



Quarterly Gas Report –Q2 2023

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Gas Market Report, Q2- 2023

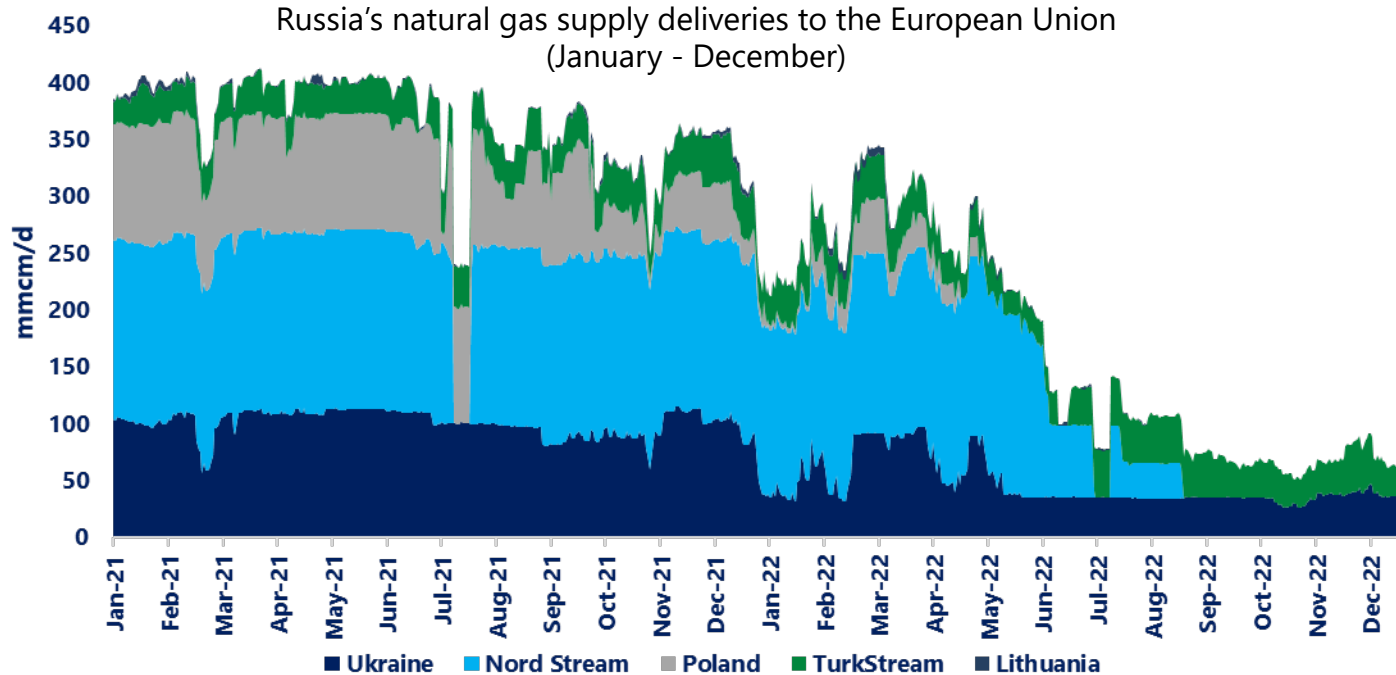
Fuel report
May 2023

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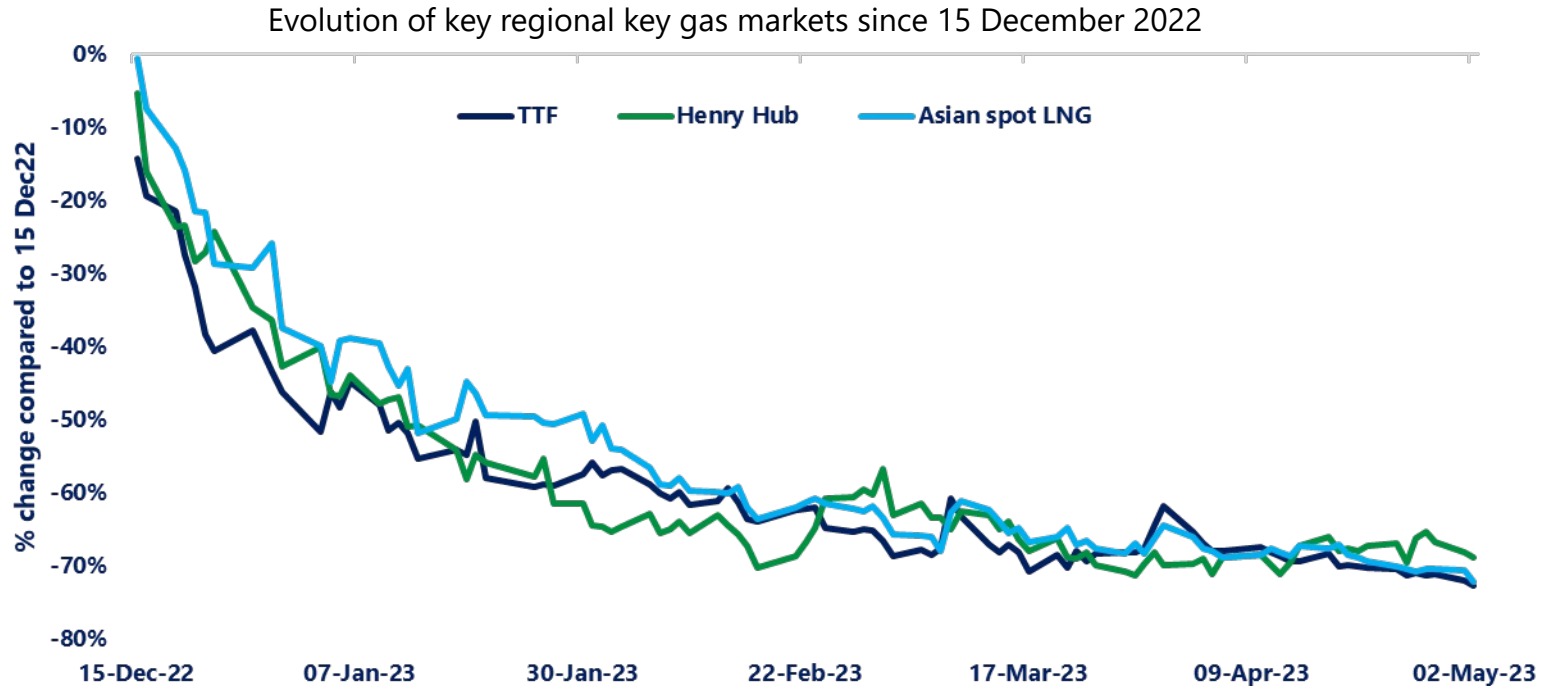
<https://www.iea.org/reports/gas-market-report-q2-2023>

