



MINISTRY OF  
FOREIGN AFFAIRS AND TRADE  
OF HUNGARY

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REKK

# NECPS OF DANUBE REGION COUNTRIES – RENEWABLE HEATING AND COOLING

*National Energy and Climate Plans in  
the Danube Region*

*Online workshop*

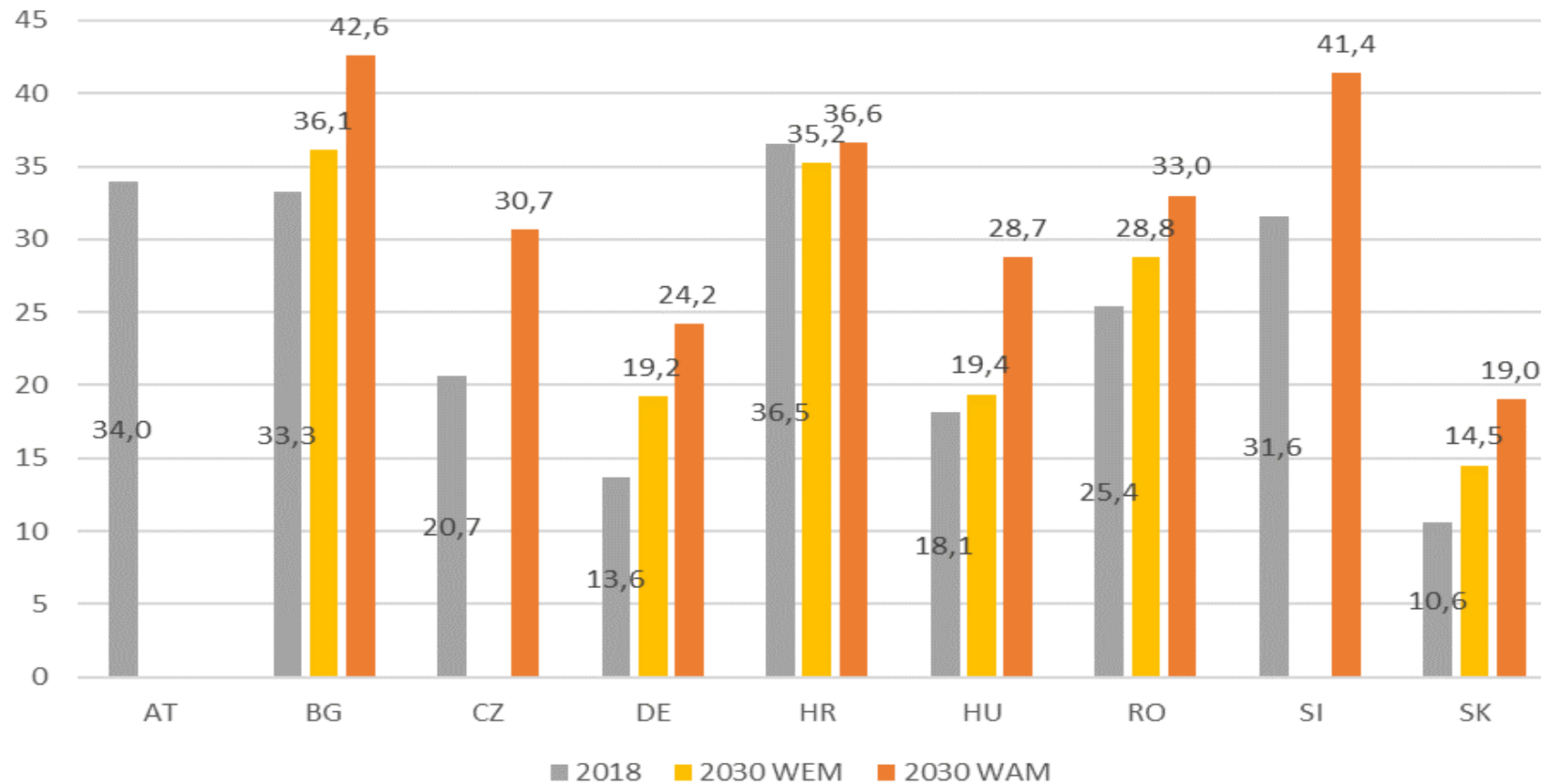
*May 20, 2021 10:00 - 12:00 a.m.*

# Targets and regulation related to RES-H

- The sector plays a very important role in reaching the overarching RES targets
- The 2018 Renewable Directive (EU 2018/2001, RED II) does not define binding sectoral RES share target but sets the following for heating and cooling:
  - Increase RES share by an indicative annual average of 1.3% from 2021
  - Set a minimum level of RES for new buildings and buildings subject to major renovation, if economically and technically feasible
  - Increase the share of renewable and waste heat / cooling in district heating and cooling systems by 1% annually.
  - Obligation to connect providers with these heat sources to their network unless it is not feasible
- Each country voluntarily defines its own indicative sectoral ambitions

