

10-year network development plan

July 2020



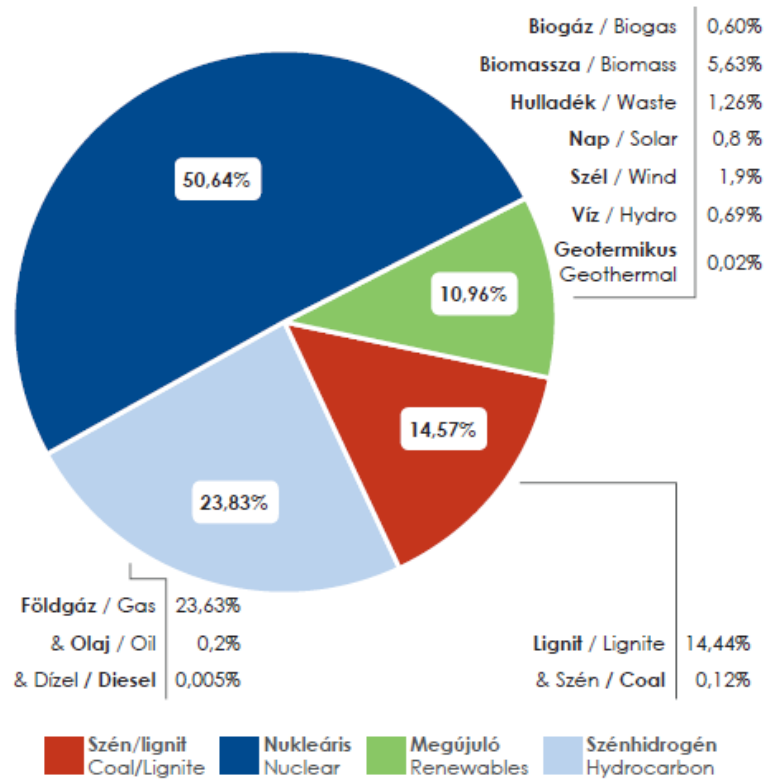
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10-year network development plan

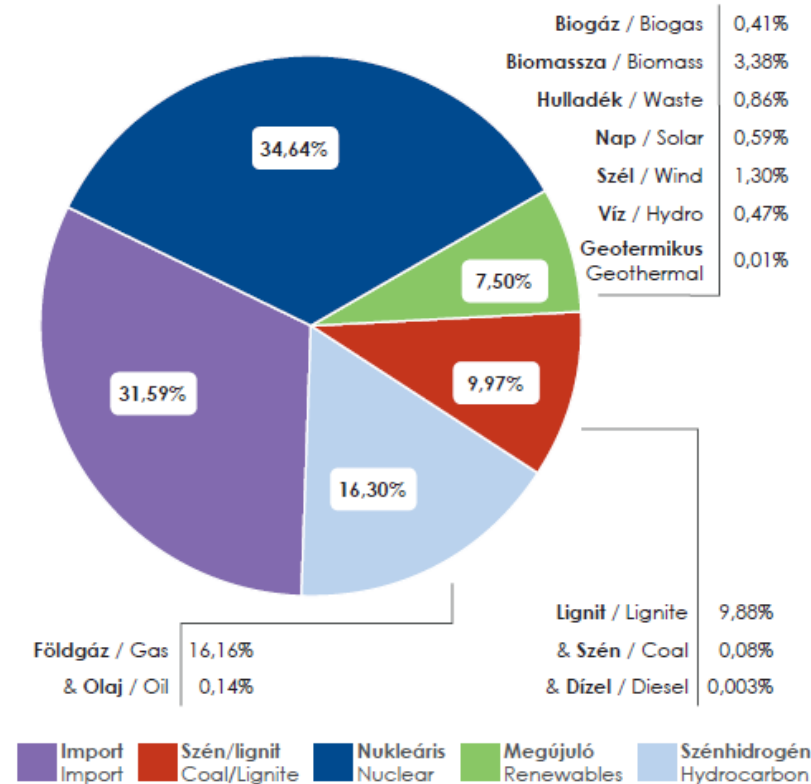
- Pursuant to Article 96 (5) of the Implementation Decree of Act XL of 2008 on natural gas supply (Gas Supply Act), the transmission system operator sent the results of the coordinated capacity review pursuant to Article 82 (2) of the Gas Supply Act and the 10-year network development proposal to the Hungarian Energy and Public Utility Regulatory Authority (HEA) by 31 December 2019.
- In its letter dated on 27 March 2020, the transmission system operator initiated the suspension of the approval procedure at HEA, given that the developments in the gas market in the first quarter of 2020 justified the modification of the 10-year network development proposal.
- In accordance with Decree no. H991/2020. of HEA, the transmission system operator submitted to HEA a partial amendment of the 10-year network development proposal by 15 May 2020.
- In accordance with the order of HEA (case number: FFAFO_2020/167-8) requesting for clarification, the transmission system operator submitted the revised 10-year network development proposal for approval by 29 May 2020.
- In its Decree no. H1596/ 2020, the HEA approved the 10-year network development proposal of the interoperable natural gas system, so the 10-year network development plan of the interoperable natural gas system is available.

Domestic primer energy consumption and electricity generation

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



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

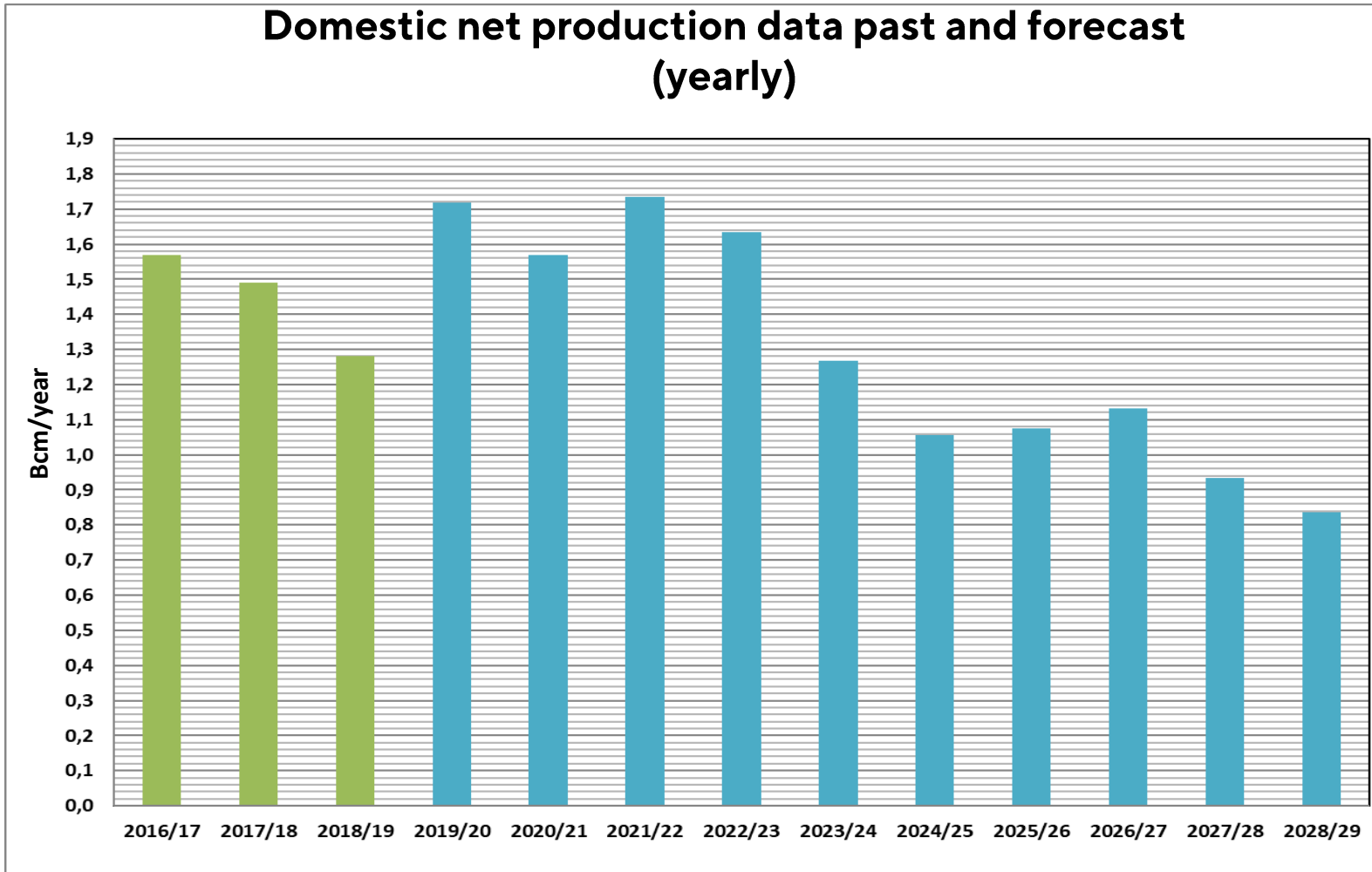


Nuclear power and fossil fuels dominate the domestic power production.