The gas supply shock of 2022



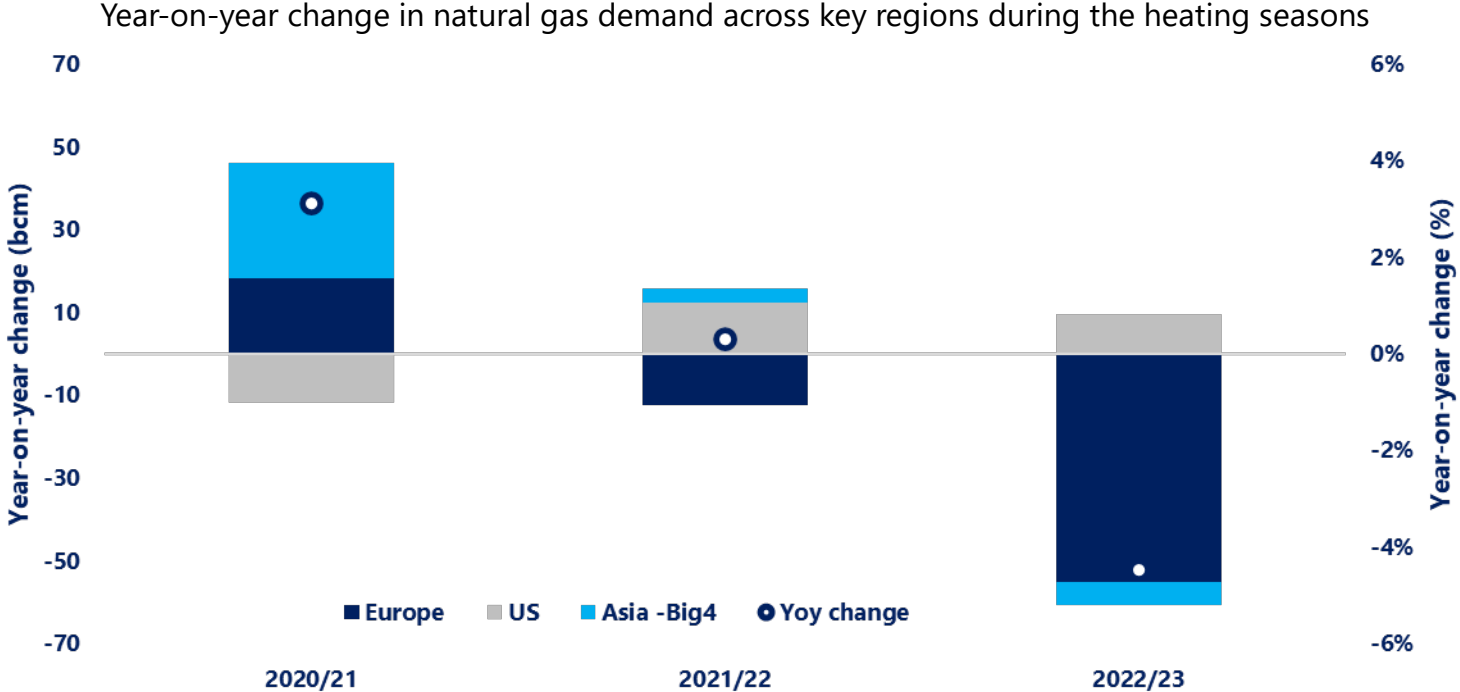
Russia more than halved its piped gas supplies to the European Union in 2022, putting an unprecedented pressure both on the European and global gas markets.

