

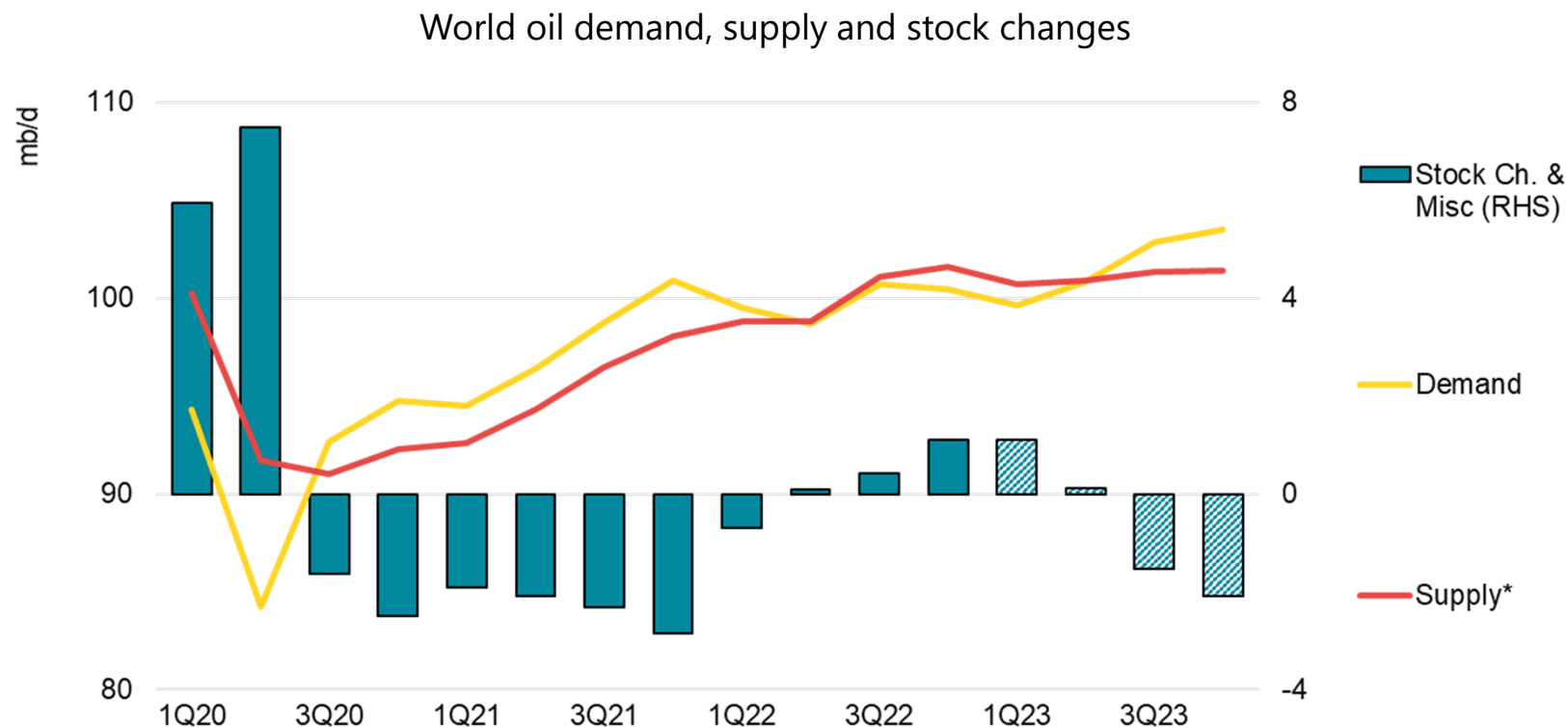


# Energy Market Outlook

Keisuke Sadamori, Director Energy Markets and Security

IEEJ Seminar, 3 February 2023

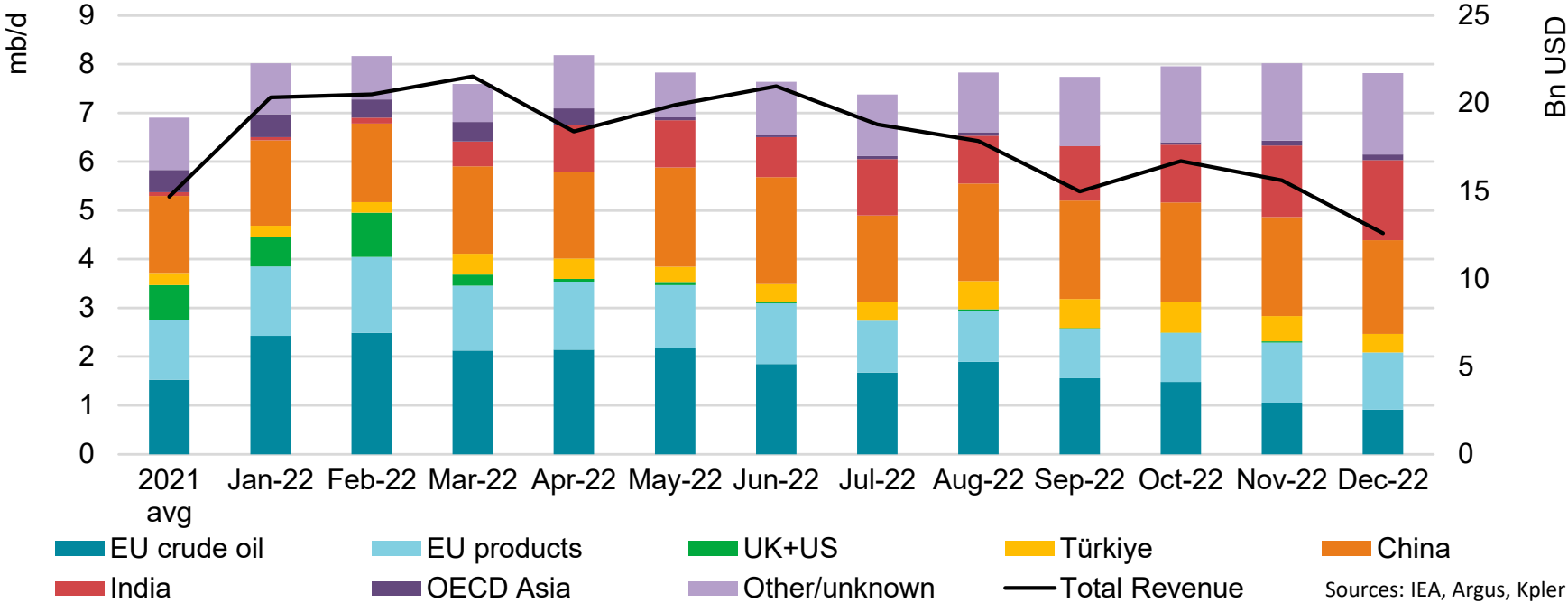
# Oil prices have eased as market shifted to surplus