Source: Mavir Ver 2018

Domestic production

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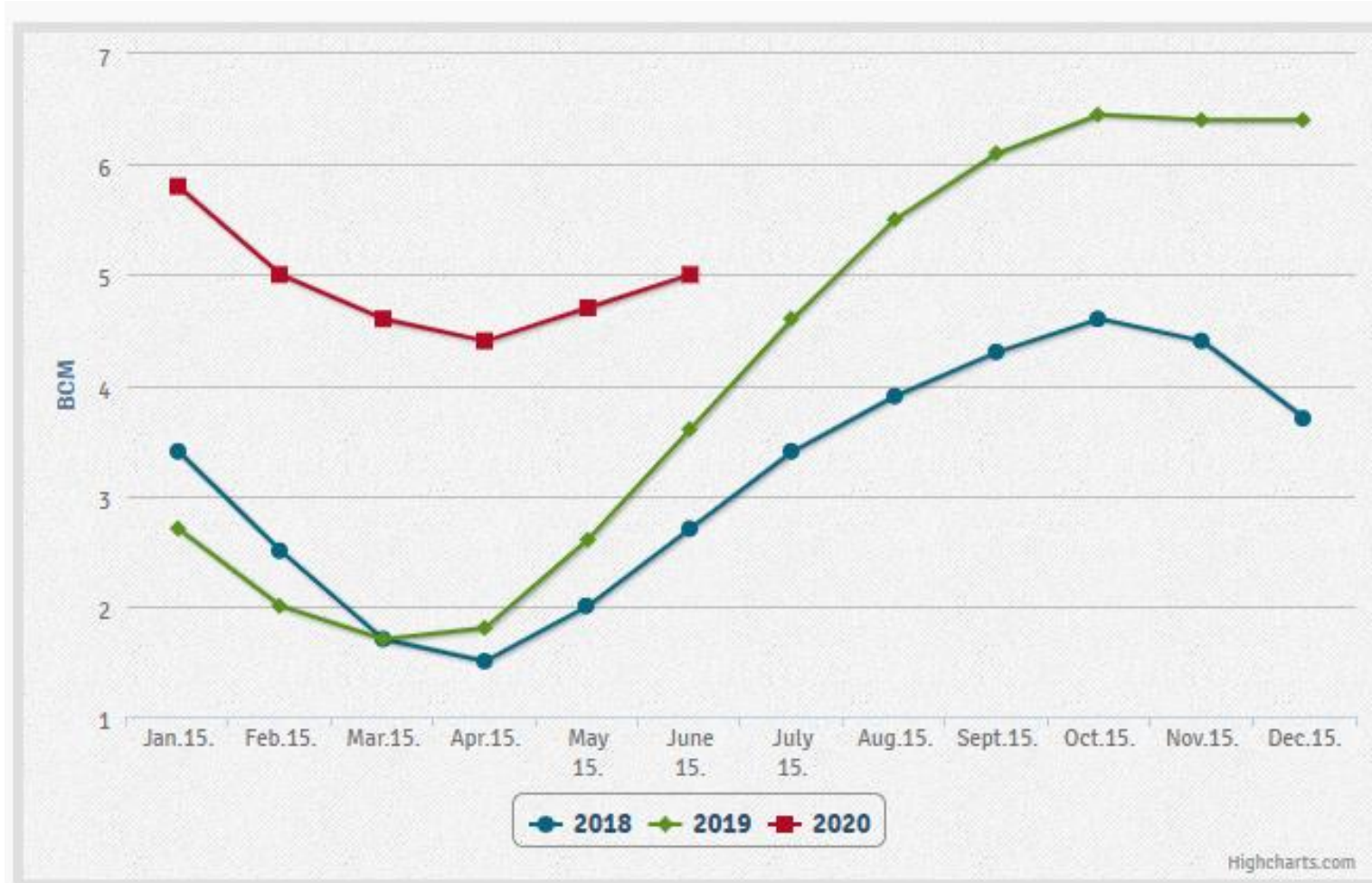


Source: 10-year network development proposal

2019

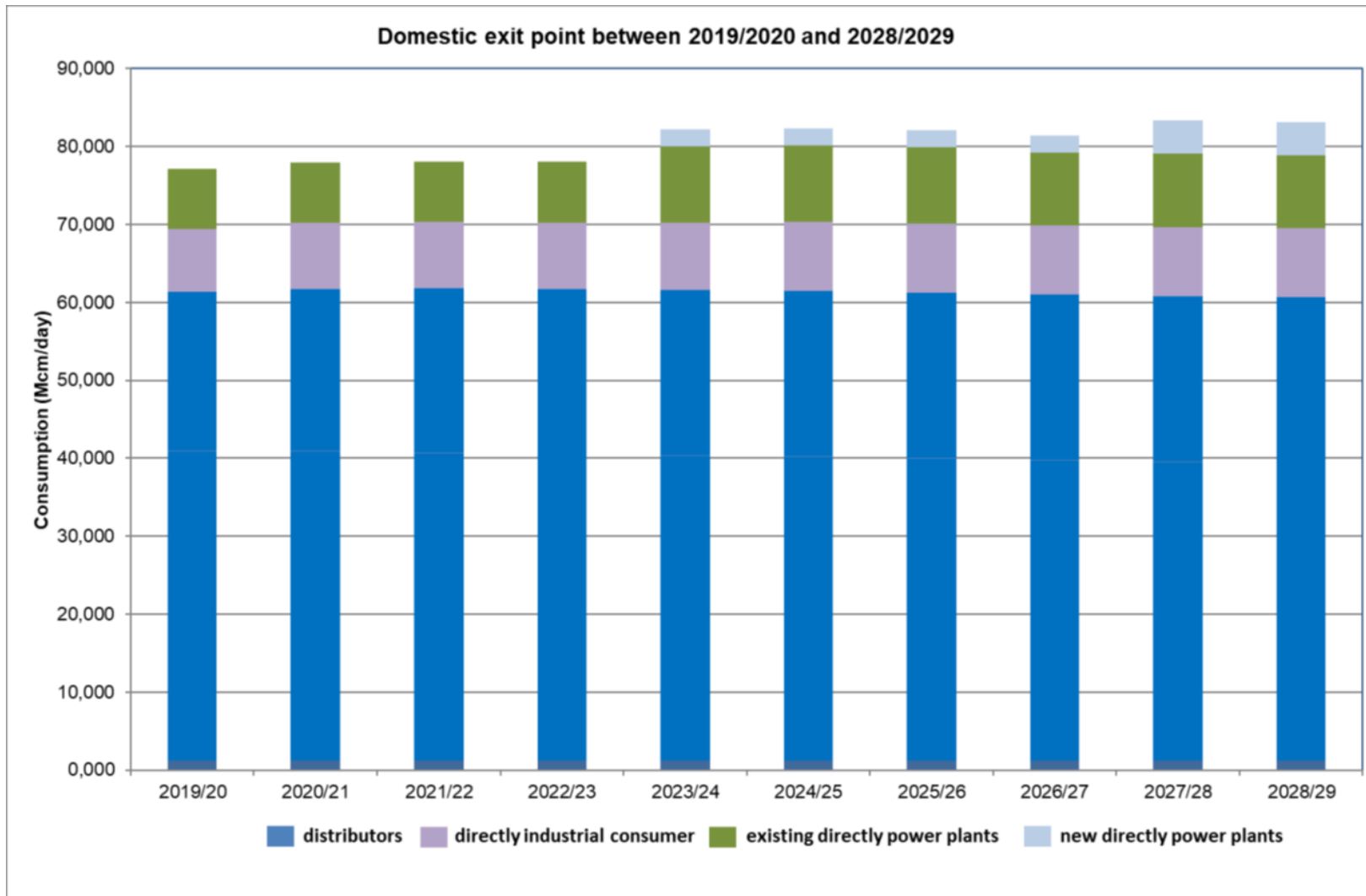
Decreasing gas production and field developments of indigenous E&P companies represent domestic production.

