



MINISTRY OF
FOREIGN AFFAIRS AND TRADE
OF HUNGARY

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REKK

NEPCS OF DANUBE REGION COUNTRIES - NATURAL GAS MARKETS

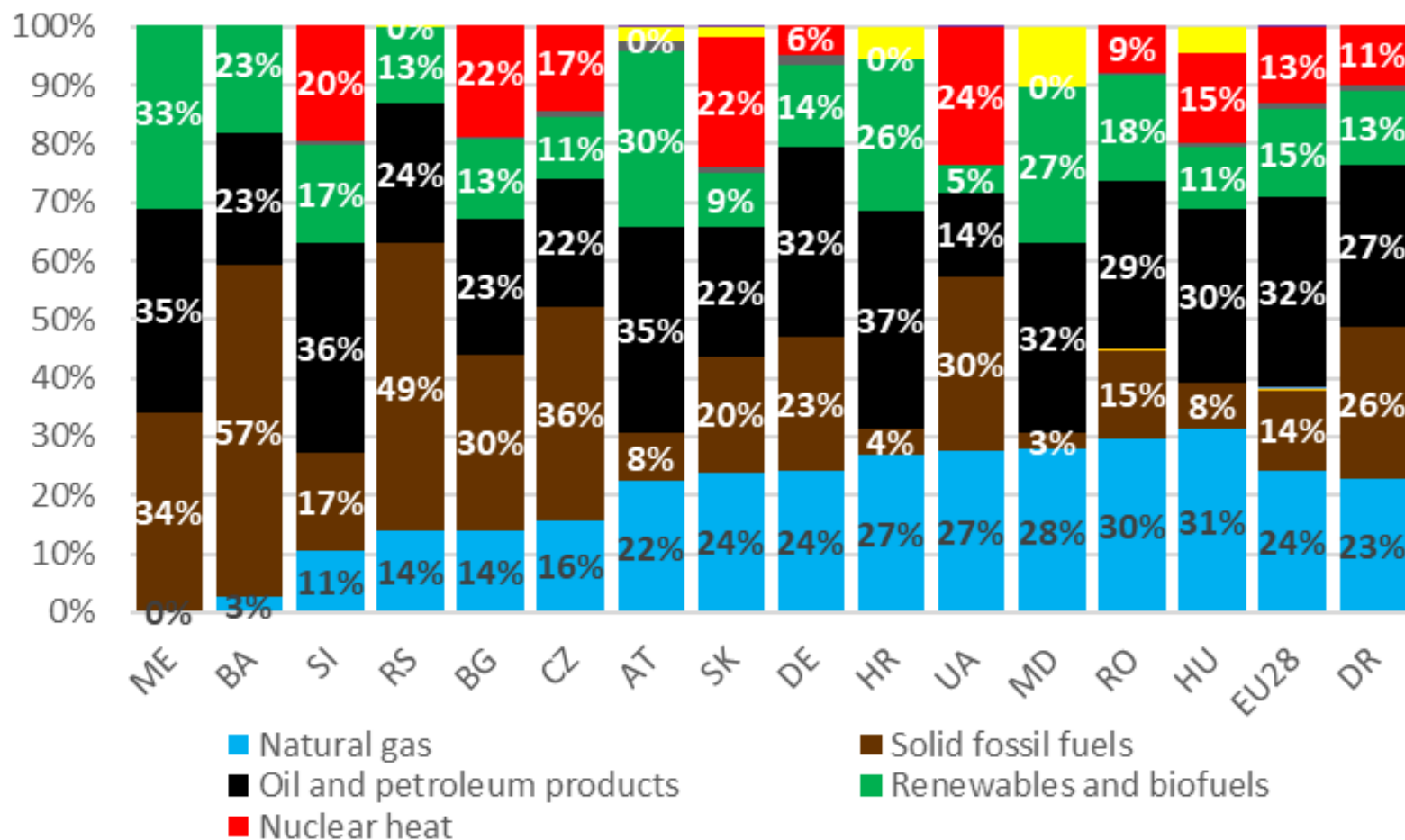
*National Energy and Climate Plans in
the Danube Region*

Online workshop

May 6, 2021 10:00 - 12:00 a.m.