Balance could quickly tighten. Chinese demand recovery and the extent of Russian supply losses remain biggest wild cards for 2023.

# Russian oil exports remain robust but revenues see sharp fall

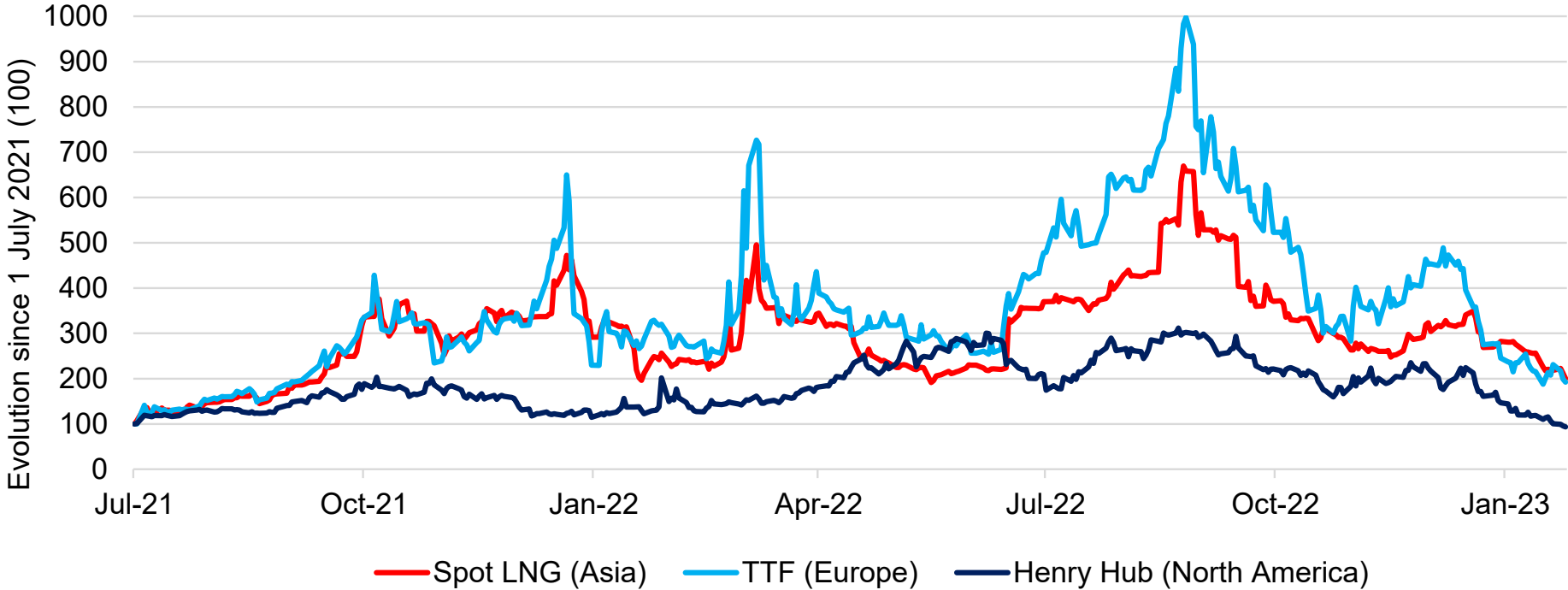
Russian oil exports and revenues



In December, the EU accounted for 27% of Russian exports, down from 49% pre-war. India, China, Türkiye largest markets. From 5 February, Russia needs to divert 1.2 mb/d of oil products from EU.

