ENERGIAÜGYI MINISZTÉRIUM

Current energy policy challenges

Attila STEINER

State secretary for energy and climate policy
Ministry of Energy

ERRA
20th Anniversary Annual Energy Conference
9th October 2023

Starting points and objectives

ENERGIAÜGYI MINISZTÉRIUM

Starting point

- **The era of cheap and accessible energy is over**
- **Import exposure:** energy carriers **not from own production**

EU average	**71 %**
Hungarian	**60 %***
Natural gas	87 %
Oil	86 %
Solid fossils	44 %
Electricity	30 %

* **76 %** if we take into account that the nuclear fuel is imported

Objectives

- Main energy policy objectives remain the same, but the **focus** has shifted to **energy sovereignty and affordability**
- There is a similar trend across Europe:
  - a new wave of nuclear energy,
  - the rise of renewables,
  - the carbon exit is postponed
- We will not give up on our climate commitments

Implementation of energy investments related to 3 intervention programmes

Main directions of intervention in the energy sector

ENERGIAÜGYI MINISZTÉRIUM

1

Reducing natural gas demand in the energy mix

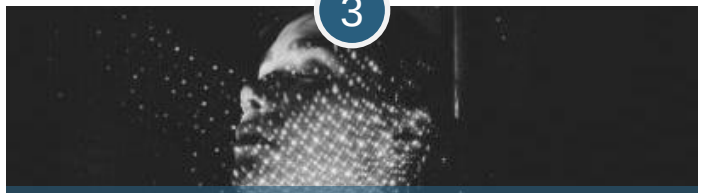
Reducing Hungary's natural gas demand and Russian import exposure through demand reduction, energy efficiency and electrification measures

2

Increasing the share of alternative energy sources

Exploitation of alternative sources of natural gas (domestic production, LNG, other import routes, e.g. Neptun field) and the use of biogas, biomass, geothermal energy, waste and hydrogen in the energy mix

3



Serving growing demand for electricity and flexibility

Meeting the growing demand for electricity and the need for flexibility brought about by the deployment of renewables through market organisation and regulation, new generation, storage capacity and infrastructure development

<u>Key regulatory challenge:</u> regulation should provide certainty in a rapidly changing environment which enables the energy sector to realize the required transition

