A FUTURE BEYOND NATURAL GAS IN CENTRAL AND EASTERN EUROPE

Borbála Takácsné Tóth (REKK)

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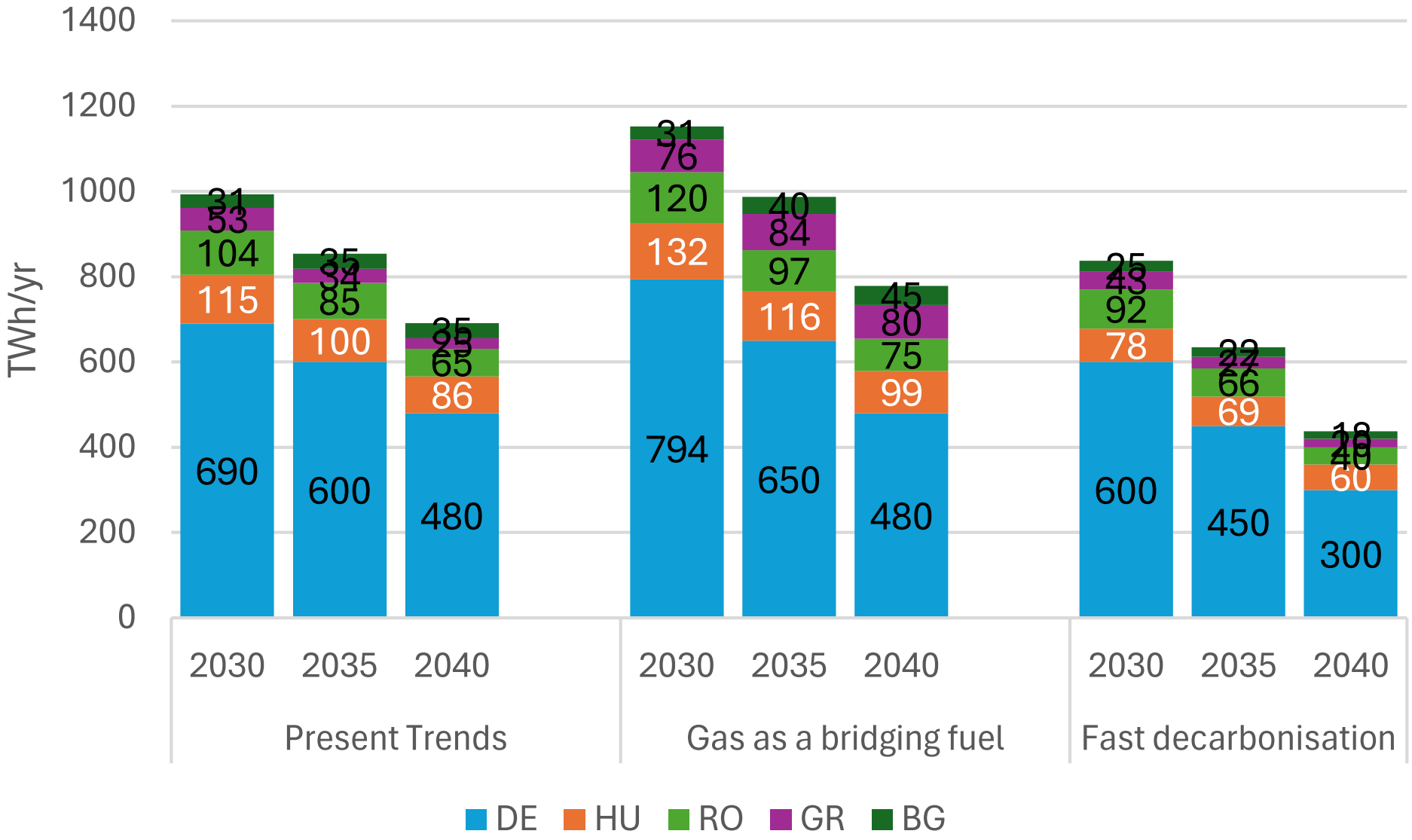
REKK

- REKK is a think tank at Corvinus University of Budapest
- Established in 2004, with a core team of 20 researchers
- Our focus is electricity, natural gas and energy and water markets in Hungary, CEE and Europe
- We provide data based policy analysis for regulators, international organisatons and energy companies

