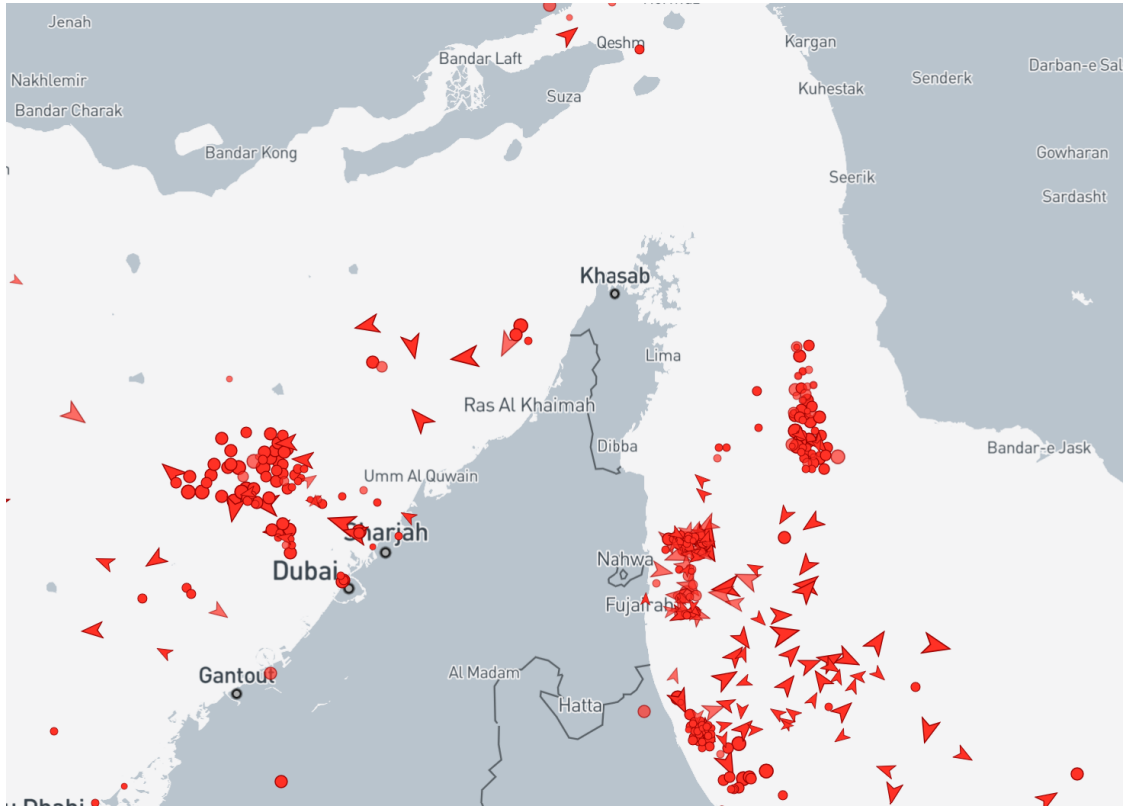


IMPACTS OF RUSSIAN GAS PHASE-OUT AND LNG SUPPLY SHOCKS ON WHOLESALE GAS PRICES IN EUROPE

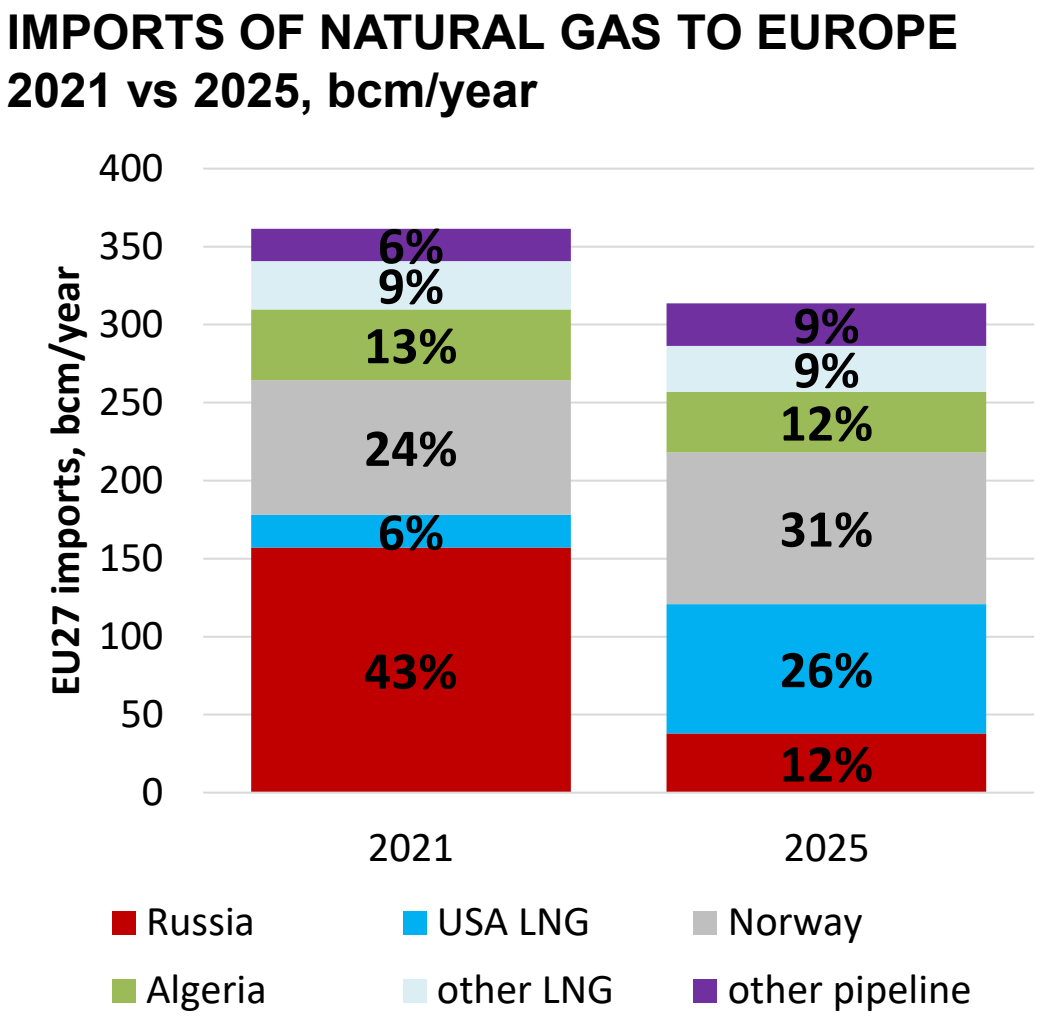
20.10.2026.
Péter Kotek
Borbála Takácsné Tóth

Agenda

- **BACKGROUND** — Strait of Hormuz crisis, Russian gas phaseout and US LNG dependence of Europe
- **METHODOLOGY** — EGMM, Scenario based modelling
- **RESULTS** — Is Russian gas phaseout possible?
- **CONCLUSION** — Main findings

Is Russian gas phaseout still possible with the increased exposure of Europe to US LNG?

In 2022 US LNG replaced the missing Russian volumes in Europe



Source: REKK based on Bruegel

BACKGROUND

- Russian share (pipe+LNG) in EU27 natural gas imports decreased from 43% in 2021 to 12% in 2025.
- US LNG share in EU27 natural gas imports increased from 6% in 2021 to 26% by 2025.
- EU has set as a political goal to ban Russian gas from the mix by Q3 2027 (REPowerEU Regulation EU/261/2026) approved in Jan 2026.
- In March 2026 US & Israel attacked Iran – due to the conflict the Strait of Hormuz is closed since 3 March 2026, stopping all LNG exports from Qatar and UAE

QUESTIONS

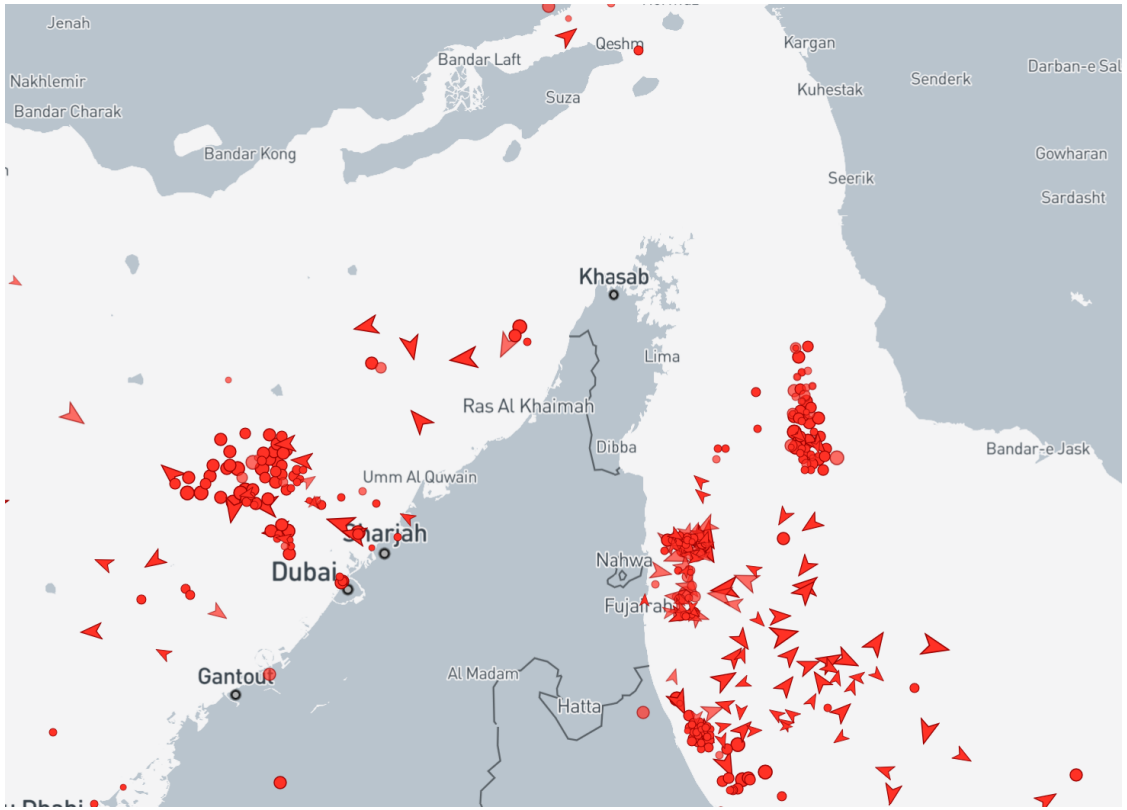
- Is the REPowerEU policy still feasible in the current geopolitical crisis?
- Is US LNG a supply risk? How does a potential temporary disruption of US LNG affect Europe?
- How can Europe mitigate the LNG supply dependency?