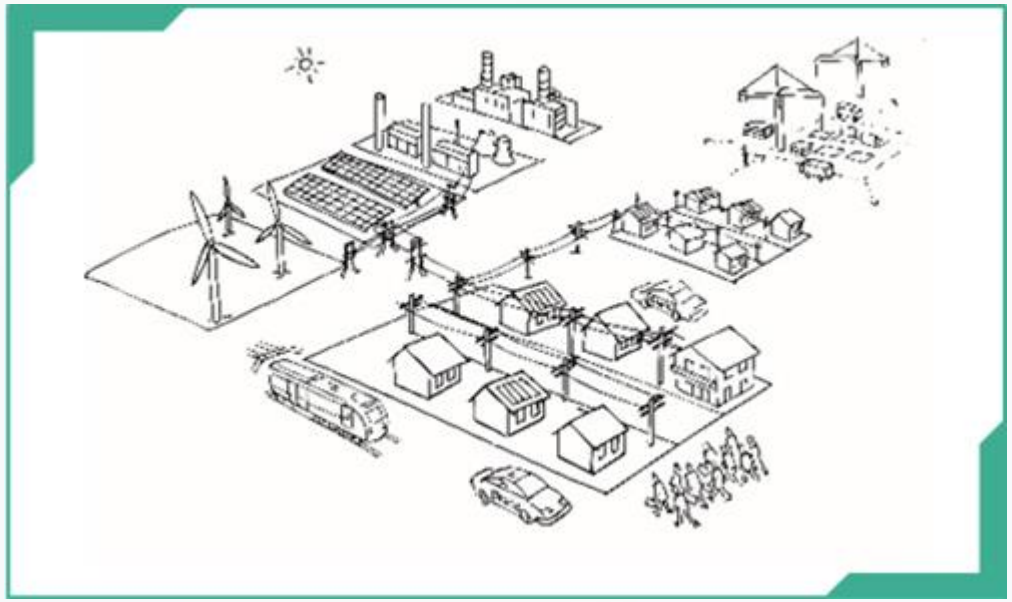
ENERGIAÜGYI MINISZTÉRIUM

Electricity, solar energy, nuclear energy

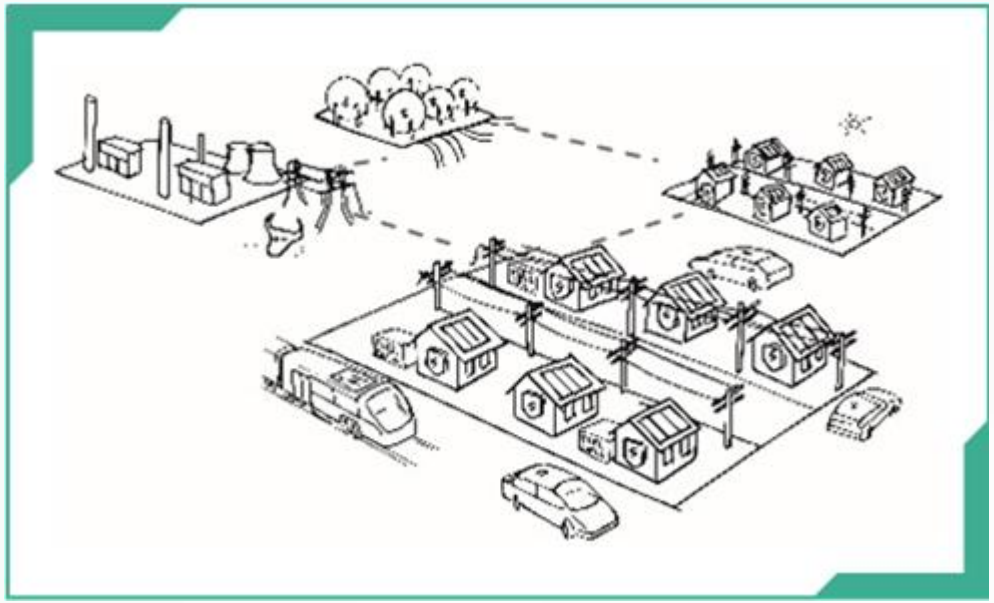
Changing grid characteristics require new regulatory approach

ENERGIAÜGYI MINISZTÉRIUM

base-load power plants → renewables → energy communities → strong TSO → strong microgrids



