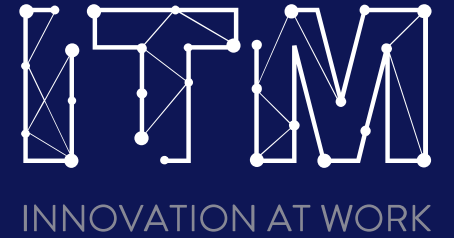


EUFORES Workshop Hungary

Budapest, March 1<sup>st</sup> 2019



# Renewables in the Draft National Energy and Climate Plan for Hungary

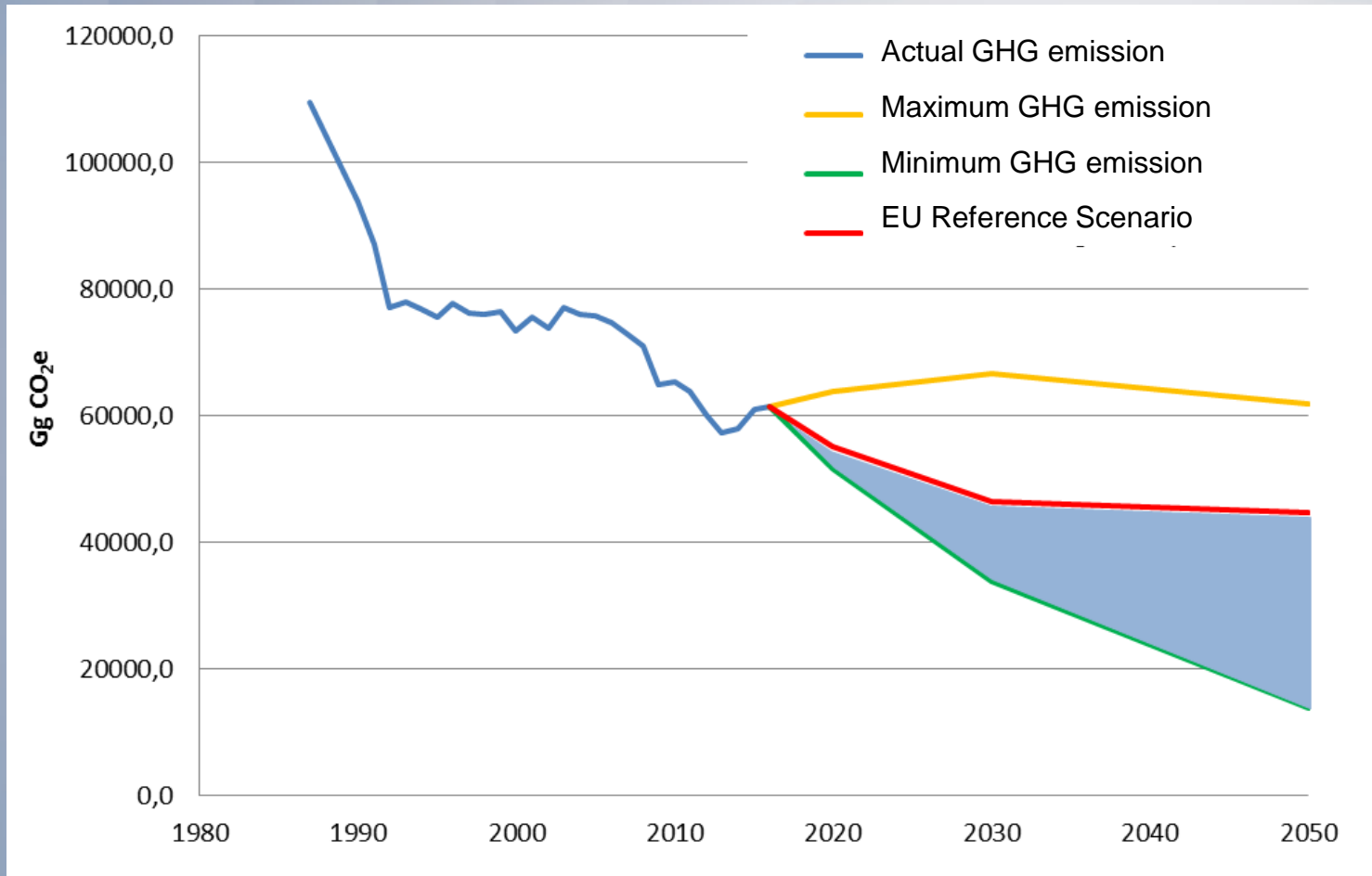


MINISTRY FOR  
INNOVATION AND TECHNOLOGY

State Secretary for Energy and Climate Policy  
Ministry for Innovation and Technology