DR countries gas markets are very diverse

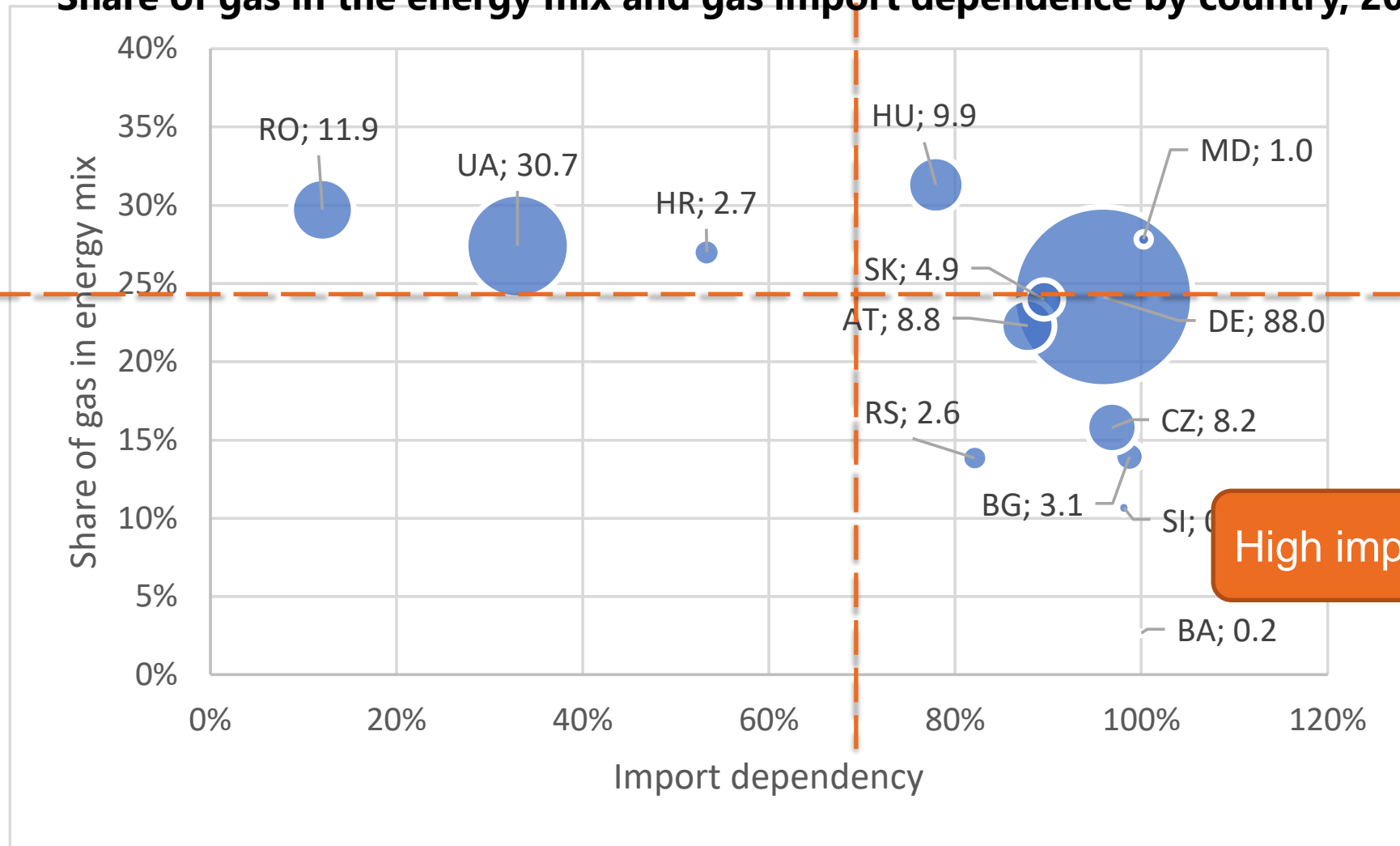
Fuel mix of the total primary energy supply in the Danube Region and in the EU28 (2018)