Market tensions moderated significantly since mid-December 2022



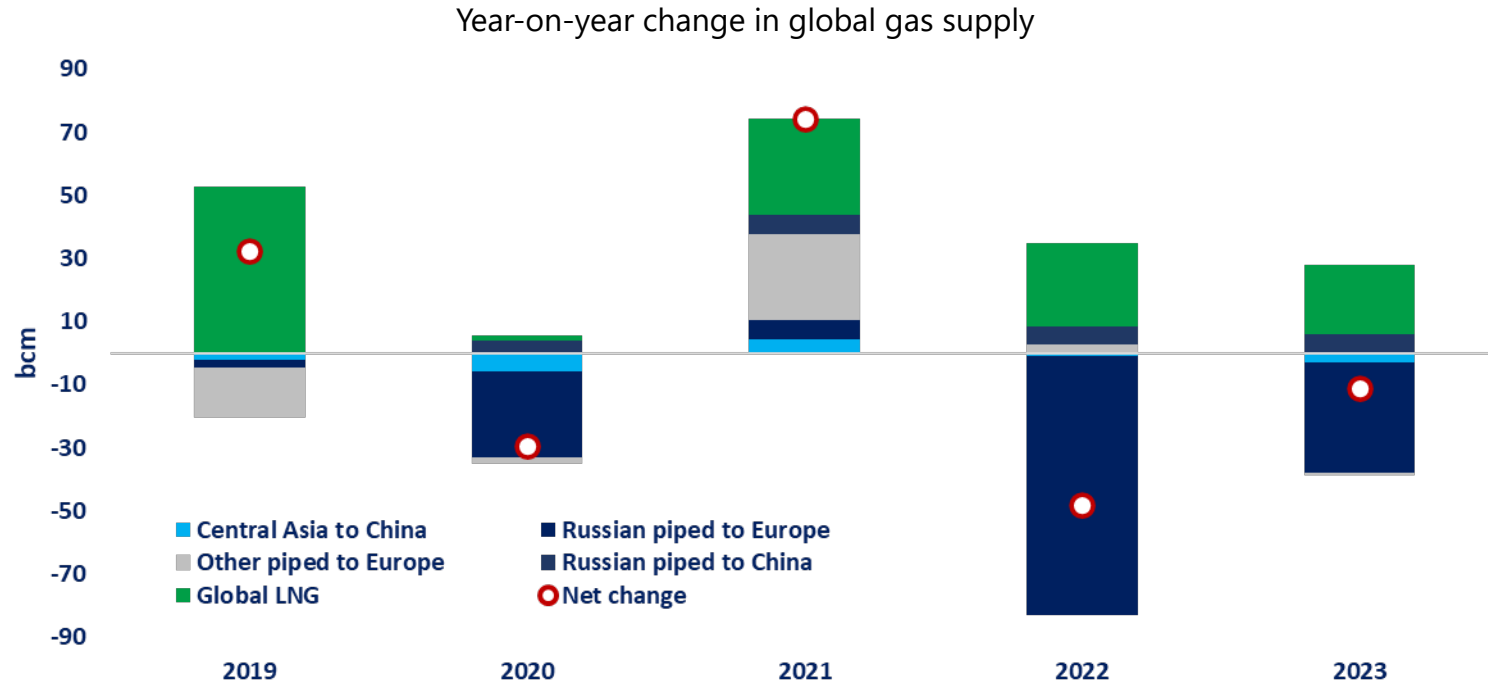
Natural gas prices fell by 70% since mid-December 2022 amidst easing market fundamentals. By the end of Q1 2023, TTF and JKM fell back into the price oil-indexed LNG –first since summer 2021.

Demand played a key role in easing market fundamentals



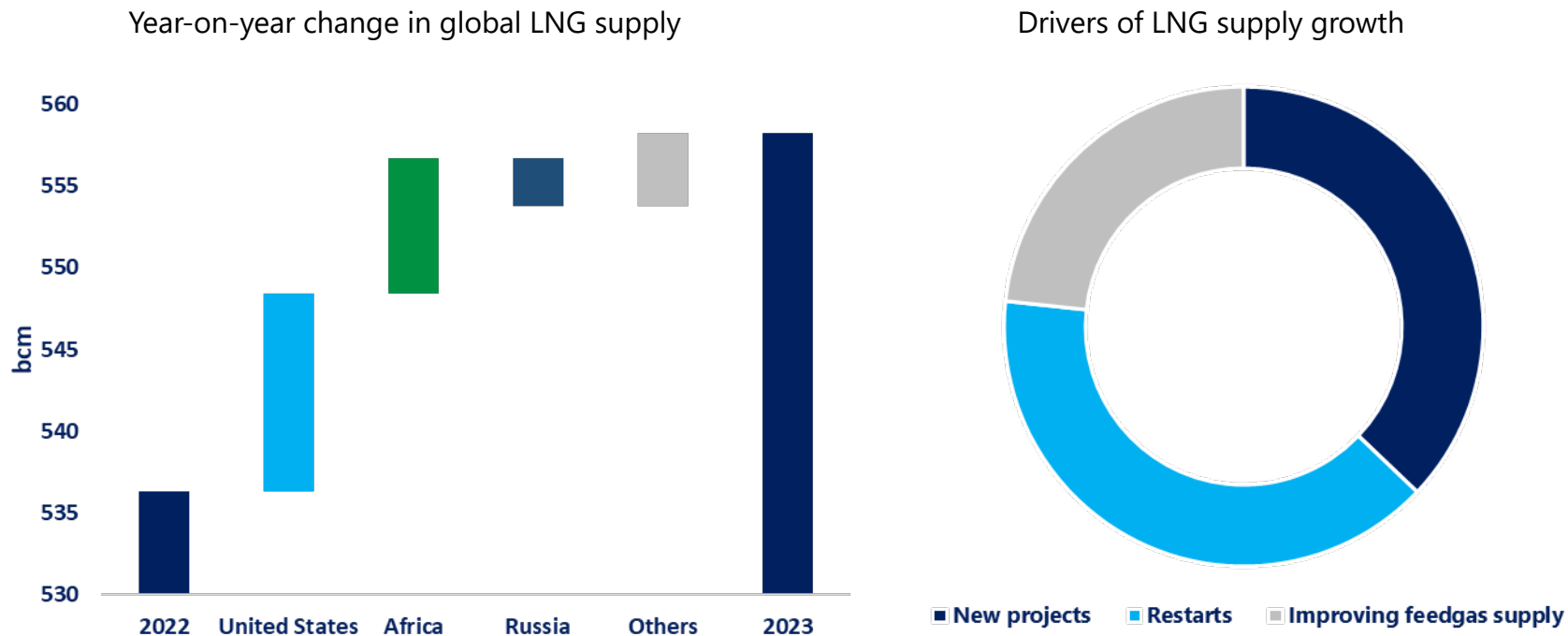
Mild weather, slower economic activity and timely policy actions were key to bring down gas demand through the 2022/23 winter season, which dropped by 5% y-o-y across key gas regions.