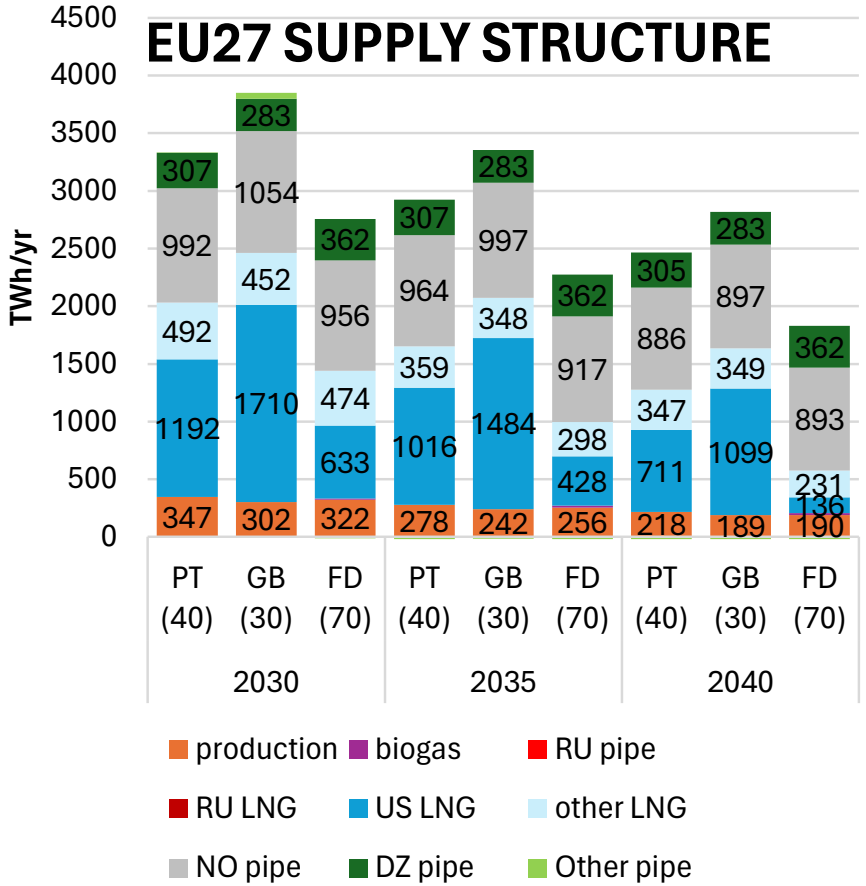
Scenario storylines

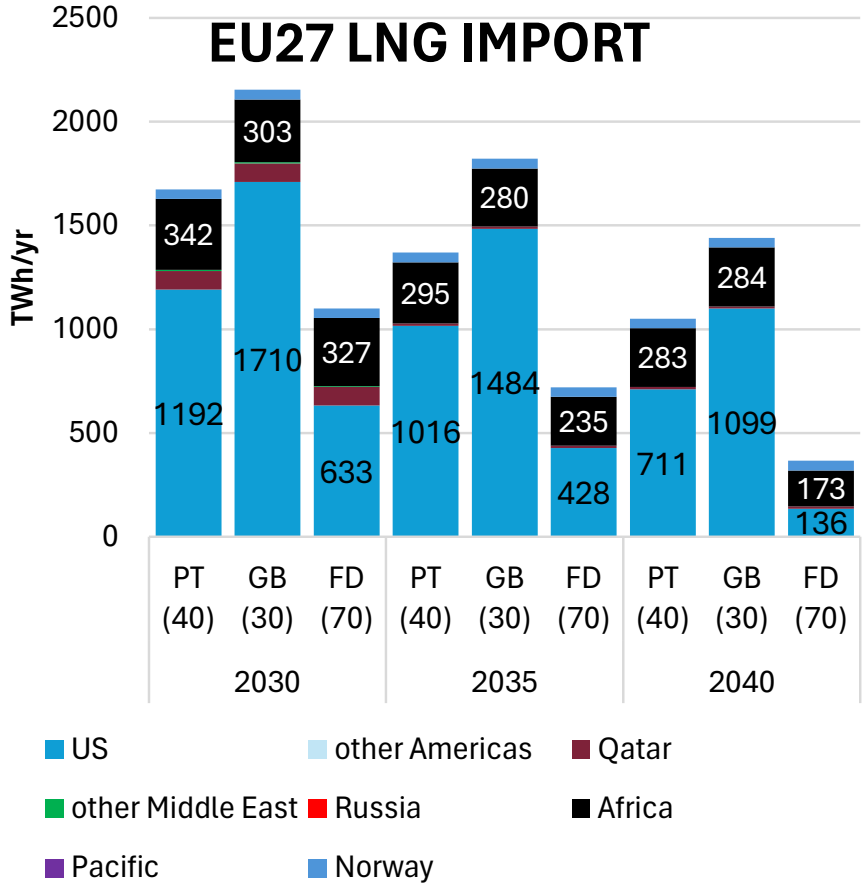
Dimension	Present trends (PT)	Gas as a bridging fuel (Gas)	Fast decarbonization (FD)
Core idea	Continuation of current power and gas system trajectories, driven by existing national plans and gradual decarbonization.	Gas is used deliberately as a transition fuel to ensure security and flexibility while preparing for hydrogen conversion.	Rapid structural transformation of power and gas systems to achieve early decarbonization.
Coal in power	Phase-out follows currently announced decommissioning dates.	Rapid phase-out.	Rapid phase-out.
Gas in power	Stable role, with new capacity broadly matching decommissioning.	Expanding role in medium term; new capacity exceeds decommissioning.	Declining role; decommissioning exceeds new builds.
RES deployment	Follows NECPs, driven mainly by solar PV; limited wind expansion.	Follows NECPs, driven mainly by solar PV; limited wind expansion.	Large-scale RES deployment dominates generation.
Nuclear	Roughly stable at current capacity.	Roughly stable at current capacity.	Moderate capacity increase.
Battery storage	Expected penetration.	Expected penetration.	High penetration, central to system flexibility.
Electricity demand	Moderate growth.	Moderate growth.	High growth due to electrification.
Power Interconnectivity	TYNDP projects realized (most realistic)	TYNDP projects realized (most realistic)	All TYNDP projects realized.
Power sector decarbonization	Beyond 2040.	By 2040.	By 2035.
Gas demand (EU level)	Stagnating overall; increases in some countries (ENTSOG national trends).	Increasing demand in EU (+15% compared to PT ~back to before crisis levels)	Rapid decline; fast natural gas phase-out. (ENTSOG DE)
Hydrogen role	Marginal across sectors.	Switch to hydrogen in power sector from 2040; other sectors follow present trends.	Switch to hydrogen in power sector from 2035; other sectors mainly electrify, no major H2 takeoff.
Gas / H2 infrastructure	Only projects with FID by 2025 added; limited transformation.	Existing infrastructure retrofitted for hydrogen readiness.	Infrastructure retrofitted and increasingly used for hydrogen transport.