METHODOLOGY

- Gas market modelling EGMM and scenario analysis

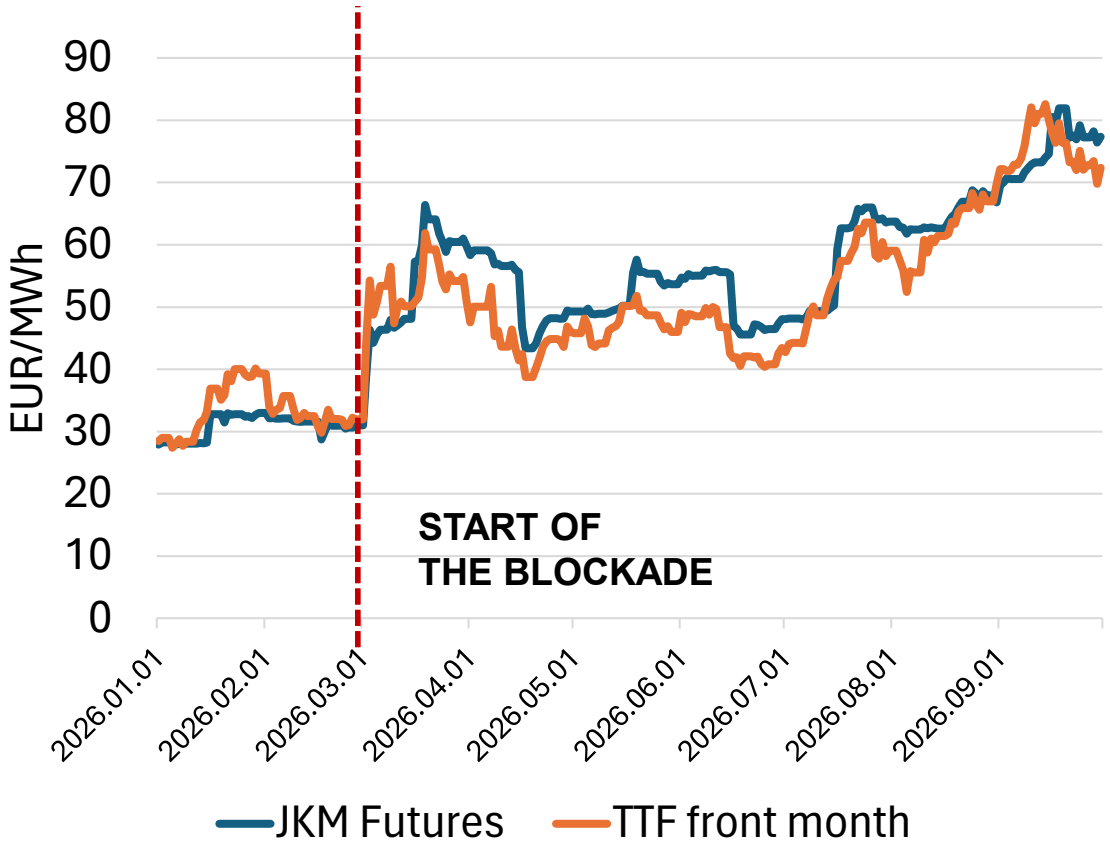
The 2026 Strait of Hormuz crisis increased gas prices globally

TANKERS WAITING AROUND THE STRAIT OF HORMUZ ON 04.03.2026.



Source: marinetraffic

JAPANESE AND EUROPEAN GAS PRICES, EUR/MWH

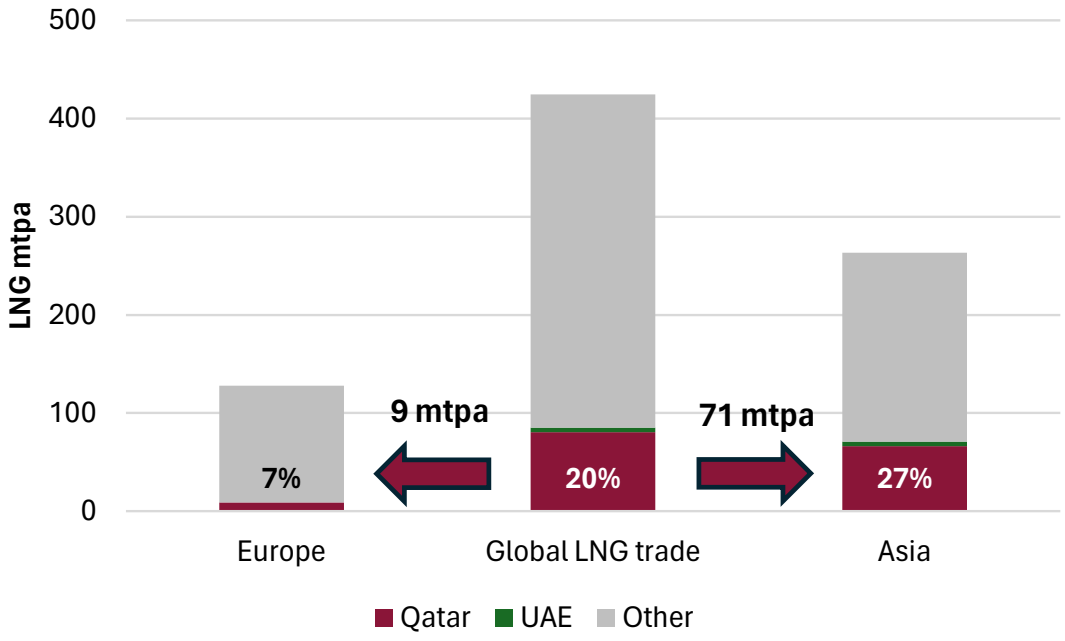


Source: investing.com

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

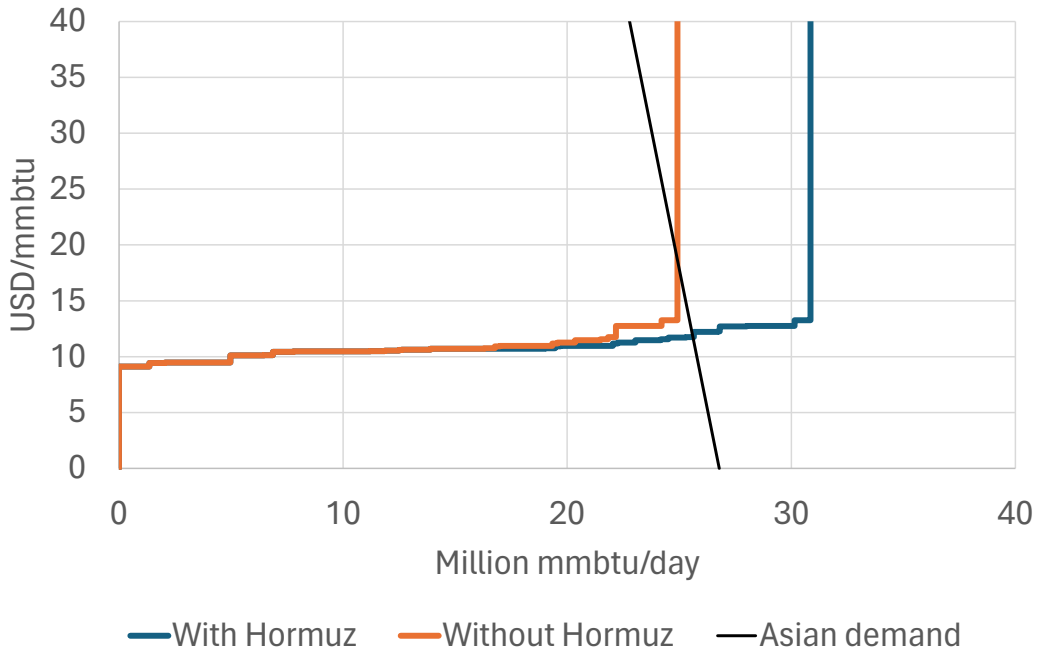
Strait of Hormuz effects on global LNG prices

ROLE OF QATAR AND UAE IN GLOBAL, ASIAN AND EUROPEAN LNG TRADE IN 2025, MTPA



Source: REKK based on Bruegel

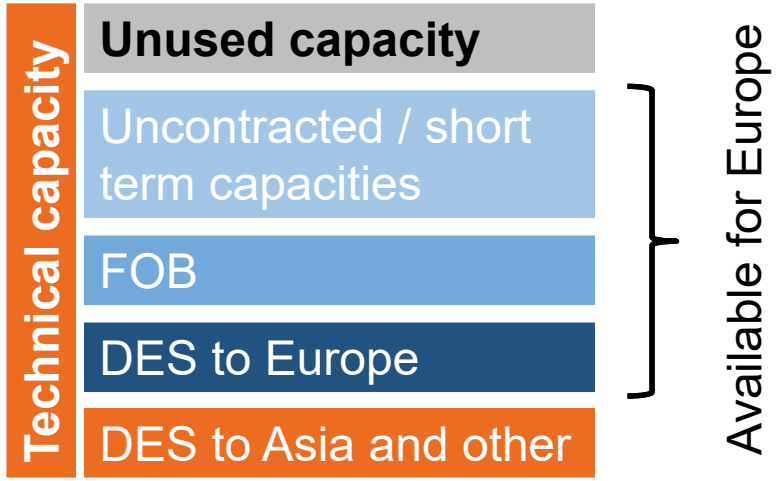
STRAIT OF HORMUZ EFFECT ON ILLUSTRATIVE LNG SUPPLY CURVE FOR ASIAN MARKETS (CHINA, KOREA, JAPAN, TAIWAN)



