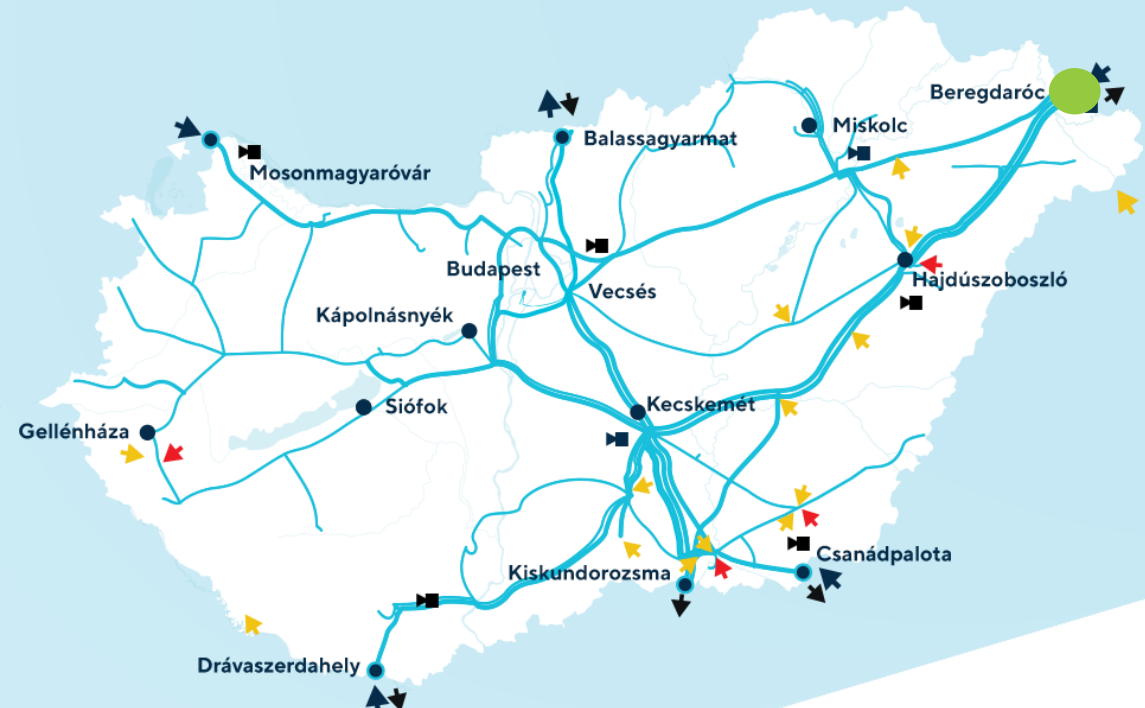
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PROJECT DESCRIPTION

Ensuring firm capacity from Hungary to Ukraine

- The project ensures 800,000 cm³/h firm capacity towards Ukraine.
- The project:
 - Modification of the existing (consisting 1 metering run) nodal measuring system at Beregdaróc in the direction HU>UA to a gas measuring station compliant with international standards
 - OR
 - Modification of the existing, unidirectional measuring station at Beregdaróc DN1400 (UA>HU) entry point suitable for bidirectional measuring
- Commissioning date: to be defined later.