CEE gas demand in the different scenarios



Supply structure and LNG





- RU LNG and pipeline gas is not imported to the EU (REPowerEU policy)
- Main supplier is US LNG
- Norway and Algeria are the pipeline suppliers
- Biogas production not competitive with LNG imports

- US LNG dominates the European LNG supplies
- Qatar is shifting its focus to Asian markets by 2040
- LNG from African countries is the second largest source

Gas market modelling

PRESENT TRENDS:

- Europe: Continuation of current power and gas system trajectories, driven by existing national plans and gradual decarbonization.
- International environment: High global uncertainty; supply risks and shortages.

EGMM → **~ 35 €/MWh** gas prices in Europe

GAS AS A BRIDGING FUEL:

- Europe: Gas is used deliberately as a transition fuel to ensure security and flexibility while preparing for hydrogen conversion.
- International environment: Abundant gas supply

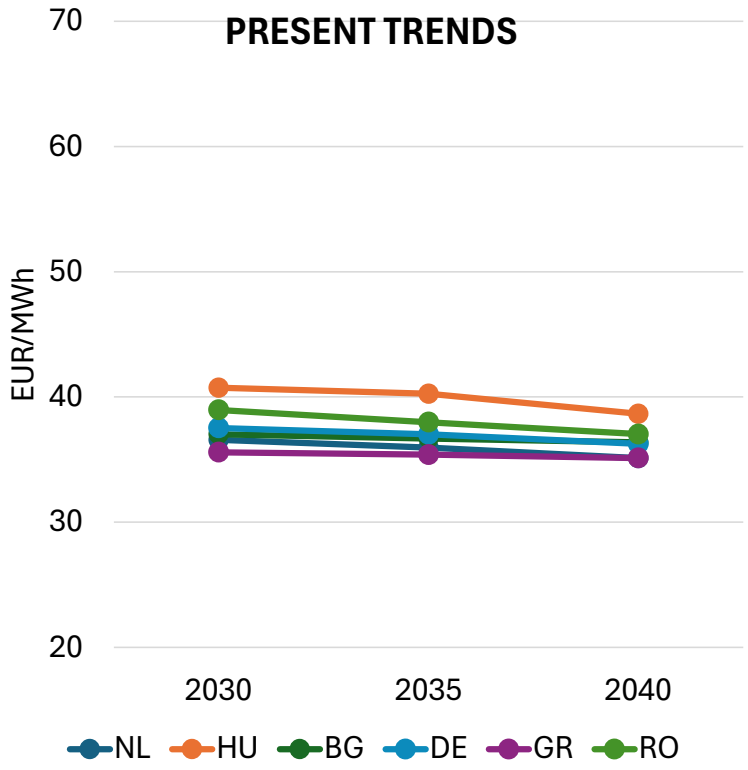
EGMM → **~ 25 €/MWh** gas prices in Europe

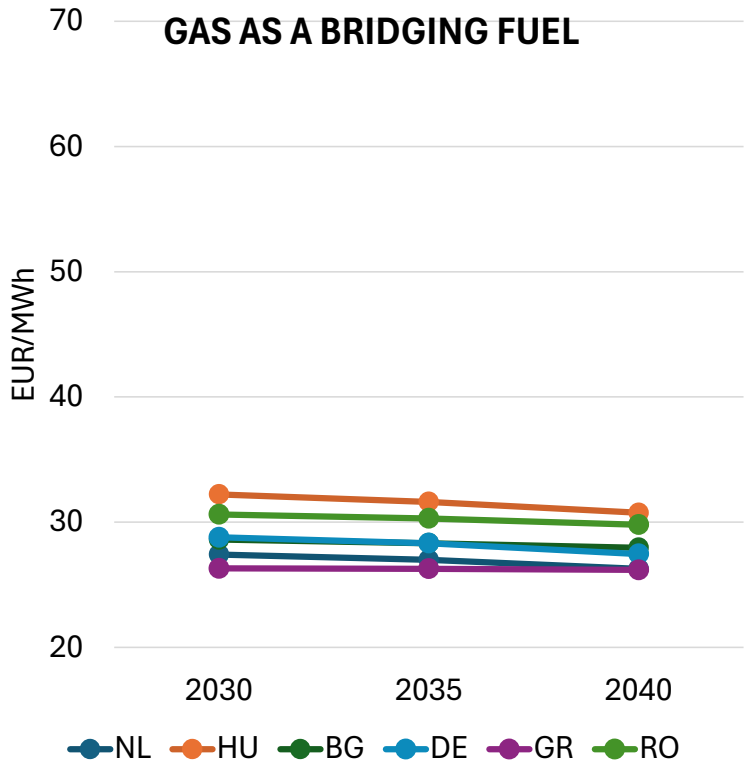
FAST DECARBONIZATION:

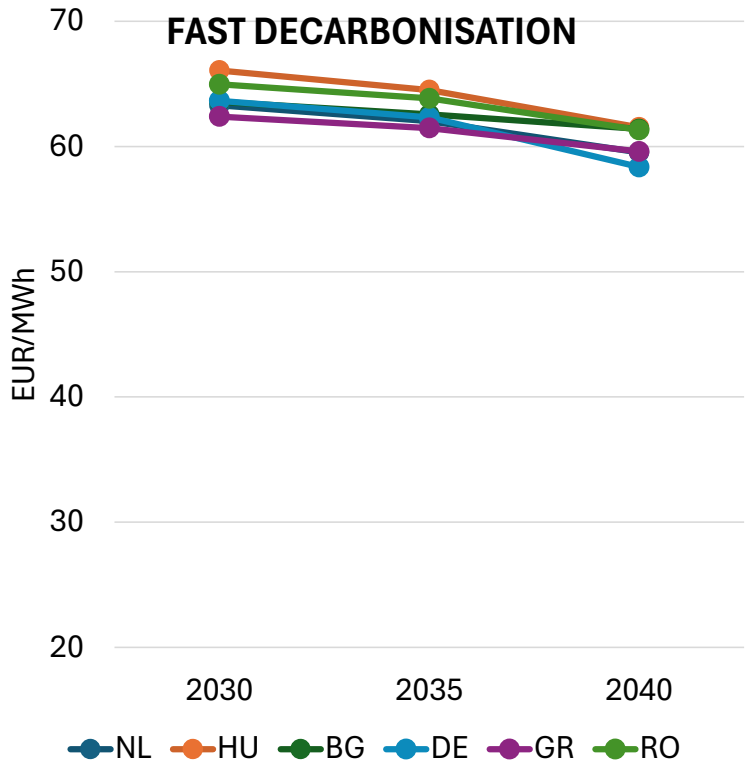
- High gas international price environment (e.g. continued supply shocks and crises)
- Driving lowest demand