Source: REKK based on Bruegel

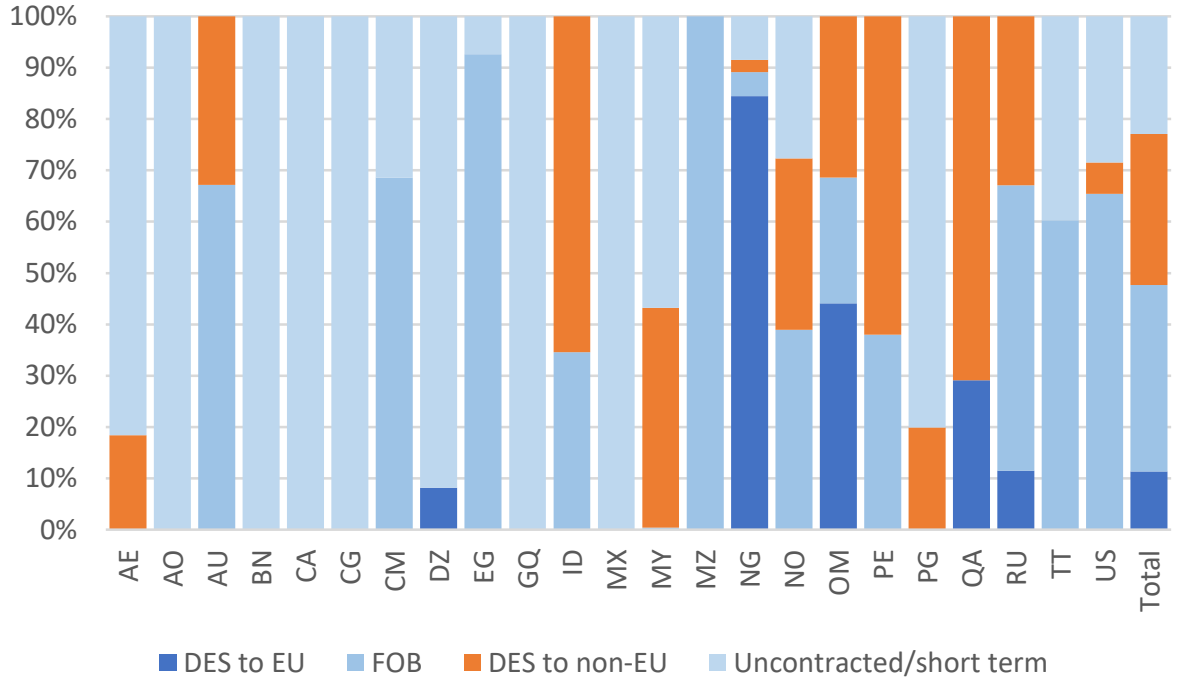
What is the volume of freely available LNG on the global market?

- Liquefaction terminals are booked with long-term contracts to ensure high utilisation
- Long-term contracts may be of DES or FOB type
  - DES: delivered ex-ship – the cargo is shipped from the liquefaction terminal to the regasification terminal ~ less flexible cargoes
  - FOB: free-on-board – the cargo may be shipped anywhere once it leaves the liquefaction terminal ~ more flexible cargoes
- DES volumes to Europe, FOB contracts and uncontracted capacity may be the total available LNG volume to Europe
- Technical capacity of liquefaction terminals was capped by
  - Historical utilisation
  - DES contracts to other regions



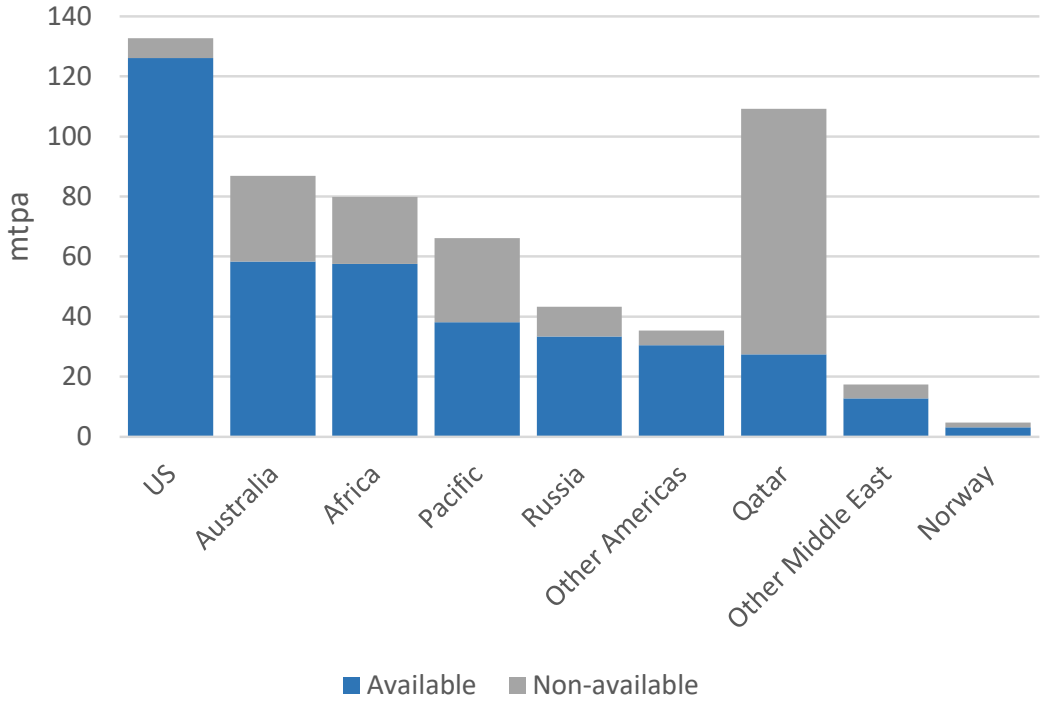
2/3 of global LNG liquefaction capacity may be available

LNG CONTRACTS IN FORCE BY PRODUCING COUNTRIES AND CONTRACT TYPE, 2025 (%)



Source: REKK based on GIIGNL

LNG VOLUMES AVAILABLE FOR EUROPE (FOB, DES TO EUROPE AND UNCONTRACTED), 2025 MTPA



Source: REKK based on GIIGNL

- 2/3 of global LNG liquefaction capacity can be accessed by Europe (by limiting technical liquefaction capacity with historical utilisation and DES volumes contracted to non-European countries)

- Largest potential of available LNG supply to Europe: US, Africa, Russia
- Australia and Pacific countries have huge available capacities, but uneconomical due to long distances

US might use energy as a weapon (?)

- US National Security Strategy explicitly mentions

  „Expanding our net energy exports … enables us to project power."

- Geopolitization of energy trade of the US, similar to Russian pipeline politics in Europe
  - Launched a war in Iran without consulting European allies, exposing EU supply chains to immediate disruption
  - Relaxed Russian energy sanctions while Europe tighten them, widening the Transatlantic divide
- On a long term Europe has a clear strategy with decarbonization
- But is there anything we can do on a short run?

US warns EU to pass trade deal or risk losing 'favourable' access to LNG

European parliament set to vote this week on whether to ratify Turnberry agreement signed last year

US President Donald Trump and European Commission president Ursula von der Leyen shake hands after agreeing the trade deal in Turnberry, Scotland, last year © Andrew Harnik/Getty Images

Source: Financial Times 23.03.2026.

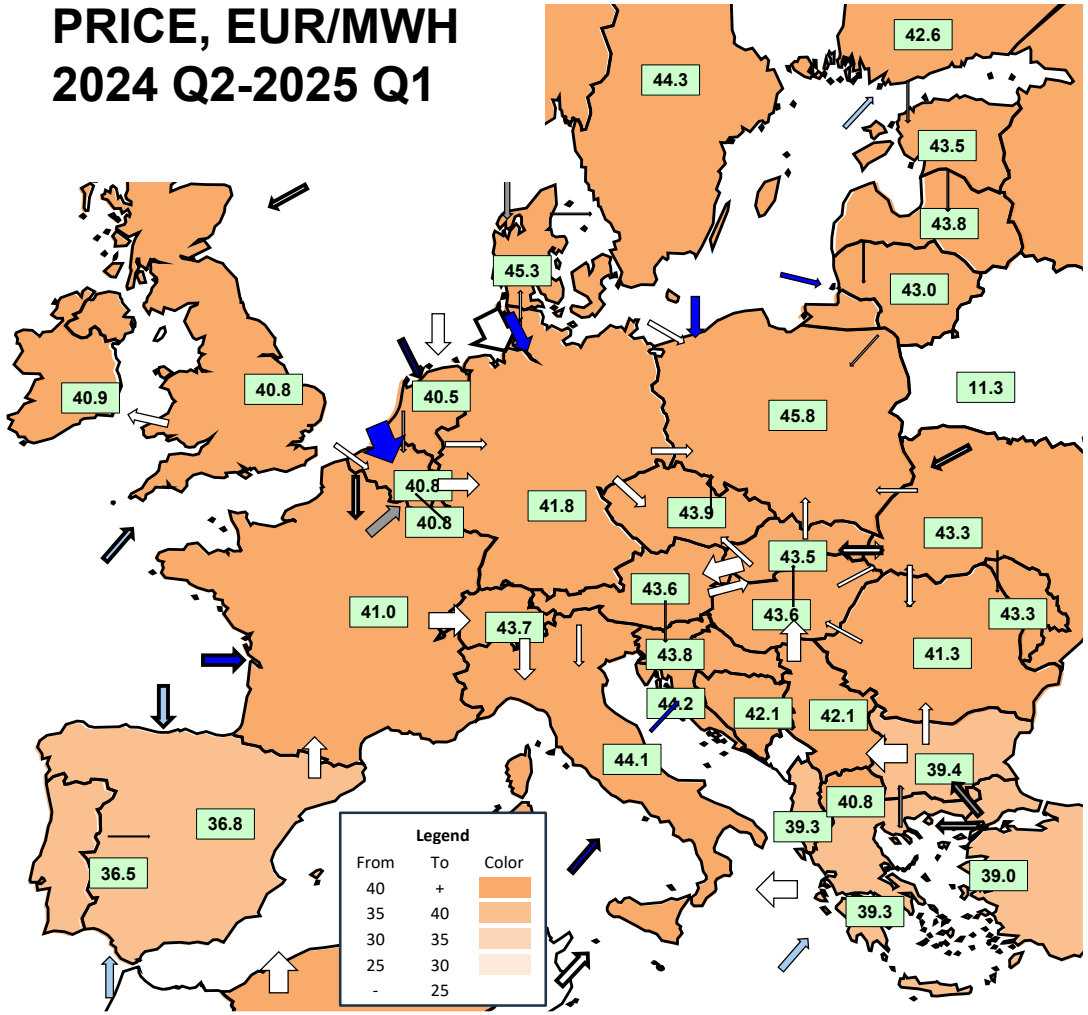
- **Energy Dominance** – Restoring American energy dominance (in oil, gas, coal, and nuclear) and reshoring the necessary key energy components is a top strategic priority. Cheap and abundant energy will produce well-paying jobs in the United States, reduce costs for American consumers and businesses, fuel reindustrialization, and help maintain our advantage in cutting-edge technologies such as AI. Expanding our net energy exports will also deepen relationships with allies while curtailing the influence of adversaries, protect our ability to defend our shores, and—when and where necessary—enables us to project power. We reject the disastrous "climate change" and "Net Zero" ideologies that have so greatly harmed Europe, threaten the United States, and subsidize our adversaries.