Source: Eurostat

Altogether a 170 bcm/yr gas market

Share of gas in the energy mix and gas import dependence by country, 2018



Addition to gas

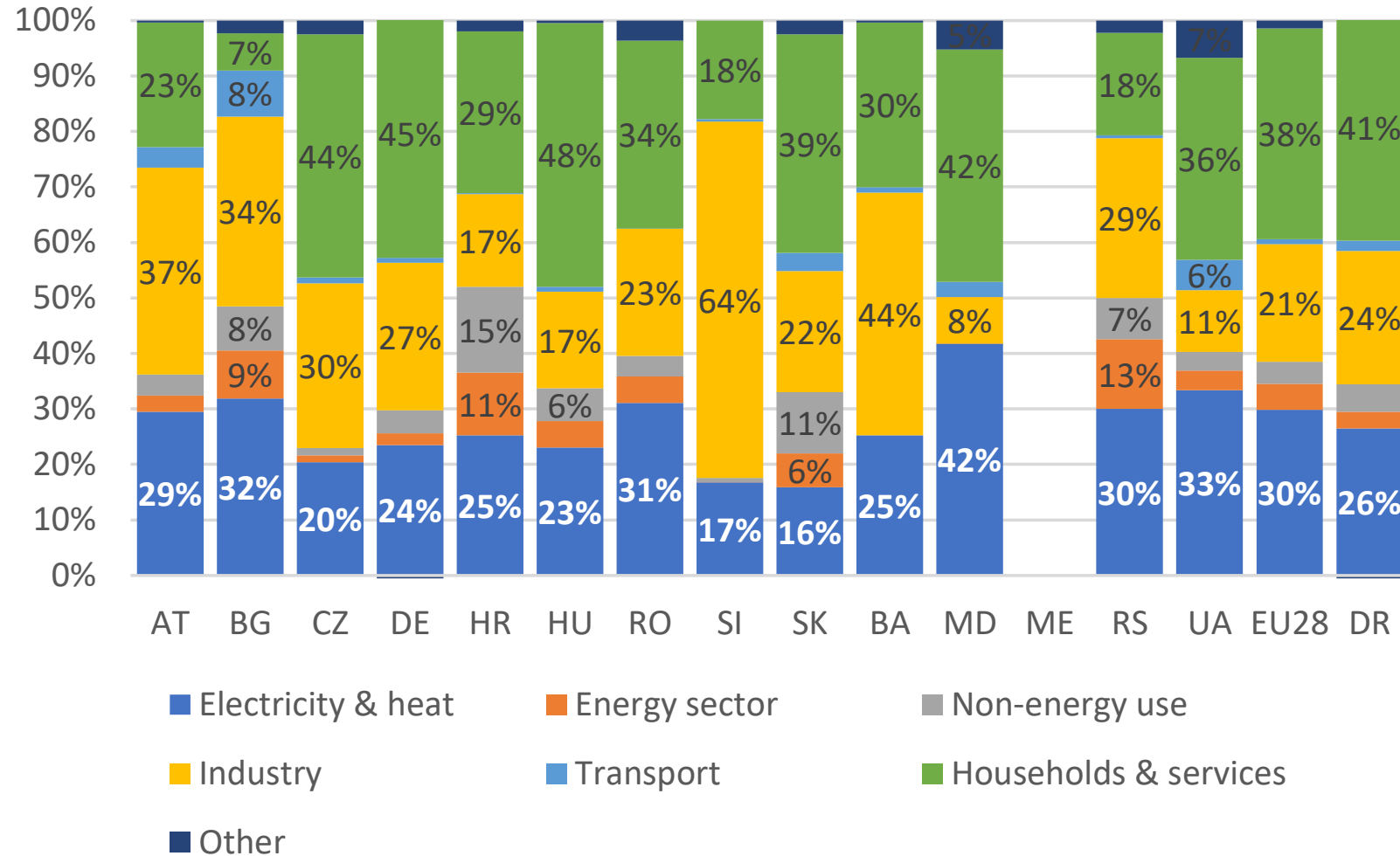
HU, MD, DE, SK

High import dependence

Source: Eurostat

Sectoral distribution also varies

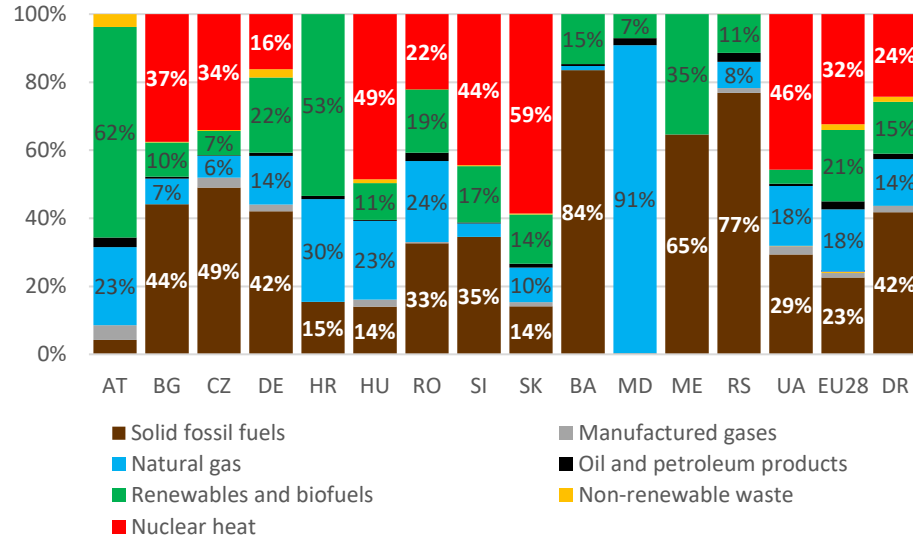
Structure of gas consumption by sectors in the Danube Region (2018)



Source: Eurostat

Energy sector natural gas consumption & decarbonization

Fuel mix of the electricity and heat generation in the Danube Region and in the EU28 (2018)



Room for coal to gas switch

Source: Eurostat

Measures related to fuel switch in the energy sector

Electricity production and district heating	AT	BG	CZ	DE	HR	HU	RO	SI	SK	BA	MD	ME	RS	UA
Coal phase out	Implementation	Proposed, but no targets, measures	Not in target / No information	Implementation	Not in target / No information	Policy formulation / decision making	Proposed, but no targets, measures	Proposed, but no targets, measures	Policy formulation / decision making	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Proposed, but no targets, measures
District heating switch to gas	Not in target / No information	Proposed, but no targets, measures	Implementation	Implementation	Policy formulation / decision making	Not in target / No information	Not in target / No information	Not in target / No information	Implementation	Proposed, but no targets, measures	Proposed, but no targets, measures	Proposed, but no targets, measures	Proposed, but no targets, measures	Implementation
District heating switch to RES-H	Proposed, but no targets, measures	Not in target / No information	Not in target / No information	Implementation	Policy formulation / decision making	Implementation	Policy formulation / decision making	Policy formulation / decision making	Implementation	Not in target / No information	Implementation	Not in target / No information	Not in target / No information	Not in target / No information