# Current RES shares and projections for 2030

SHARE OF RENEWABLE ENERGY IN THE H&C SECTOR COMPARED TO 2030 WEM AND WAM SCENARIOS (%)



# Policies and measures in the sector

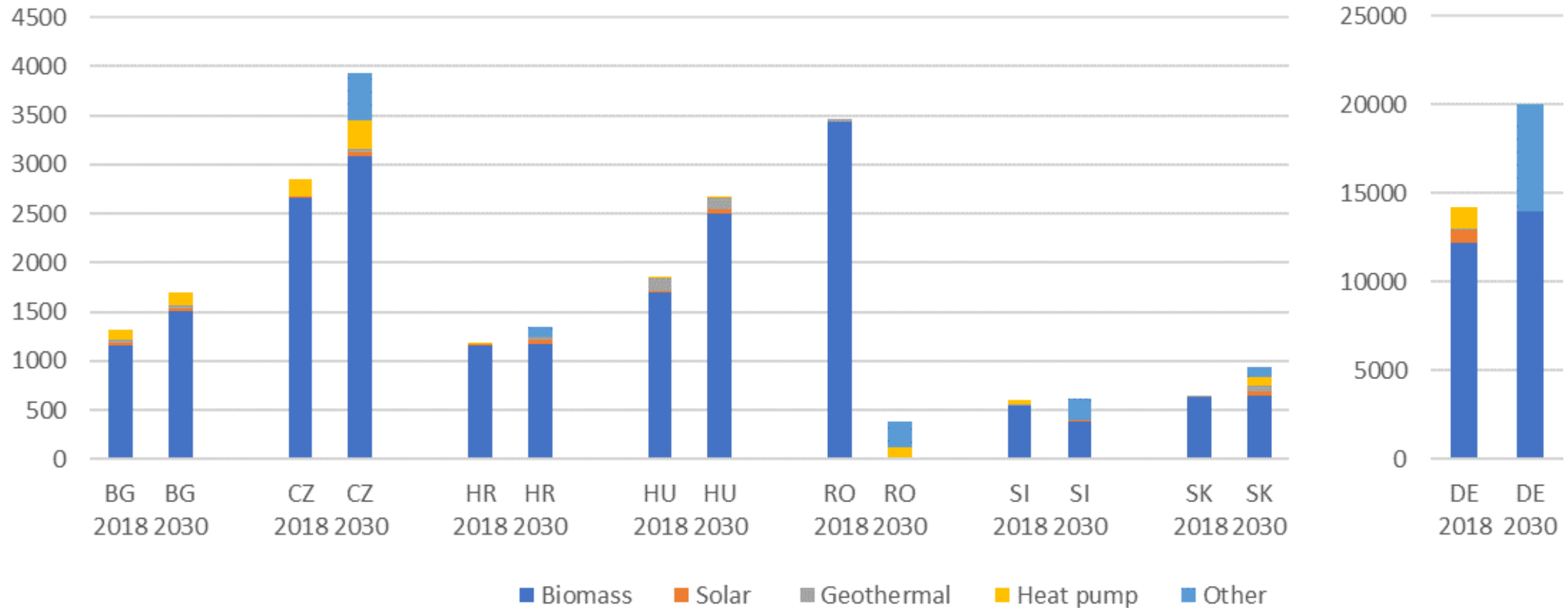
- Lack of experience with well established support schemes like feed-in-tariff, operating support is rare
- Investment support is the most common in the sector
- Introduction of guarantees of origin are among the plans of some DR countries
- Specific policies target RES integration in district heating

Financial instruments	AT	BG	CZ	DE	HR	HU	RO	SI	SK
Investment support	Implementation	Policy formulation / decision making	Implementation	Policy formulation / decision making	Implementation	Implementation	Implementation	Policy formulation / decision making	Proposed, but no targets, measures
Operating support	Not in target / No information	Not in target / No information	Implementation	Not in target / No information	Not in target / No information	Proposed, but no targets, measures	Not in target / No information	Not in target / No information	Policy formulation / decision making
Price subsidy	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Policy formulation / decision making
Refundable aid	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Not in target / No information	Policy formulation / decision making	Not in target / No information	Not in target / No information	Not in target / No information
Guarantees of origin	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	Not in target / No information	Not in target / No information	Not in target / No information

System development	AT	BG	CZ	DE	HR	HU	RO	SI	SK
Building new RES based district heating	Not in target / No information	Policy formulation / decision making	Proposed, but no targets, measures	Policy formulation / decision making	Policy formulation / decision making	Not in target / No information	Implementation	Implementation	Proposed, but no targets, measures
Refurbishment of existing systems	Policy formulation / decision making	Proposed, but no targets, measures	Proposed, but no targets, measures	Policy formulation / decision making	Not in target / No information	Policy formulation / decision making	Implementation	Not in target / No information	Implementation
Individual heating	Policy formulation / decision making	Implementation	Not in target / No information	Policy formulation / decision making	Policy formulation / decision making	Implementation	Not in target / No information	Not in target / No information	Policy formulation / decision making