Source: US National Security Strategy 2025

European Gas Market Model – major characteristics

- EU (26) + Energy Community CPs (7) + UK + CH + TR +BY + AM = 38 countries are modelled
  (CY, ME and KO* not included as no gas market is there)
- Trade is based on long term contracts and spot trade within the modelled and with exogenous countries and global LNG market (NO, RU, LNG)
- LNG market representation is linked to Asian LNG prices (indicated by JKM marker)
- Physical constraints are interconnection capacities (transmission tariffs are also included)
- Trade constraints: TOP obligations with flexibility
- Domestic production and storage facilities are included
- Main output:
  - Competitive prices by countries; price modelled for each 12 months (in boxes)
  - Natural gas flows and congestions on interconnectors (arrows)

WHOLESALE GAS PRICE, EUR/MWH 2024 Q2-2025 Q1



Detailed description of EGMM:
[Péter Kotek, Adrienn Selei, Borbála Takácsné Tóth, Balázs Felsmann (2023): What can the EU do to address the high natural gas prices?, Energy Policy, Volume 173:113312, ISSN 0301-4215](), Annex 3

Scenario definition

COMMON SCENARIO ASSUMPTIONS

- Modelling done for a 2026 and a 2028
- Storages at 30%, to be filled to 80% then close at 30%
- Regasification capacity availability in Europe: 80% of technical capacity, based on historical utilisation
- LNG available for Europe: FOB cargoes and DES to Europe

LNG SUPPLY SCENARIOS

- **Baseline:** LNG supply not constrained
- **Strait of Hormuz constrained:** reflecting the Q1 2026 events, the strait of Hormuz is assumed closed, QA and AE LNG not allowed to reach global markets. Oil price at 100 USD/barrel, JKM marker at 60 EUR/MWh (20 USD/mmbtu)
- **US LNG disruption shock:** 100% of US LNG production unavailable due to natural events (e.g. hurricanes in Texas and Lousiana) for 3 months
- **Combined:** Strait of Hormuz shock and US LNG disruption shock combined

REPOWER ROADMAP SCENARIOS

- **With RU gas:** Counterfactual / no REPowerEU to show the effects of the regulation – RU pipeline gas and RU LNG allowed to the EU27 as of 2025 contracts
- **No RU gas:** REPowerEU implemented for the EU27

DEMAND SCENARIOS

- **Stagnating demand** to 2028, ~3500 TWh/yr
- **35% demand:** REPowerEU demand to 2028, ~2200 TWh/yr
- **25% demand reduction:** Demand Adjustment to 2028, ~2600 TWh/yr

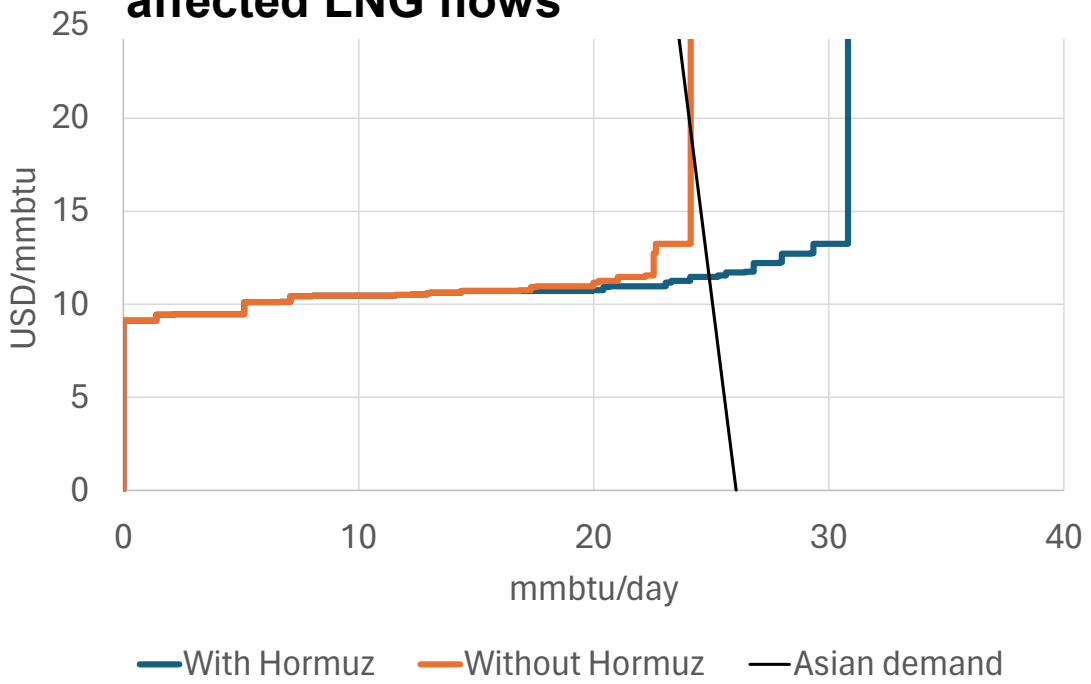
Modelled scenarios

REKK

	With RU gas		No RU gas			
	2026	2028	2026	2028	2028 -35% dem.	2028 -25% dem.
Baseline, no constraint (JP=40)						
1. Hormuz closed (JP=60)						
2. US LNG disruption (JP=60)						
3. Hormuz + US LNG disruption (JP=60)						

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

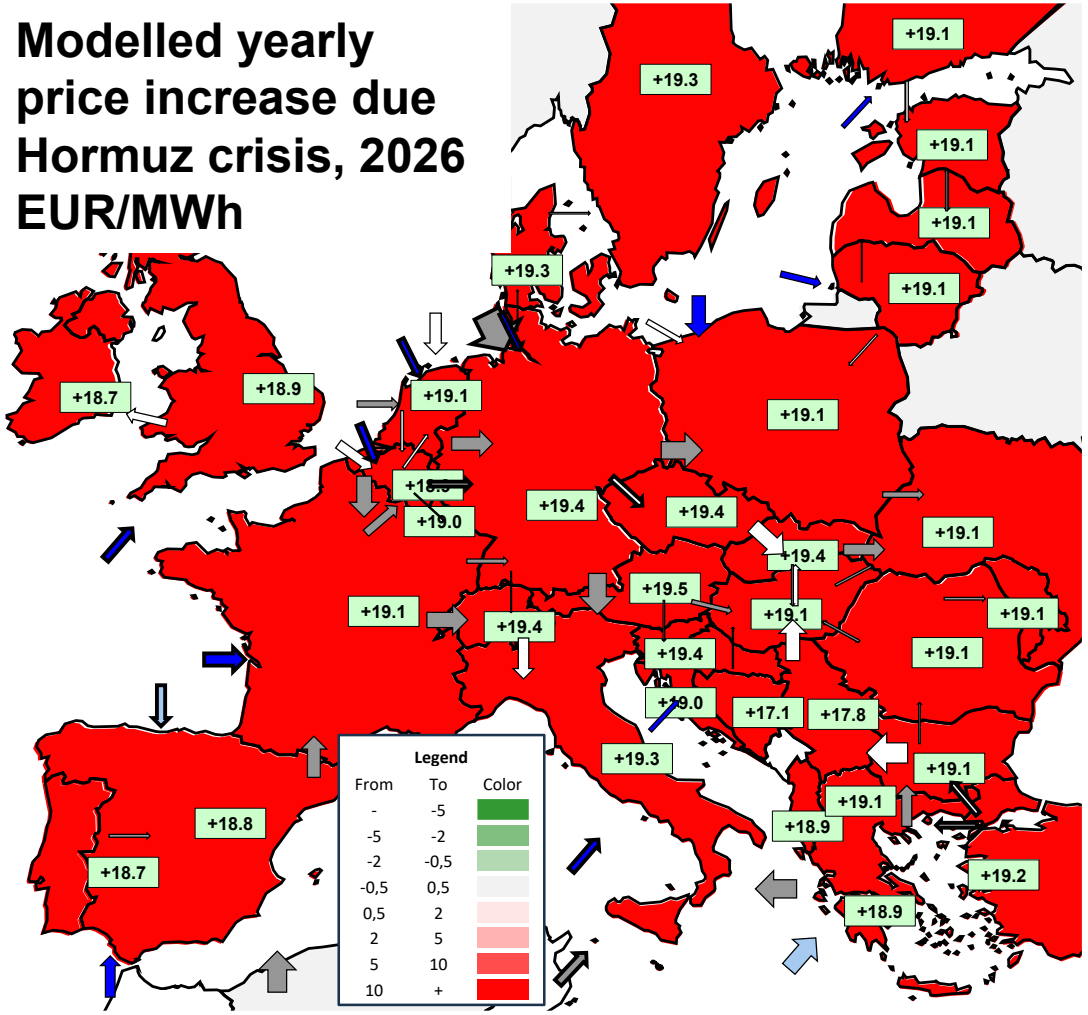
LNG supply curve to China, Japan, Korea and Taiwan with and without Hormuz affected LNG flows