Trend of stock levels in Hungarian natural gas storage



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

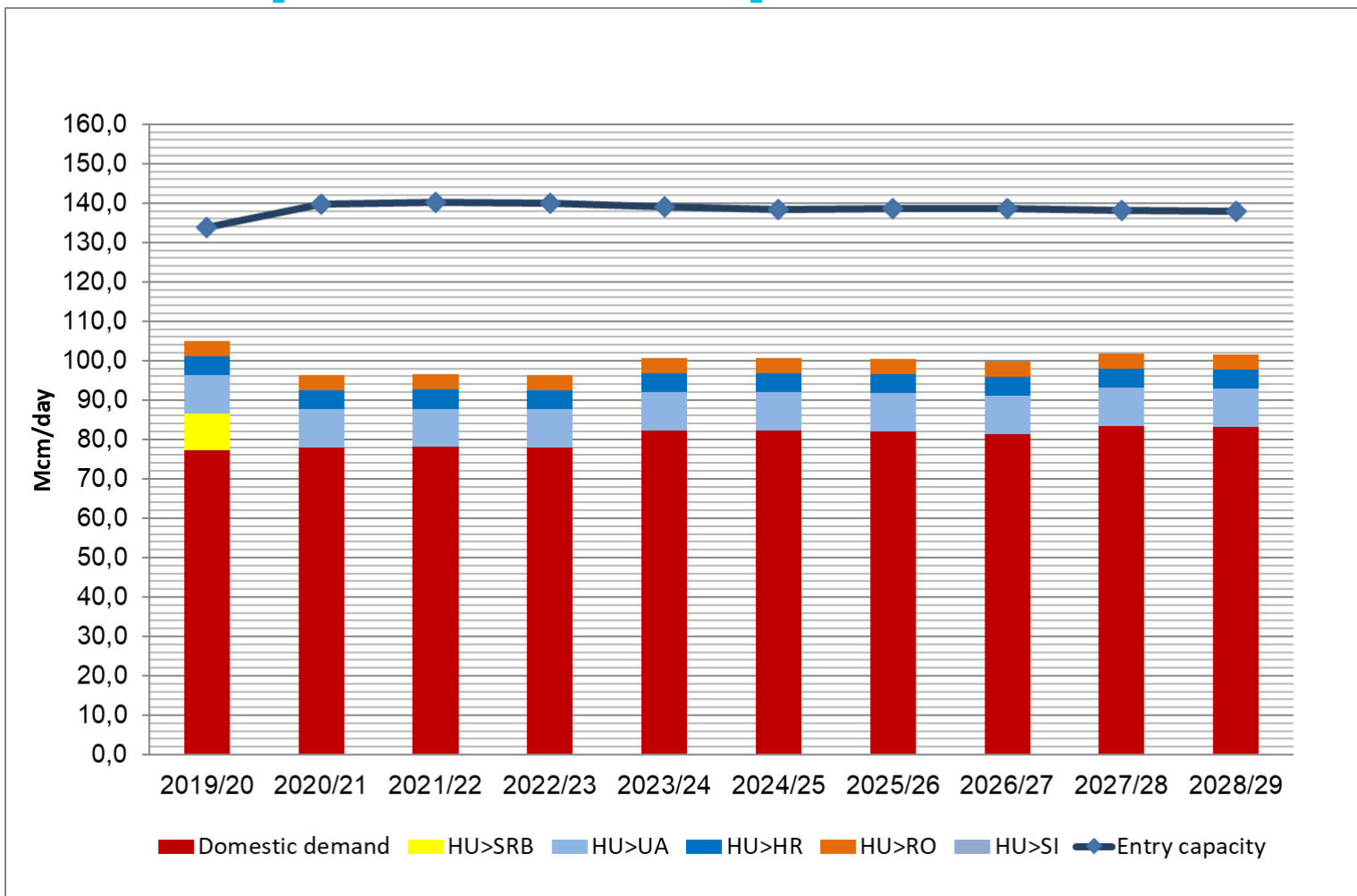
Demand of domestic exit points



Source: 10-year network development proposal
2019

Hungarian entry and exit capacities with accepted developments I.

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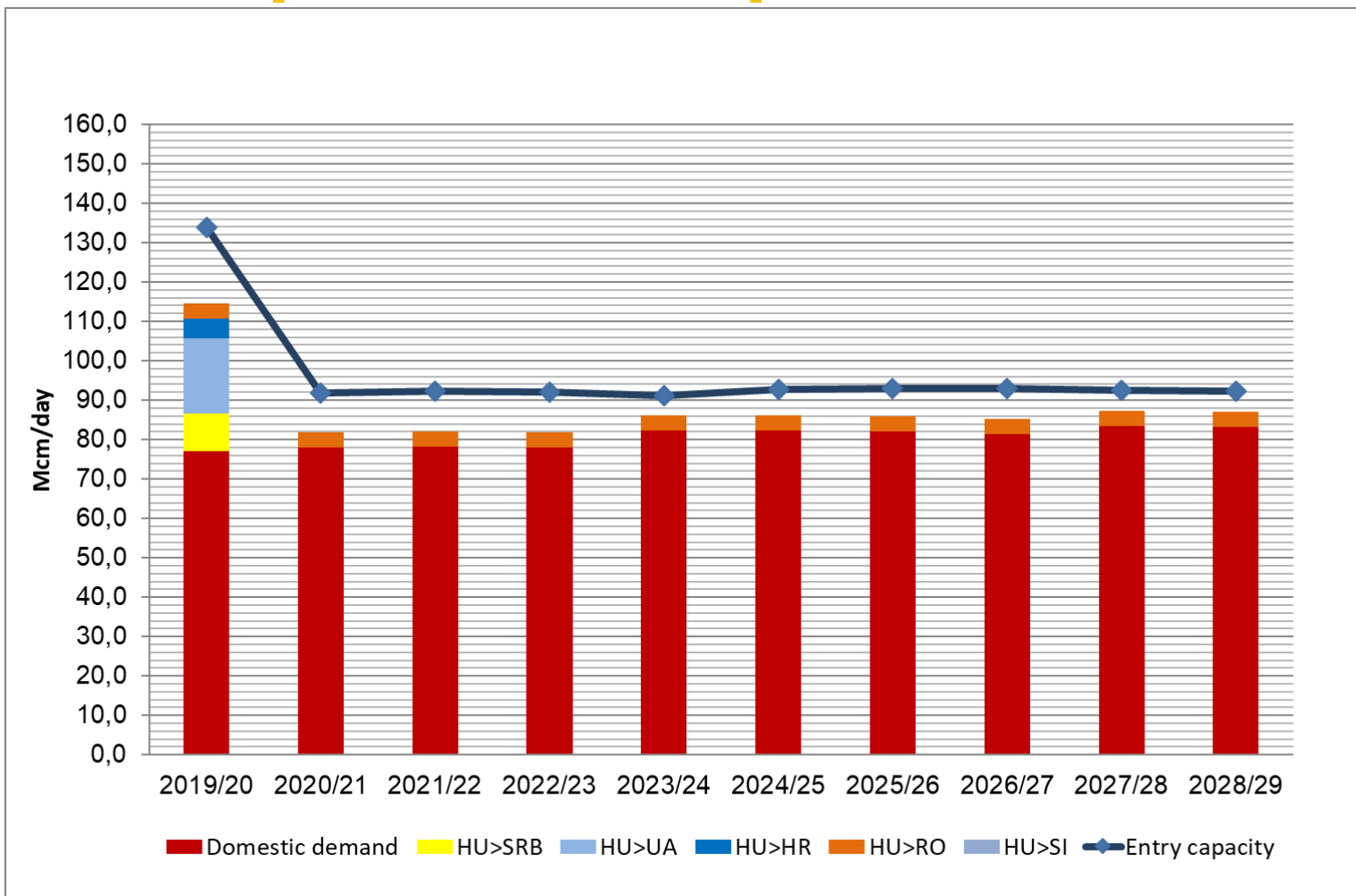


Source: 10-year network development proposal

2019

Hungarian entry and exit capacities with accepted developments II.