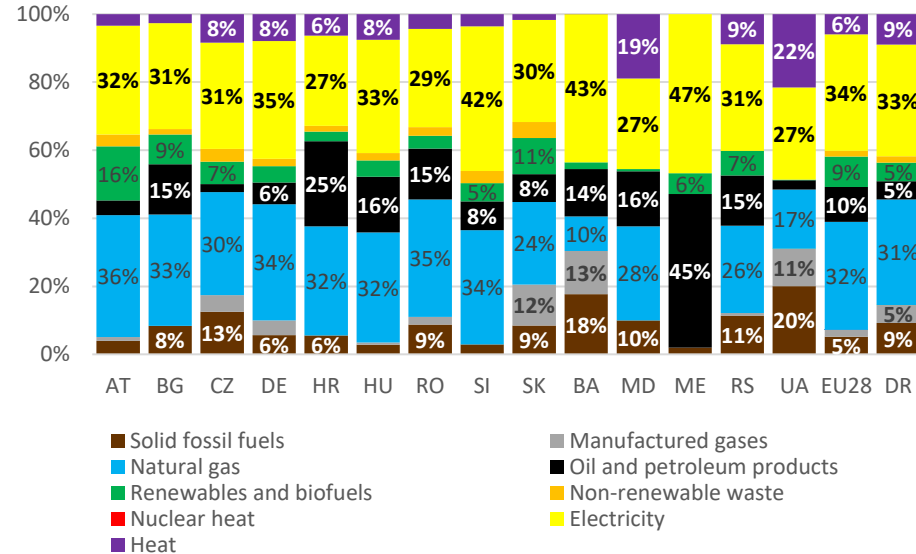
Not in target / No information
 Proposed, but no targets, measures
 Policy formulation / decision making
 Implementation

- Coal phase out dates are rarely set
- Gas based CHPs replace existing solid or liquid fossil fuel based units
- RES based units replace retiring gas based CHPs

Source: NECPs, Strategies

Industry: few concrete measures

Final energy consumption of the Industry sector in the DR and in the EU28, %, 2018

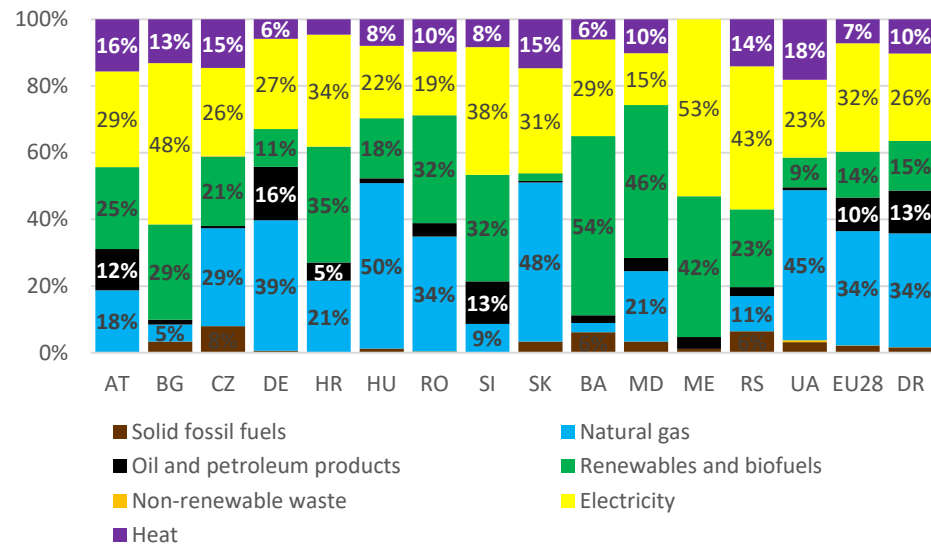


- Some countries refer to goals without any specific measures, especially those with huge potential to decrease energy intensity (e.g. Ukraine, Moldova).
- Industrial gas consumption is less impacted by measures and volume shifts to date, as the full decarbonisation plans need further technological development. (pace of industrial process innovation, availability of low-cost zero carbon electricity and hydrogen, price evolution of carbon capture, storage)

Source: Eurostat

Households: gas in gas out

Fuel mix of the households and service sectors in the DR and in the EU28 (2018)