Source: REKK based on historical LNG flows and UN Comtrade

- European markets experience similar price increase, no regional differences occur ->NO MAJOR BOTTLENECKS
- Infrastructure utilizition of certain LNG terminals and major pipelines is high

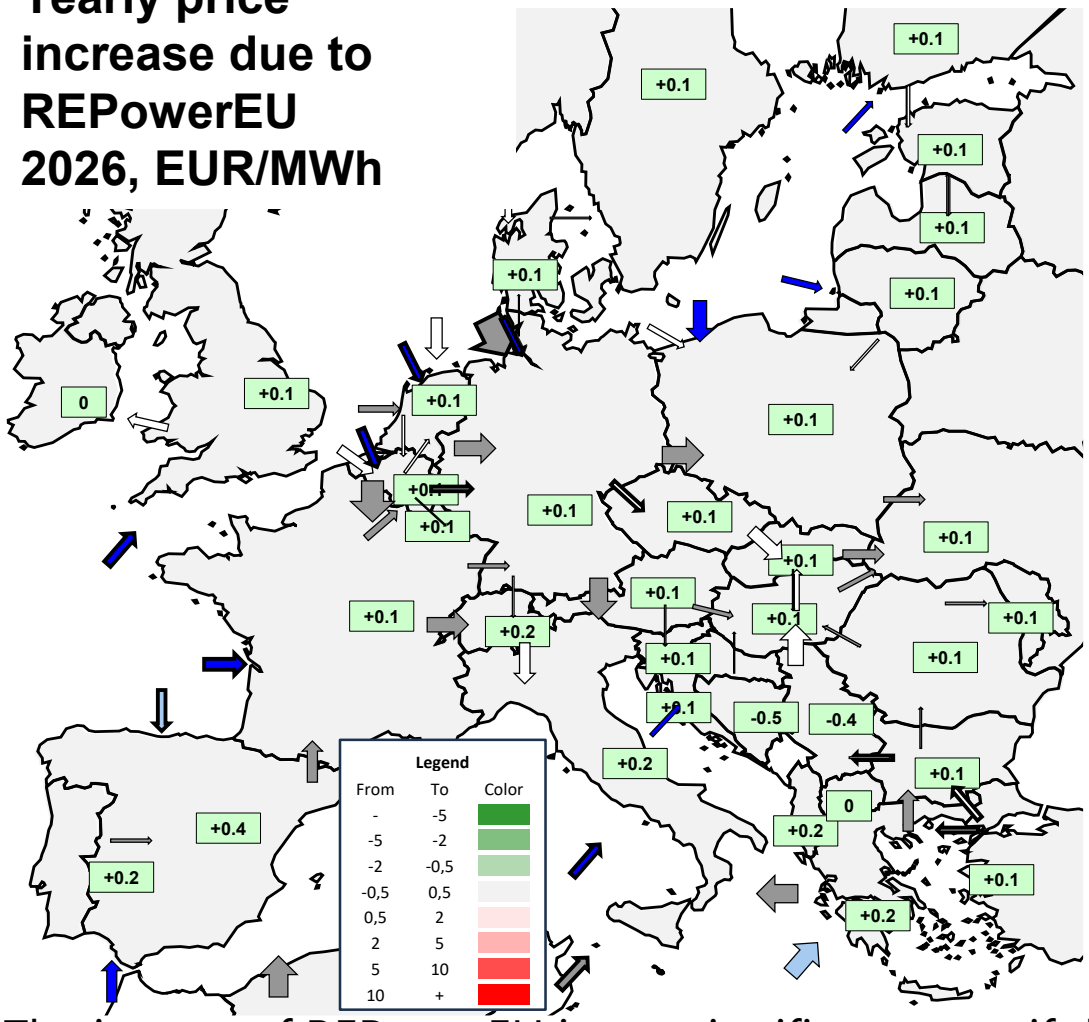
Modelled yearly price increase due Hormuz crisis, 2026 EUR/MWh



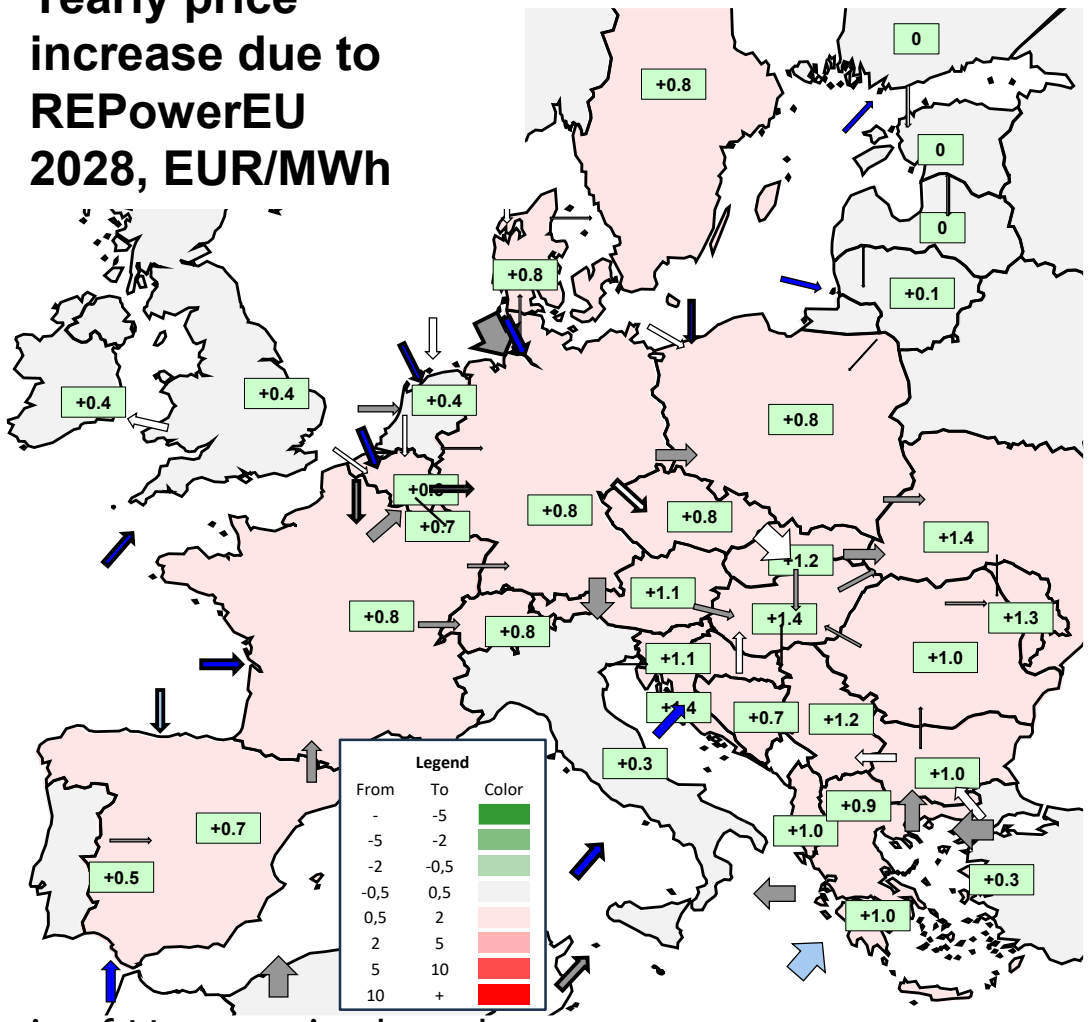
Source: REKK EGMM

1. REPowerEU effect with Hormuz closed

Yearly price increase due to REPowerEU 2026, EUR/MWh



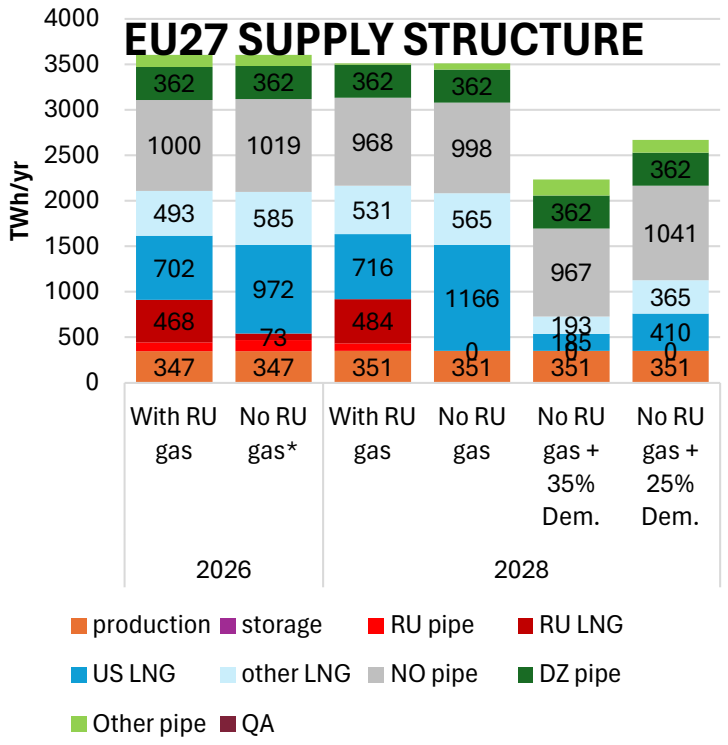
Yearly price increase due to REPowerEU 2028, EUR/MWh

