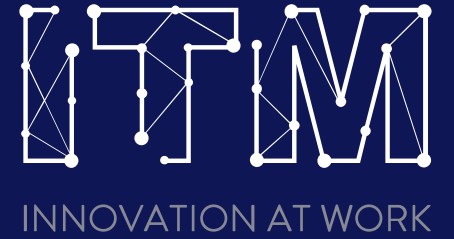


2019 IEA Workshop on Nuclear Power  
Paris, February 25<sup>th</sup>2019



# NUCLEAR POWER IN HUNGARY'S ENERGY STRATEGY

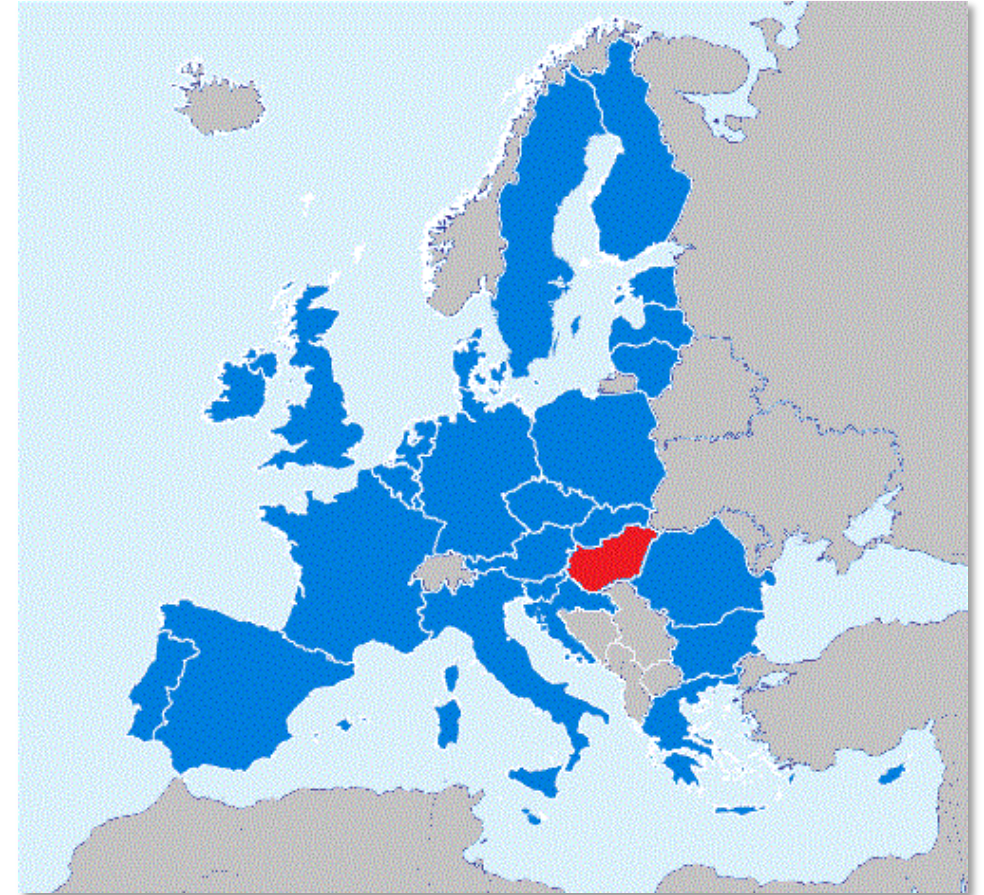


MINISTRY FOR  
INNOVATION AND TECHNOLOGY

Dr. Péter Kaderják  
Minister of State for Energy and Climate Policy

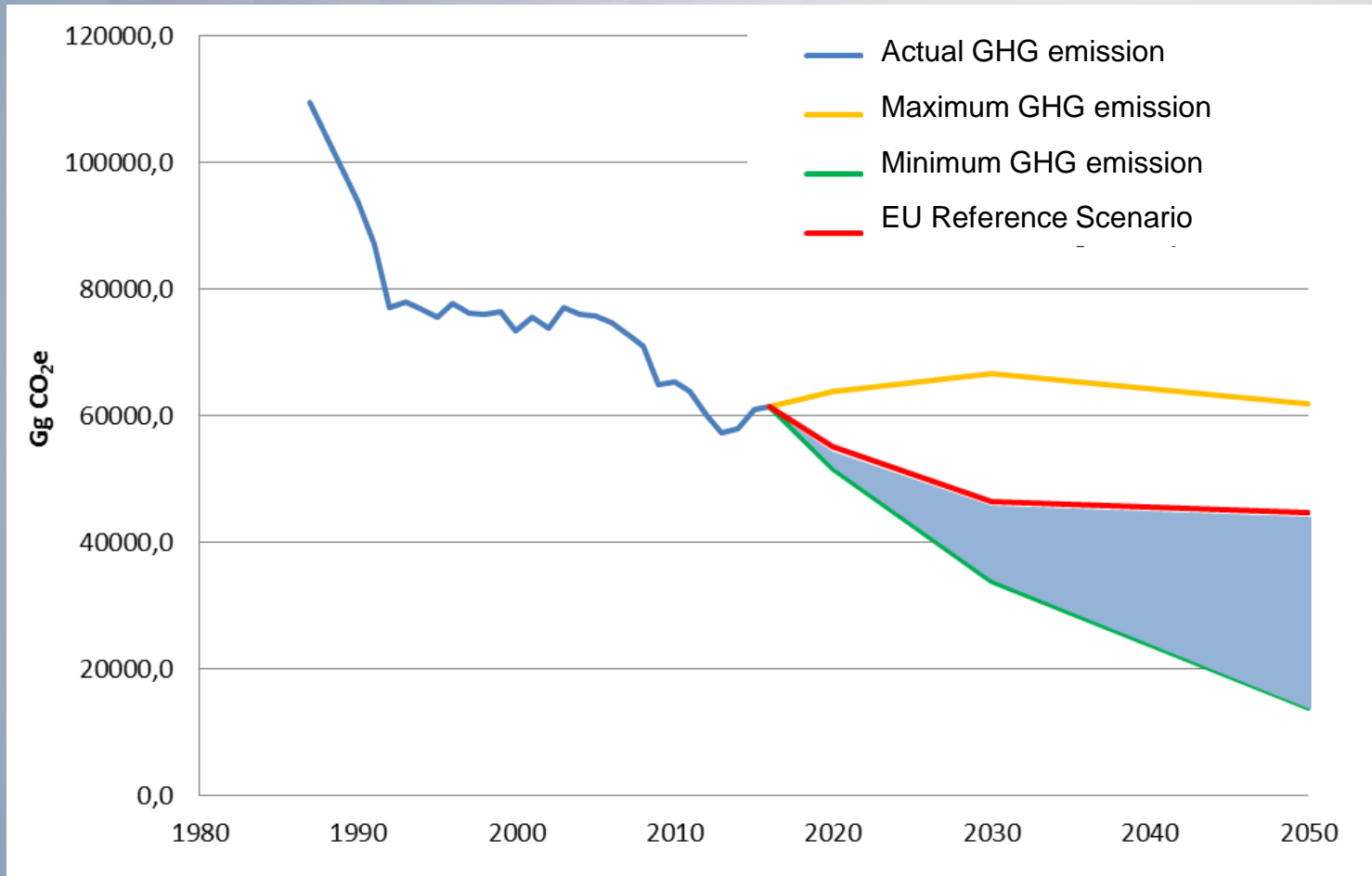
# HUNGARY'S KEY ENERGY DATA

- **Area:** 93 030 km<sup>2</sup>
- **Population:** 9 778 000 people (2018)
- **GDP:** 139,04 billion USD (2017)
- **GDP/capita:** 15647.85 (2017)
- **GDP/capita PPP:** 26777.56 USD (2017)
- **Primary energy supply :** 1 076 PJ (2016)
- **Final energy consumption:** 726 PJ (2016)
- **Total electricity production:** 31 968 GWh (2016)
- **Total electricity consumption:** 44.04 TWh (2016)
- **Installed capacity:** 8.6 GW
- **Share of renewable energy in final energy consumption:** 14,14%
- **Energy import dependency - Energy dependency rate:** 55,6%