# THE HUNGARIAN GOVERNMENT IS FULLY COMMITTED TO THE PARIS AGREEMENT

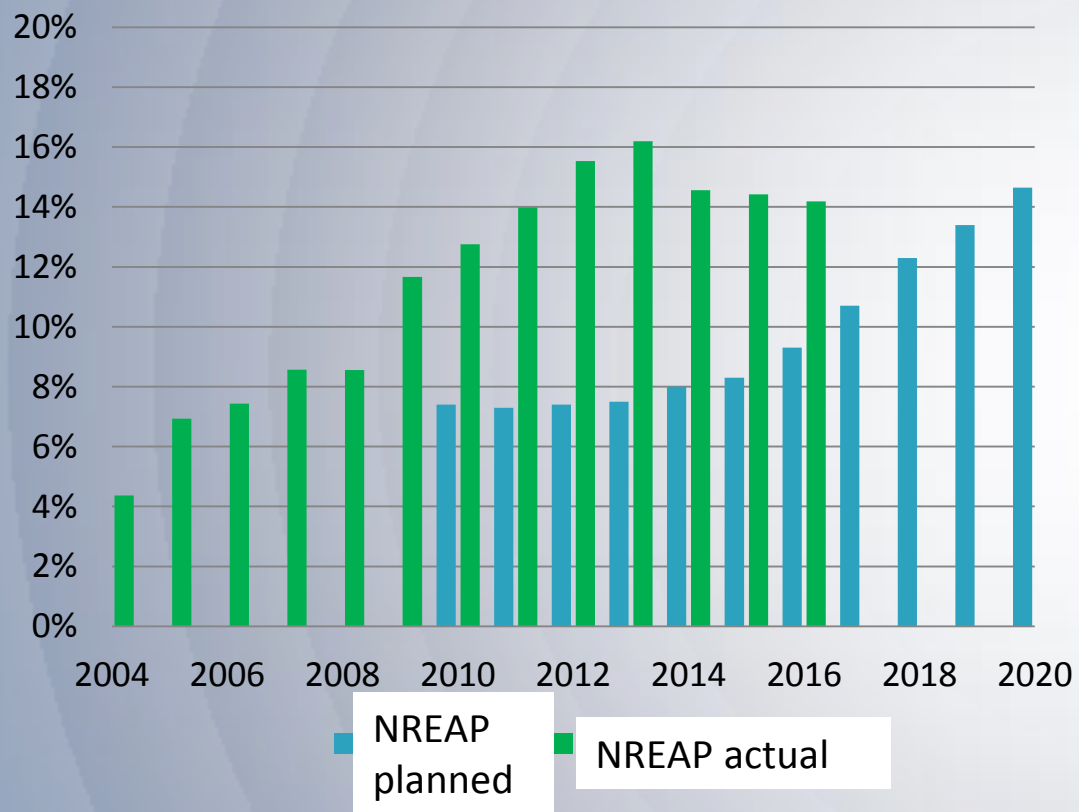
## GHG mitigation scenarios for Hungary



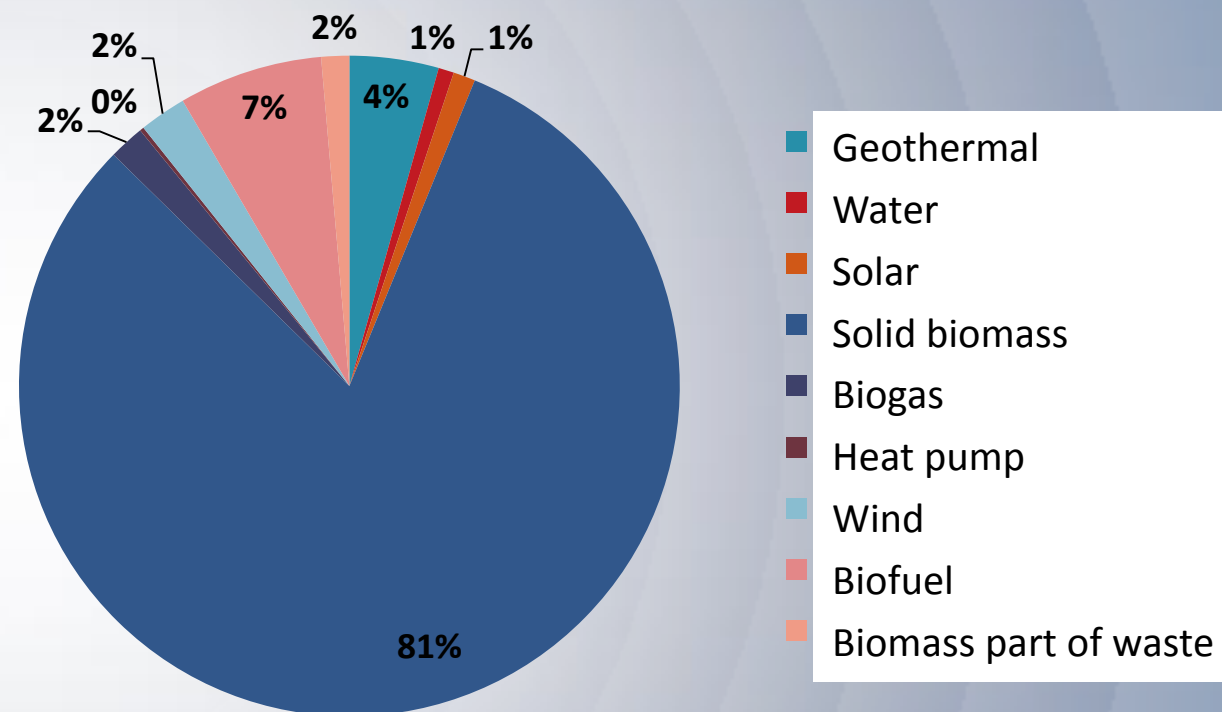
- 2nd National Climate Change Strategy (2018): two GHG scenarios examined
- Critical role of RES utilization in meeting climate objectives
- Future RES scenarios defined in draft NECP