Strong central grid



Strong microgrids

Domestic solar boom

The role of solar energy in the energy supply continues to grow

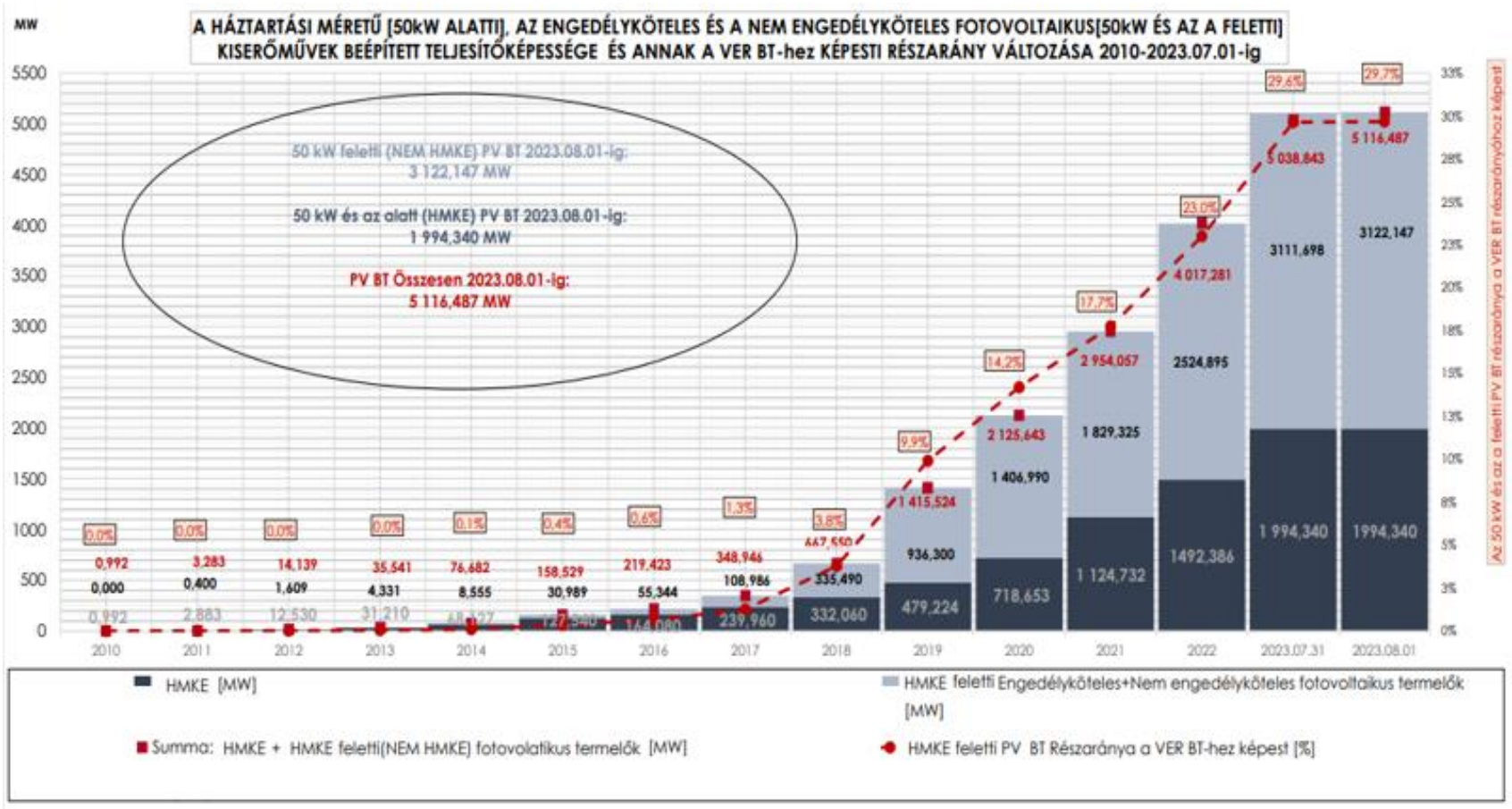
Energiaügyi Minisztérium

As a result of the Government's actions, domestic installed photovoltaic capacity has significantly exceeded previous estimates, now exceeding 5,300 MW.

Previous 2030 targets:
- 6000 MW PV
- 200 000 small scale electricity generating plant (4 kW)

The 2030 targets are not far:
- 5300 MW PV
- 205 000 household PV

New target of NECP:
- 12 000 MW PV



From energy dependence to energy sovereignty

Closed-cycle gas turbine, CCGT

Energiaügyi Minisztérium

Around 1500 MW of gas-fired power plants could be built in Hungary in the next one and a half decade

- natural gas fired
- high efficiency
- low CO2 intensity
- flexible control
- electricity generating gas turbine unit

Planned locations:

- Mátra Power Plant
- Tisza II. Power Plant

Renewal of back-up power plants

life extension of power plants at Litér, Bakony, Lőrinc, and Sajószöged

Képek forrása: youtube.com, power.mhi.com

Energy storage – helping market momentum

Form of support	Impact of investment on energy system	The impact of investment on consumers
▪ RRF1 investment aid of **HUF 62 billion** (max. 30% CAPEX) ▪ Energy storage METÁR cash box to be used for ~ **HUF 20 billion per year operating subsidy** (revenue compensation) ▪ The selection criterion is the unit cost of the operating grant requested per year, so **preference is given to cost-effectiveness** ▪ **Eligible capacities: 0.5 - 90 MW**	▪ At least **400 MW/800 MWh** of energy storage capacity can be realised ▪ **Increasing system-level balancing capacities, thereby reducing balancing payments**	**Reducing regulatory capacity charges could lead to grid fee savings.** Two scenarios outlined by MEKH: • **Best case:** consumers could save 6 Ft/kWh, while their burden increases by only ~0.76 Ft/kWh • **Least favourable:** no change in the level of the system charges, but no increase in the burden on the financing consumers, as no compensation is needed due to the high level of regulatory revenues left

From energy dependence to energy sovereignty

The inescapable role of Paks I and Paks II in energy supply

Energiaügyi Minisztérium

- **Exploit the additional potential** of the plant
- Nuclear capacity must be maintained and expanded
- **Paks I provides 1/3 of the country's average consumption**
- In order to achieve energy sovereignty and meet increased energy demand, **the operating life of Paks I should be extended**
- Fossil energy imports can be replaced, **providing a long-term clean solution**
- **Paks II project**
- **No sustainable climate policy without nuclear energy**

Small Modular Reactors; SMR

ENERGIAÜGYI MINISZTÉRIUM

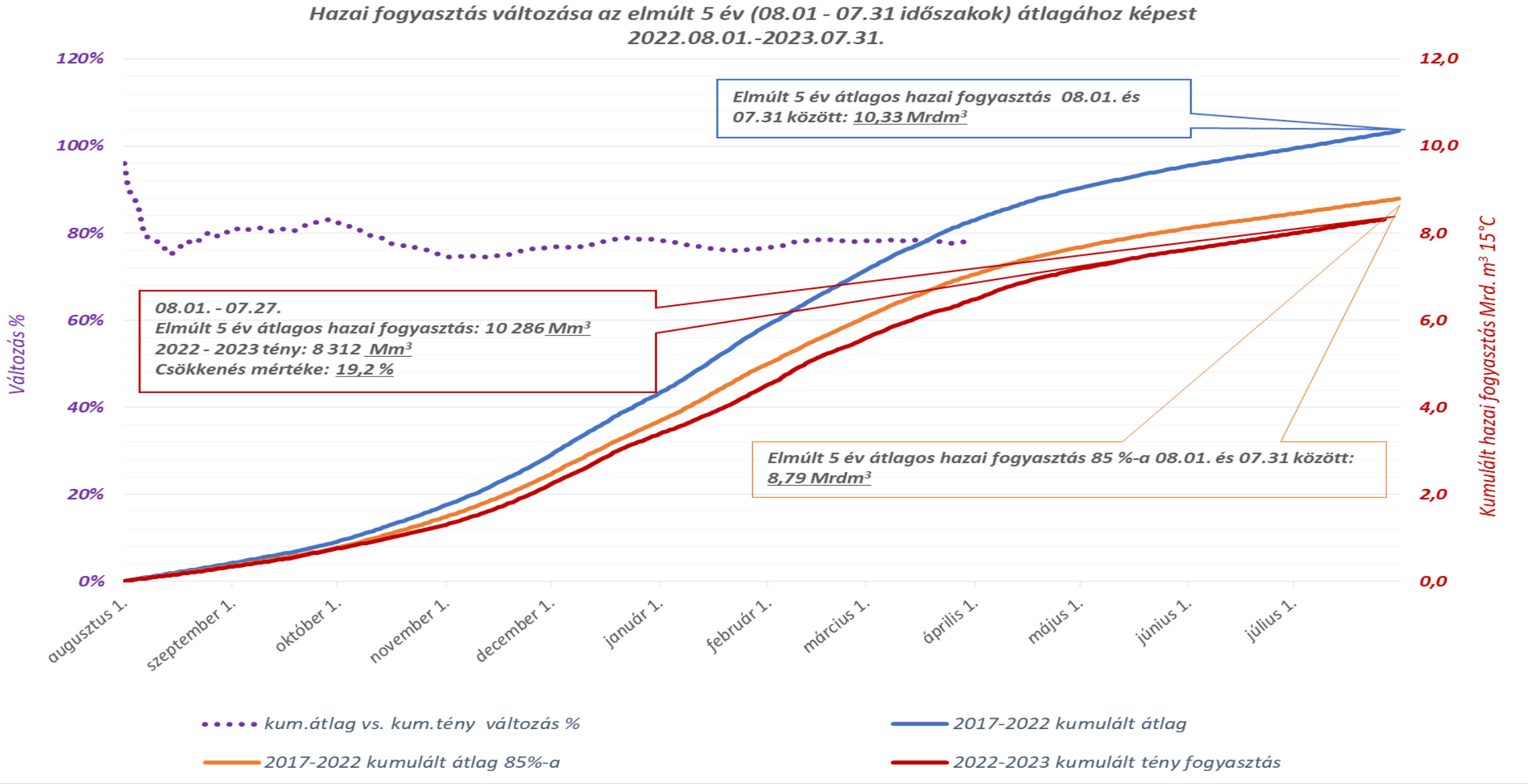
- **small nuclear power plants**, easier installation and production
- technology already in use (e.g. research reactors, nuclear submarines)
- **production of pressurised water-developed reactors is expected around 2030 at the earliest** (power generation SMRs)
- **international efforts** towards harmonised and standardised **regulation** (IAEA)
- there is a **strong interest** in the introduction of SMR technology **in our region: Romania, Czech Republic, Poland and Bulgaria** have started preparations
- Hungary is also following the technological developments