# Gas prices dropped from their peak in August but still show strong volatility

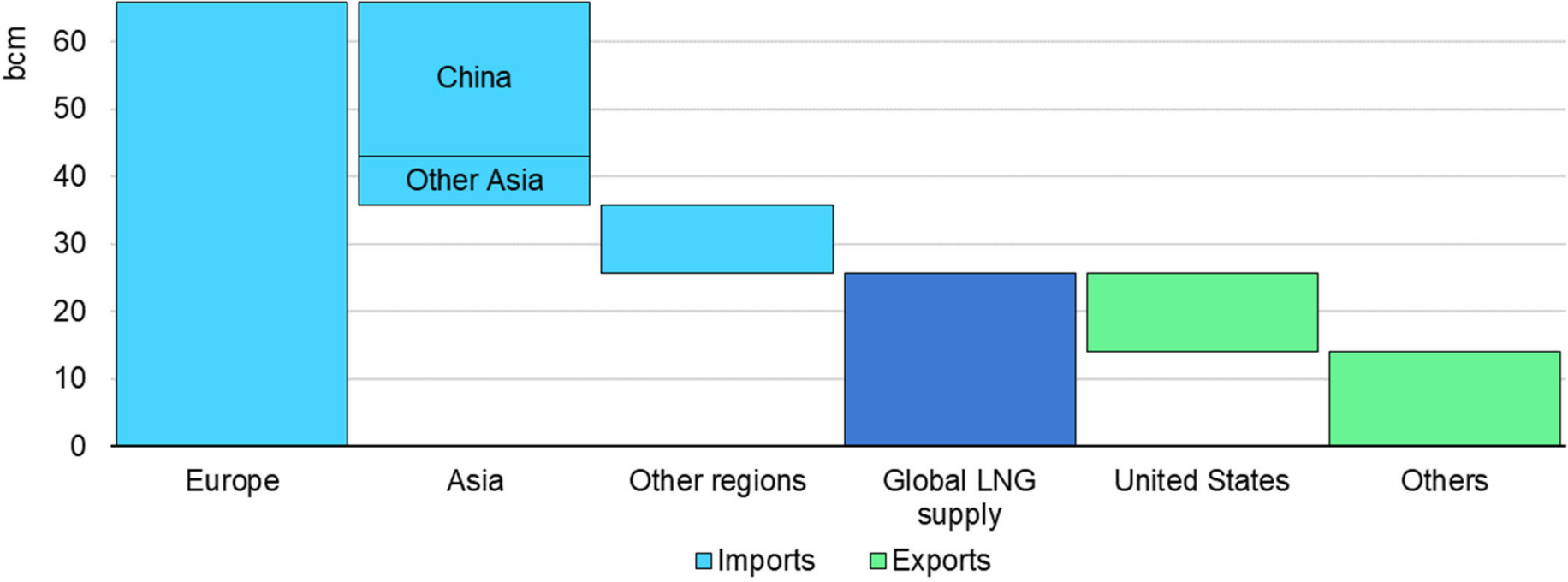
Evolution of key regional natural gas prices since mid-2021



Prices in Europe and Asia declined from their all-time records of late August on a combination of mild temperatures and high storage inventories.

# Europe's incremental gas needs drove LNG growth and tightness

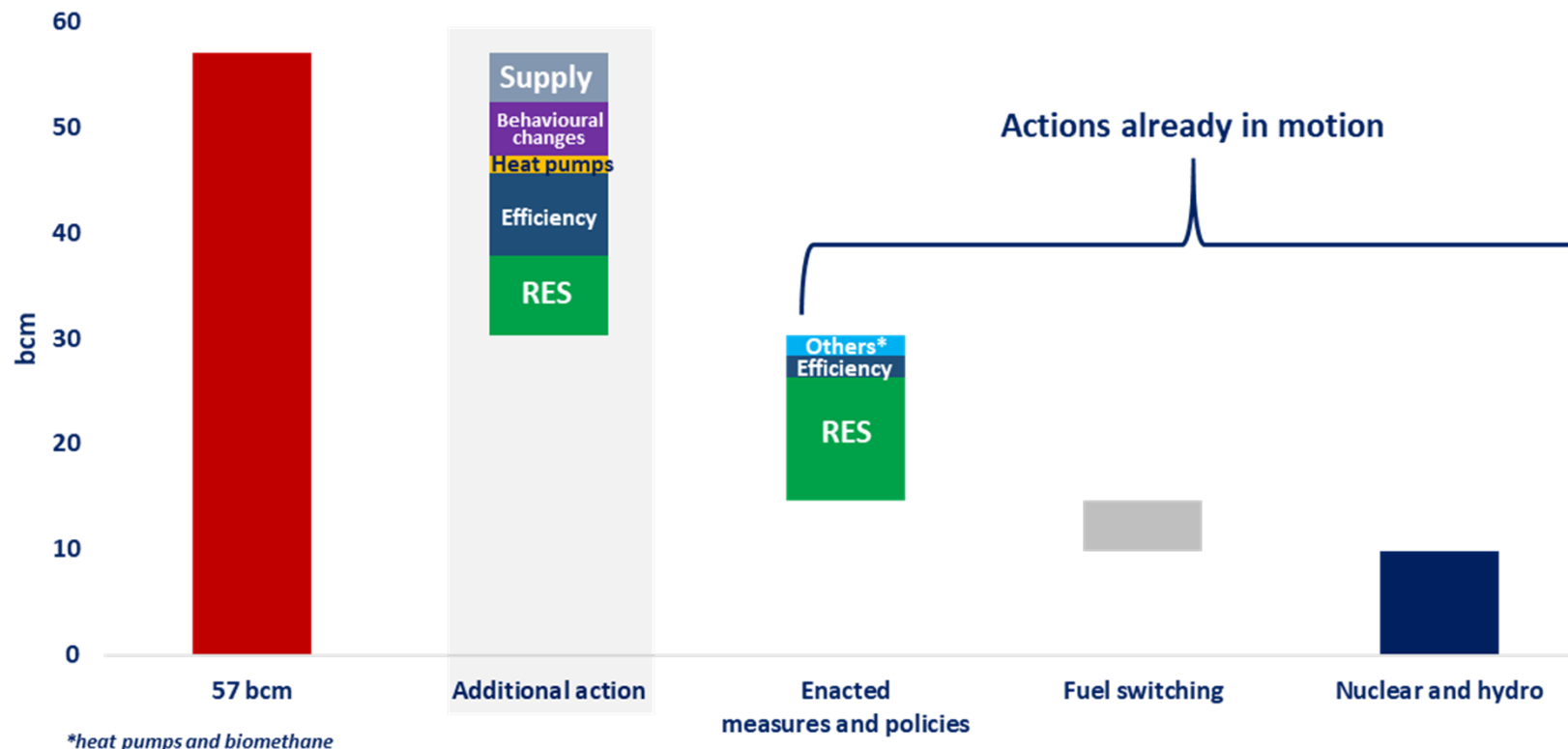
Global LNG balance, y-o-y change, 2021-2022