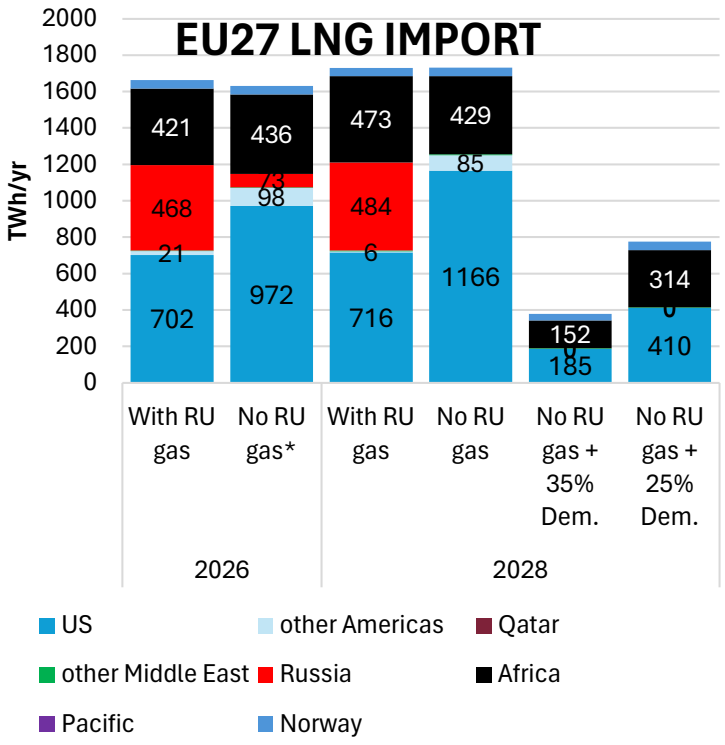


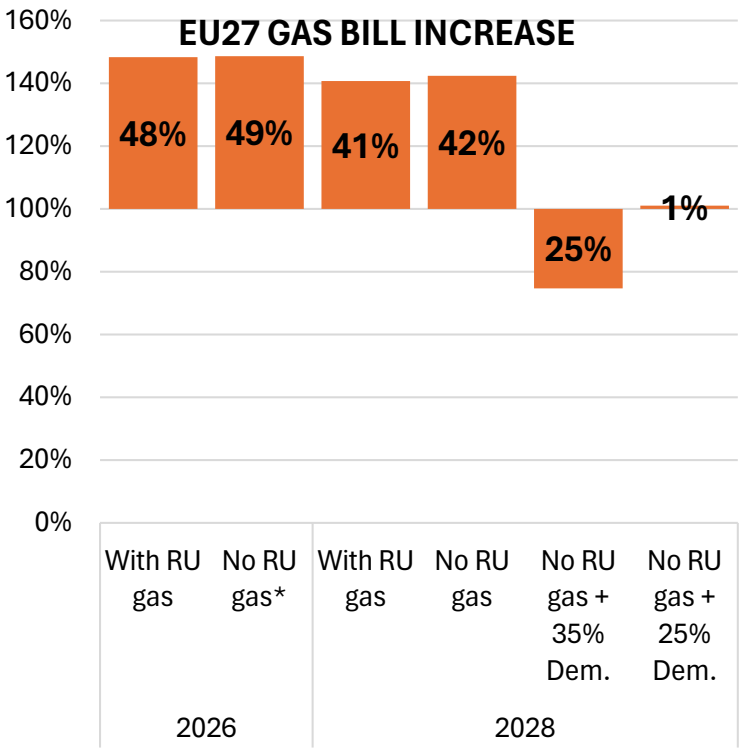
- The impact of REPowerEU is not significant even if the Strait of Hormuz is closed:
  - In 2026 (only spot RU flows are banned), the impact across Europe is low: +0.1–0.2 EUR/MWh
  - In 2028, the impact will be slightly higher due to the phase-out of Russian long-term contracts: 0.4-0.8 EUR/MWh in Western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

Source: REKK EGMM

1. Strait of Hormuz closed







EU27 SUPPLY STRUCTURE

- EU27 supply can adjust to RU gas phaseout
- US LNG may increase to nearly 37% in EU27 supply

EU27 LNG IMPORT

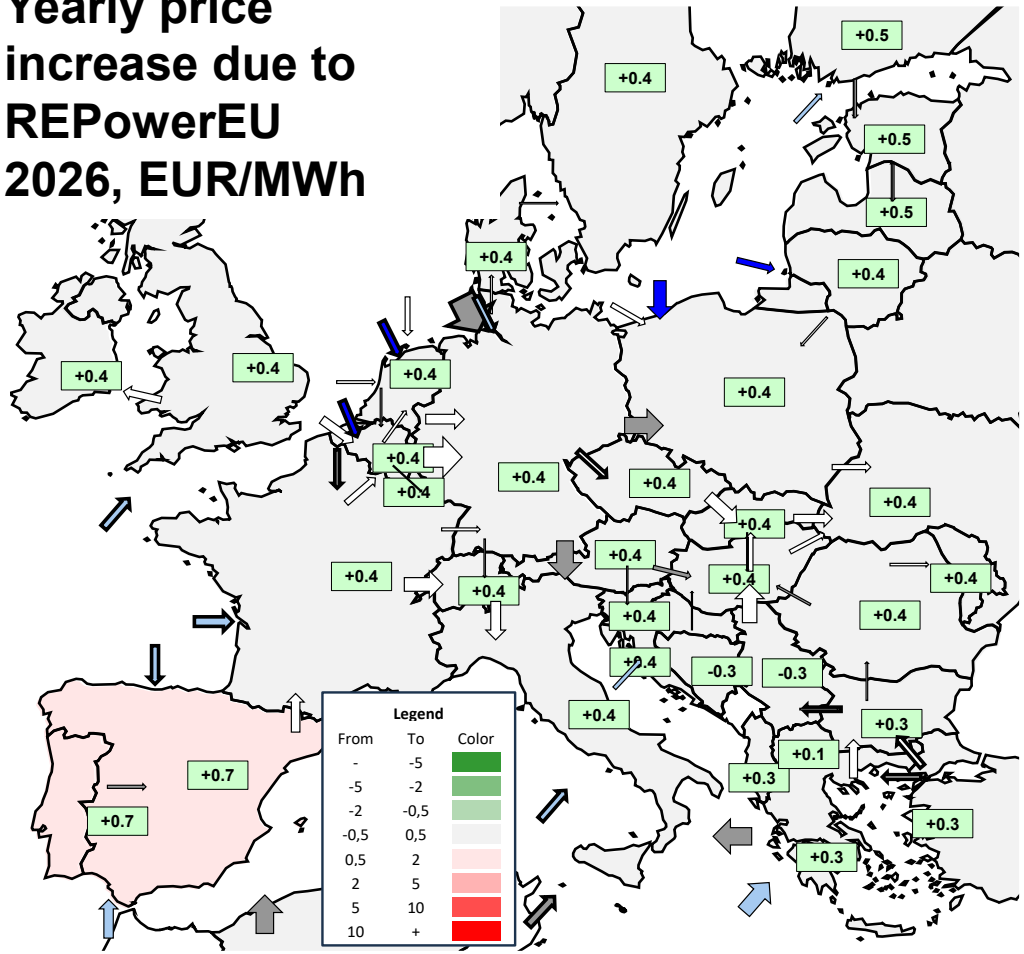
- US LNG as the most flexible import
- LNG from Africa (DZ, NG, etc.) is te second largest source

EU27 GAS BILL

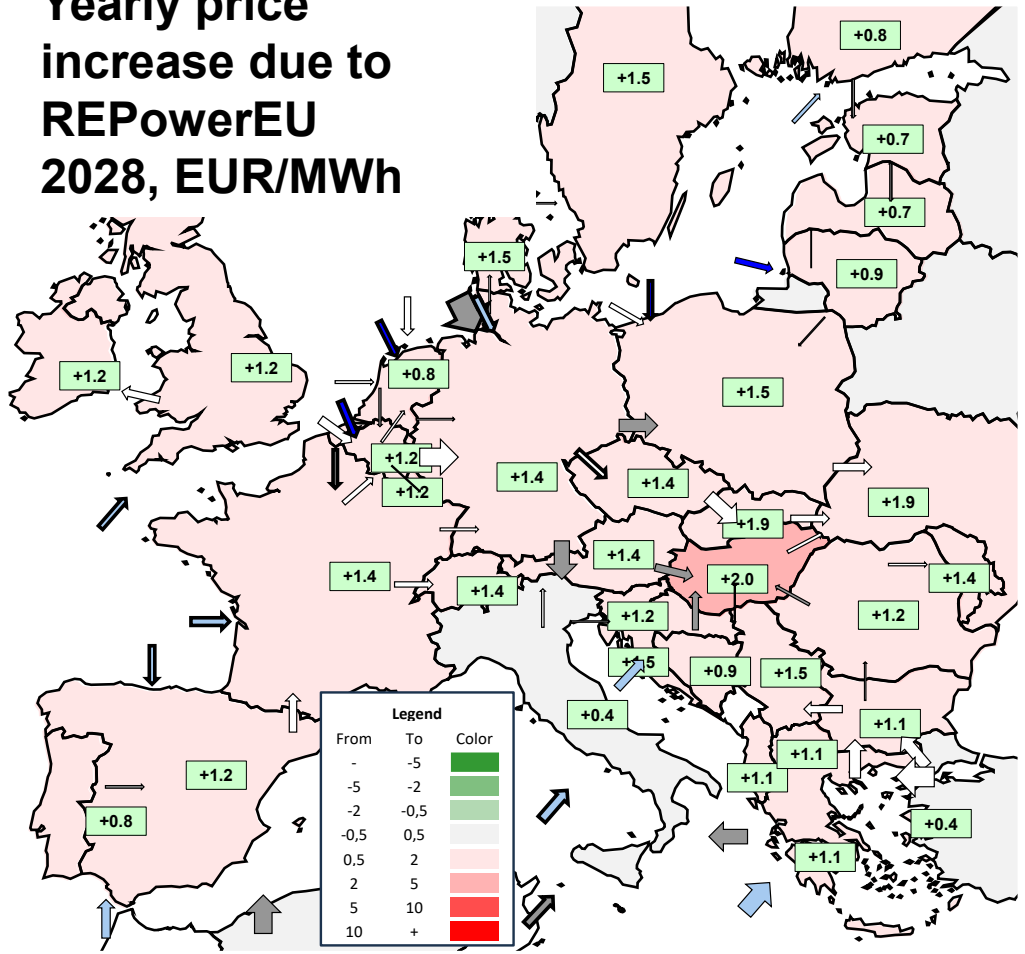
- Hormuz shock causes 50% higher gas bills
- Banning Russian gas adds 1% on gas bills
- Reducing demand by 35% cuts gas bill by 25%
- To mitigate Hormuz effects, a 25% demand reduction is need