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

# CURRENT AND EXPECTED (WAM) CONSUMPTION OF RES-H IN THE DR (KTOE)



# Geothermal potential

- Geothermal energy could be available for more than 1/4 of the EU population
- There are various support programs in the EU DR countries, although the planned pace of deployment is below the potential
- Non-EU DR countries do not include geothermal development in their strategies

EUROPEAN CITIES WITH DISTRICT HEATING SYSTEMS (LEFT) AND GEOTHERMAL HEAT AT 2000 M DEPTH

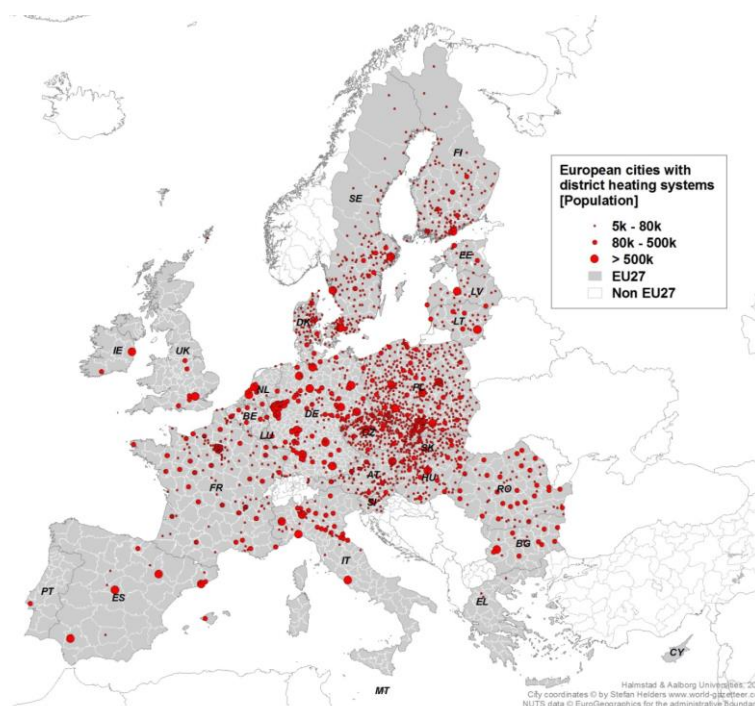


Figure 9: Cities with district heating systems in EU27 by city size and for cities having more than 5000 inhabitants. The map shows 2188 cities with 2445 systems [8].