Global gas supply is set to remain tight in 2023



Global incremental LNG supply in 2023 won't be enough to offset the expected drop in Russia's piped gas deliveries to the European Union, leading to tighter gas supply

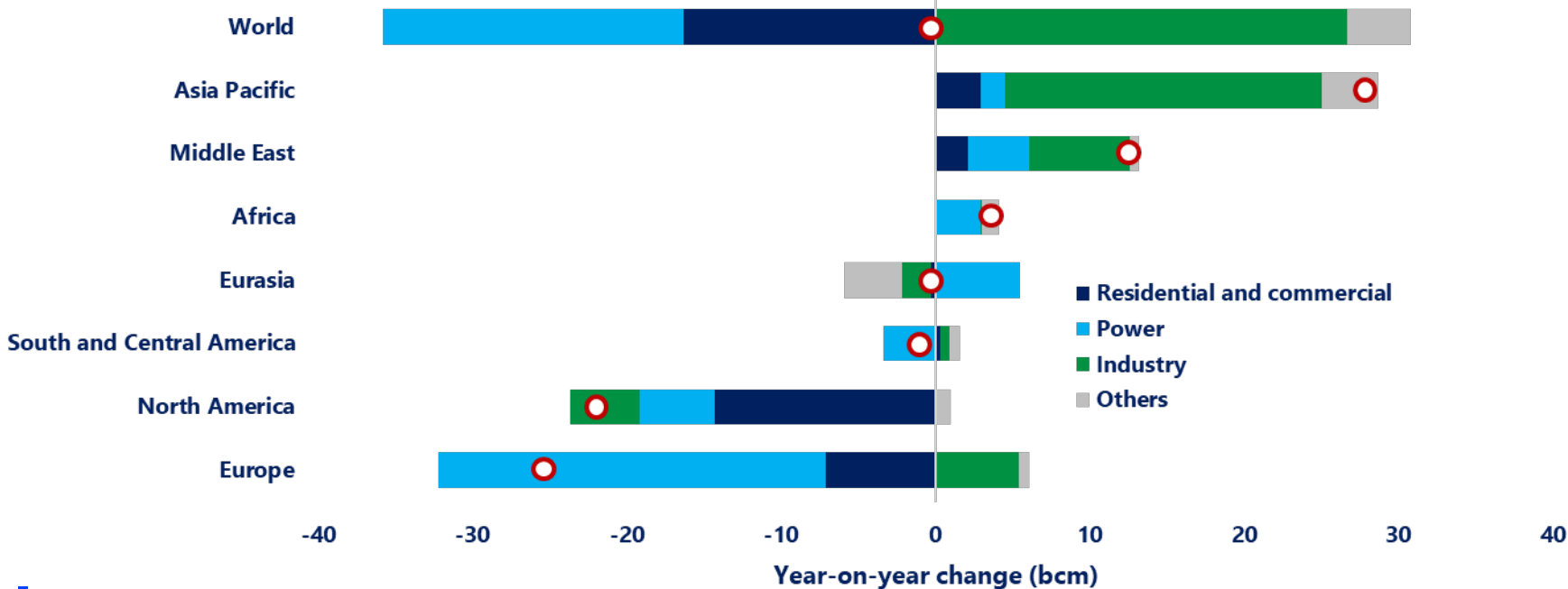
The United States will drive global LNG supply growth in 2023



The United States will account for over half of incremental LNG supply in 2023 to become the world's largest LNG exporter. Improving feedgas availability in Africa remains an uncertainty in our outlook.

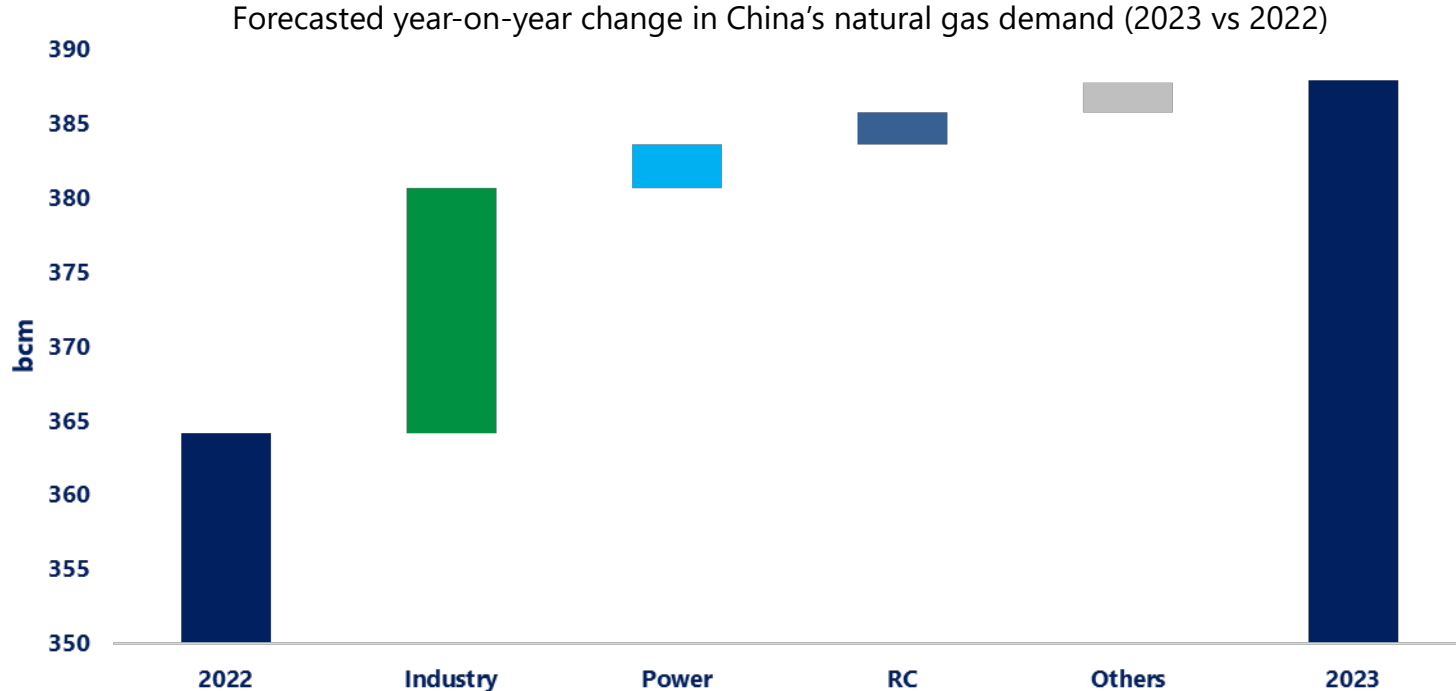
No relief: global gas demand remains broadly flat in 2023