The visual design of NuScale

ENERGIAÜGYI MINISZTÉRIUM

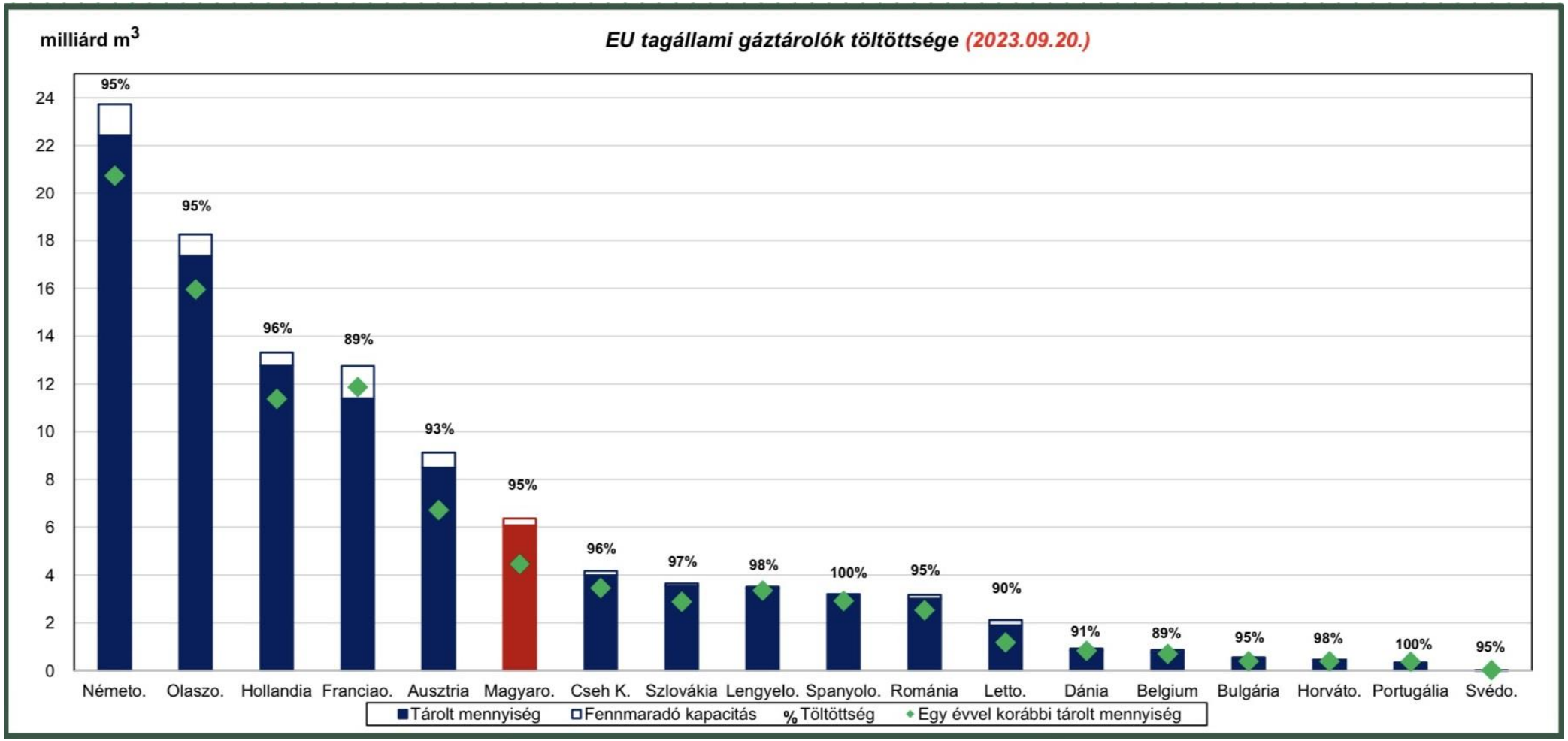
Natural gas

Trends in gas consumption



Member State natural gas storage levels

The filling of gas storage facilities is uninterrupted, with 95% of domestic storage facilities filled and the European average being 95.2%.