Global LNG trade flows reconfigured in 2022 as Europe's incremental LNG needs account for over twice the amount of supply capacity additions.

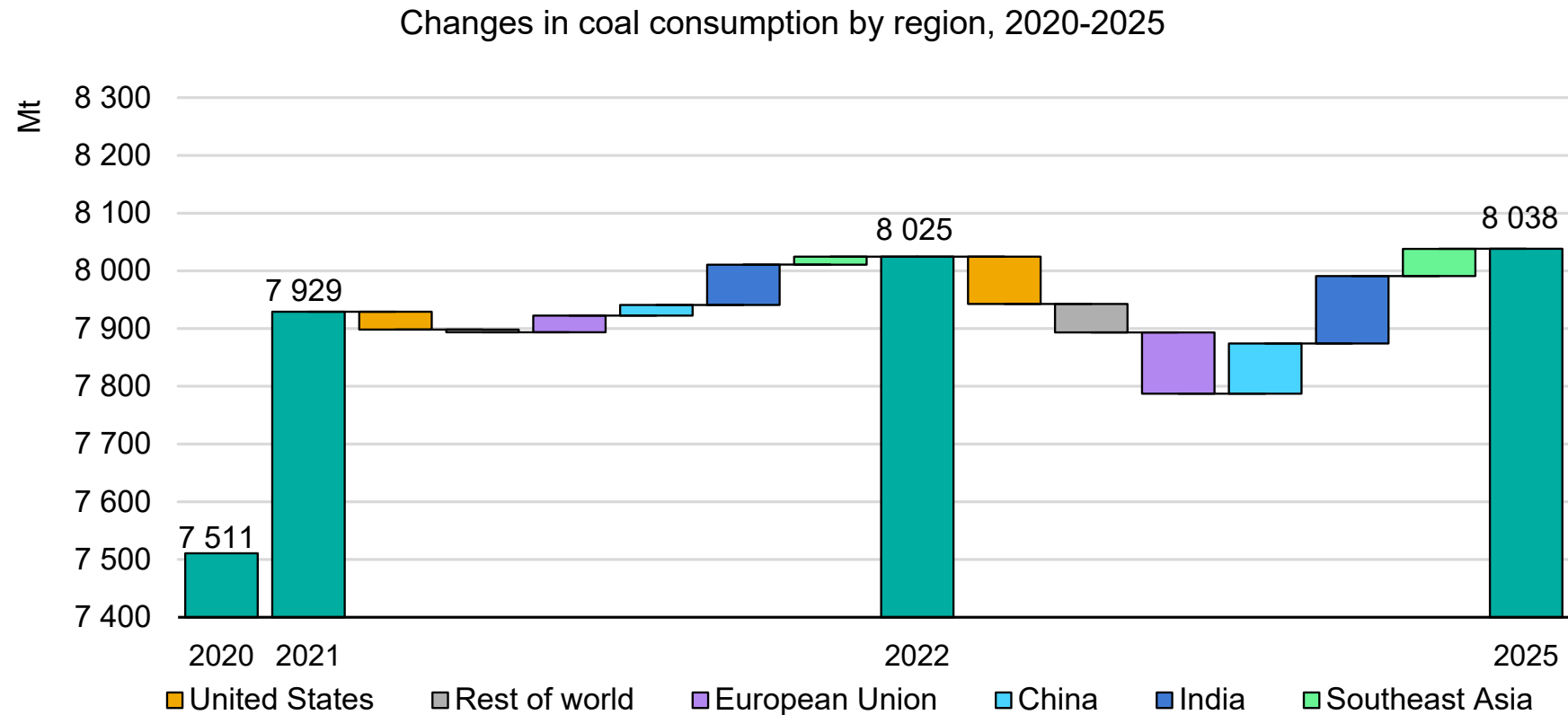
# Immediate action is needed to avoid a gas shortfall in 2023

Expected changes and additional actions to close the supply-demand gap in the European Union in 2023



There is a need for immediate actions to close a 27 bcm supply-demand gap, with enhanced energy efficiency, faster deployment of renewables & heat pumps, behavioural changes and supply measures.