Year-on-year change in global gas demand in 2023 by regions and sectors



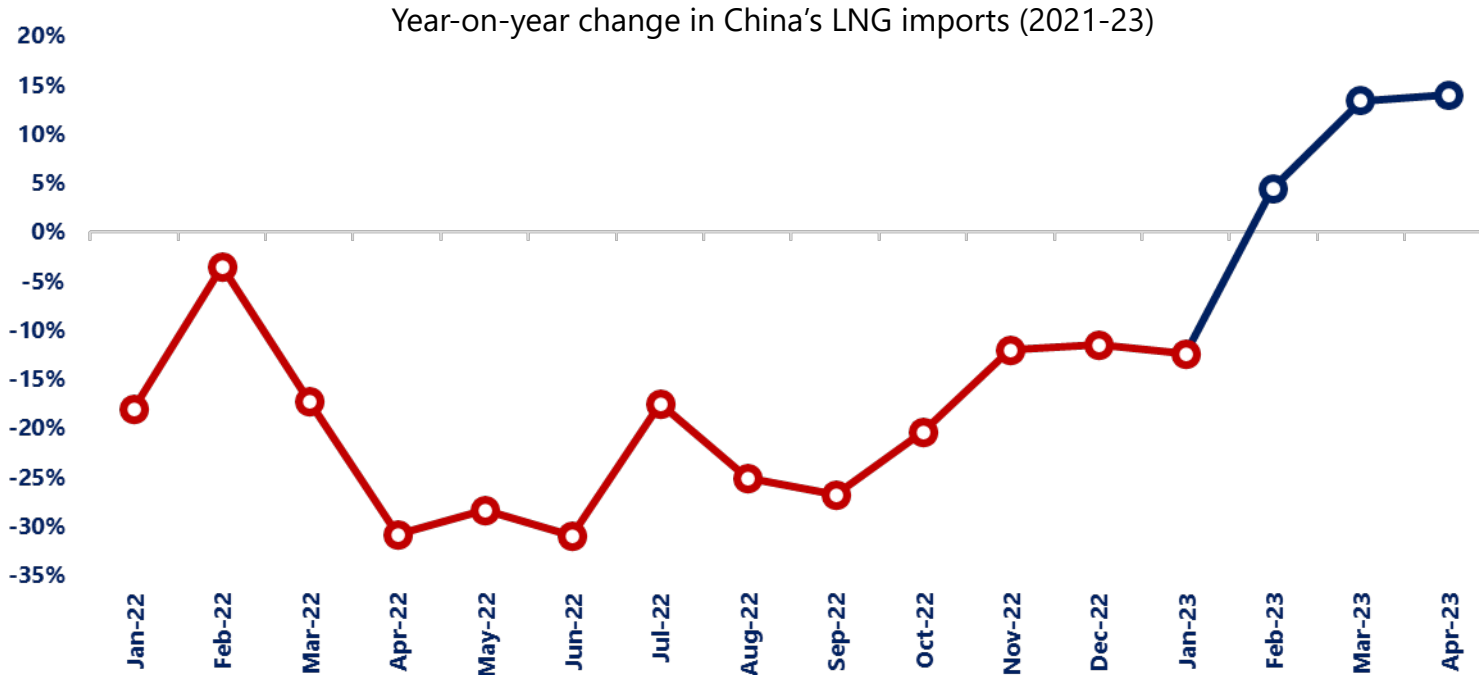
Asia and the Middle East is set to drive demand growth, offsetting the expected drop in Europe and North America. Lower demand in the power and heating sectors is compensated by higher gas use in industry.

All eyes on China: set up for recovery?



China's natural gas demand returned to growth in Q1 2023. The country's gas demand is expected to increase by over 6% in 2023, largely supported by improving economic activity.