8

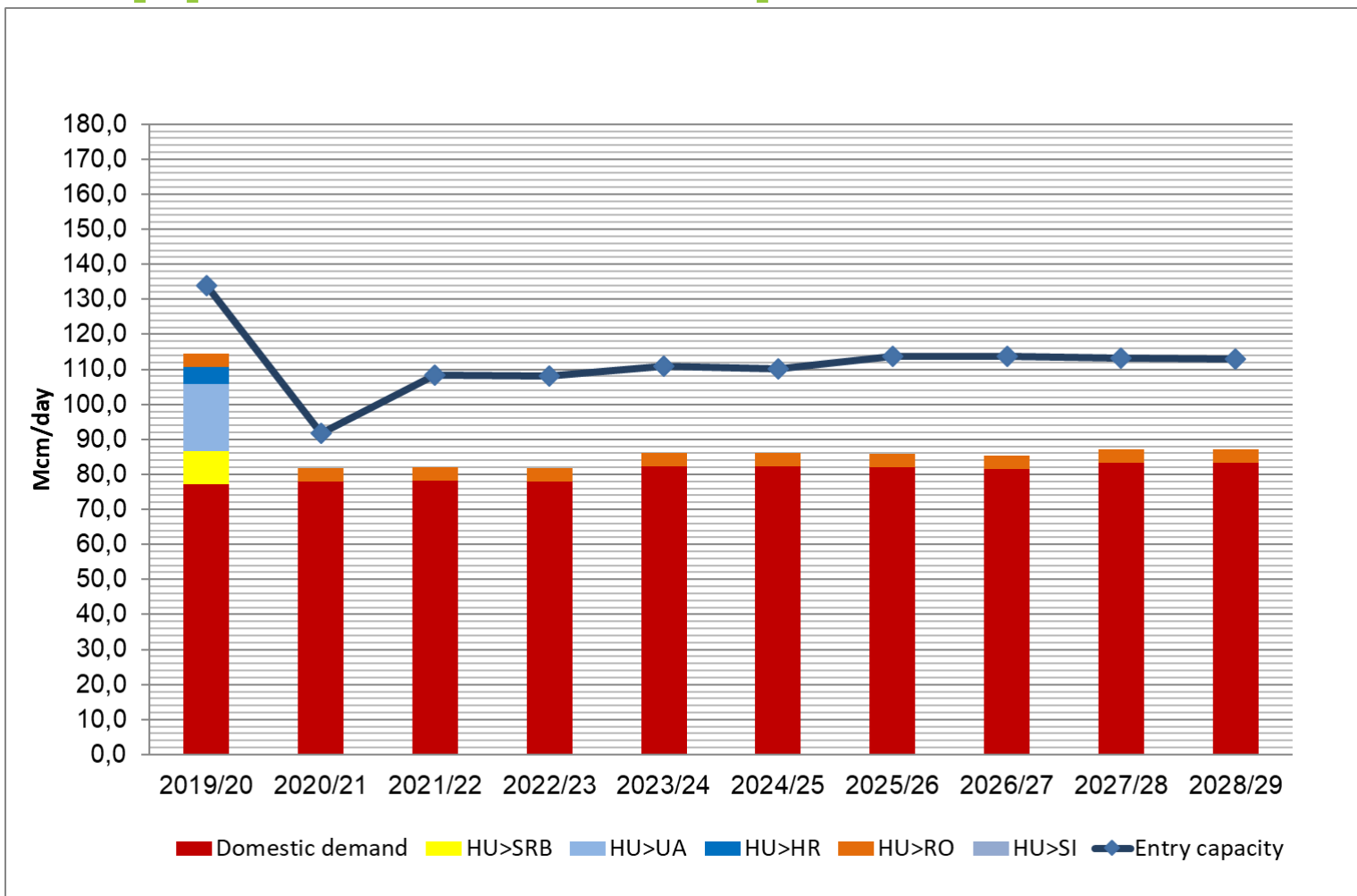


Source: 10-year network development proposal

2019

Hungarian entry and exit capacities with approved developments III.

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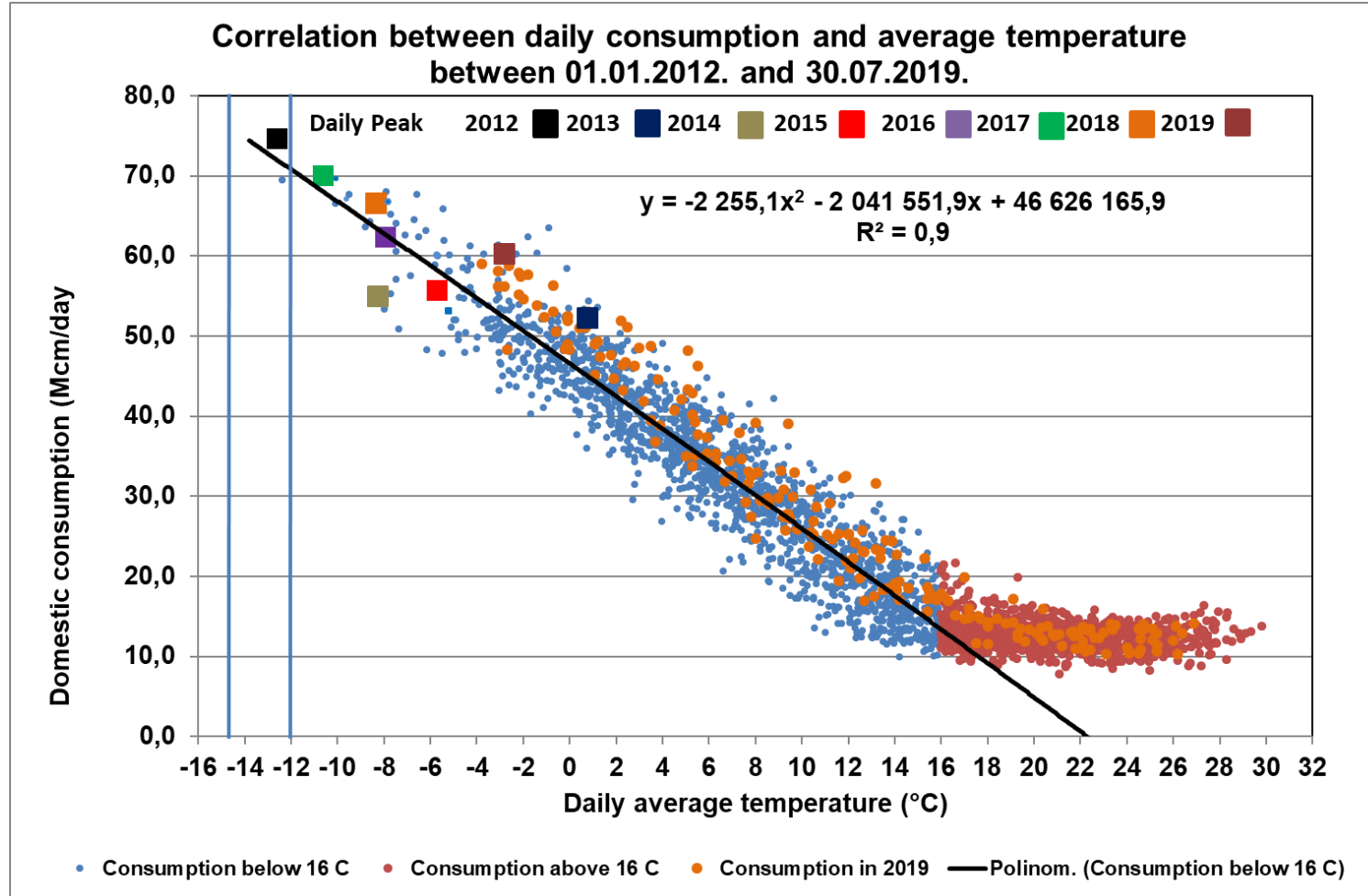


Source: 10-year network development proposal

2019

Correlation between domestic consumption and temperature I.