2. REPowerEU effect with US LNG disruption

Yearly price increase due to REPowerEU 2026, EUR/MWh

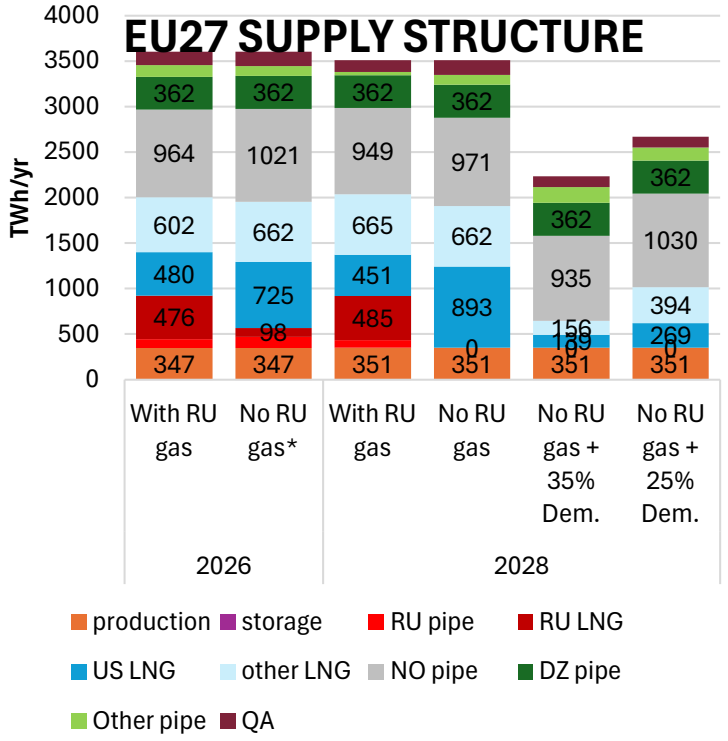


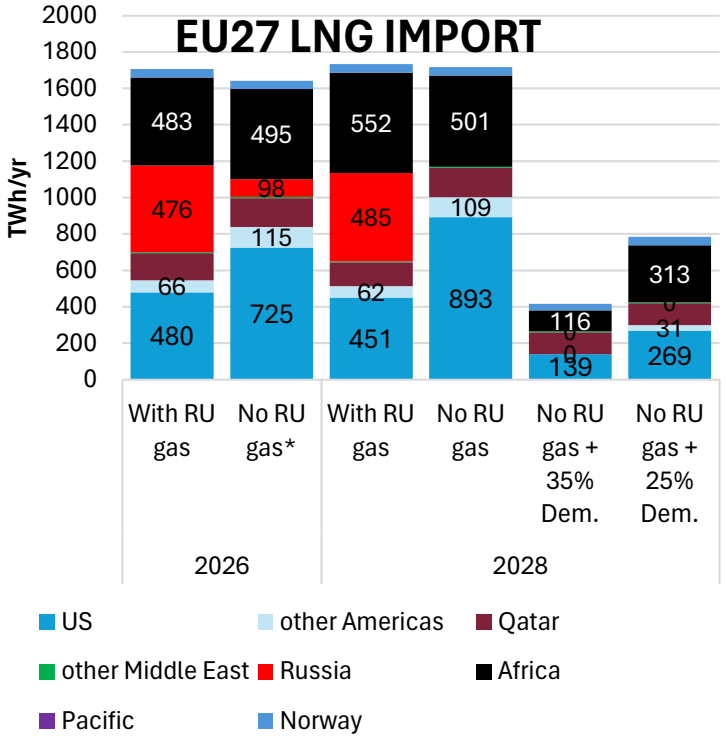
Yearly price increase due to REPowerEU 2028, EUR/MWh

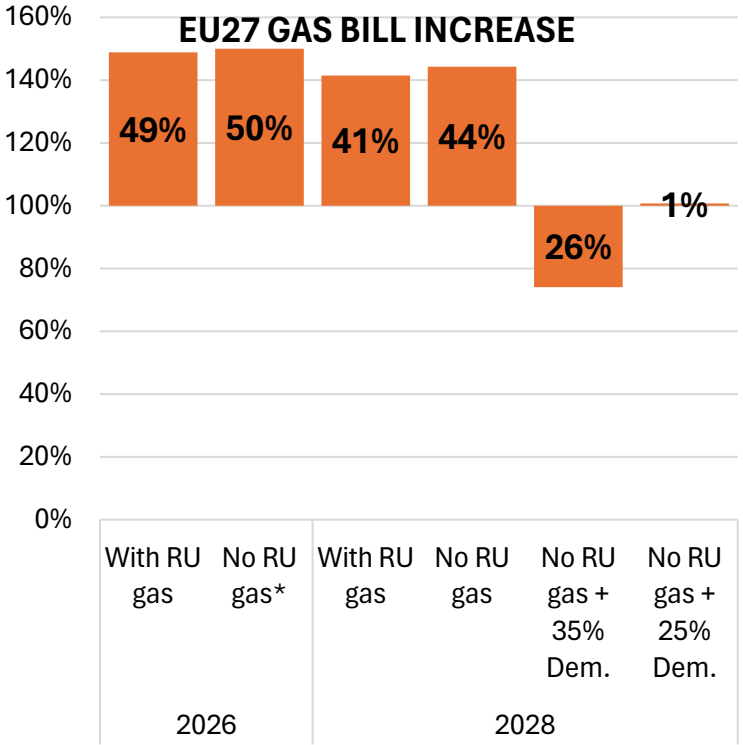


- The impact of REPowerEU is not significant even if the US LNG is unavailable:
  - In 2026 (only spot RU flows are banned), the impact across Europe is low: +0.4-0.7 EUR/MWh
  - In 2028, the impact will be slightly higher due to the phase-out of Russian long-term contracts: 0.8-1.4 EUR/MWh in Western Europe, 1.4-2 in the CEE region

2. US LNG disruption







EU27 SUPPLY STRUCTURE

- EU27 supply can adjust to RU gas phaseout
- 3 month US LNG unavailability can be handled with alternative LNG (QA available)