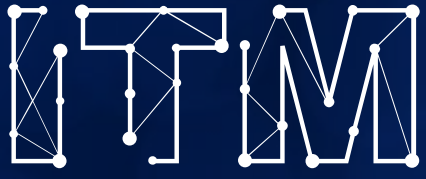
# 2020 TARGETS AND HISTORIC RES DEVELOPMENT: DOMINANCE OF BIOMASS

## Share of renewable energy in gross final energy consumption



## Renewable energy use by sources 2016

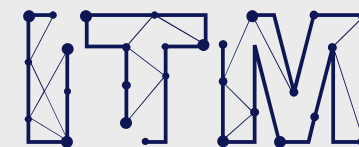








INNOVATION AT WORK

# 2030 RES OBJECTIVES

# KEY ENERGY AND CLIMATE OBJECTIVES AND TARGETS IN HUNGARY'S DRAFT NECP

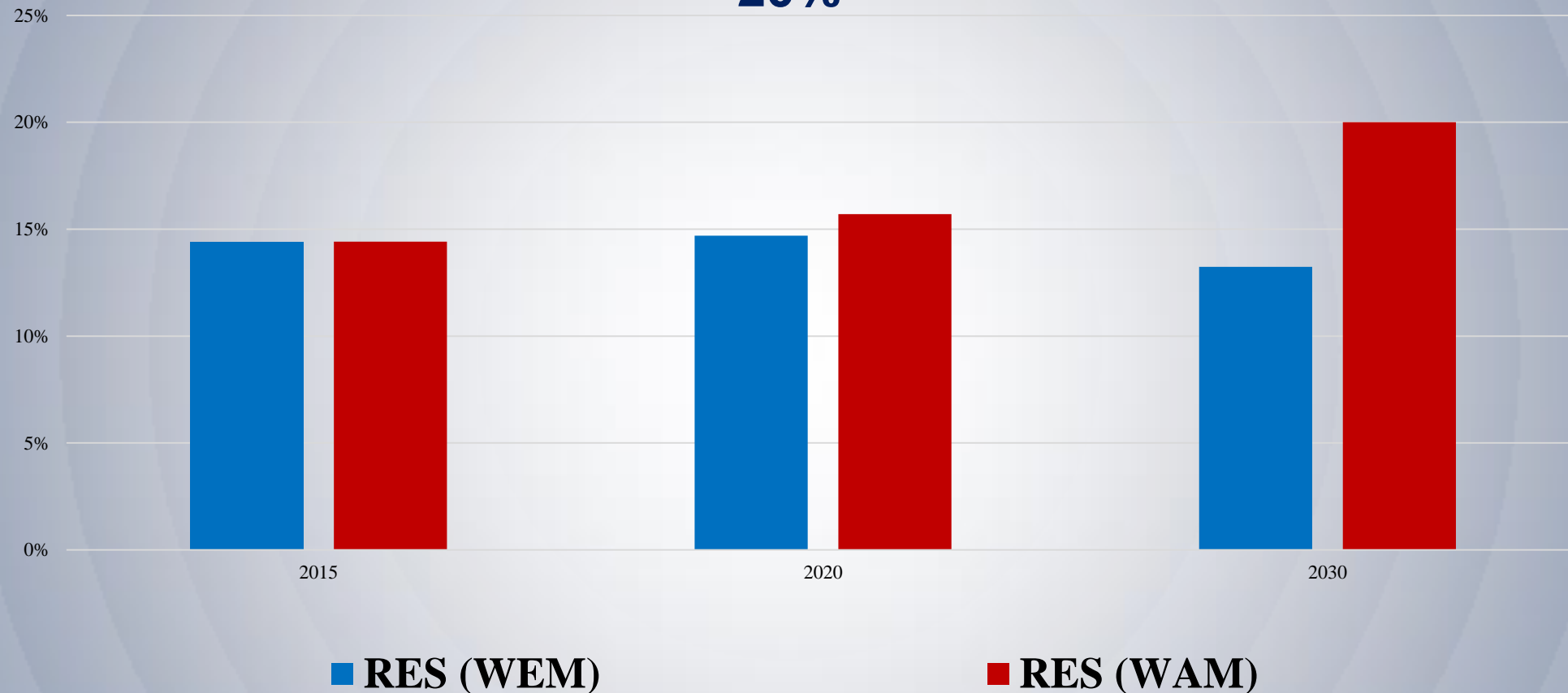


INNOVATION AT WORK

National targets in comparison with EU objectives		2020		2030		National policies and measures to support Hungarian targets
						