10

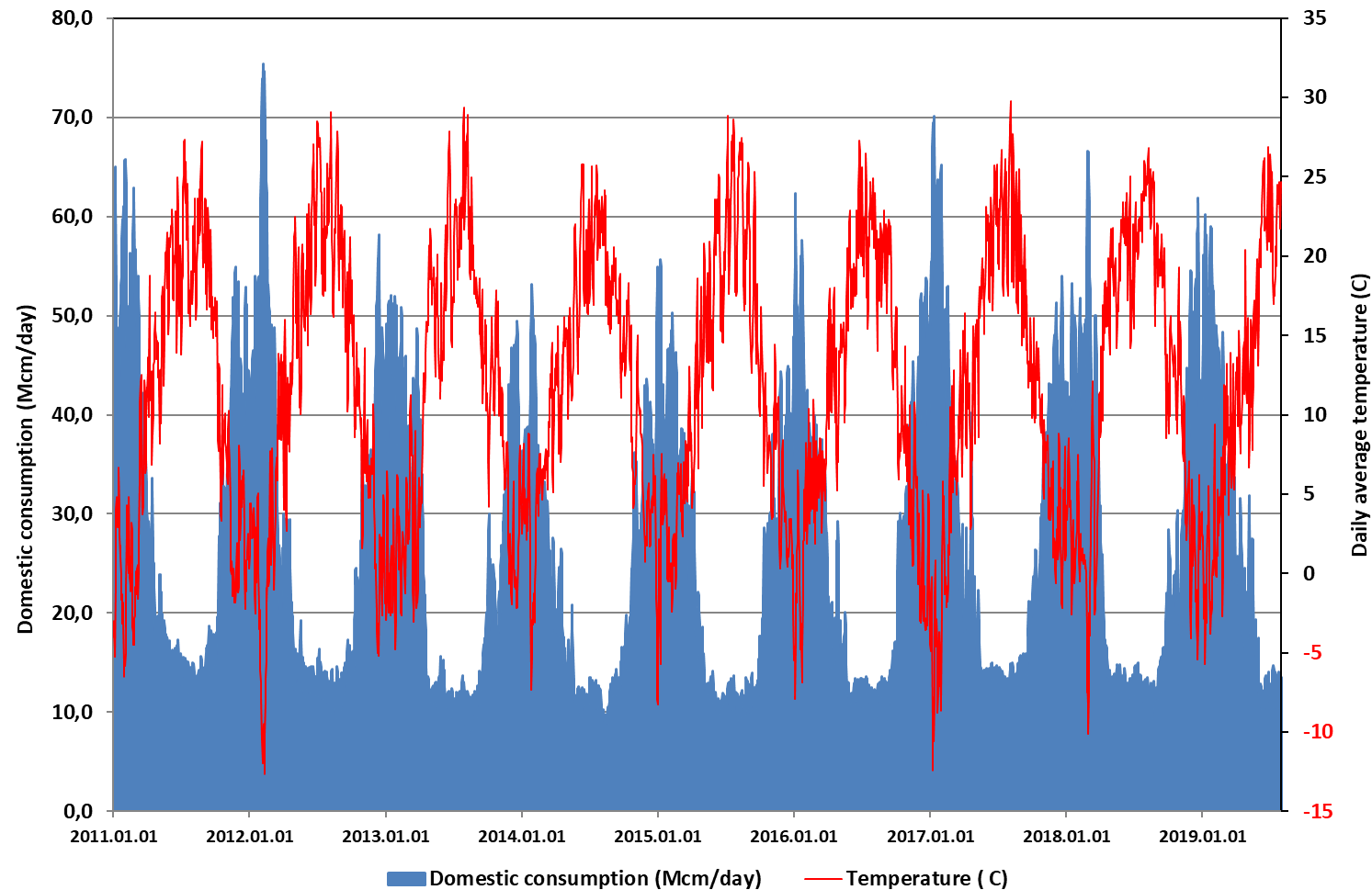


Source: 10-year network development proposal

2019

Correlation between domestic consumption and temperature II.

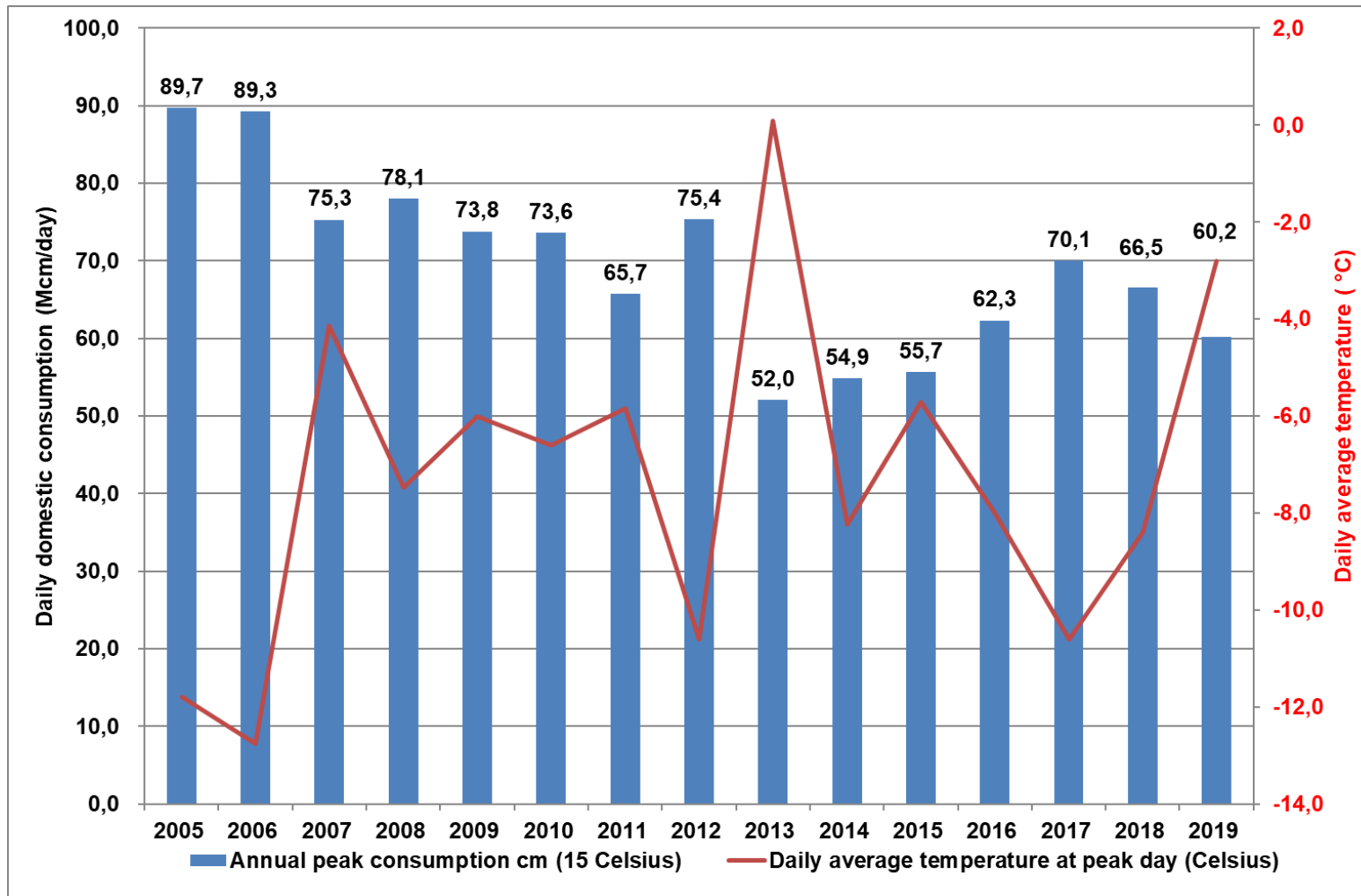
11



Source: 10-year network development proposal

2019

Daily domestic peak consumption



Source: 10-year network development proposal

2019

Projects

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- Completed developments of approved projects
 - ROHU project 1st phase
 - Automatic change of direction on the Slovak-Hungarian pipeline
 - Security of supply of North-Eastern Hungary
- Approved projects to be implemented without any condition
 - Establishment of Serbian-Hungarian entry capacity with 6 bcm/y (20 °C) max. capacity
- Conditionally approved projects
 - Expansion of the Serbian-Hungarian entry capacity
 - Development of HUAT cross border capacities (incremental capacity process according to Decree no. H1343/2020. of HEA)
 - Development of HUSK cross border capacities (incremental capacity process according to Decree no. H1344/2020. of HEA)

Projects

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- Projects subject to further investigation (not approved)
 - Ensuring firm capacity from Hungary to Ukraine
 - Capacity expansion of Balassagyarmat GMS, SK>HU capacity increasing up to 800 000 cm/h
 - Development of Gödöllő junction point with technological measuring
 - Developments related to the RO-HU transmission corridor 2nd stage (as part of the infrastructure development need for incremental capacity)
 - Establishment of new CS at Dorog
 - Establishment of Kozármisleny-Kaposvár pipeline
 - Modification of central odorization stage II
 - Slovenian-Hungarian interconnector (Max. capacity: 0.4 / 1.7 / 2.0 / 3.2 bcm/y)
 - New compressor unit at CS Hajdúszoboszló
 - Eastring Hungary

Completed developmnets of approved projects


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PROJECT DESCRIPTION


RO-HU project 1st 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 4,5 MW) 
- Capacity: 1.75 bcm/year bi-directional cross border capacity
- The project is completed.