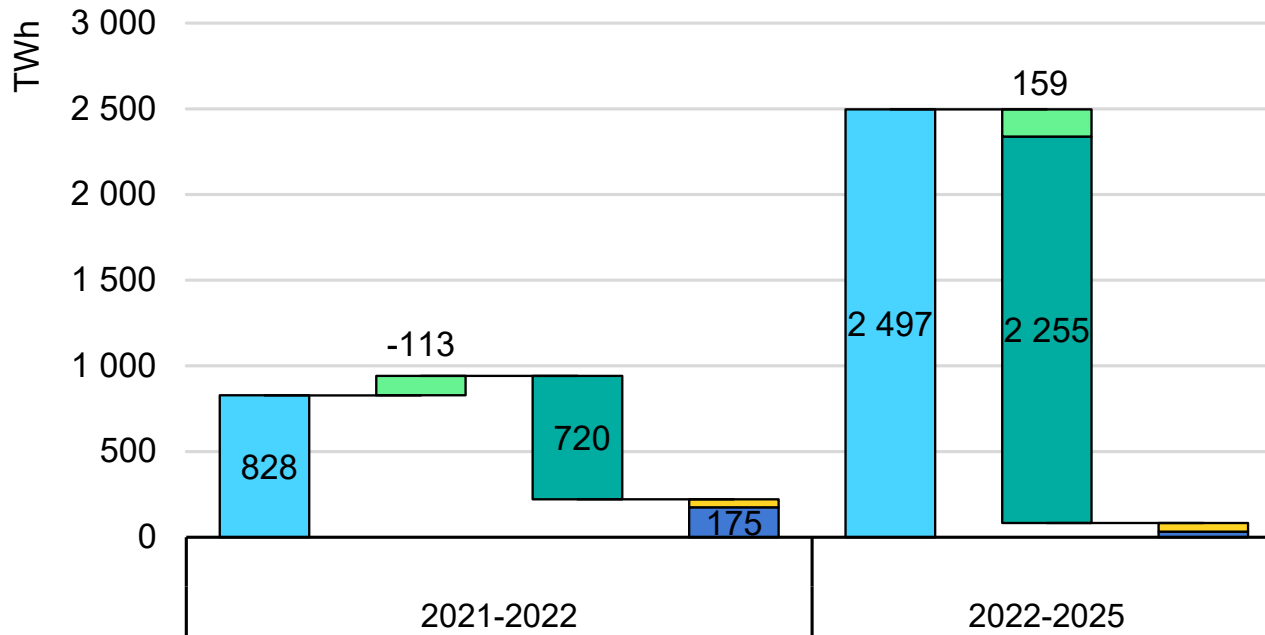
# Coal demand is likely to reach a new all-time global high in 2022



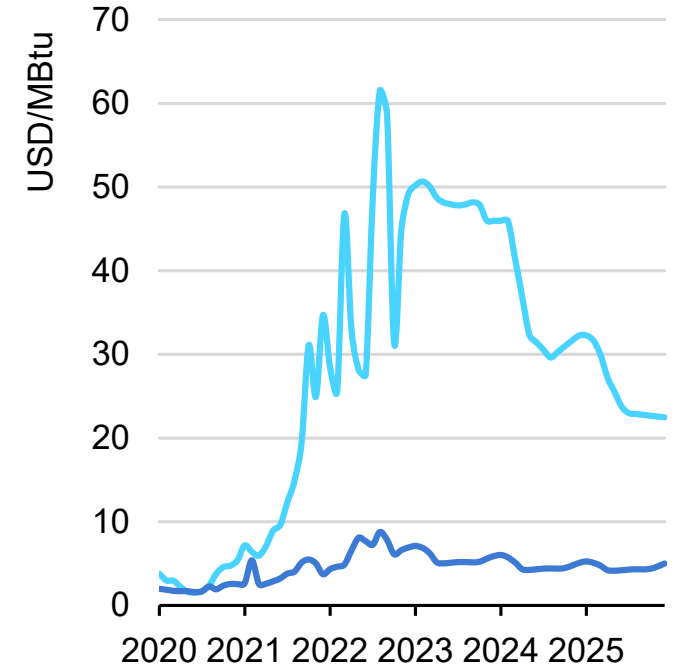
**Global coal consumption will reach a new all-time high in 2022 although growing only by 1% from 2021. Consumption will plateau afterwards through 2025.**