Renewables Share of renewable energy		20%	14,65%	32%	20%	Solar Cell (PV) Transport Greening (E-mobility) District heating modernisation
Energy efficiency		20 % indicative	1009 PJ primer energy	32,5% indicative	8-10%	Reduce final energy consumption (Building energy) Stimulate industrial energy efficiency investments
GHG emissions	Total vs 1990	-20%	-	-40%	-40%	Climate-friendly transformation of Electricity mix
	ESD/ESR vs 2005	-10%	+10%	-30%	-7%	

# WITHOUT NEW POLICY MEASURES HUNGARY'S RES SHARE IS LIKELY TO DECREASE

**Objective: Renewable share in gross final energy consumption in 2030:  
20%**

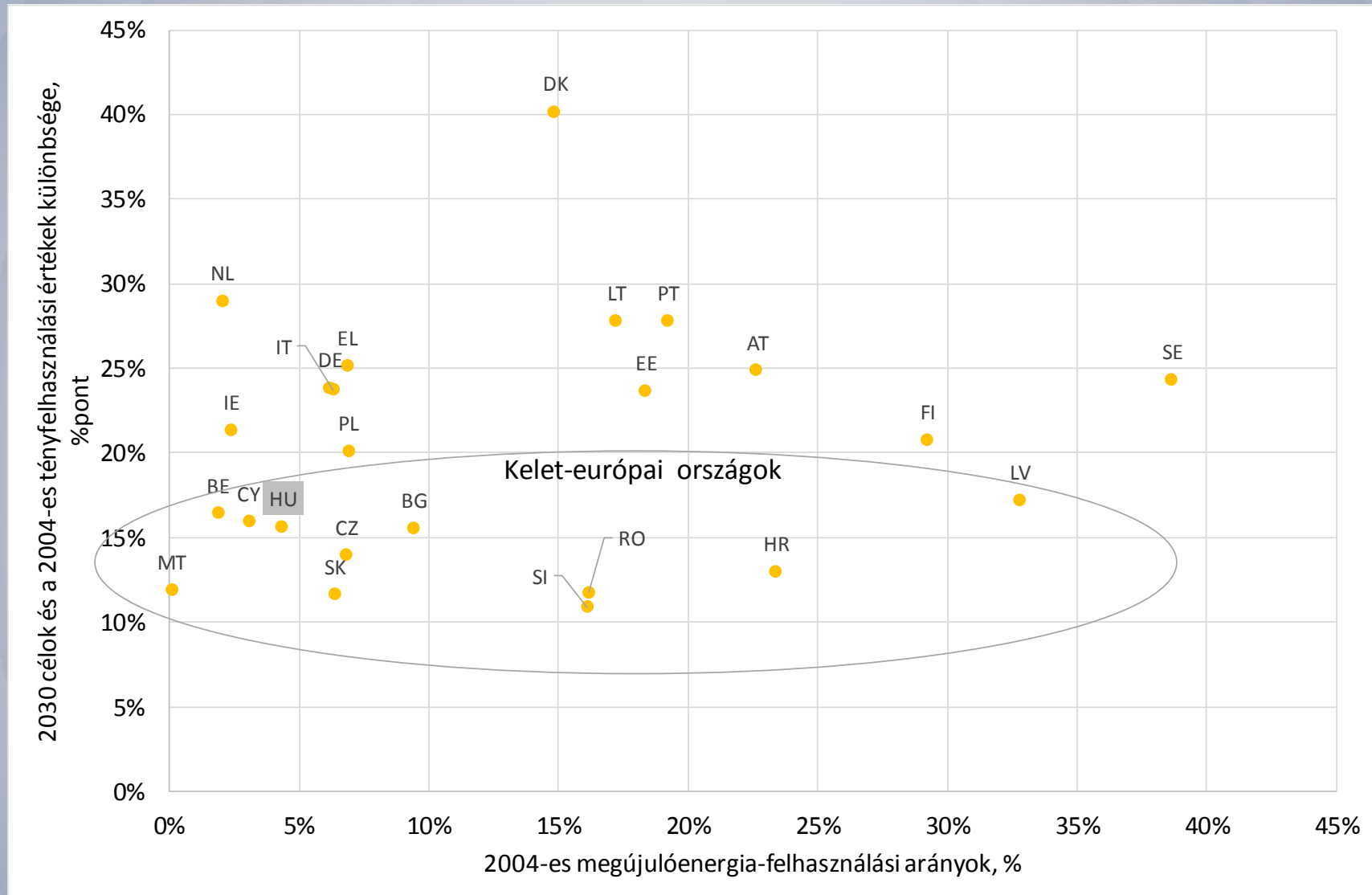