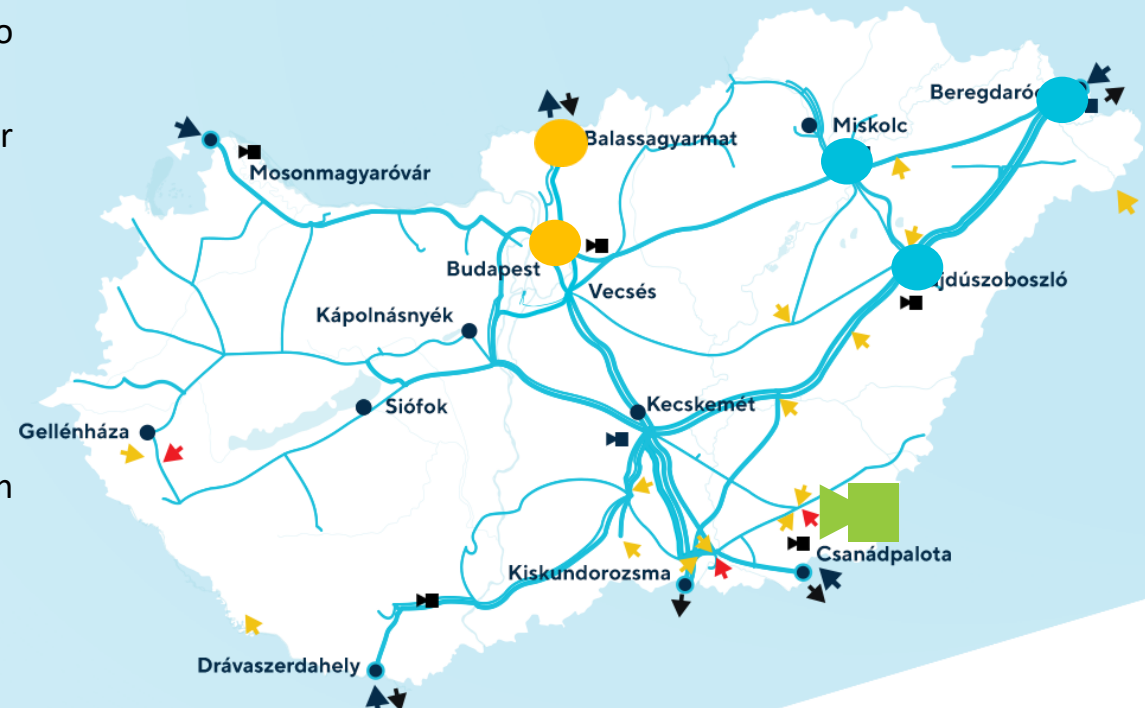
Automatic change of direction on the Slovak-Hungarian pipeline

- The project ensures firm capacity in both direction.
- Project: establishment of automatic change of direction in Balassagyarmat. 
- Capacity: HU>SK direction 1,75 (NEW); SK>HU direction 4,4 bcm/y
- The project is completed.

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 nodes 
- The project is completed.

PROJECT




Approved projects to be implemented without any condition

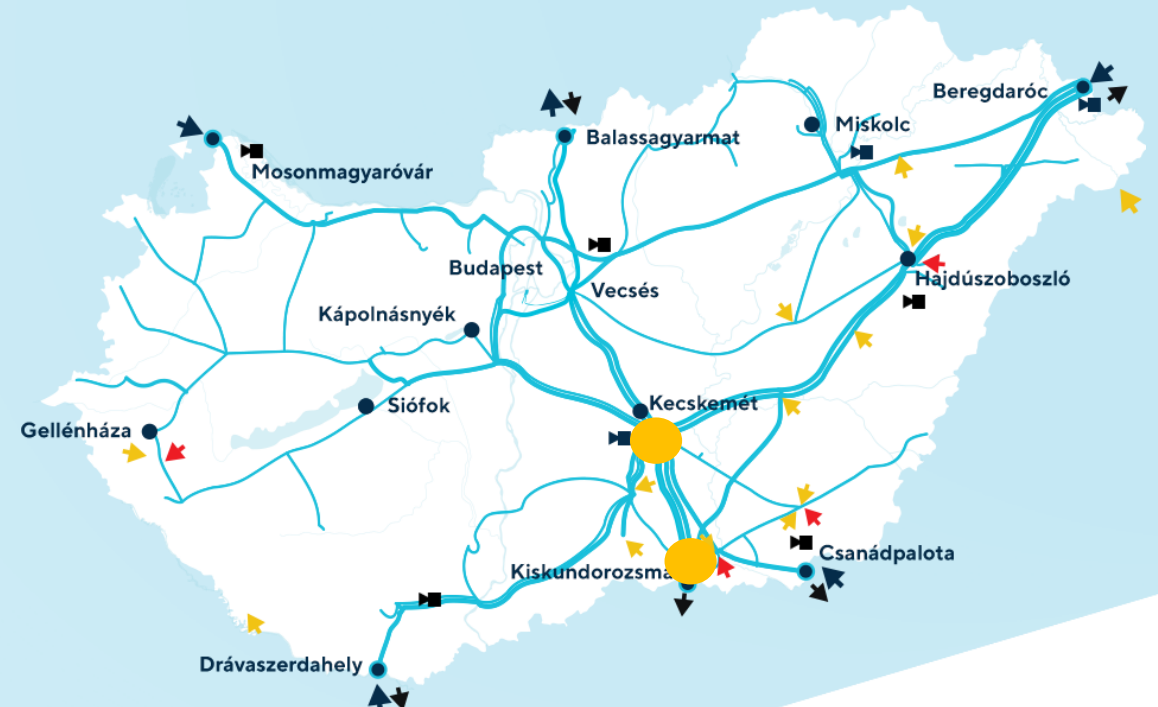
16

PROJECT DESCRIPTION

Establishment of Serbian-Hungarian entry capacity with 6 bcm/y (20 °C) max. capacity

- The project ensures transmission of natural gas from Serbia.
- Project: 
 - SRB-HU border - Kiskundorozsma 15 km DN1200, PN75 pipeline,
 - New metering station at Kiskundorozsma,
 - Pipe connections at Városföld,
 - Modification of Városföld node (moved from the project Security of supply of North-Eastern Hungary)
- Expected commissioning date: 01/10/2021

PROJECT



Conditionally approved projects

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PROJECT DESCRIPTION

Expansion of the Serbian-Hungarian entry capacity

- The project ensures transmission in the direction of SRB>HU up to 8.5 bcm/y (20 °C)
- Project:
 - Kiskundorozsma - Városföld 67 km, DN1000, PN75 pipeline
 - Modification at Kiskundorozsma node
- Expected commissioning date: 01/10/2022
- The condition for the implementation of the project is the conclusion of the binding Open Season procedure (approved by HEA) with a positive result and making the final investment decision prior to the announcement of the Open Season procedure.

PROJECT



Conditionally approved projects

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PROJECT DESCRIPTION

Ensuring capacity demands in direction HU>AT with 5.2 bcm/y and/or 9.0 bcm/y capacity (auction: 06/07/2020)


The project ensures transmission in the direction HU>AT.

- Projects:

- Variant 1: 5.2 bcm/y (600,000 cm/h):

- Városföld-Ercsi-Győr 205 km, DN1000, PN75 pipeline,
- Ercsi-Százhalombatta 11 km, DN800 pipeline, 
- New CS near Városföld, 30 MW.

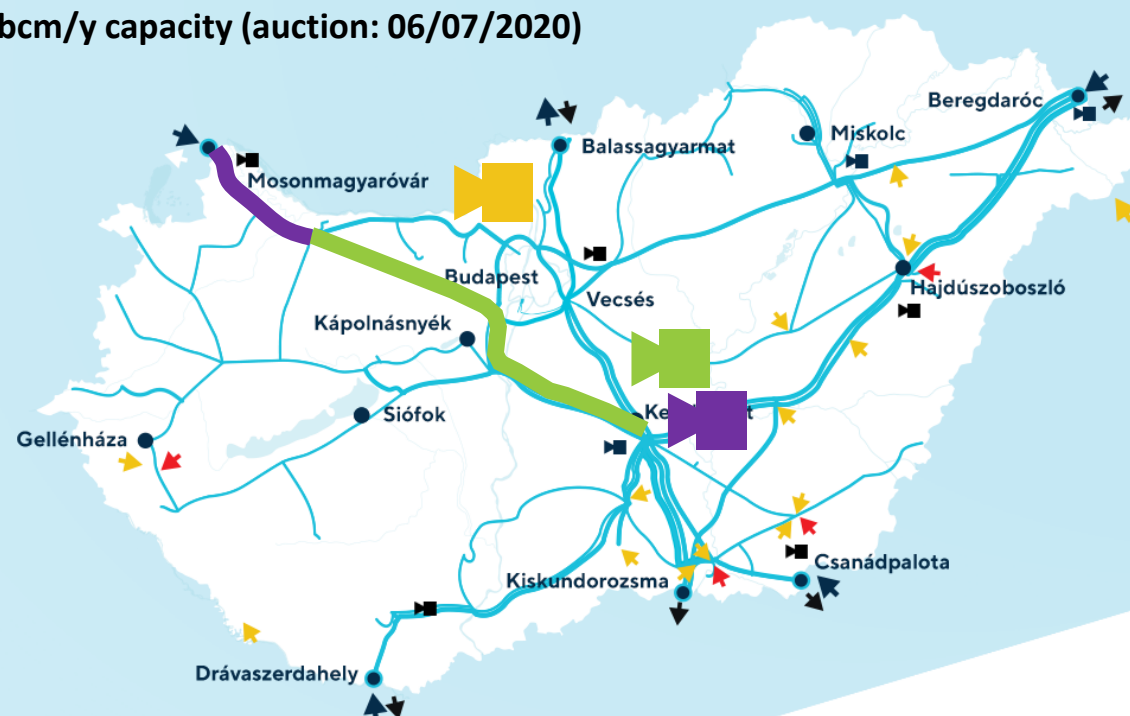
- Variant 2: 9.0 bcm/y (1,300,000 cm/h):

- Városföld-Ercsi-Győr 205 km, DN1000, PN75 pipeline,
- Ercsi-Százhalombatta 11 km, DN800 pipeline,
- New CS near Városföld, 50 MW. 
- Győr-HU/AT border 71 km, DN800, PN75 pipeline

- Expected date of commercial operation: 01/10/2024

- The condition for the implementation of the project is the positive conclusion of the binding incremental capacity auction procedure prescribed by the Resolution ACER 05/2019 of the Agency for the Cooperation of Energy Regulators (hereinafter: ACER) and held on the basis of the Rule Book approved by HEA in its Decision H1343/2020.