EGMM → **~ 65 €/MWh** gas prices in Europe

Natural gas price scenarios driven by international prices

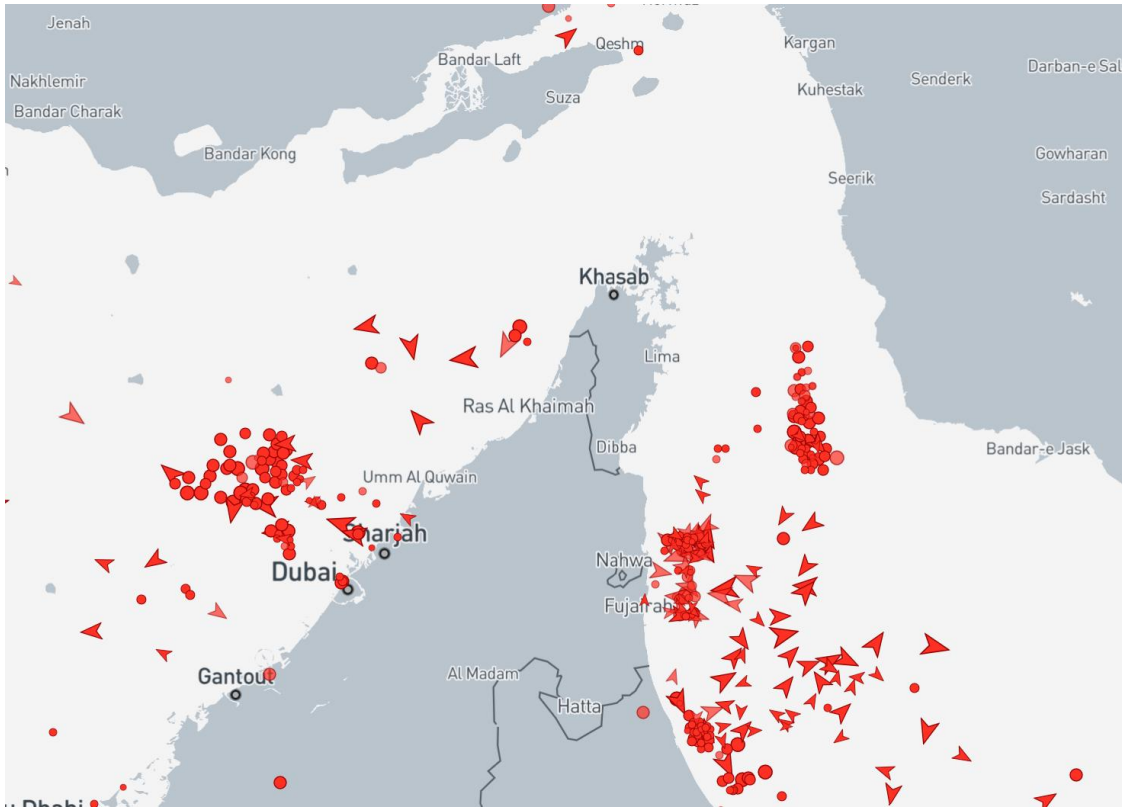






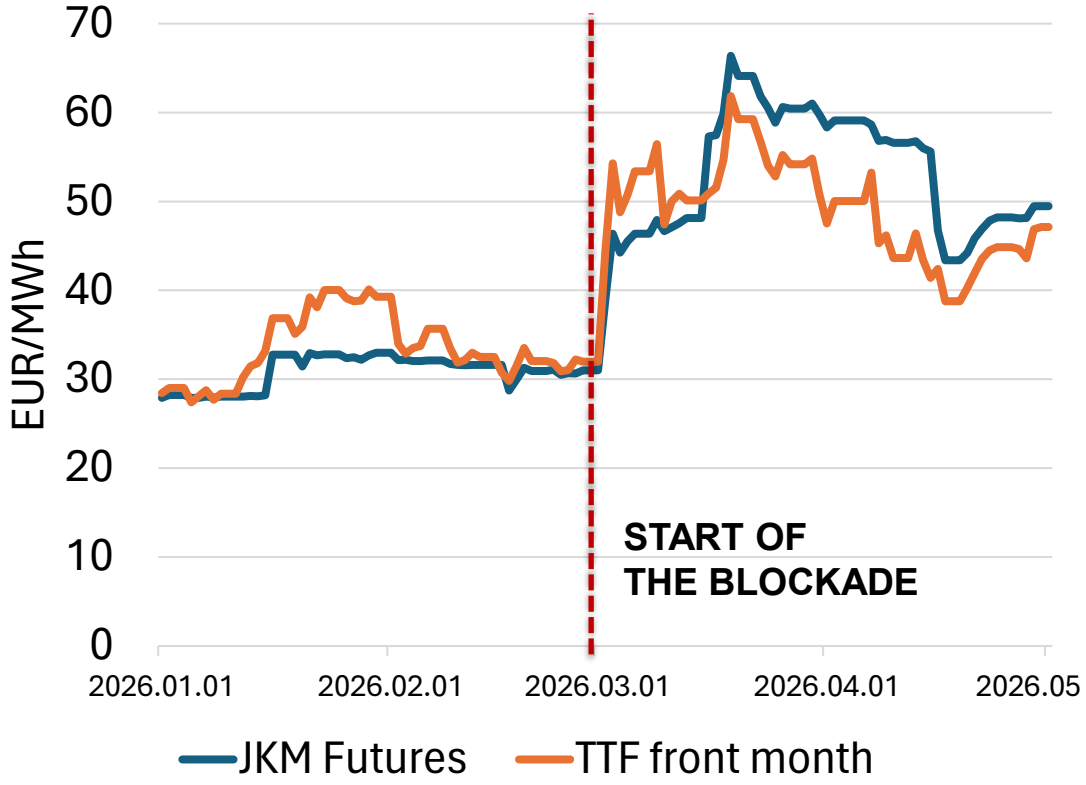
The 2026 Strait of Hormuz crisis increased gas prices globally

TANKERS WAITING AROUND THE STRAIT OF HORMUZ ON 04.03.2026.



Source: marinetraffic

JAPANESE AND EUROPEAN GAS PRICES, EUR/MWH



Source: investing.com

- ~20% of global LNG trade was constrained by the Hormuz crisis
- Which resulted in a ~50-100% price increase in Asian and European gas prices