Room for biomass to gas switch

Source: Eurostat

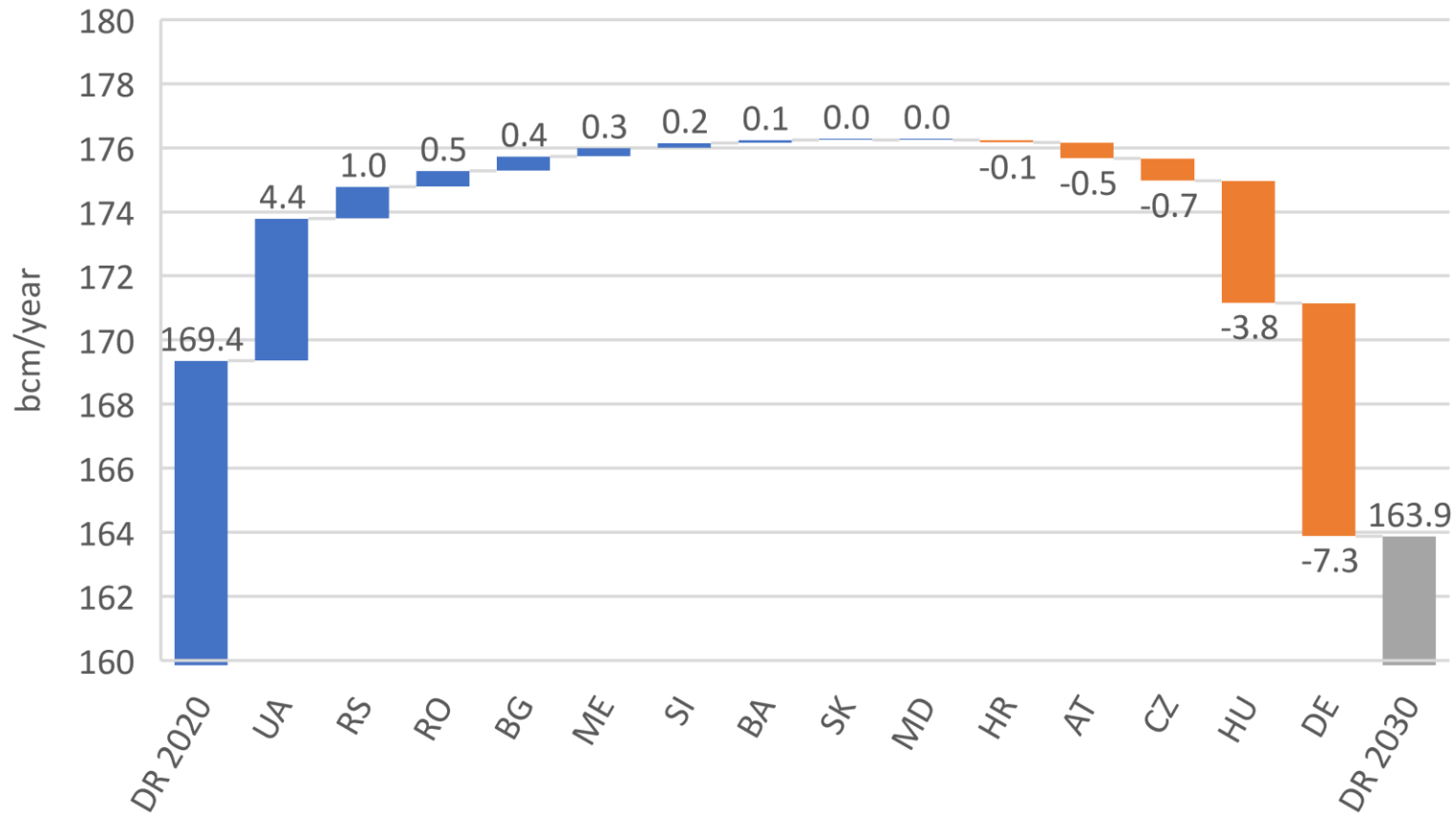
Measures related to HH and services

Household measures	AT	BG	CZ	DE	HR	HU	RO	SI	SK	BA	MD	ME	RS	UA
Energy efficiency targeting gas use				Dark Green	Yellow	Light Green	Yellow	Dark Green			Dark Green		Light Green	Dark Green
Phasing out oil/old (coal) burning furnaces	Dark Green	Dark Green						Light Green						
Support for switch to (efficient) gas heating		Yellow	Dark Green			Dark Green				Yellow	Light Green		Yellow	Yellow
Existing gas change to RES	Yellow		Dark Green			Light Green		Light Green						
Support RES in household	Yellow		Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Light Green	Dark Green	Yellow	Dark Green	Light Green	Yellow	Yellow