PROJECT



CONDITIONAL PROJECTS TO BE DEVELOPED IN THE FOLLOWING 3 YEARS

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PROJECT DESCRIPTION

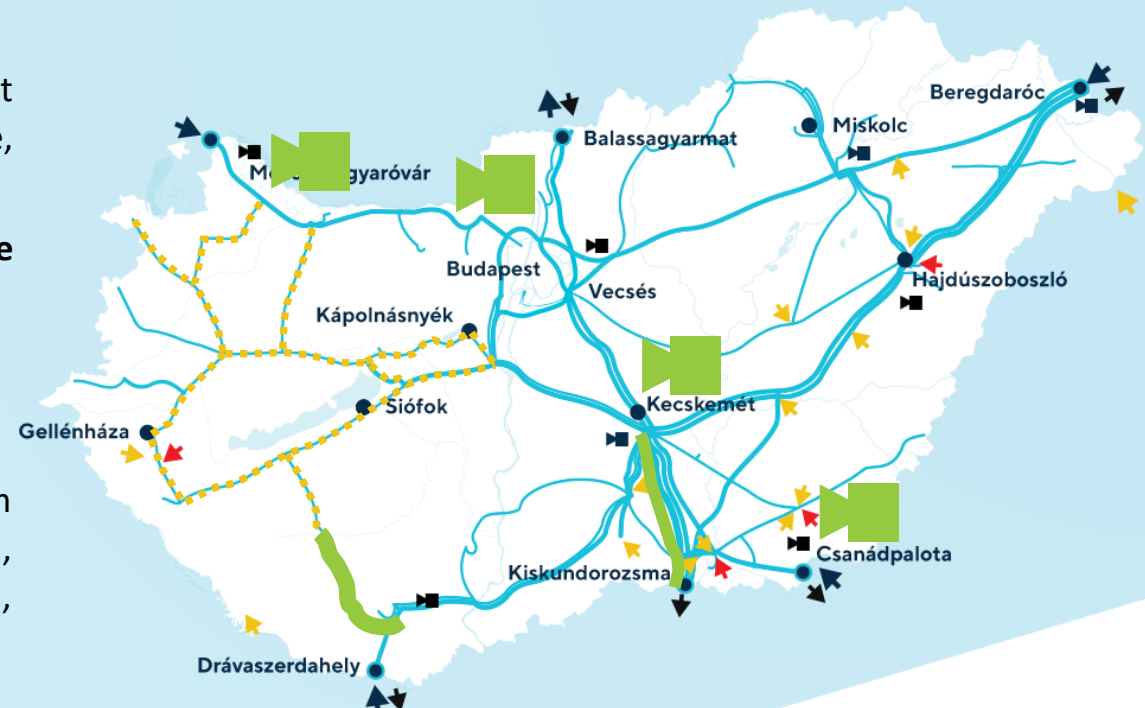
RO-HU transmission corridor 2nd stage

- The project ensures the bidirectional transmission of 500,000 cm/h natural gas at the Romanian-Hungarian interconnection point.
- The project: expansion of CS Canádpalota and Városföld, establishment of new CS at Dorog, establishment of Kozármisleny-Kaposvár pipeline, modification of central odorization stage II
- In case of the positive result of the ongoing Open Season procedure the project shall be realized by 01/10/2022.

Establishment of Serbian-Hungarian entry capacity

- The project ensures transmission of natural gas from Serbia.
- The project: **Stage I** (6 bcm/y): SRB-HU border - Kiskundorozsma 15 km DN1200,PN75 pipeline, new metering station at Kiskundorozsma, **Stage II** (8,5/10 bcm/y) Kiskundorozsma - Városföld 67 km, DN1000,PN75 pipeline
- Expected commissioning date of the project: Stage I: 01/10/2021, Stage II: 01/10/2022

PROJECT



CONDITIONAL PROJECTS TO BE DEVELOPED IN THE 4th – 10th YEARS

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PROJECT DESCRIPTION

Ensuring capacity demands in direction HU>AT (auction: 06/07/2020)

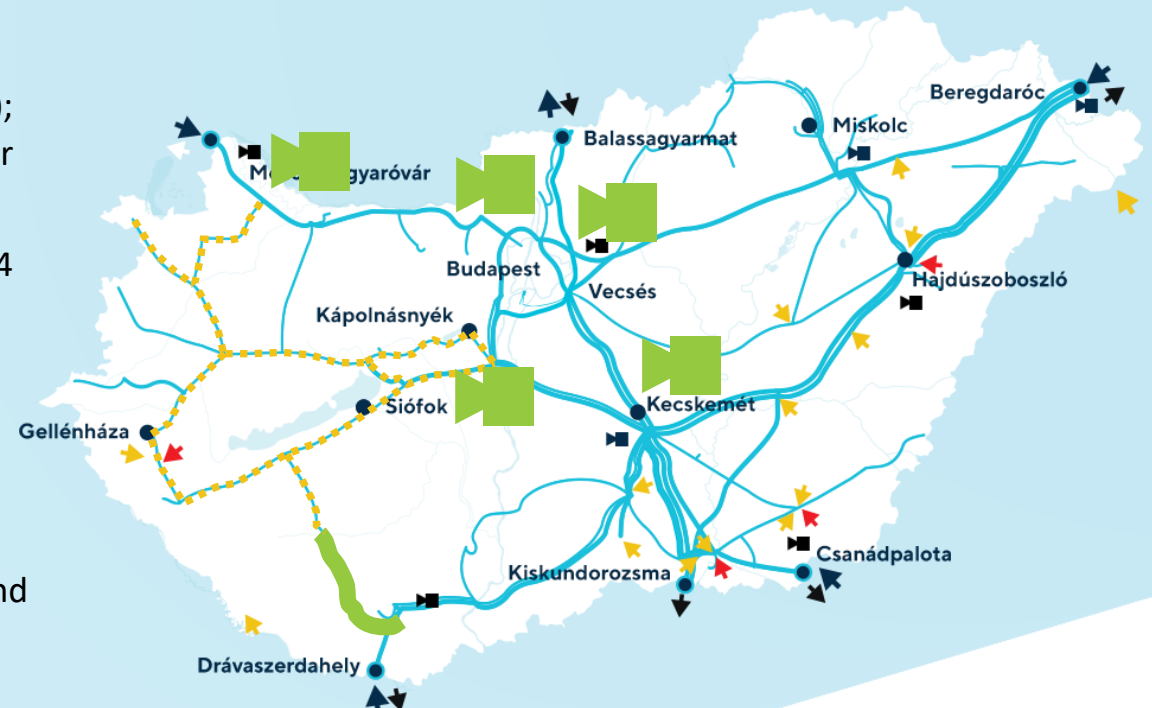
- The project ensures transmission in the direction HU>AT.
- Projects:
 - Variant I: 0.9 bcm/y (100,000 cm/h): New CS at Dorog (3 x 5,7 MW); modification of central odorization stage II, Kozármisleny-Kaposvár pipeline, enhancement of CS Mosonmagyaróvár (2 x 2 MW electric)
 - Variant II: 1.1 bcm/y (120,000 cm/h): + New CS at Adony (2 x 5,4 MW)
- Expected commissioning date: 01/10/2023