# RENEWABLE ENERGY OBJECTIVES BY SECTOR, 2030

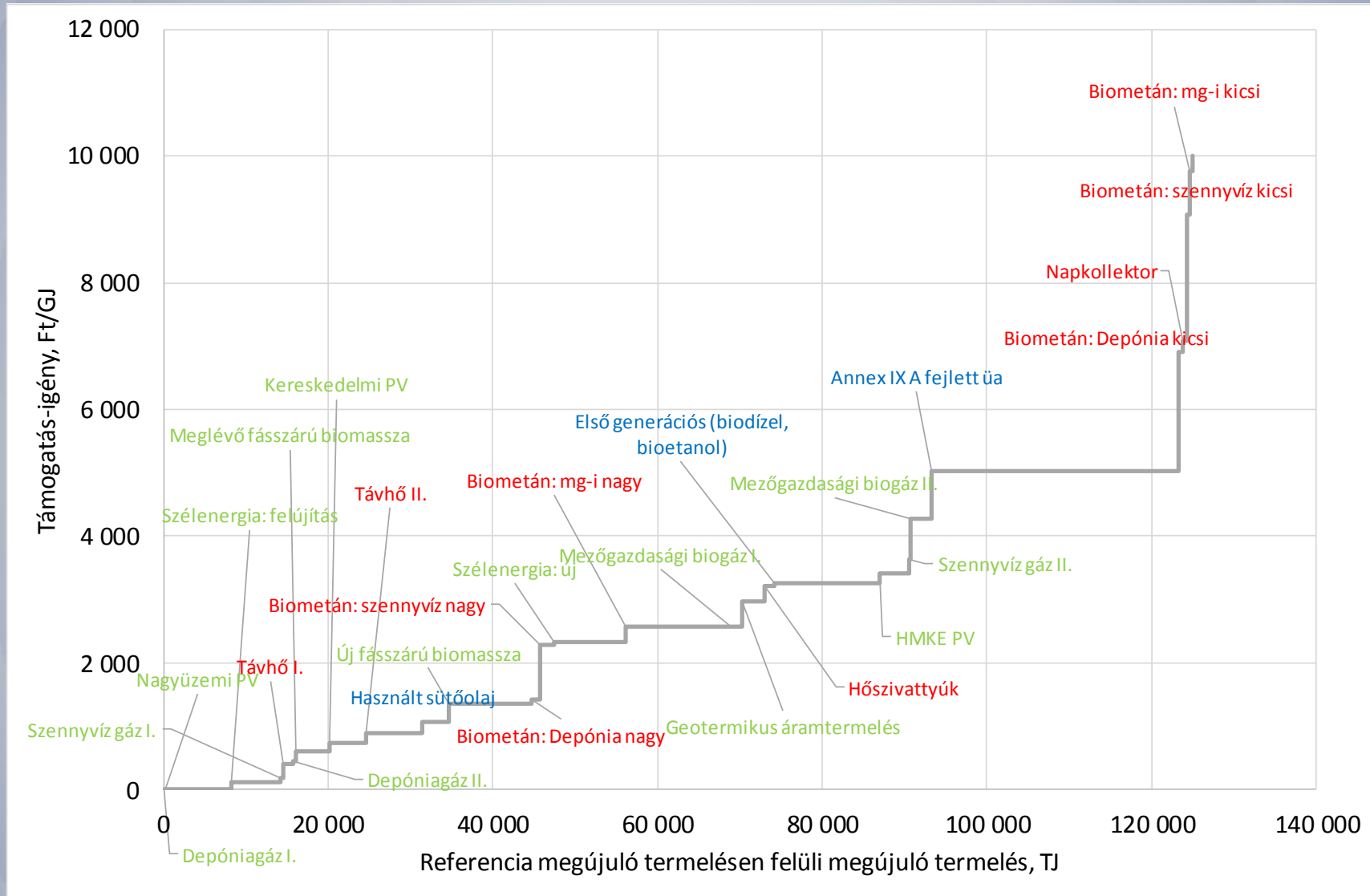
	2016 *	2030	UNITS
Planned share of energy from renewable sources in gross final consumption of energy in 2030	14,2	20	%
Estimated share of renewable sources in the heating and cooling sector (end point of estimated trajectory for RES-H/C)	20,8	26,9	%
Estimated share of renewable sources in the electricity sector (end point of estimated trajectory for RES-E)	7,2	19,1	%
Estimated share of renewable sources in the transport sector (end point of estimated trajectory for RES-T)	7,4	15	%
(Other national GHG objectives and targets consistent with the Paris Agreement and the existing long-term strategies)	-34,5 vs 1990	-40% vs1990	%