# THE HUNGARIAN GOVERNMENT IS FULLY COMMITTED TO THE PARIS AGREEMENT

## GHG mitigation scenarios for Hungary

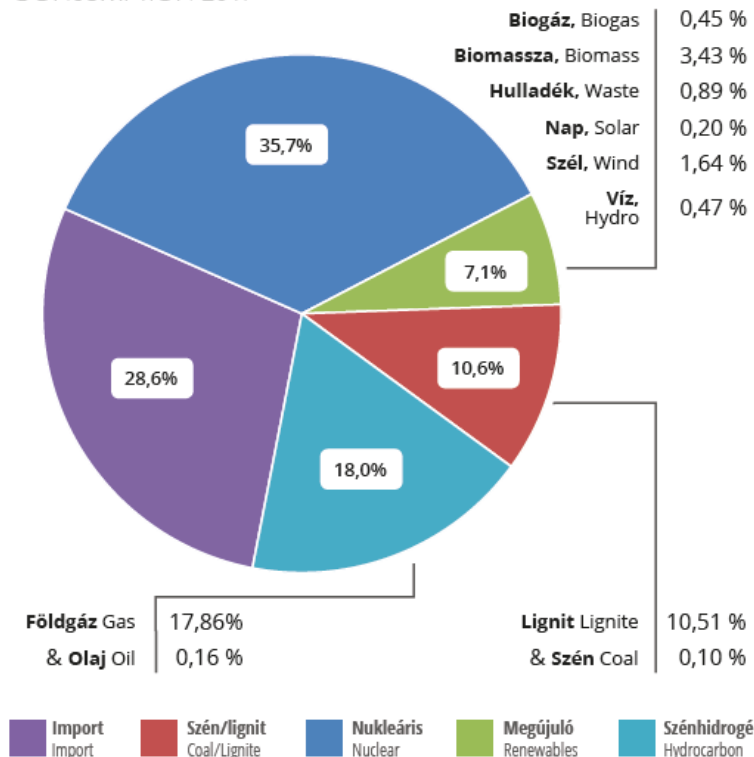


- 2nd National Climate Change Strategy (2018): two GHG scenarios examined
- Conclusion: **The decarbonization of the Hungarian electricity sector cannot be realized by a single technology**
- Outlining the optimal energy mix - **new National Energy Strategy**