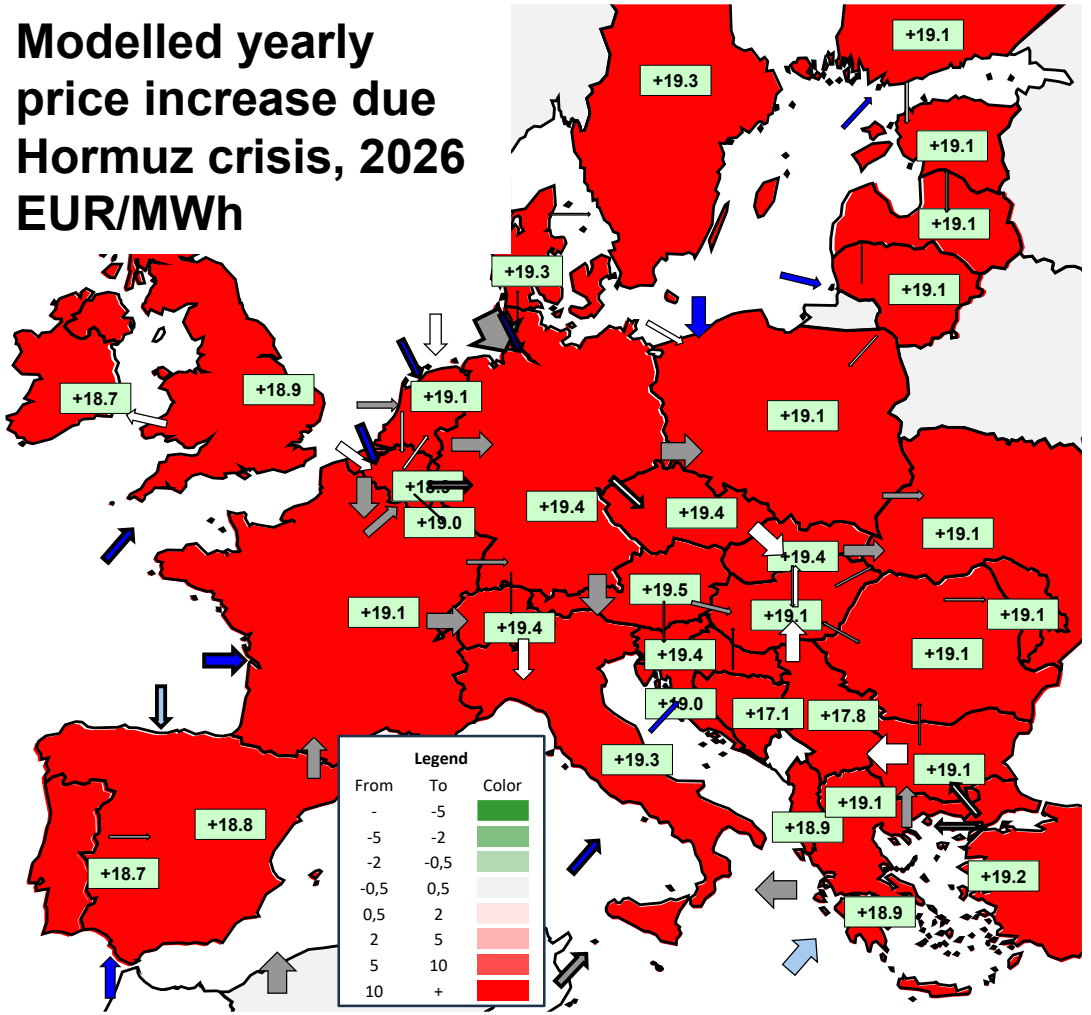
MODELLING RESULTS

Modelled scenarios

Baseline, no constraint (JP=40)	**With RU gas**		**REPowerEU**	
	2026	**2028**	**2026**	**2028**
Hormuz closed (JP=60)	**With RU gas**		**REPowerEU**	
	2026	**2028**	**2026**	**2028**

Hormuz crisis raises European gas prices by ~20 EUR/MWh

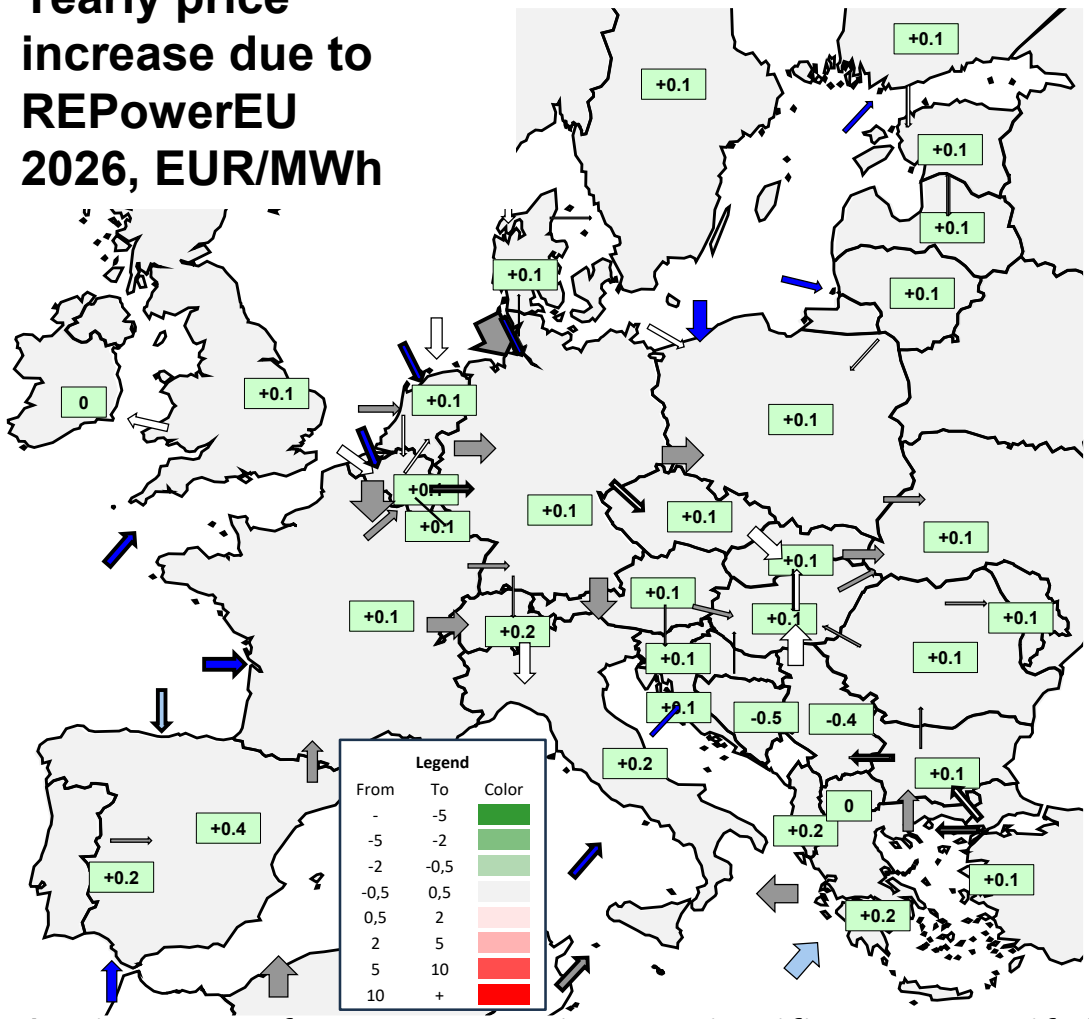
- European markets experience similar price increase, no regional differences occur
- ->NO MAJOR BOTTLENECKS
- Infrastructure utilizition of certain LNG terminals and major pipelines is high (see dark blue and gray arrows)