HU>SK gas transmission corridor

The project ensures the flexible transmission in direction HU>SK and HU>AT.

- Projects:
 - Expansion of CS Szada (2 x 8 MW) + modification of existing units
- Expected commissioning date: 01/10/2024

PROJECT



CONDITIONAL PROJECTS TO BE DEVELOPED IN THE 4th – 10th YEARS

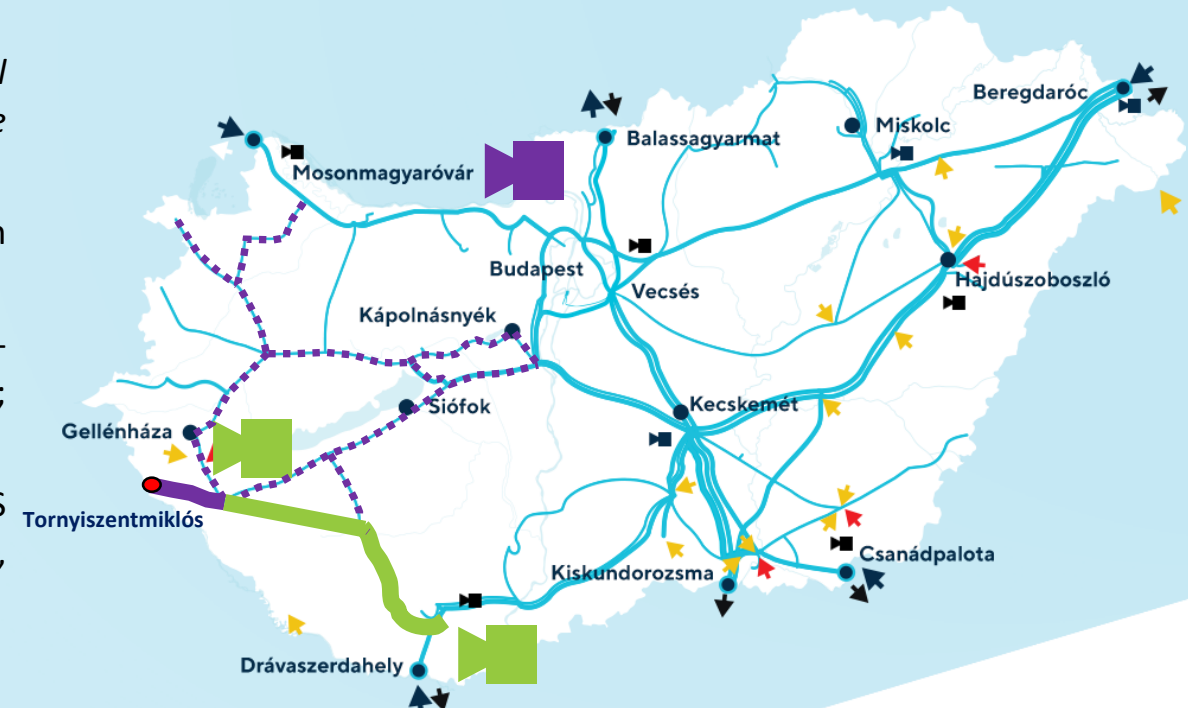
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PROJECT DESCRIPTION

Slovenian-Hungarian interconnector (auction: 06/07/2020)

- The projects ensures bidirectional transmission between Slovenia and Hungary
- Projects: *(the neighbouring TSOs currently negotiate the mutual agreed technical content, therefore the needed projects could be changed)*
- Precondition: CS Dorog and modification of central odorization are realized
- Variant 1: 0.4 bcm/y (max: 50,000 cm/h): SI/HU border-Torniszentmiklós-Nagykanizsa 41 km, DN600, PN75; Torniszentmiklós metering station;
- Variant 2: 1.66 bcm/y (190,000 cm/h): Variant 1 + new CS Nagykanizsa + Nagykanizsa-Kaposvár-Kozármisleny 150km, DN600, PN75
- Variant 3: 2 bcm/y (230,000 cm/h): Variant 2 + CS Nagykanizsa enlargement
- Variant 4: 3.2 bcm/y (362,000 cm/h): Variant 3 + CS Kozármisleny,
- Expected commissioning date: Variant 1: 01/10/2023; Variant 2: 01/10/2025; Variant 3/4: 01/10/2027

PROJECT



PROJECTS ANALYSED, BUT PROPOSED NOT TO BE DEVELOPED I

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PROJECT DESCRIPTION

Ensuring capacity demands in the direction of HU>AT

The project facilitates the transmission in the direction of HU>AT.