PROJECT



Conditionally approved projects

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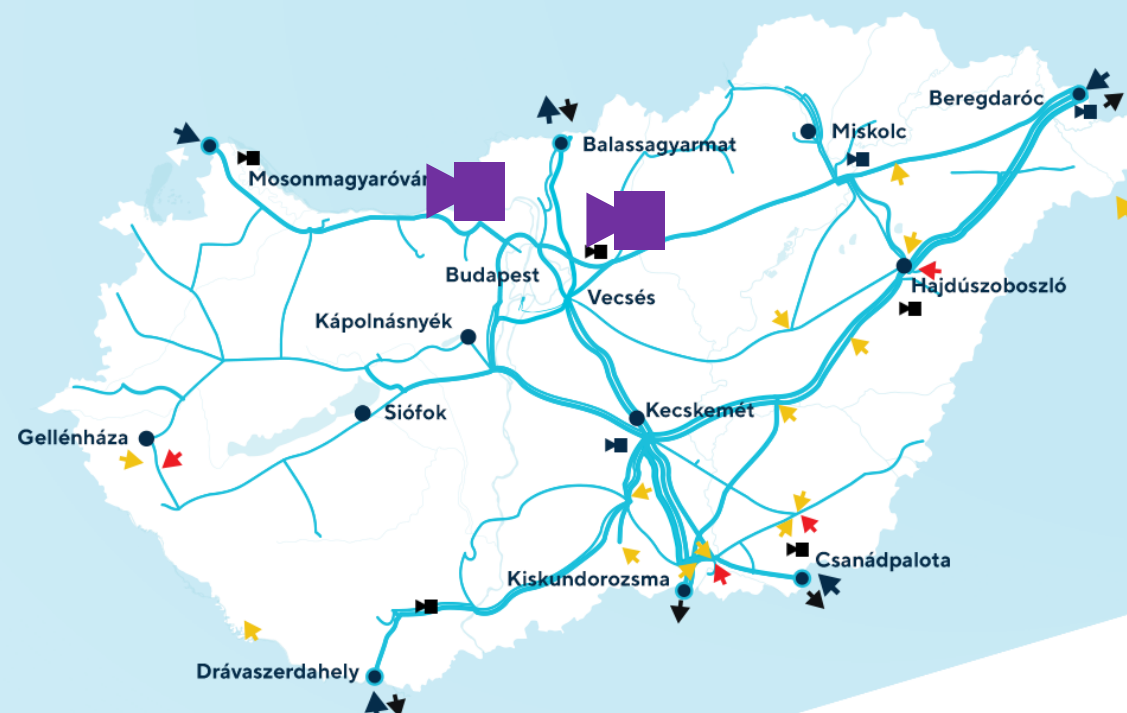
PROJECT DESCRIPTION

Ensuring capacity demands in direction HU>SK

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

- Projects:
 - New electrically driven compressor station at Szada (2 x 8 MW) + replacement of bundles of existing compressors.
 - Development of Gödöllő junction point
 - New CS at Dorog 3 x 5,7 MW
- Expected date of commercial operation: 01/10/2024
- The condition for the implementation of the project is the conclusion of the binding HU>SK incremental capacity auction procedure approved by the HEA with its decision H1344/2020 with a positive result.

PROJECT



Projects subject to further investigation

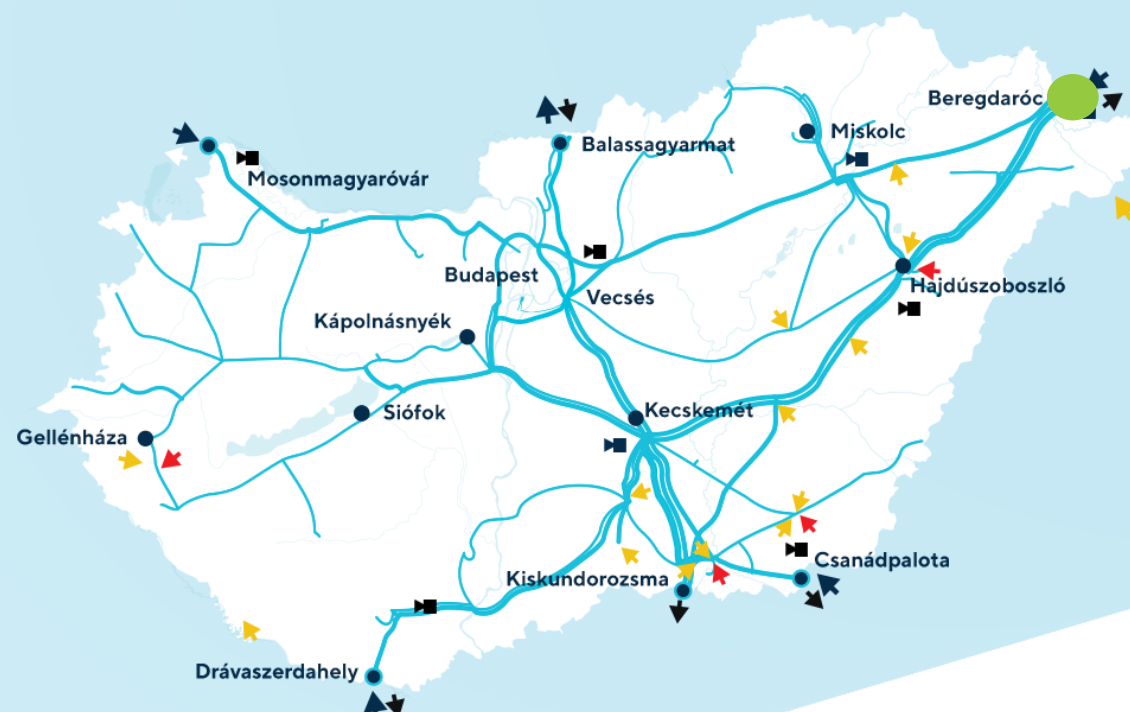
20

PROJECT DESCRIPTION

Ensuring firm capacity from Hungary to Ukraine

- The project ensures 800,000 cm³/h firm capacity towards Ukraine.
- A 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.
- Until 1 October 2020, the transmission system operator shall initiate the addendum of the development plan related to the project in accordance with Decision H1596/2020. of HEA.

PROJECT



Projects subject to further investigation

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PROJECT DESCRIPTION

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).
- The necessity of the project shall be reviewed every year until 2025, until the submission of the 10-year development proposal 2026.

Capacity expansion of Balassagyarmat GMS, SK>HU capacity increasing up to 800 000 cm/h