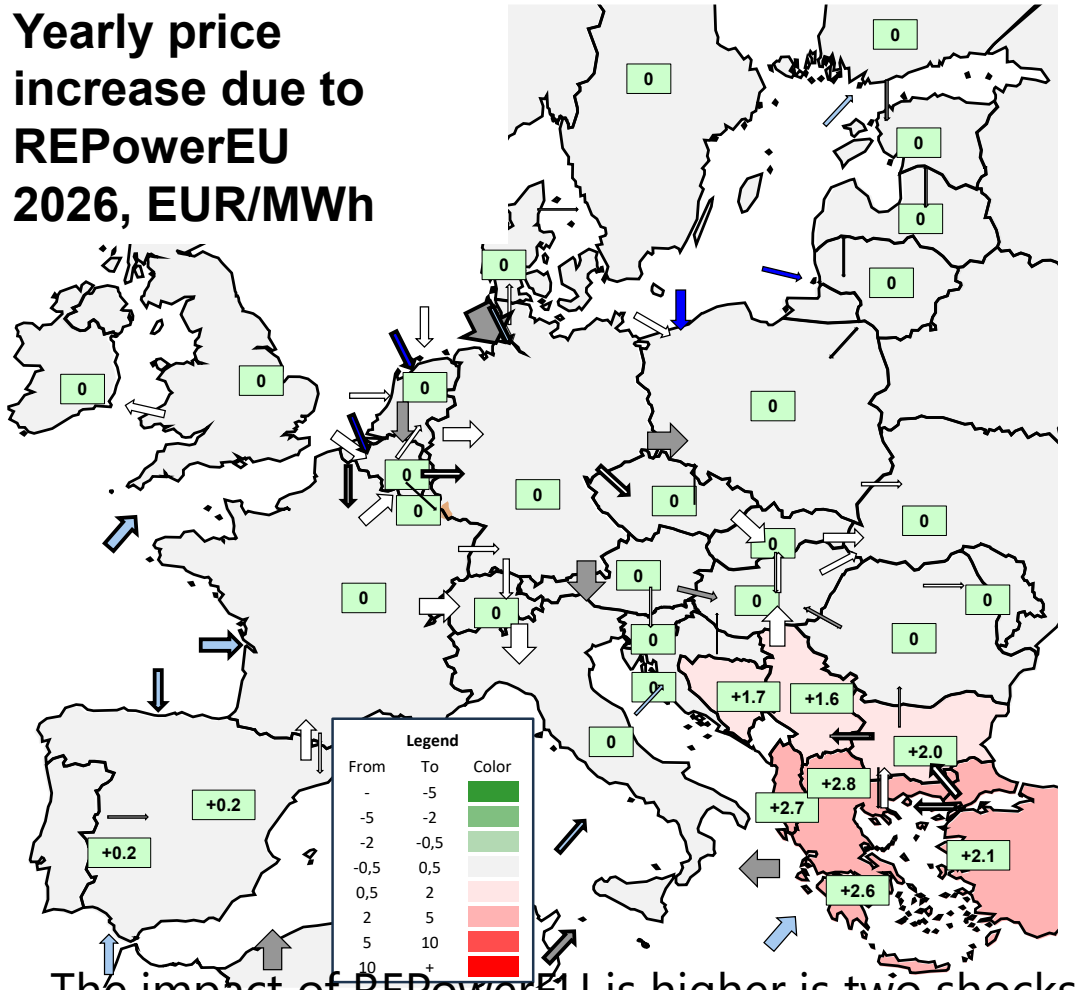
EU27 LNG IMPORT

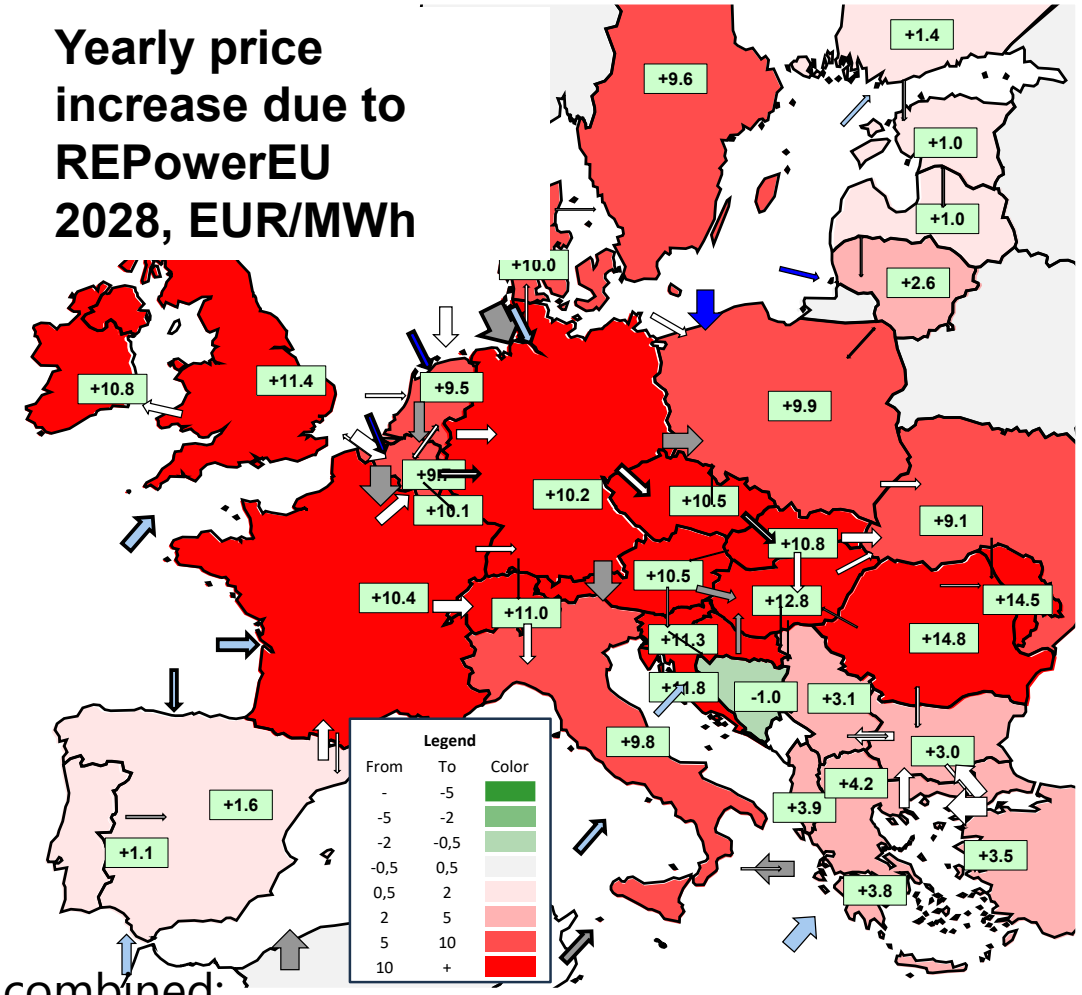
- US volumes replaced with QA and other LNG

EU27 GAS BILL

- 3 month disruption of US LNG to Europe is n similar scale as 1 year prolonged Hormuz crisis
- Banning Russian gas adds 1-3% on gas bills
- Reducing demand by 35% cuts gas bill by 26%
- To mitigate Hormuz effects, a 25% demand reduction is need

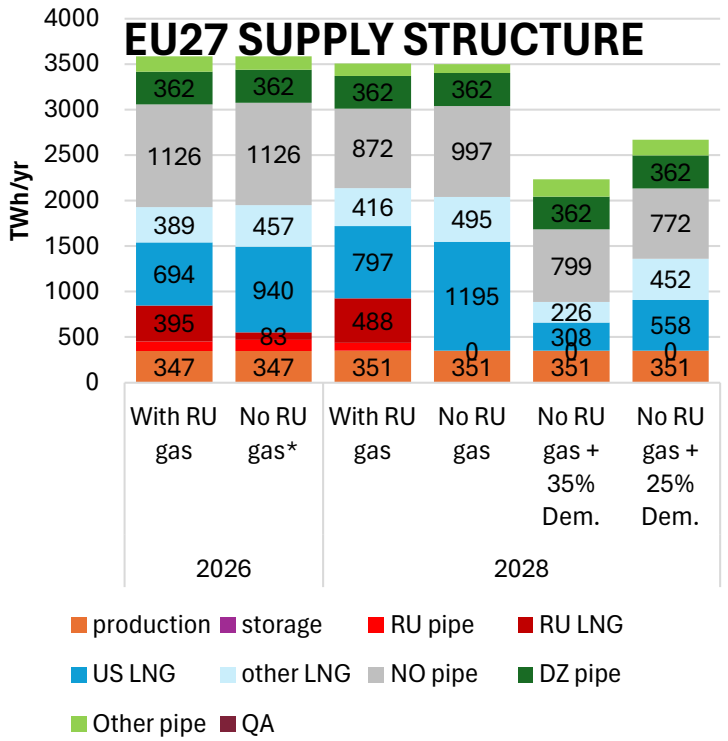
3. Strait of Hormuz and US LNG disruption combined

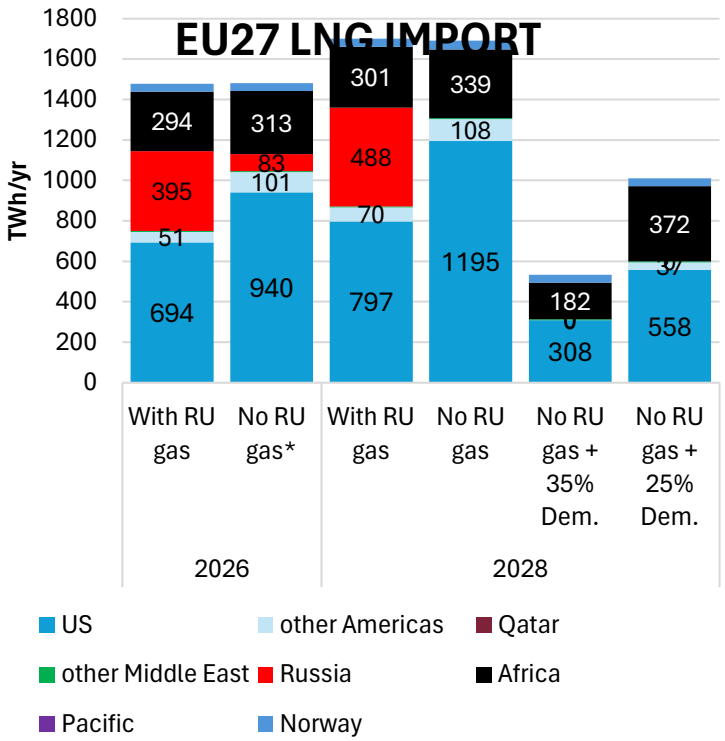


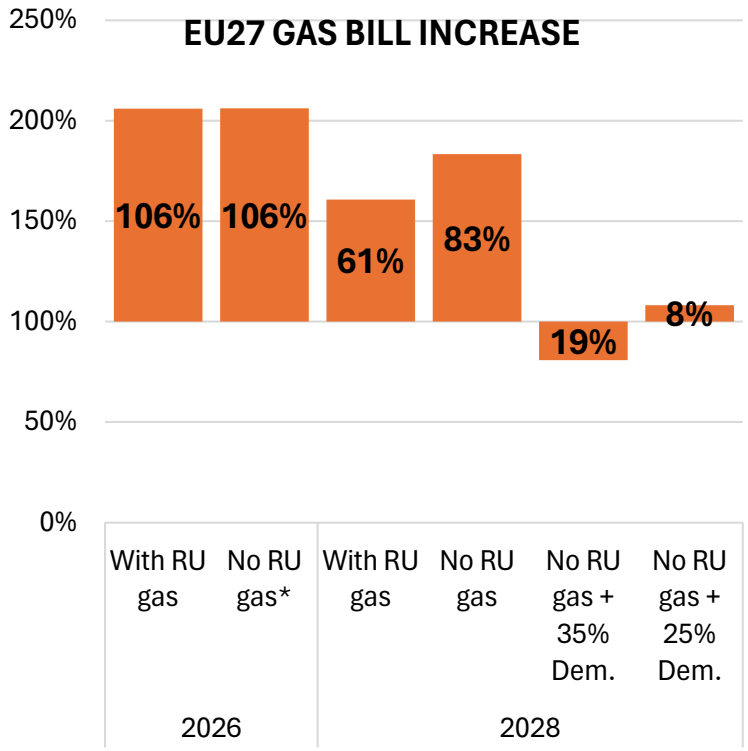


- The impact of REPowerEU is higher is two shocks are combined:
  - In 2026 (only spot RU flows are banned), the impact across Europe is low: +0.1–0.2 EUR/MWh
  - In 2028, the impact will be considerably higher due to the phase-out of Russian long-term contracts and absence of Russian LNG: 9.5-11.4 EUR/MWh in Western Europe, 10-14.8 in the CEE region

3. Strait of Hormuz and US LNG disruption combined







EU27 SUPPLY STRUCTURE

- EU27 supply can adjust without demand reduction

EU27 LNG IMPORT

- Besides US LNG, African sources step in

EU27 GAS BILL

- Combined shock without demand reduction may increase the EU27 gas bill by over 100%
- Bannin Russian gas increases gas bill by 22% in 2028
- Reducing demand by 35% cuts gas bill by 19%
- Reducing demand by 25% cuts gas bill by 8%

Conclusions

IS THE REPOWEREU POLICY STILL FEASIBLE IN THE CURRENT GEOPOLITICAL CRISIS?

- Russian gas ban is possible by 2028 in most scenarios both from technical point of view
- Russian gas ban increases EU27 gas bill by 1-2% in most scenarios
- If Strait of Hormuz is unavailable combined with a 3-month shock of US LNG, Russian gas ban increases EU gas bill by 22%
- It is global LNG market which sets the European price level, not Russian supply

HOW DOES THE TEMPORARY DISRUPTION OF US LNG AFFECT EUROPE?

- 3-month disruption of US LNG to Europe has the same effect on gas bill as 1 year disruption at the strait of Hormuz
- Middle Eastern and African LNG may replace US cargoes
- Combined with Strait of Hormuz crisis, gas bill would increase by over 100% without demand reduction

HOW CAN EUROPE MITIGATE THE LNG SUPPLY DEPENDENCY?

- Reducing EU27 natural gas consumption mitigates supply shocks to a great extent

THANK YOU FOR YOUR ATTENTION

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