China gradually recovers its appetite for LNG

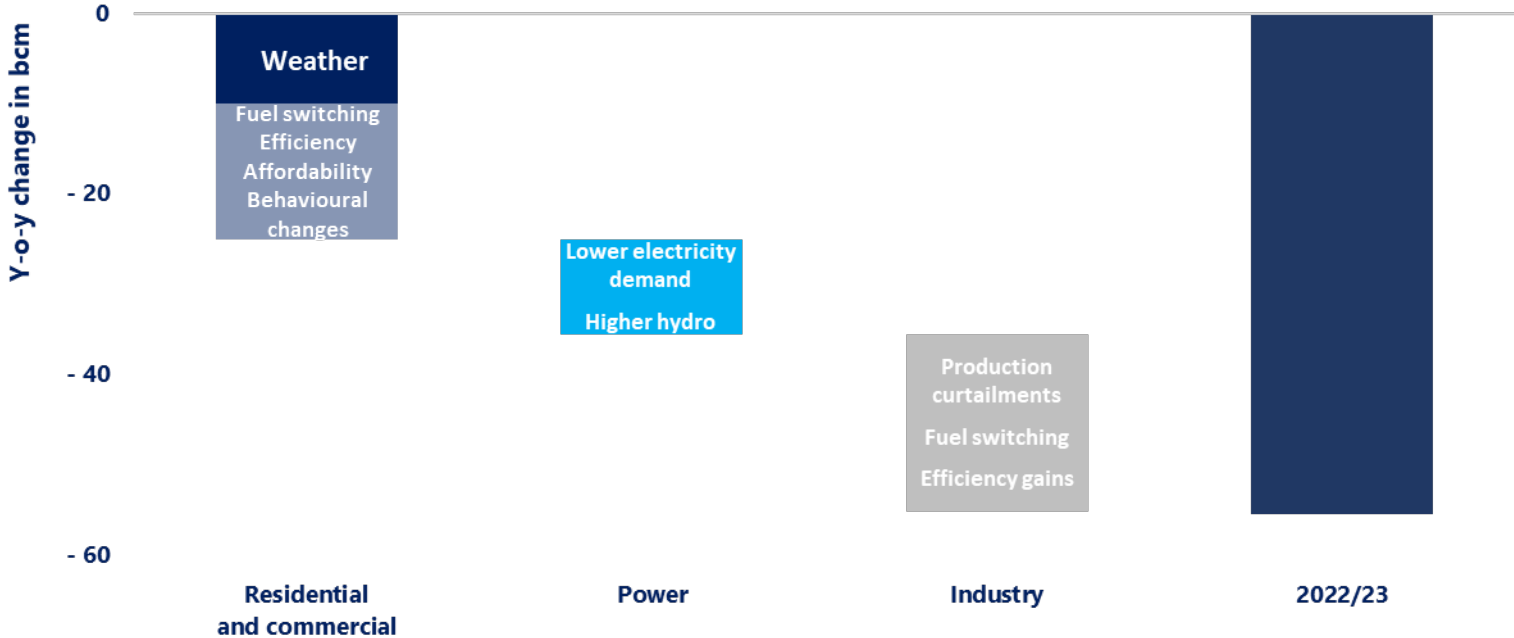


China's LNG imports returned to double-digit growth, supported by a recovery in internal demand. Nevertheless, the country's LNG imports are expected to remain below their 2021 levels.

European gas market

European gas demand dropped by a record 55 bcm

Year-on-year change in natural gas demand in OECD Europe during the 2022/23 heating season



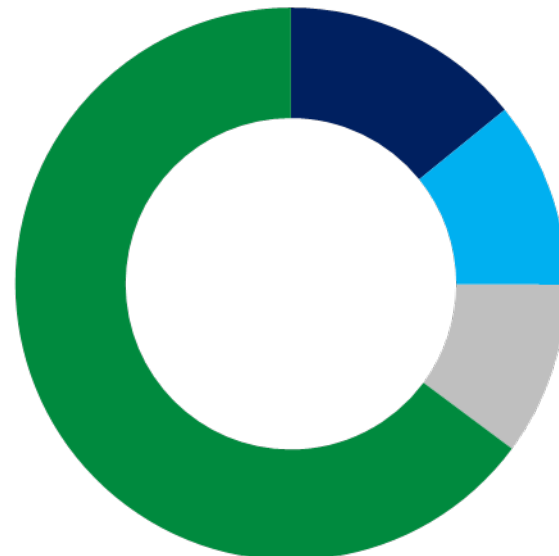
Natural gas consumption in OECD Europe fell by an estimated 16% (or 55 bcm) y-o-y during the 2022/23 heating season – its steepest drop in absolute terms for any winter season in our records.

LNG became a new baseload supply for Europe

OECD Europe's natural gas imports
(2021/22 heating season)



OECD Europe's natural gas imports
(2022/23 heating season)