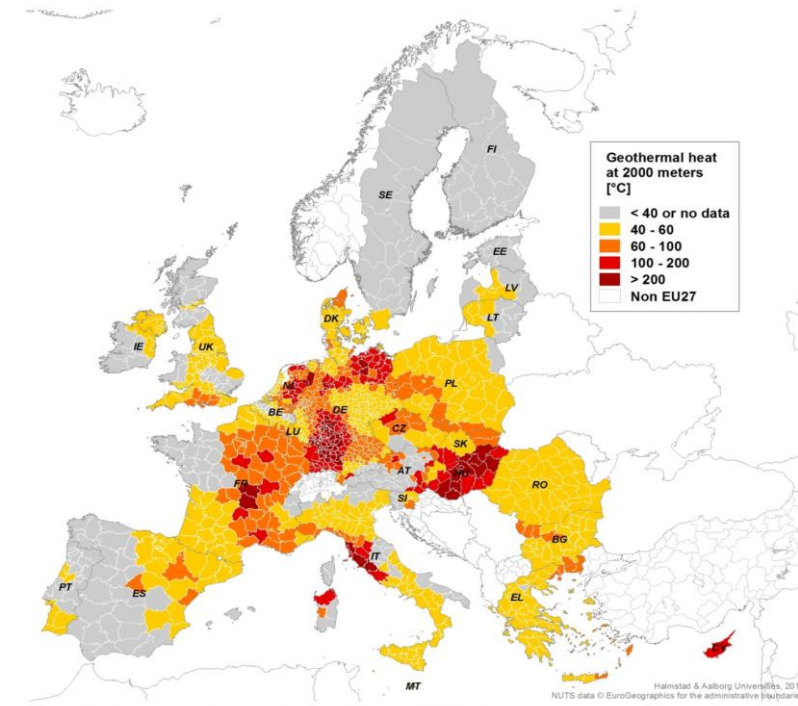
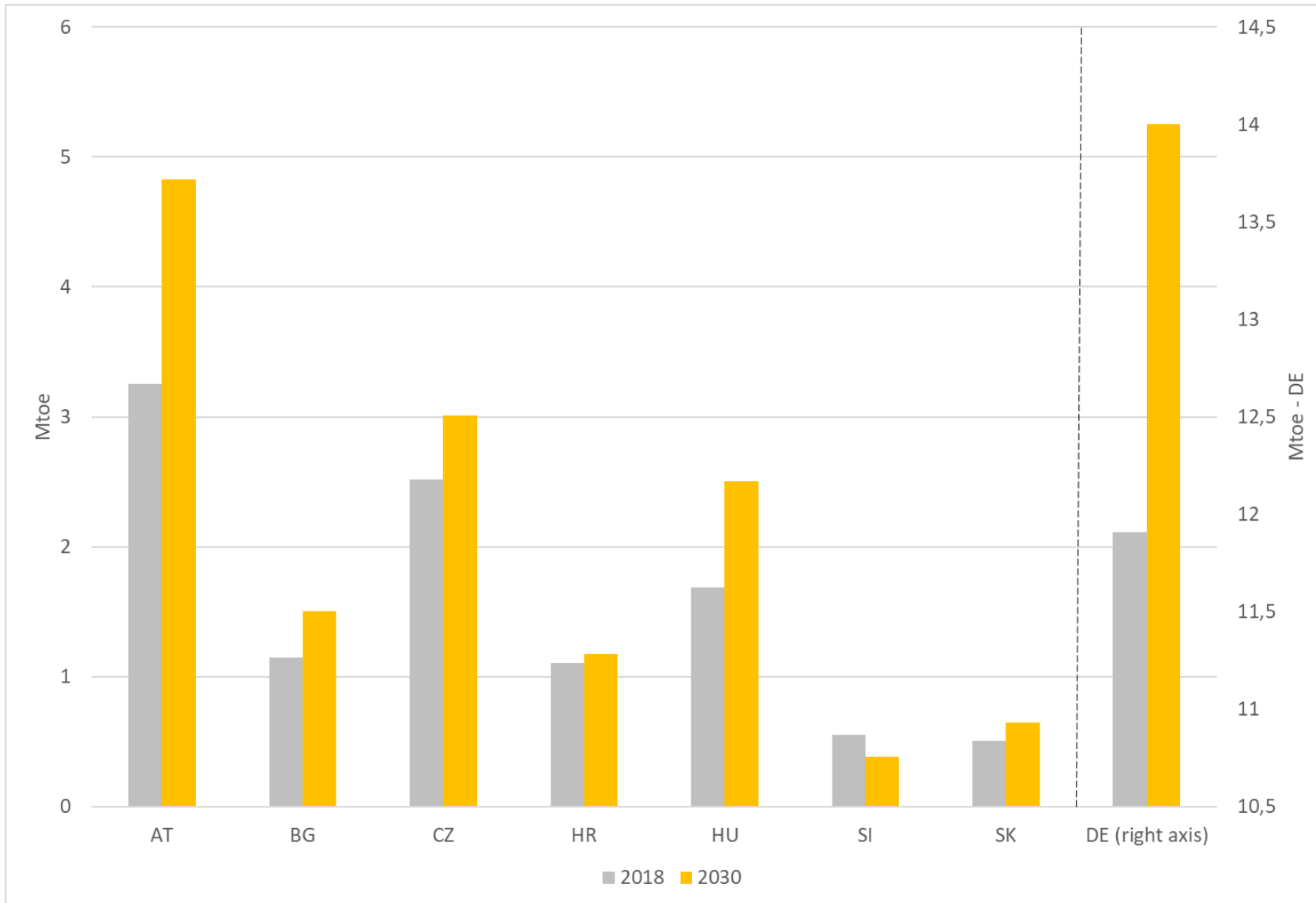