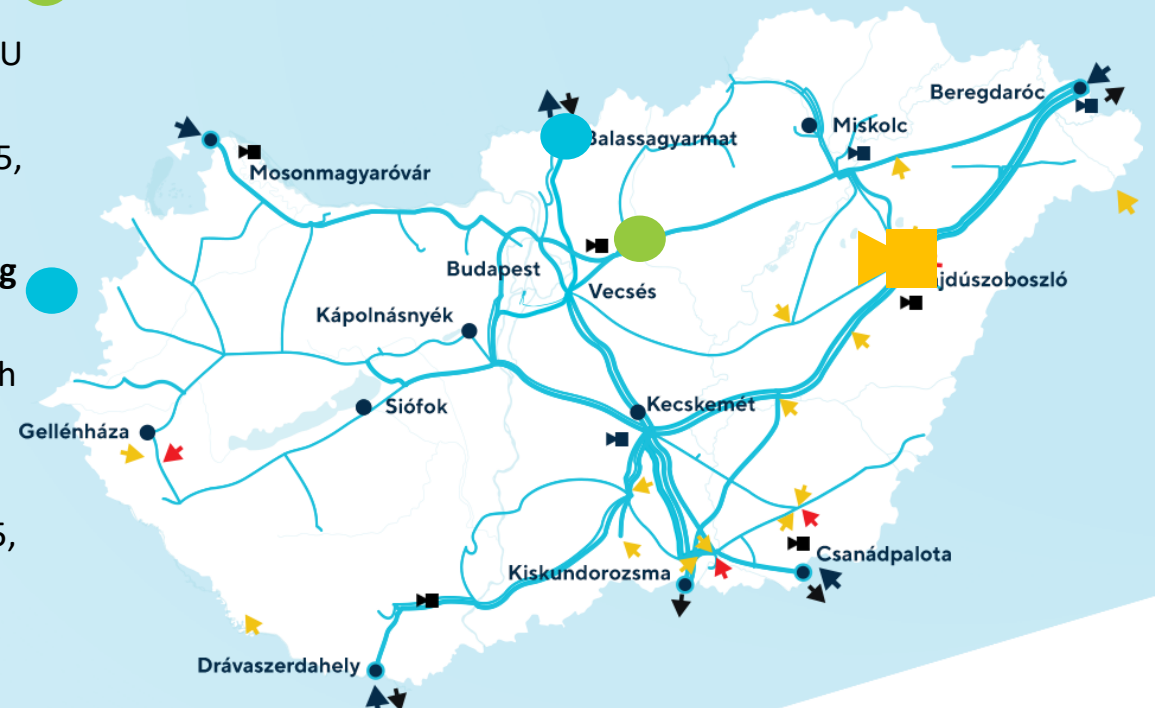
- The project ensures 800,000 cm/h (500,000 cm/h firm + 300,000 cm/h interruptible) capacity from Slovakia to Hungary.
- Project: capacity expansion of Balassagyarmat GMS
- The necessity of the project shall be reviewed every year until 2025, until the submission of the 10-year development proposal 2026.

New compressor unit at CS Hajdúszoboszló

The project ensures additional transmission in the direction HU>UA .

- Project:
 - New compressor unit at Hajdúszoboszló.
- Expected commissioning date: to be defined later

PROJECT



Projects subject to further investigation

22

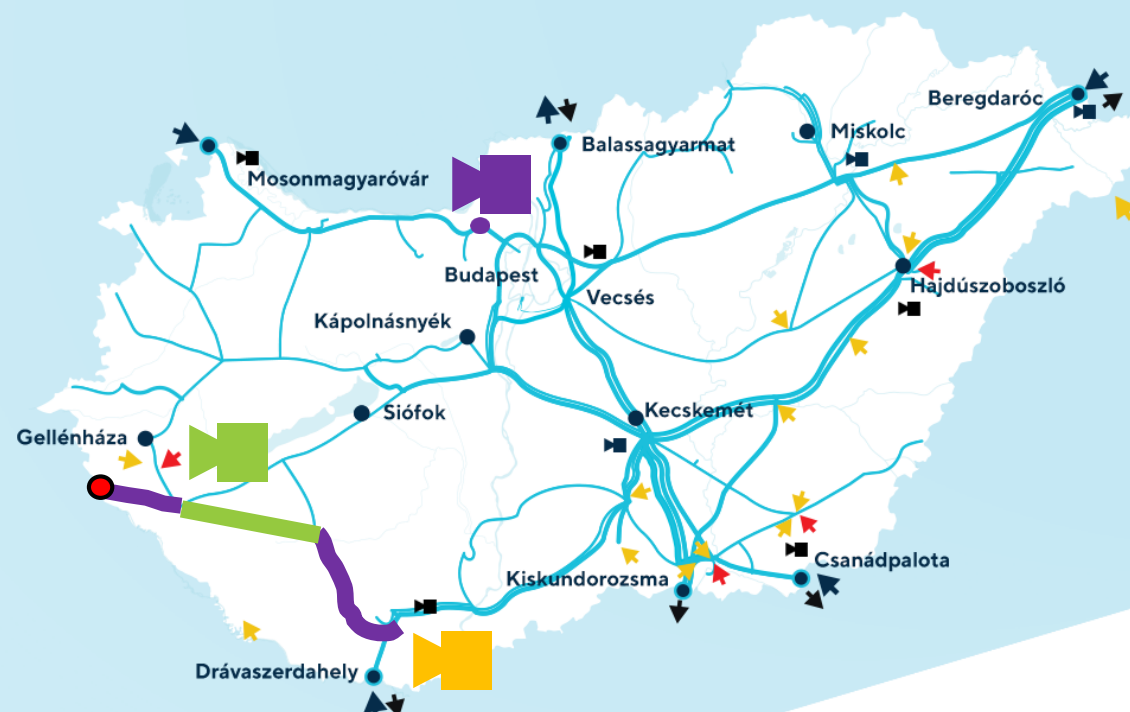
PROJECT DESCRIPTION

Slovenian-Hungarian interconnector

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 for Variant 1: establishment CS Dorog;
 - Variant 1: 0.4 bcm/y (max: 50,000 cm/h): SI/HU border-Toronyiszentmiklós-Nagykanizsa 41 km, DN600, PN75; Toronyiszentmiklós metering station;
 - Variant 2: 1.66 bcm/y (190,000 cm/h): Variant 1 + new CS at 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 subject to further investigation

23

PROJECT DESCRIPTION

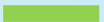
Enhancing security of supply of Transdanubia

The project increases the security of Supply of Transdanubia.

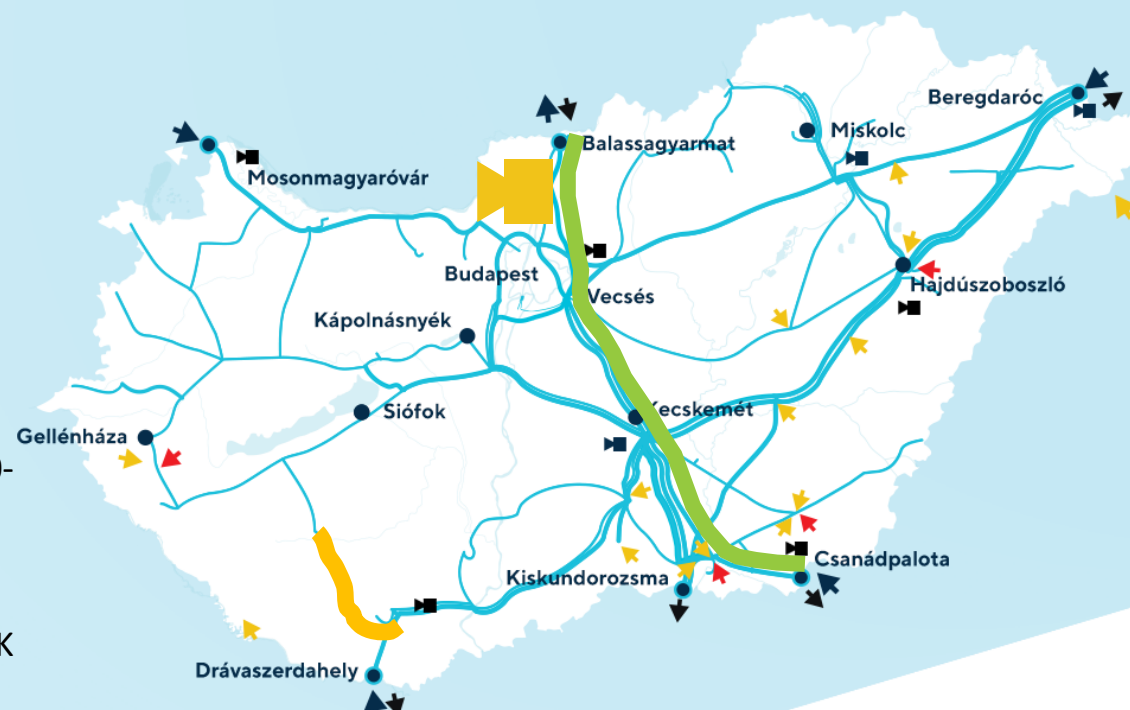
- Projects:
 - New CS at Dorog (3 x 5,7 MW); 
 - Kozármisleny-Kaposvár pipeline, 
- Expected commissioning date: to be defined later

EASTRING

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

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

PROJECT



Projects subject to further investigation

24

PROJECT DESCRIPTION

Ensuring capacity demands in direction HU>AT with 0.9 bcm/y or 1.0 bcm/y capacity

The project ensures transmission in the direction HU>AT.

- Projects:
 - Variant 1, 0.9 bcm/y (100,000 cm/h): New CS at Dorog (3 x 5,7 MW); Kozármisleny-Kaposvár, automatic change of direction at Mosonmagyaróvár, pressure management agreement with Gas Connect Austria.
 - Variant 1, 1.1 bcm/y (120,000 cm/h): + new CS at Adony (2 x 5,4 MW).
- Expected commissioning date: 01/10/2024
- According to the Decree no. H1596/2020 of HEA the HU>AT with 0.9 bcm/y or 1.0 bcm/y capacity, the new CS at Dorog and the Kozármisleny-Kaposvár pipeline should be assessed together further.

PROJECT