# 2030 RES OBJECTIVE ON 2004 AND 2020 BASIS: RIGHT AHEAD AMONG CEE MEMBER STATES

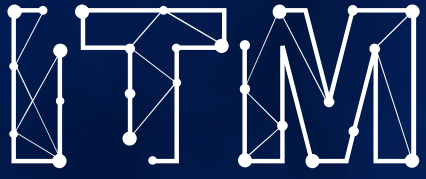




# STRIVE FOR COST EFFICIENCY IN PLANNING FUTURE RES POLICIES



Source: REKK



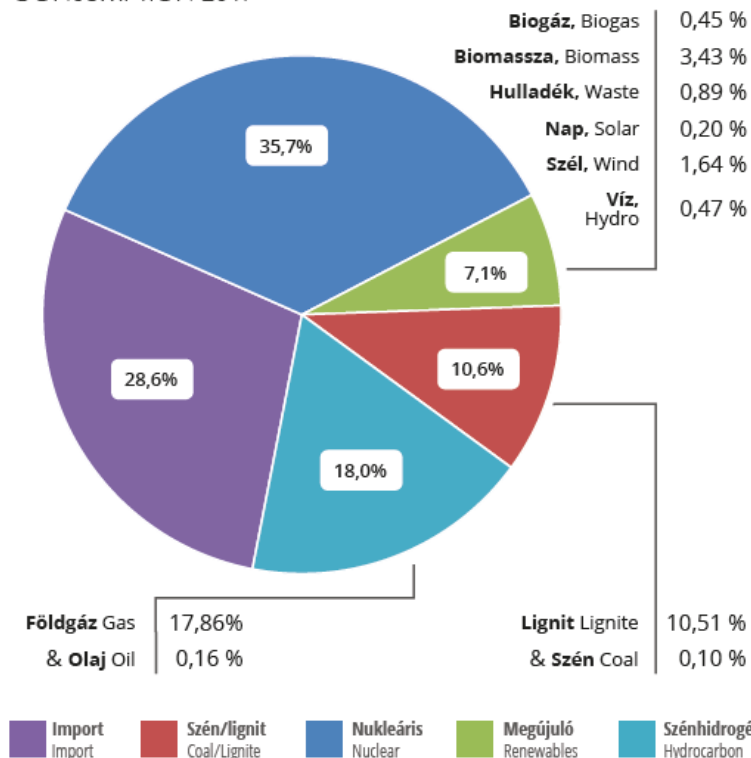
INNOVATION AT WORK

# RES POLICIES BY SECTOR

# NUCLEAR AND RES PROVIDES 60% OF POWER GENERATION AND KEY FOR A FUTURE DIVERSIFIED, LOW CARBON POWER MIX

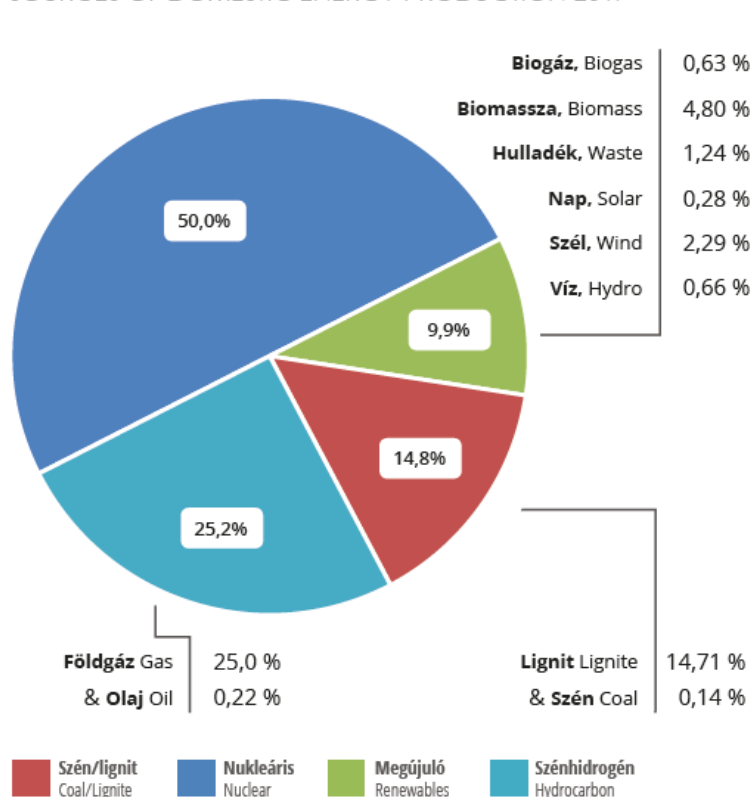
**A TELJES BRUTTÓ VILLAMOSENERGIA-FELHASZNÁLÁS FORRÁSMEGOSZLÁSA 2017**

SOURCES OF THE TOTAL GROSS ELECTRICITY CONSUMPTION 2017



**A TERMELT HAZAI VILLAMOS ENERGIA MEGOSZLÁSA 2017**

SOURCES OF DOMESTIC ENERGY PRODUCTION 2017



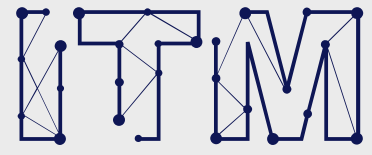
Teljes bruttó villamosenergia-felhasználás / Total gross electricity consumption: 45 057,24 GWh