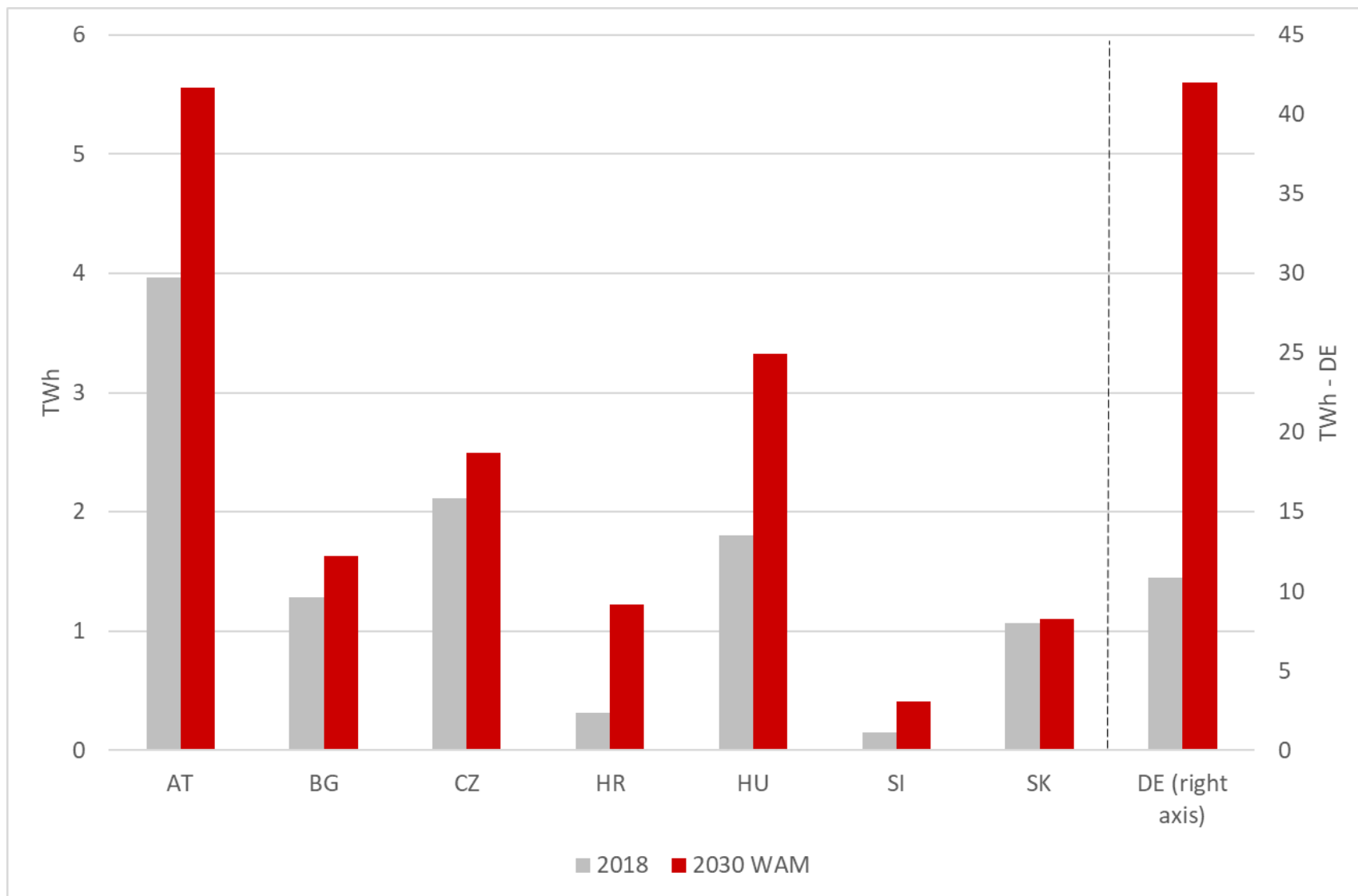
Figure 84: Identified geothermal heat resources by temperature at 2000 m depth by NUTS3 region. Source: European Commission, Atlas of Geothermal Resources in Europe. Publication EUR 17811, Luxembourg 2002.

## Biomass-to-heat has been the single largest renewable energy segment in the energy balances of DR countries, and still more is to come



- biomass has been the primary renewable energy option for DR countries
- ubiquitous and affordable mostly for household heating.
- altogether, the region is set to increase biomass heating by 24%, from 22.7 Mtoe in 2018 to 28.1 Mtoe in 2030 (with non-EU countries also included).

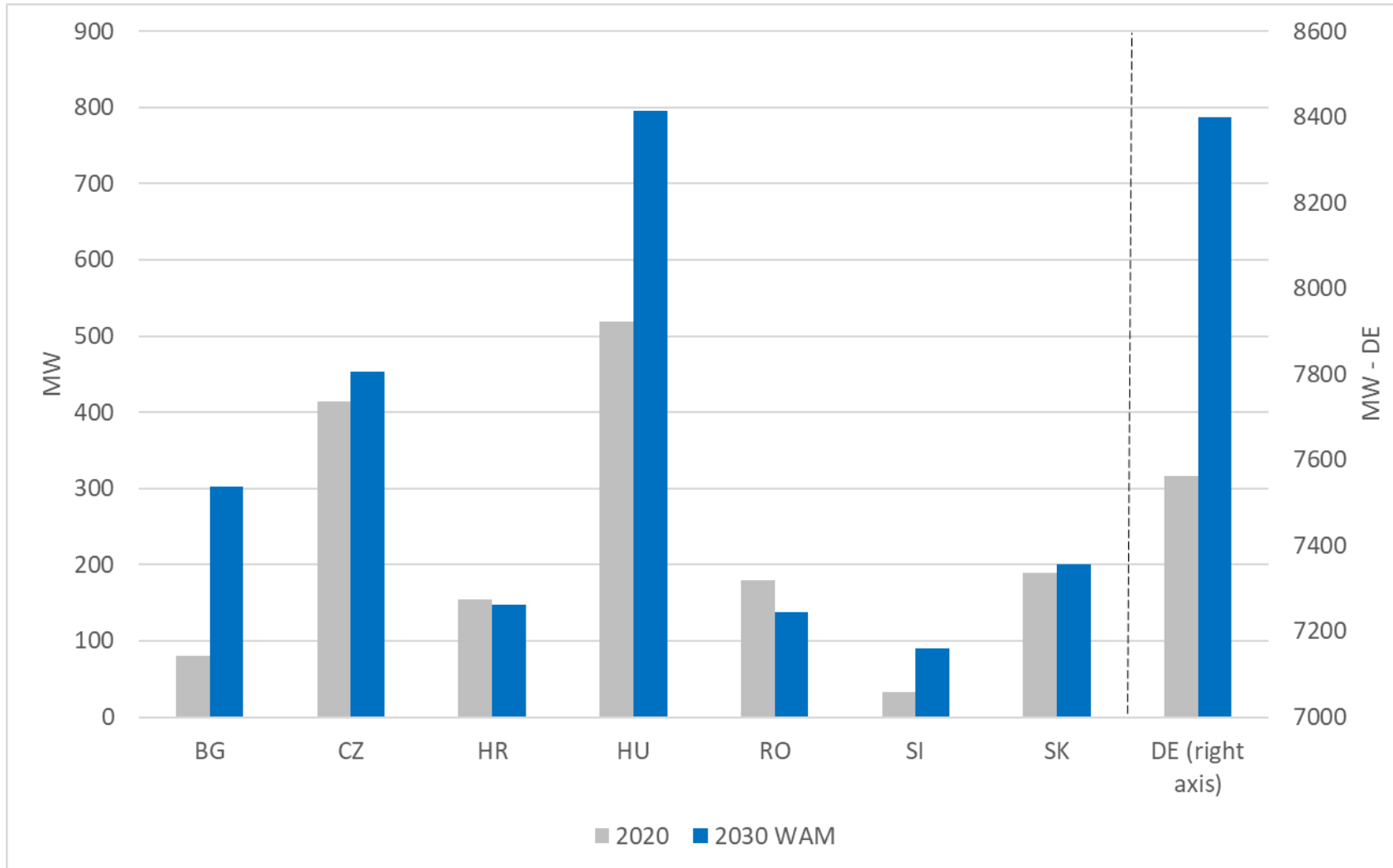
# Even more ambitious plans for biomass electricity