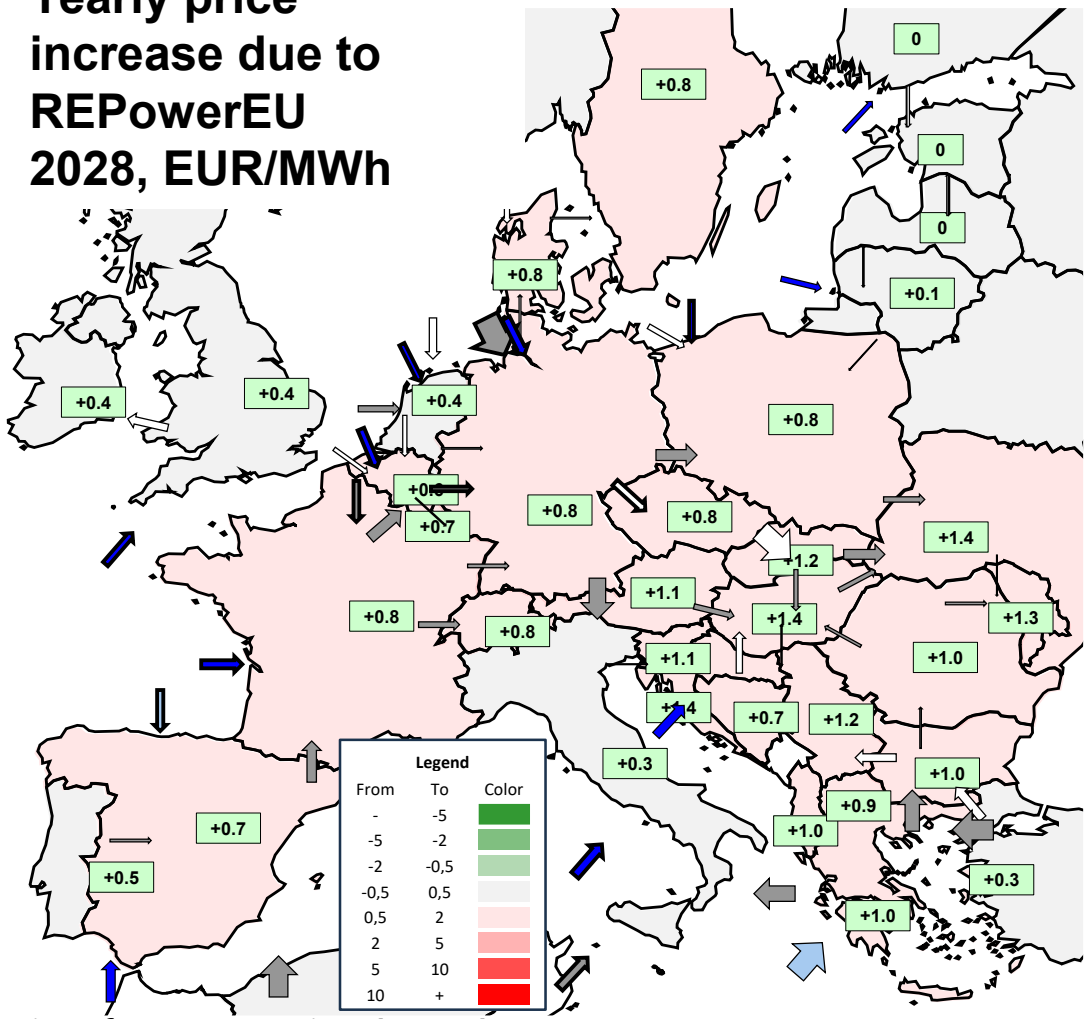
Source: REKK EGMM

REPowerEU effect with Hormuz closed

Yearly price increase due to REPowerEU 2026, EUR/MWh



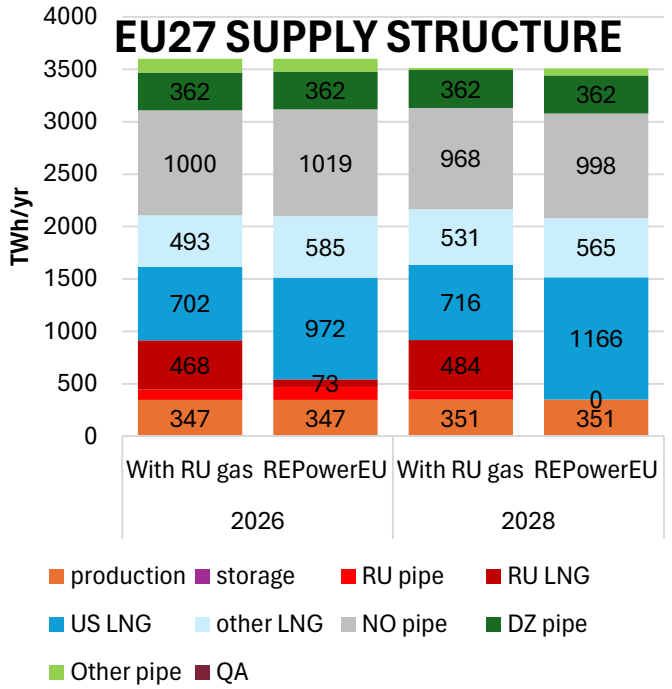
Yearly price increase due to REPowerEU 2028, EUR/MWh