# Coal and gas power generation still needs to cover residual load

Additional global power demand and generation by source, 2021-2025



Gas price markers, 2020-2025



■ Additional power demand 
 ■ Renewables 
 ■ Nuclear and others 
 ■ Coal 
 ■ Gas

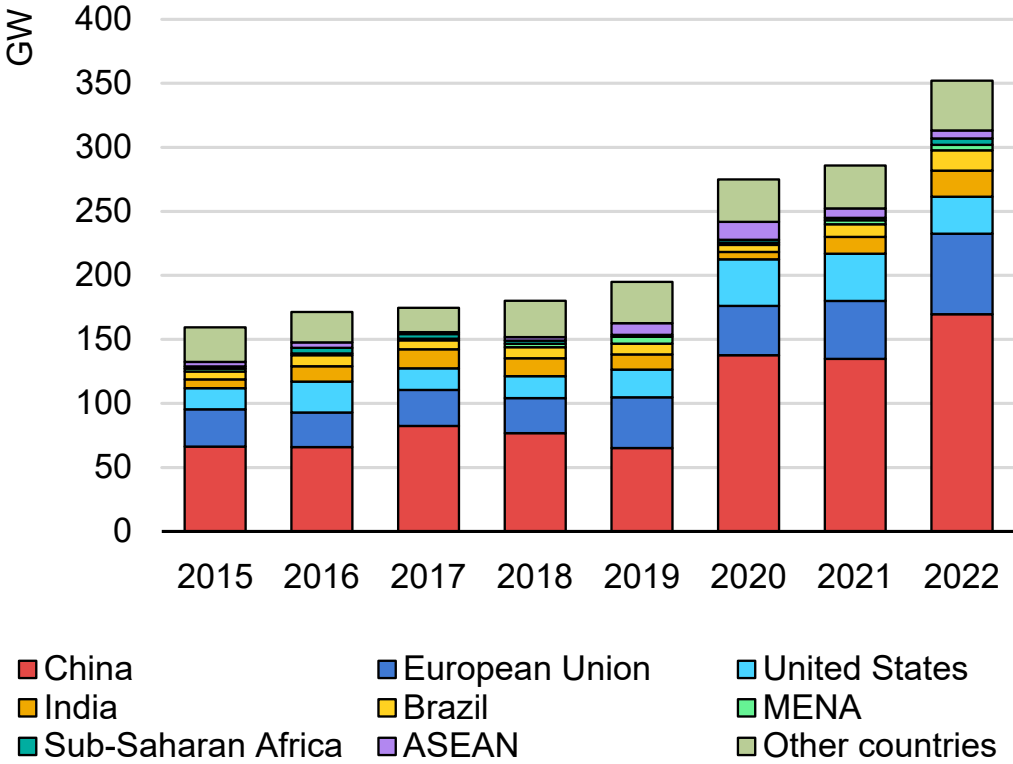
— TTF 
 — Henry Hub

**Weak nuclear and high gas prices pushed up coal power generation in 2022. Renewables cover the majority of additional electricity demand but leave some limited room for coal and gas growth.**

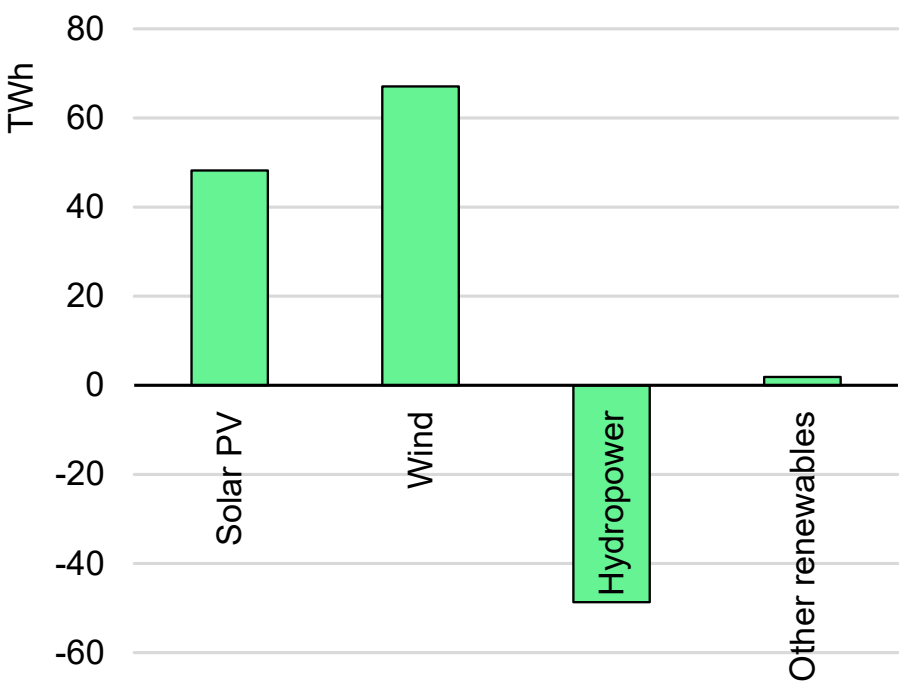


# Renewable capacity additions accelerate during the crisis

Renewable capacity annual additions, 2015-2022



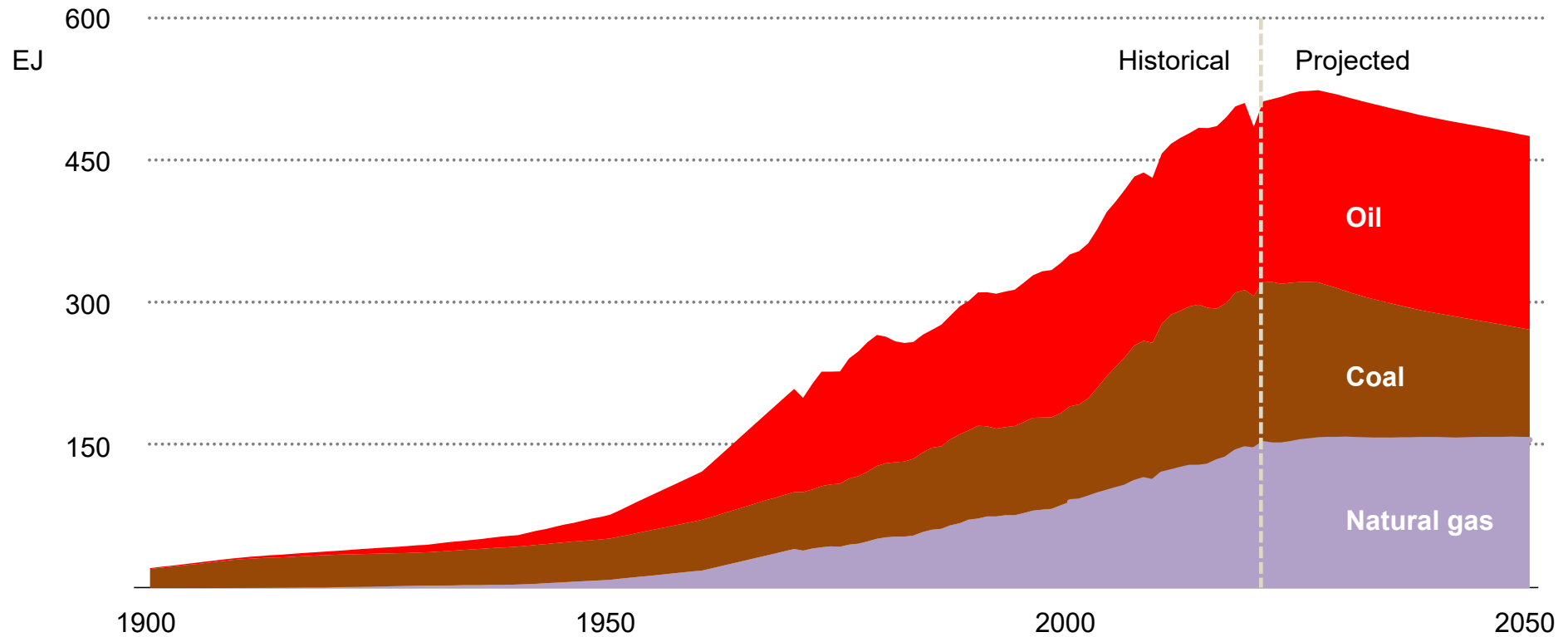
EU renewable electricity generation change 2022 vs 2021