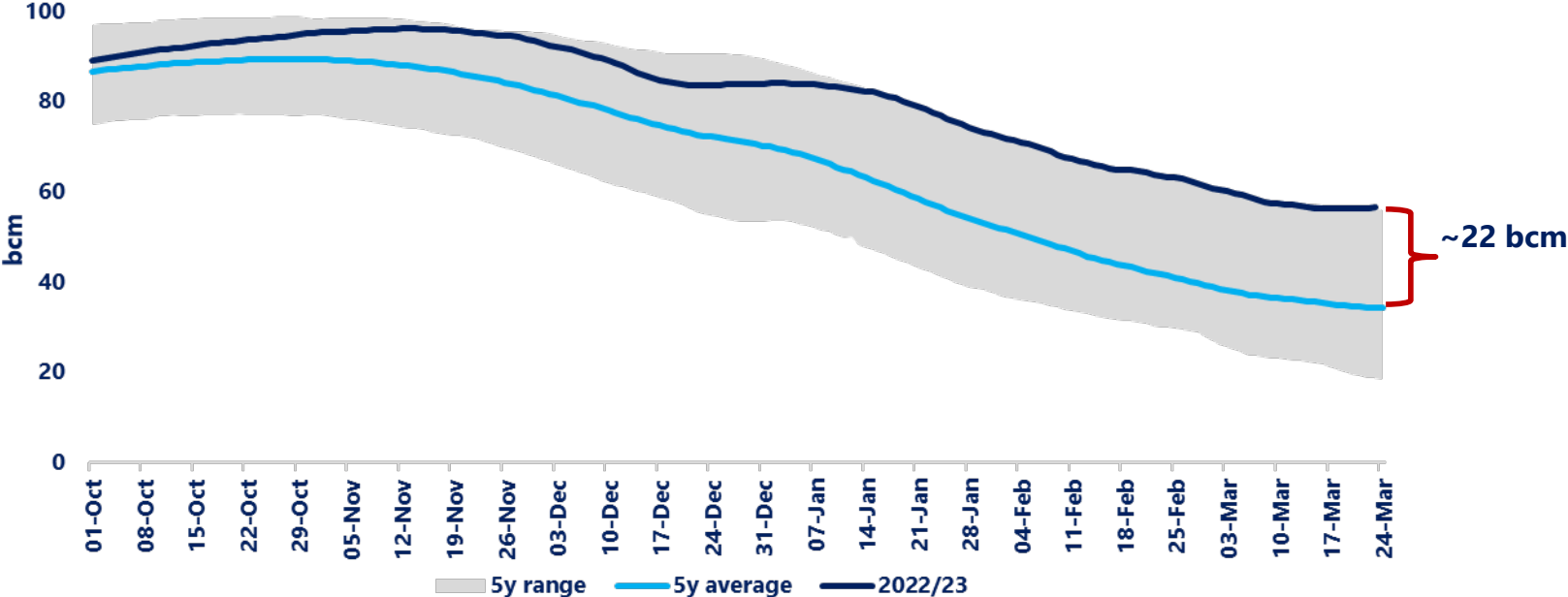


■ Russia - pipeline flows ■ North Africa - pipeline flows ■ Others - pipeline flows ■ LNG

LNG accounted for two-third of Europe's imports and met around one-third of the region's gas demand through the 2022/23 winter season.

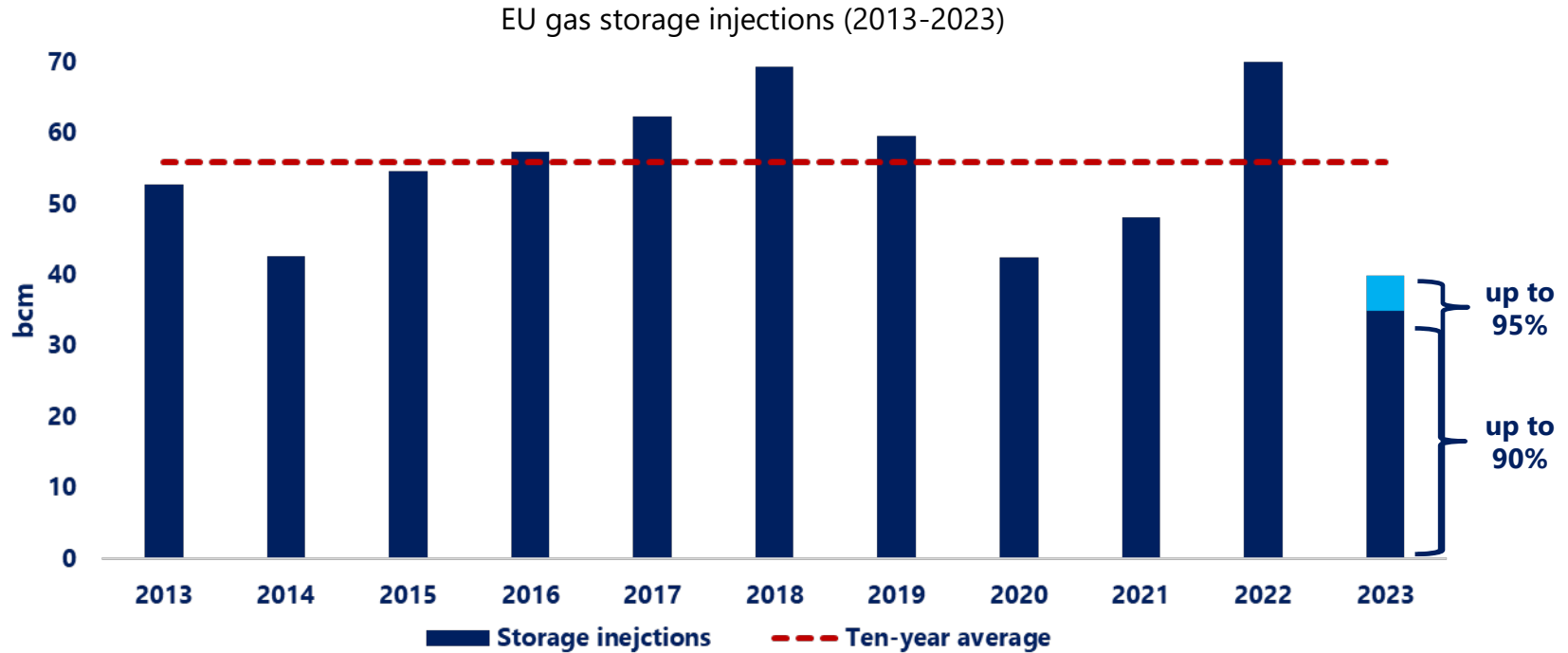
EU gas storage sites closed the heating season 55% full...