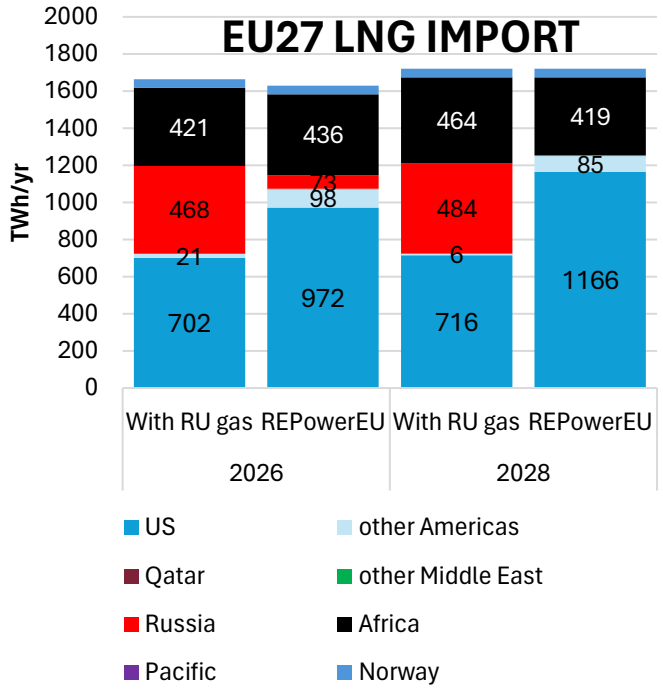


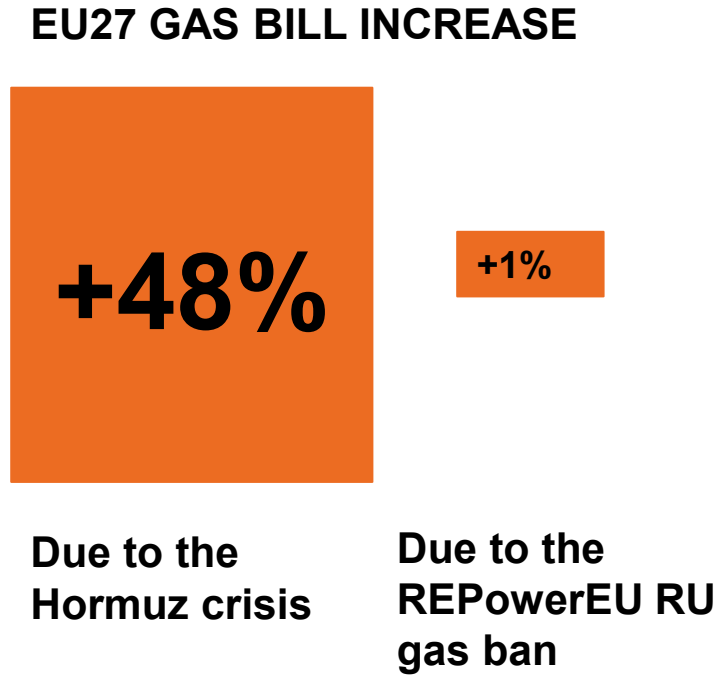
- The impact of REPowerEU is not significant even if the Strait of Hormuz is closed:
  - In 2026 (only sport RU flows are banned), the impact across Europe is low: +0.1–0.2 EUR/MWh
  - In 2028, the impact will be slightly higher due to the phase-out of Russian long-term contracts: 0.4-0.8 EUR/MWh in Western Europe, 1.1-1.4 in the CEE region

Source: REKK EGMM

REPowerEU impact with Strait of Hormuz closed







Source: REKK EGMM

- Russian gas may be replaced by US LNG
- **US LNG share can increase up to 37% of imports!**

- Besides US LNG, African sources (Algeria, Nigeria, etc.) step in

- **+48% gas bill increase due to Hormuz crisis in 2026**
- +1% gas bill increase due to REPowerEU policy

Discussion

- REPowerEU Roadmap on phasing out Russian gas has been tested: the full ban on RU gas phaseout adds 1-2% to the prices in 2028 and does not cause any regional price distortion
- The Romanian offshore production is key in supporting the supply need for CEE (without RO offshore the Balkan price would increase by ~10%
- The US LNG is about to dominate the supply of Europe in all scenarios, especially when RU gas is banned under the RepowerEU Roadmap
- Landlocked countries (HU, RO) pay higher price due to tariff pancaking along the route
- German demand has a huge impact on German prices (see fast decarbon)

THANK YOU FOR YOUR ATTENTION

Contact:
Borbála Takácsné Tóth borbala.toth@rekk.hu

Péter Kotek peter.kotek@rekk.hu
Adrienn Selei adrienn.selei@rekk.hu
András Mezősi andras.mezosi@rekk.hu
Alfa Diallo alfa.diallo@rekk.hu

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