Global capacity additions to jump by 25% driven by acceleration in China, EU, India & Brazil driven by policies. Rapid growth of wind and PV in the EU can potentially reduce 12-13 bcm of natural gas this year despite severe droughts

# Peak fossil fuel demand is coming this decade

Fossil fuel demand in the Stated Policies Scenario, 1900-2050

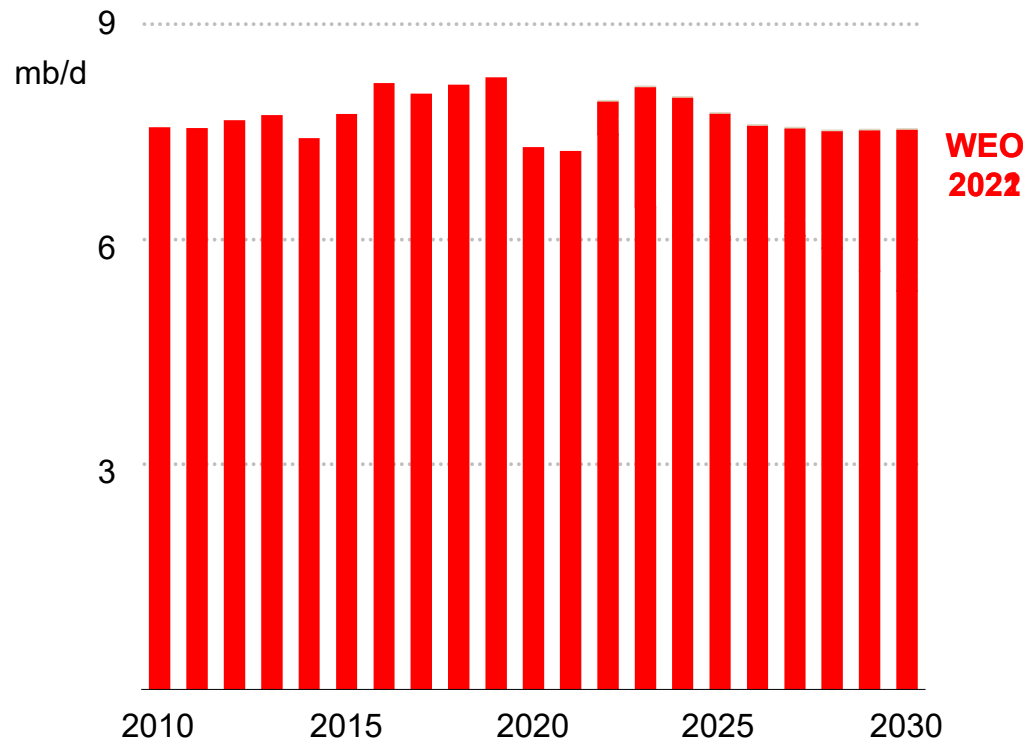


**Today's policy settings are now sufficiently strong that they produce a distinct peak in fossil fuel use before 2030**

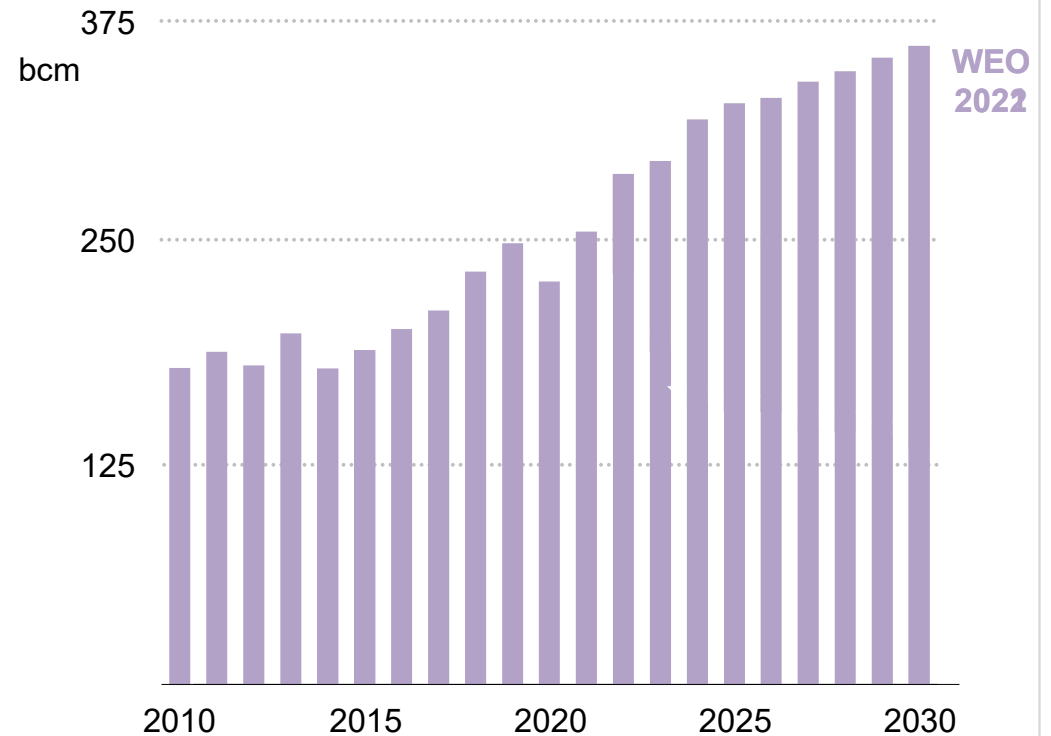
# Russia faces a much-diminished role in international energy