Hazai termelés / Domestic energy production: 32 181,0 GWh

Import energia / Import energy: 12 876,24 GWh

- Diversified mix with high interconnectivity and net imports share
- 279g/kWh carbon intensity
- Demand growth overcompensates efficiency
- Lignite: future is uncertain
- Gas: important flexibility provider but moderate profitability, SOS concerns
- RES: weak hydro, moderate wind potential; priority for solar PV

# VISION FOR THE ELECTRICITY SECTOR



INNOVATION AT WORK



**DECARBONIZATION**



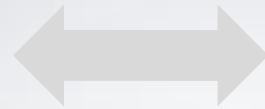
**DECENTRALIZED  
PRODUCTION**



**DIGITALIZATION**

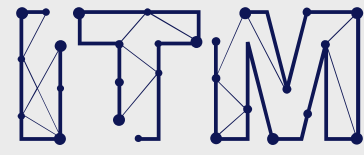


# PV POTENTIAL UP TO 6 GW BY 2030 – NETWORK AND MARKET INTEGRATION CHALLENGES TO MEET



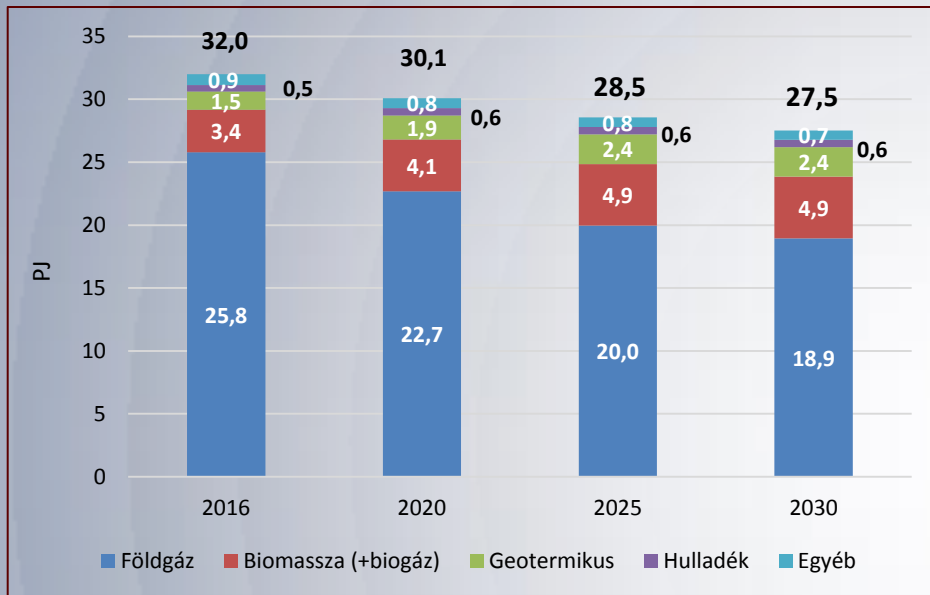
- Cost-efficiency: minimising the burden on industrial consumers
- Taking into account the reduction of installation costs
- Creating incentives for network companies: network integration
- Cost-efficient, flexible regulatory capacities: market integration
- Economic development aspects: small and large investors, domestic industry