- widely shared conviction about the climate benefits of biomass combustion
- easily managed and economic co-firing with coal
- full fuel switching to prolong utilization of existing coal power capacities
- the cheapest renewable electricity technology of scale.
- combined increase for all DR countries (with RO missing): from 21.5 TWh in 2018 to 57.7 TWh by 2030, a rise of 168%.

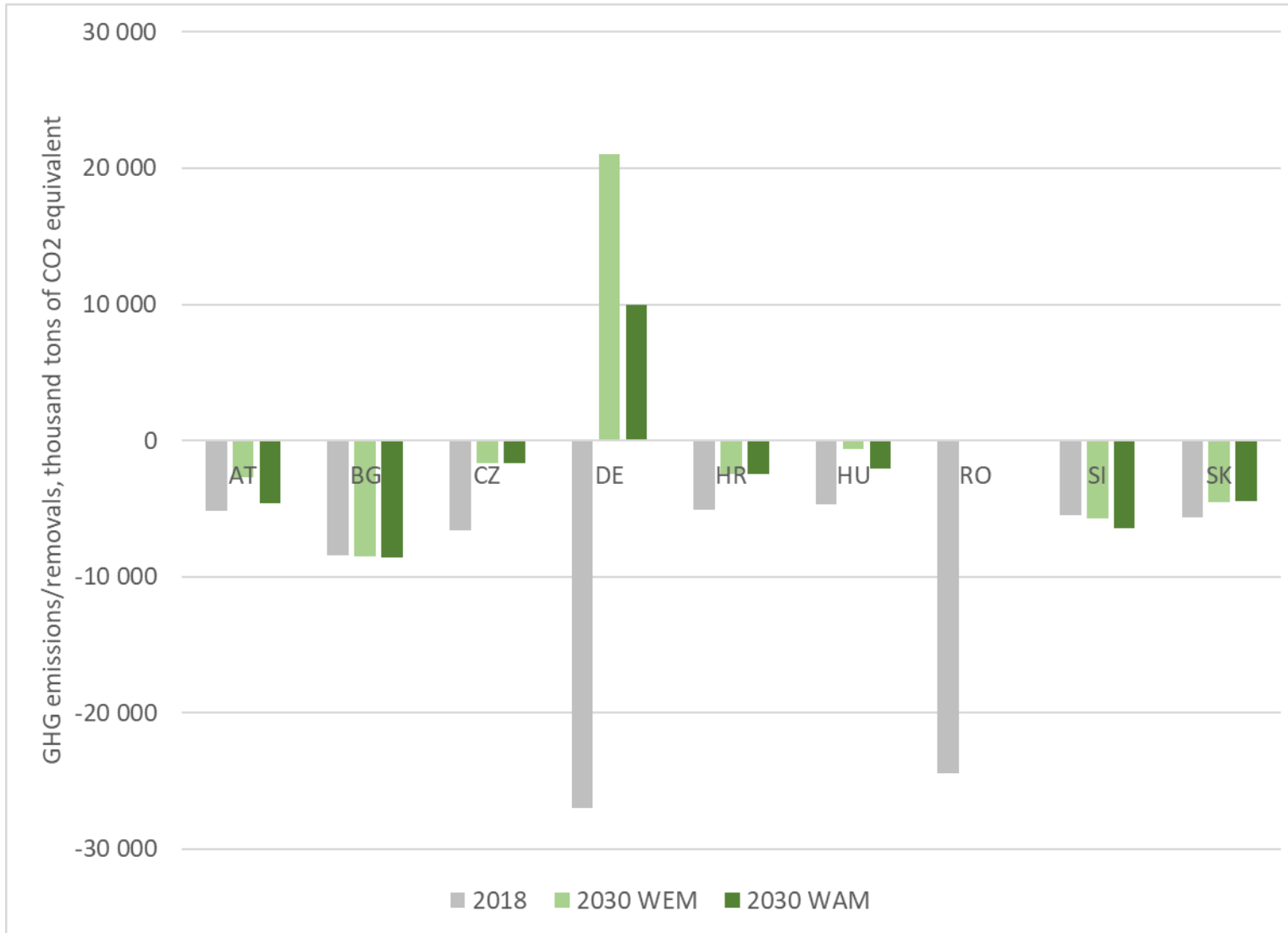


## Significant investments into biomass electricity is foreseen in the whole DR region

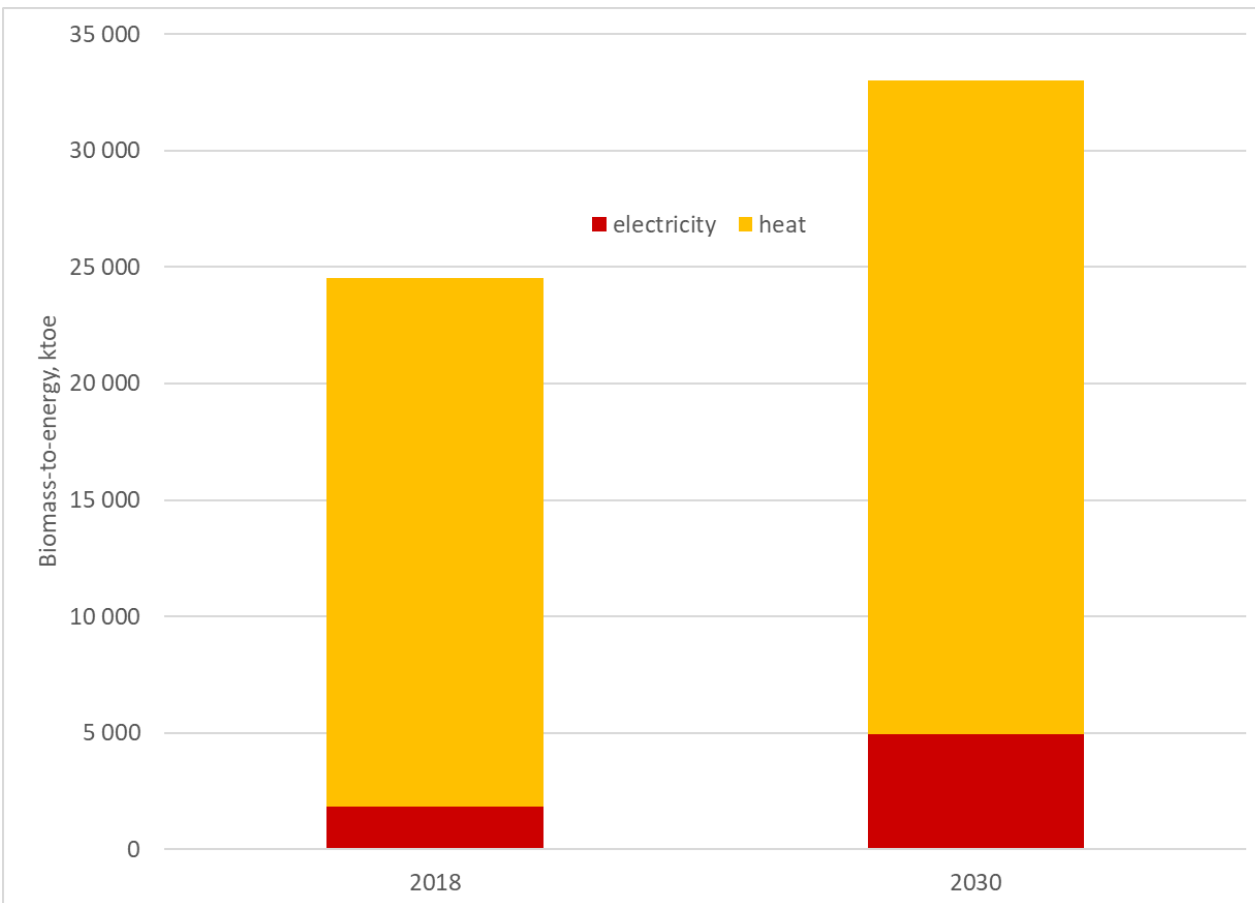


- a net increase of 15% for the DR (with AT missing)
- absent Germany, aggregate EU DR investment in biomass will be 35% more in 2030 than 2020.
- similarly, non-EU DR countries seek to further increase their biomass electricity (Ukraine to promote co-firing, Serbia to add 1000 MW by 2050).
- Even countries that lack significant biomass reserves, (Moldova, Montenegro, Bosnia i Herzegovina) plan to implement support schemes for biomass electricity.