Russian oil and gas exports in the Stated Policies Scenario

Oil exports

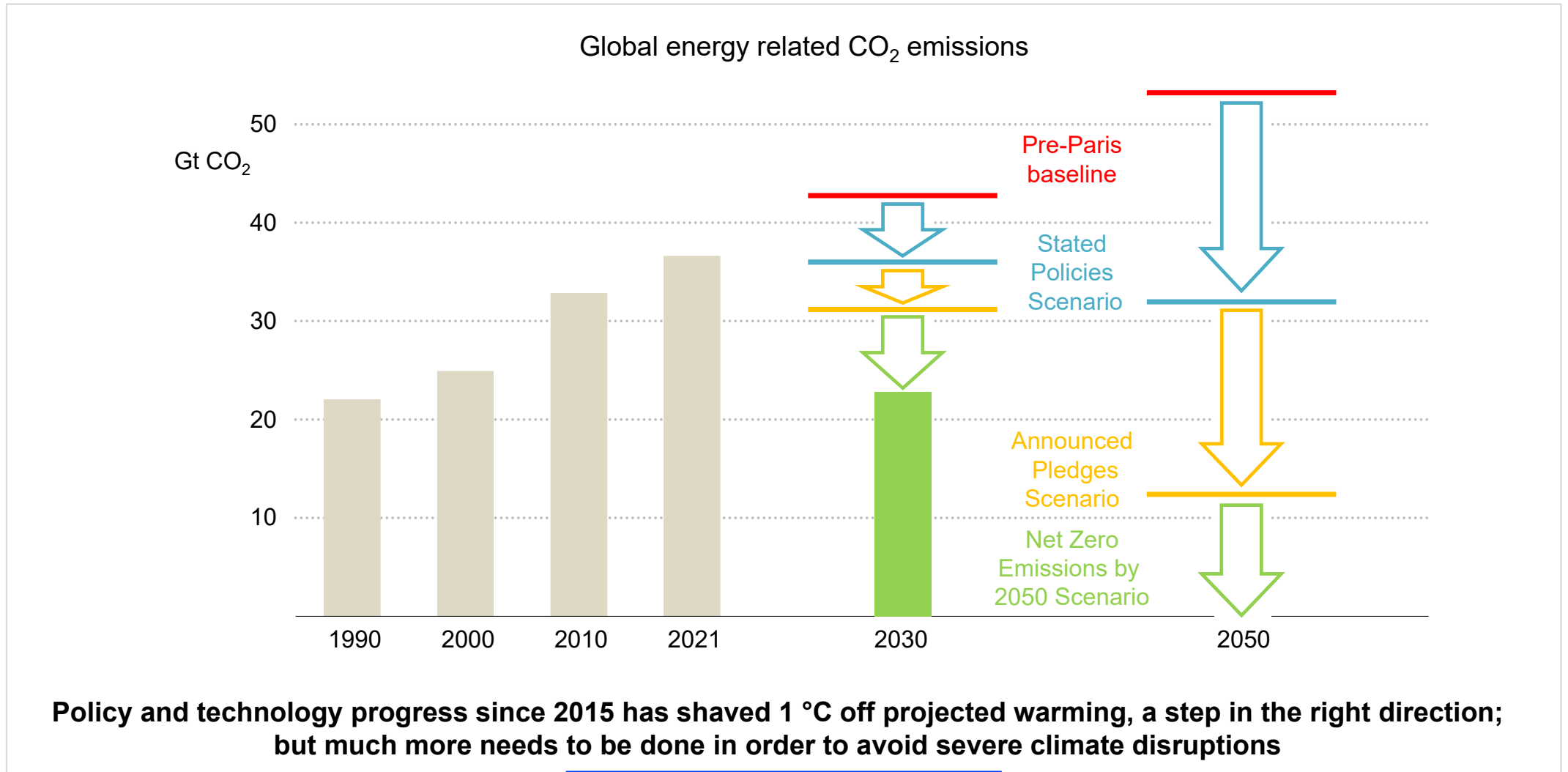


Gas exports



**Russia's share of global oil and gas trade halves by 2030, with exports from the United States, Middle East, South America and East Africa – and enhanced efforts to reduce demand – filling the gap**

# Keeping the door to 1.5 °C open



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