Capacities available at border points

AT>HU: 5,2 bcma available

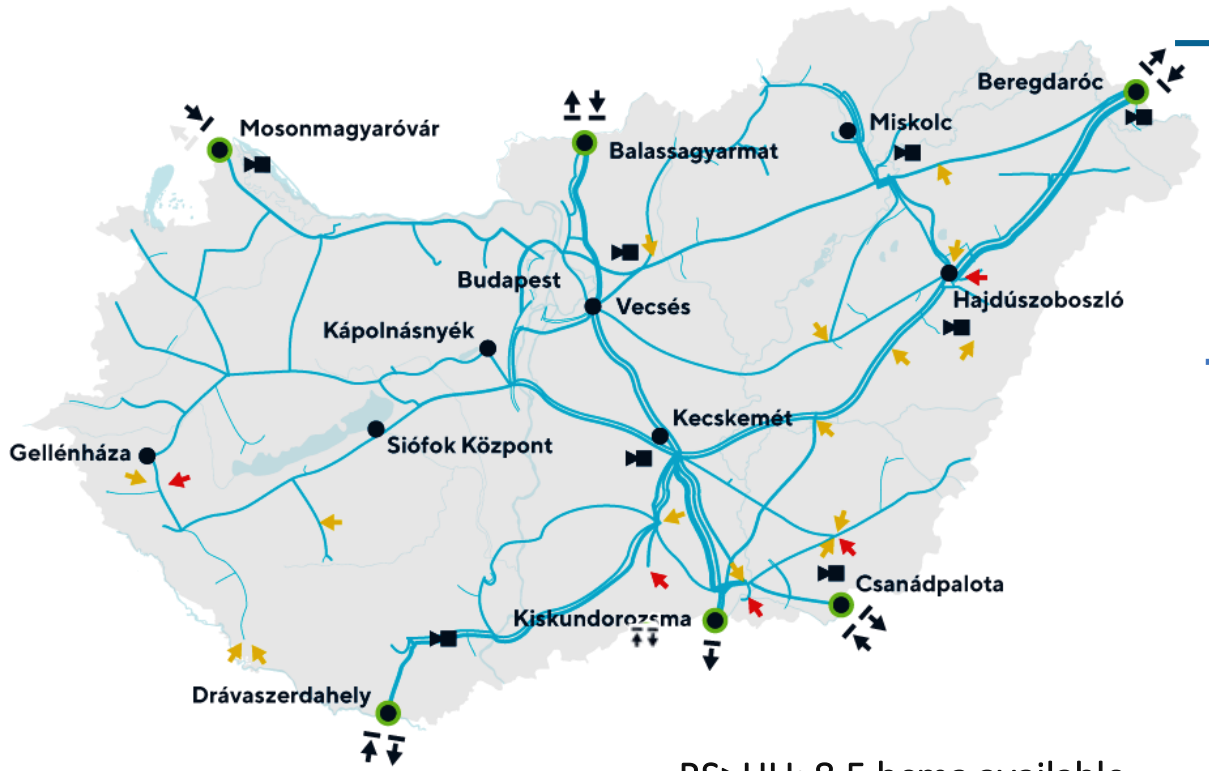
SK>HU: 4,4-6,1 bcma available

UA>HU: 17,5 bcma available

RO>HU: 1,75-3,3 bcma available

RS>HU: 8,5 bcma available

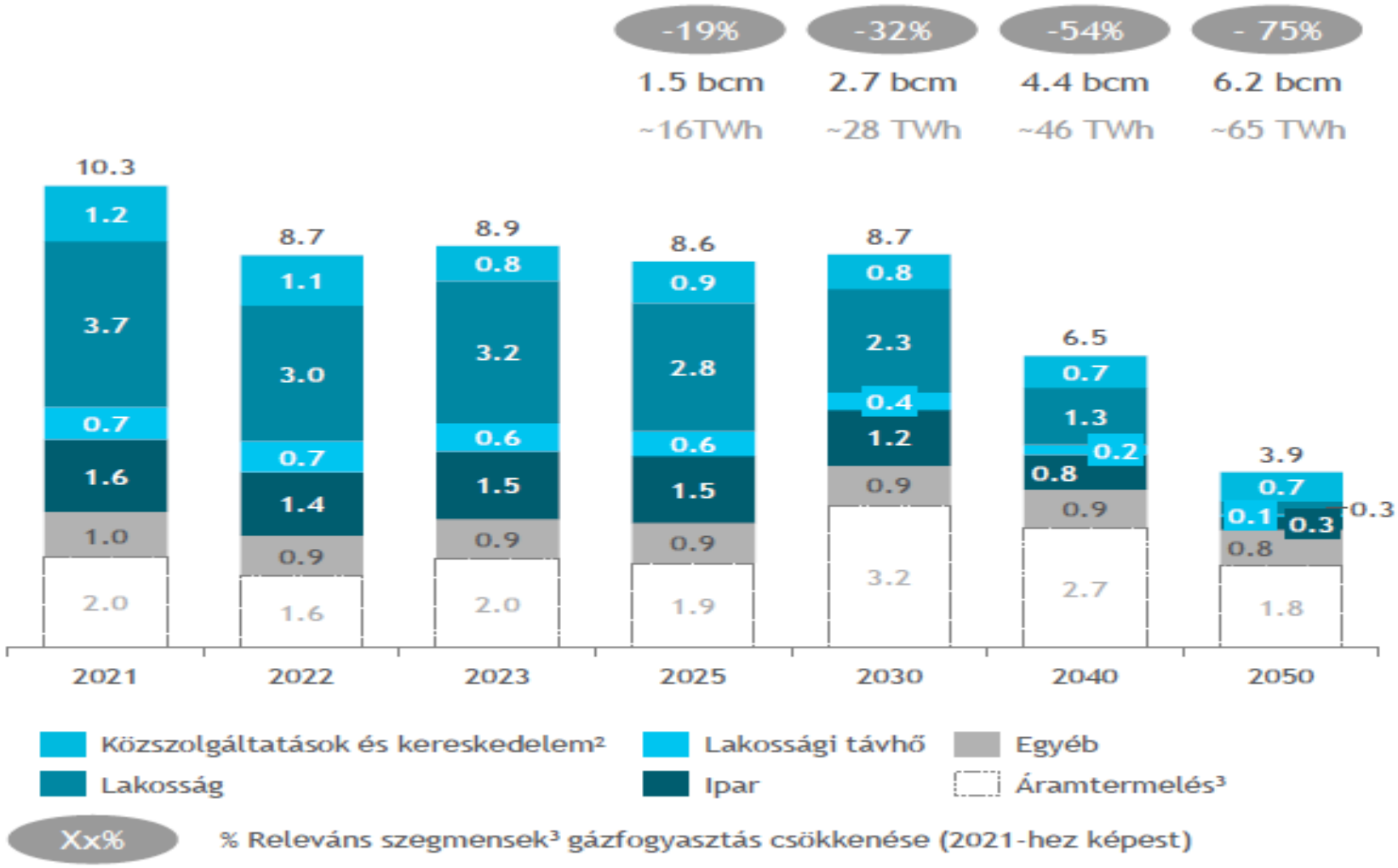
HR>HU: 1,75 bcma available



Explanation:

- Typically Russian source
- Alternative, non-Russian source

Expected reallocation of gas consumption



ENERGIAÜGYI MINISZTÉRIUM

Review of the National Energy and Climate Plan

Objectives of the revised National Energy and Climate Plan

ENERGIAÜGYI MINISZTÉRIUM

	In force NECP	New targets
GHG emissions reduction compared to 1990	At least 40%	**At least 50%**
Final energy consumption	No more than 785 PJ	**No more than 750 PJ**
Renovation of central government buildings		**3% of floor area per year to cost-optimal level**
Share of renewable energy in gross final energy consumption	At least 21%	**At least 29%**
Reduction of non-ETS emissions compared to 2005	At least 7%	**At least 18,7%**
GHG intensity of GDP	continuous reduction of GHG intensity	**continuous reduction of GHG intensity**
Import exposure – natural gas	80% (based on import dependency ratio)	**80% (share of non-domestic production in total consumption)**
Electricity system interconnection rates	min 60%	**min 60%**
Number of innovation pilot projects implemented	min 20	**min 20**
Number of international patents registered during the implementation of pilot projects	min. 10	**min. 10**