## Consumption of so much more biomass for energy does carry the risk of losing forest carbon stocks to the atmosphere.



- Forestry is usually the only subsector of LULUCF with negative carbon inventory – net sinking
- Several DR countries are anticipating deteriorating forestry sequestration due to the combination of intensive harvesting and disruptions of natural increments of live forest stock (climate change and aging).
- From a total of 68 million tons of CO<sub>2</sub>eq in 2018, the EU DR will only have 20 million tons of CO<sub>2</sub>eq by 2030 (WEM).
- Despite the high ambitions for reducing GHG emissions across the DR, the massive potential of LULUCF to cheaply sequester and store carbon is not taken seriously enough with climate policy measures.

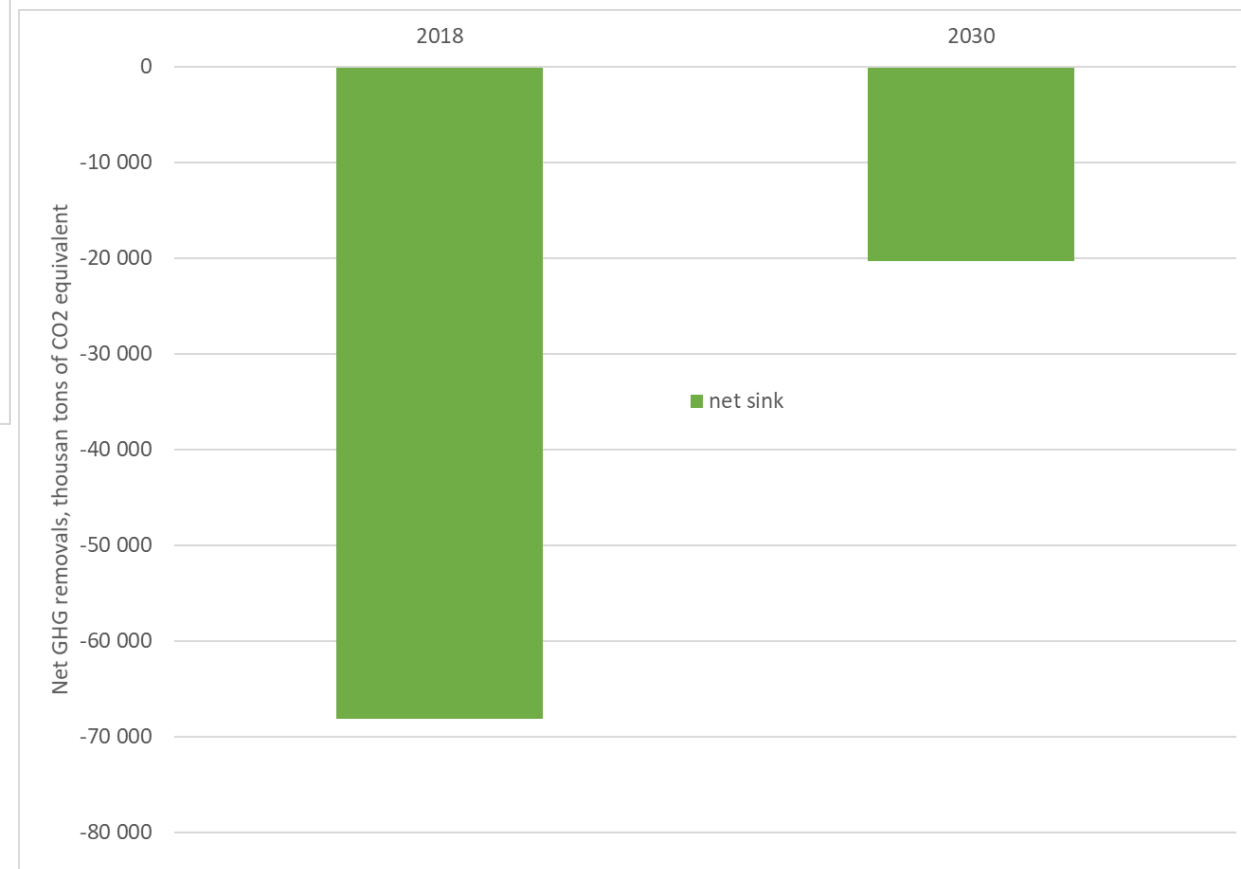


- Heat and electricity combined, biomass-to-energy will grow from 1027 PJ in 2018 to 1383 PJ in 2030 (35% increase, WAM).

net efficiency rates (averages):

- Electricity: 30-40%
- Heat: 70-85%

- Loss of LULUCF carbon sinks of 70% by 2030 (WEM)
- One-sided climate policy: supporting biomass-to-energy while ignoring the climate economic value of forest sequestration and carbon storage.
- Without integrative climate policy instruments to target biomass resources as well, any further support for biomass-to-energy should be reconsidered.



# 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: Bettina Dézsi and Gabriella Szajkó**

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