- Gas is difficult to phase out once it is established – lock in: limiting connection to gas, decommissioning of underutilized DSO grids
- Still plans to build DSO gas grids in non-EU countries
- General support for RES

Impact of measures on gas consumption results in ~ 3% drop by 2030

Change in gas consumption in the Danube Region 2020-2030 (bcm/yr)



Source: NECPs and, national strategy documents. The changes refer to the difference between 2020 WEM and 2030 WAM projections

To serve the stagnating demand a lot of plans



Measures related gas infrastructure

Infrastructure	A T	B G	C Z	D E	H R	H U	R O	S I	S K	B A	M D	M E	R S	U A
Storage		■	■		■		■		■				■	■
LNG				■	■									
distribution system development		■			■		■			■	■	■	■	
distribution system decommissioning						■								
transmission system upgrade to H ₂	■		■	■	■	■			■					

□ Not in target / No information ■ Proposed, but no targets, measures ■ Policy formulation / decision making ■ Implementation

Disclaimer: This map serves for illustration purposes. Not all projects mentioned in the NECPs and strategies are included. Bold lines indicate the large transmission projects of outside suppliers. Arrows indicate that existing pipeline has capacity extension or reverse flow. Cross border projects within region are depicted only when both countries explicitly mention the importance of the project in the NECP. Source: NECPs and national strategy documents.

75% of capacity extension is planned in countries with decreasing consumption

	Entry 2019	Entry FID	ENTSOG NECP	Growth according to NECP	NECP
	GWh/d	GWh/d	GWh/d	%	Million EUR
AT	2126	0	167	8%	100
BG	1405	1222	626	45%	1941
CZ	1807	2238	2593	143%	805
DE¹	7413	4287	4442	60%	6900
HR	132	272	1587	1202%	1382
HU	811	151	1900	234%	277
RO	1174	42	672	57%	2343
SI	149	0	165	111%	0
SK	3490	1505	1851	53%	529
BA	18	0	154	857%	101
ME²	94	42	42	45%	0
MD³	0	0	17		0
RS⁴	142	415	759	535%	164
UA	9335	29	376	4%	190
TOTAL	28094	10203	15348		14732

Findings and policy recommendations

FINDINGS

- No clear vision of how to decarbonize any of the sectors with significant shares of natural gas
- No clear vision on the future of gas – BUT no doubt that it will play a significant role in the next decades
- Production of declining domestic resources is rapidly maximized

RECOMMENDATIONS

- Do not provide subsidies to fossil fuels and those in operation should be phased out
- Do not invest in future stranded assets! Introducing natural gas to new markets should not be supported. Gas can be a bridging fuel where the infrastructure already exists, but in not yet gasified markets renewable solutions should be the way forward.
- Provide decarbonized alternative heating at affordable prices for low-income consumers
- Energy efficiency and building renovation plans must be supported through training and education of skilled workers and by setting up reliable and independent advisory service transparently

Thank you for your attention!

Disclaimer: Opinions expressed in this presentation are those of the authors. They do not necessarily represent REKK's or the Danube Region Strategy's views.

For questions feel free to contact: Borbála Takácsné Tóth and Peter Kotek

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Points for discussion

- Contradiction: Pipeline investment in markets with decreasing gas consumption
- Energy sector has coal to gas switch potential – will it happen, what are the barriers?
- Household sector: is it worth to invest in gas for a household consumer from an economic perspective? From a decarbonization perspective? Is there a difference between newly gasified and mature countries? What can be done to avoid lock ins?