ENERGIAÜGYI MINISZTÉRIUM

Recovery and Resilience Plan REPowerEU Chapter (RRF2)

REPowerEU investments

ENERGIAÜGYI MINISZTÉRIUM

		Support framework (billion HUF)	Total cost (billion HUF)
REPower EU non-reimbursable Member State investment			
Energy infrastructure development	Electricity network development	262,32	262,32
REPowerEU credit line investments			
Energy infrastructure development	Electricity network development and digitalisation	95,49	95,49
	Security of supply investments in gas storage	18,72	18,72
Industrial development and greening	Greening industrial parks for energy	201,14	510,9
	Green economic manufacturing capacity building	200,00	508
	Green technologies	42,40	107,7
	Digitalisation developments for energy services	90,00	228,6
	Energy efficiency improvements in enterprises	175,49	175,49
	Hydrogen investments	70,40	127,7
	Strengthening human resources in the green economy	13,99	15,15
Renewable energy and energy efficiency (Enhancing our energy sovereignty)	Utilisation of geothermal energy	159,58	159,58
	Energy efficiency investments in public buildings	62,80	99,7
	Residential energy efficiency investments	224,00	278
Alternatively powered mobility	Railway electrification	37,73	37,73
	Support for the purchase of electric vehicles by businesses	60,00	116,4
	Development of electric charging network	30,10	42,5
	IN TOTAL (grant + loan)	**1 744,16**	**2 875,7**

ENERGIAÜGYI MINISZTÉRIUM

Thank you for your attention!