# HEATING AND COOLING

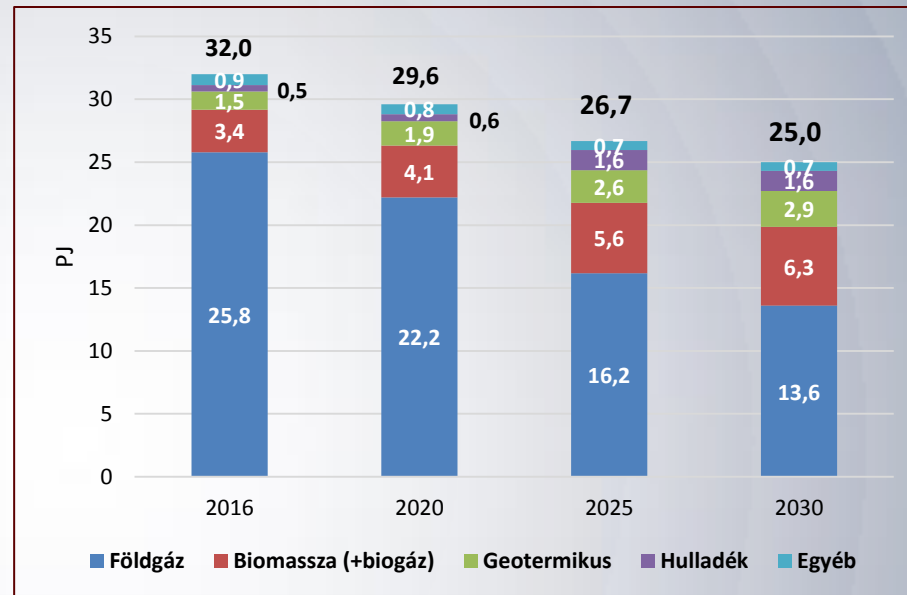


INNOVATION AT WORK

District heat generation - WEM



District heat generation - WAM

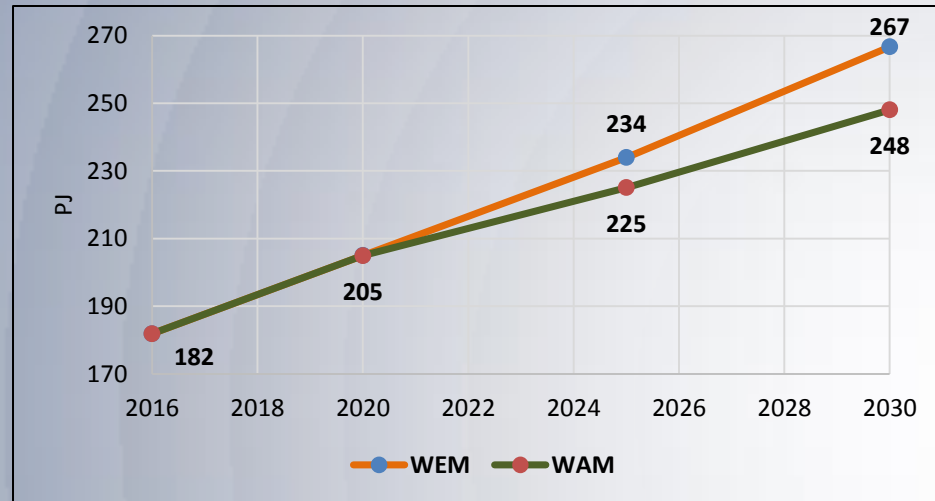


Source: Századvég

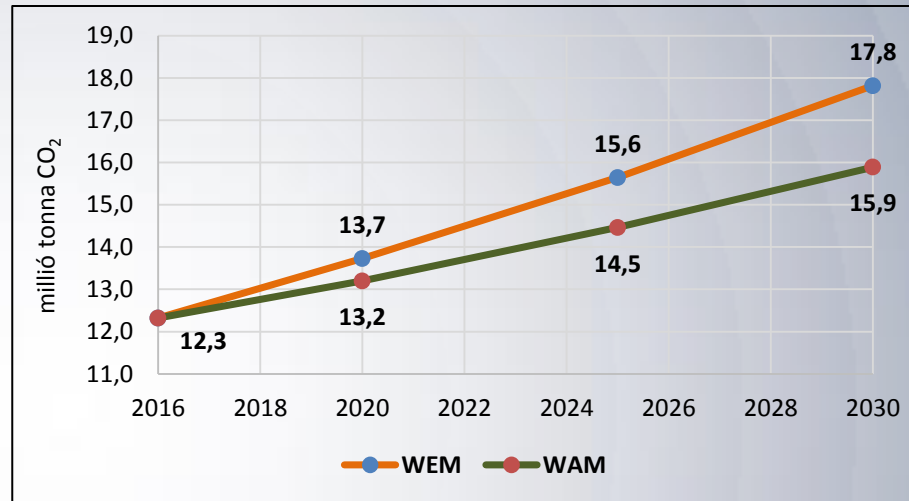
- **Focus:** biomass, geothermal, waste utilization
- Large scale (ESCO) program for public buildings and individual dwellings



### Energy use by transportation



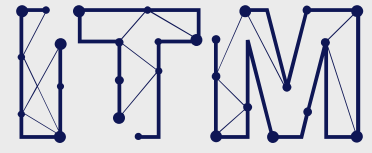
### CO2 emission by transportation



Source: Századvég

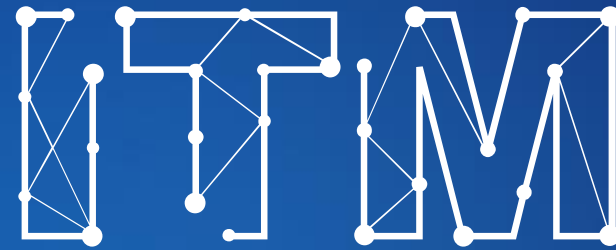
- **Focus:** electro-mobility, biofuel mix increase, energy efficiency improvement, public transportation greening

# ADDITIONAL TASKS



INNOVATION AT WORK





INNOVATION AT WORK

Thank you  
for your attention.



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