# NUCLEAR PROVIDES 50% OF POWER GENERATION AND KEY FOR A FUTURE DIVERSIFIED, LOW CARBON POWER MIX

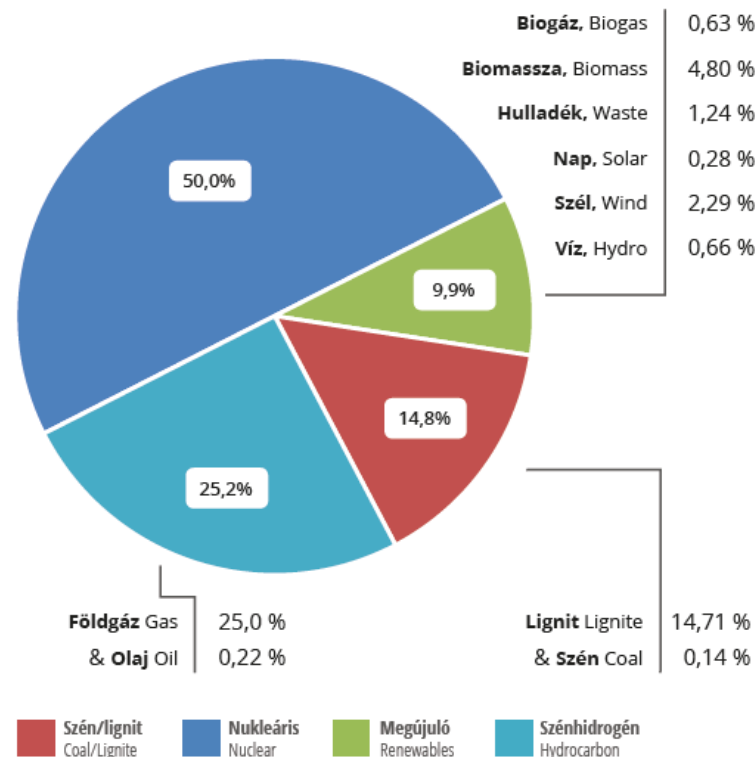
**A TELJES BRUTTÓ VILLAMOSENERGIA-FELHASZNÁLÁS FORRÁSMEGOSZLÁSA 2017**

SOURCES OF THE TOTAL GROSS ELECTRICITY CONSUMPTION 2017



**A TERMELT HAZAI VILLAMOS ENERGIA MEGOSZLÁSA 2017**

SOURCES OF DOMESTIC ENERGY PRODUCTION 2017



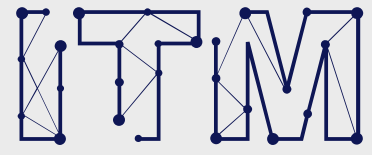
**Teljes bruttó villamosenergia-felhasználás / Total gross electricity consumption: 45 057,24 GWh**

**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

# MAINTAINING THE CURRENT SHARE OF NUCLEAR IS ESSENTIAL



INNOVATION AT WORK

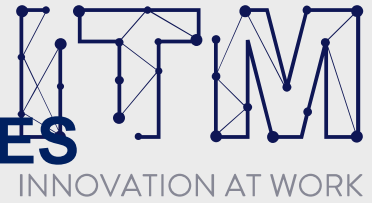


- **Climate:** 6 GW PV would 100% serve summer peak but < 50% of annual nuclear production
- **Electricity security:** very high import share
- **Gas supply security:** loss of nuclear would sharply increase gas imports

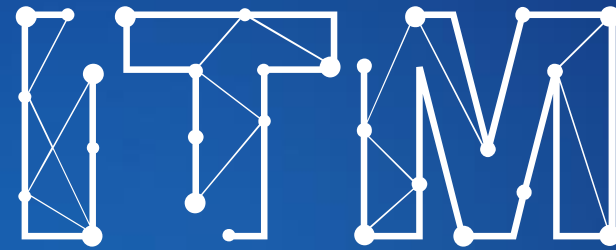
# GOVERNMENT ACTIONS TO MAINTAIN NUCLEAR

- Sets a **clear strategic signal** in its energy policy
- Creates a viable financing framework **combining a state owned corporation with its sovereign credit rating**
- **Maintains a robust safety regulation** framework and invests in maintaining **human resources** in nuclear
- In the EU context argues for the proper recognition of the low carbon nature of nuclear in meeting EU commitments and targets

# HIGH NUCLEAR – RES SCENARIOS: CLIMATE AND SECURITY BENEFITS BUT MARKET AND NETWORK INTEGRATION CHALLENGES



- Sufficient incentives needed to encourage **flexibility providers** to the market (gas fired PPs, storage, DSM, increased interconnectivity and market integration)
- Both the existing and the new nuclear units provide frequency control and primary reserves
- The units have a technical capacity to cycle back, but relying on regional hydro capacities through market integration is usually better



INNOVATION AT WORK

Thank you  
for your attention.



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