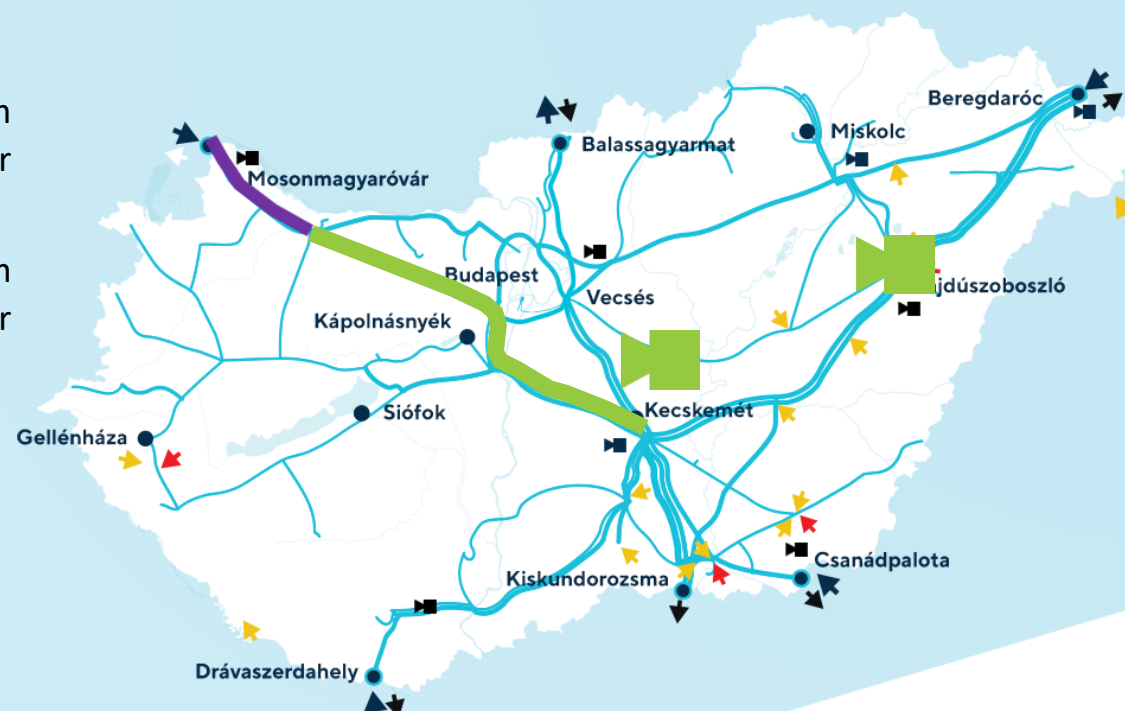
- Projects:
 - Variant 1: 5.2 bcm/y (600,000 cm/h): Városföld-Ercsi-Győr 205 km DN1000, PN75, Ercsi-Százhalombatta 11 km, DN800, new CS near Városföld 30 MW)
 - Variant 2: 9.0 bcm/y (1,300,000 cm/h): Városföld-Ercsi-Győr 205 km DN1000, PN75, Ercsi-Százhalombatta 11 km, DN800, new CS near Városföld 50 MW), Győr-HU/AT border 71 km DN800, PN75

Enhancement of CS Városföld

The project facilitates the extra deliveries in the direction of HU>UA.

- The project:
 - Establishment of a new compressor unit at CS Hajdúszoboszló
- Expected commissioning date: to be defined later

PROJECT



PROJECTS ANALYSED, BUT PROPOSED NOT TO BE DEVELOPED II

23

PROJECT DESCRIPTION

Enhancement of CS Városhöld

Further analysis of the project is needed depending on the expected cross border entry and exit capacities from the southward direction.

- The project:
 - Expansion of Városhöld CS

EASTRING

The project enables the transmission in the direction of RO>HU>SK (10-20-40 bcm/y).

- The project:
 - RO/HU border - Csanádpalota - Városhöld - Vecsés - HU/SK border 282 km, DN1400, PN100 pipeline.
 - Exit capacity at Városhöld: 5.0 bcm/y, 600,000 cm/h
- Expected commissioning date: to be defined later

PROJECT