Natural gas inventory levels in the European Union



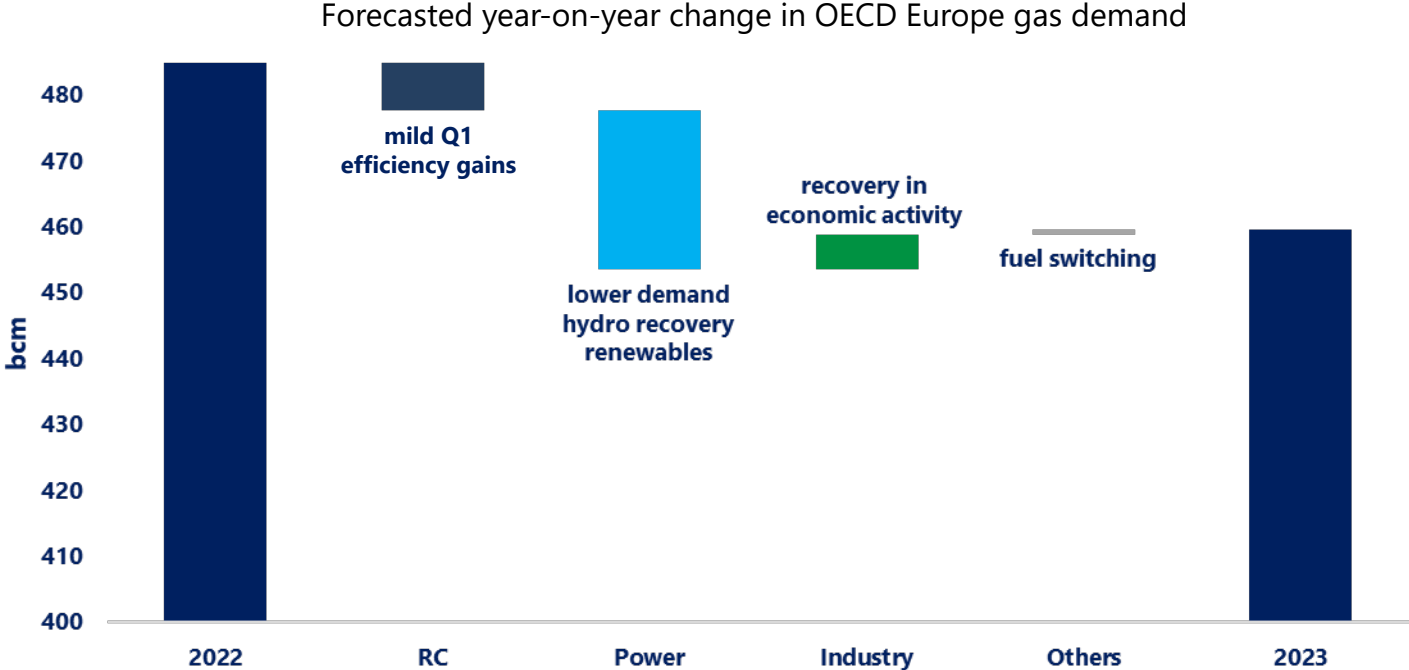
EU gas storage sites were 55% full at the end of the heating season –standing 65% (or 22 bcm) above their 5-year average.

...reducing injection demand through summer 2023



In the European Union, half of last year's storage injections would suffice to reach 90% fill levels by the start of the 2023/24 heating season.

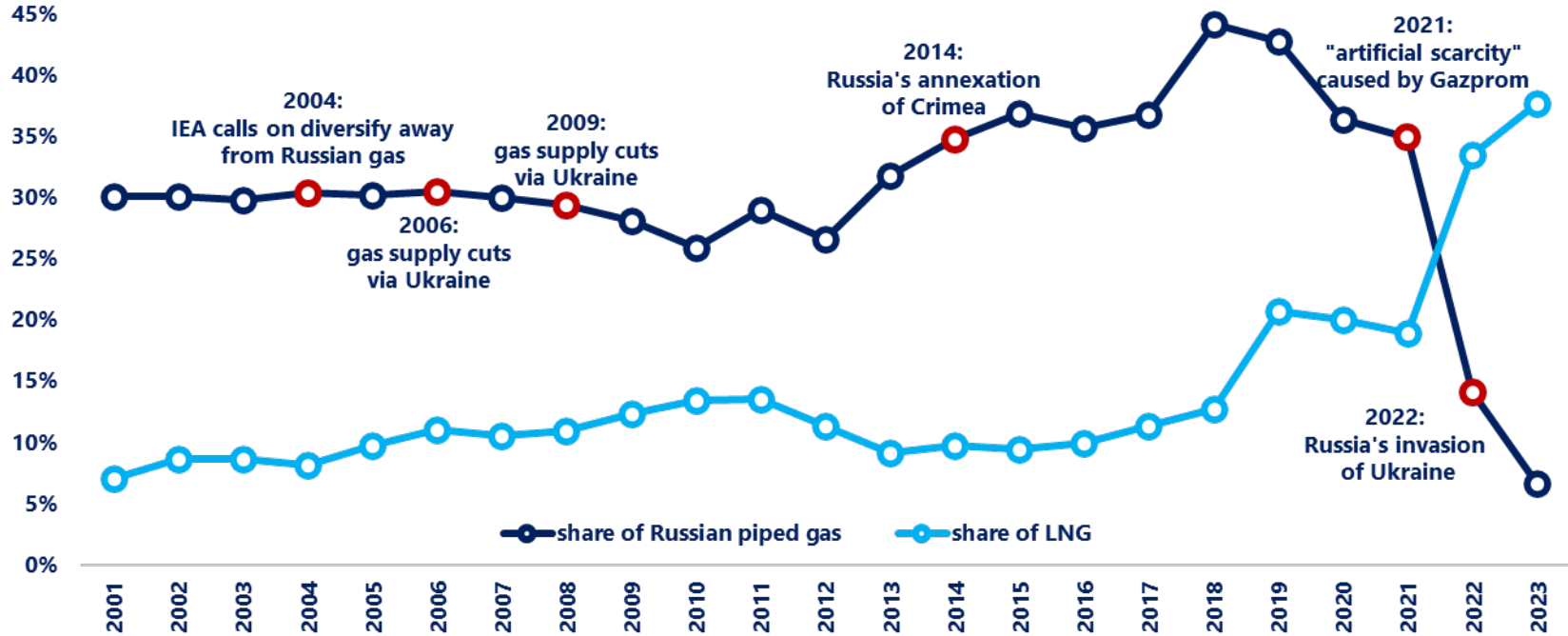
European gas demand is expected to decline further in 2023



Natural gas demand in OECD Europe is expected to drop by 5%. A modest recovery in industrial gas demand won't offset the lower gas use in space heating and for power generation.

Russian piped gas is being replaced by LNG in EU supply mix

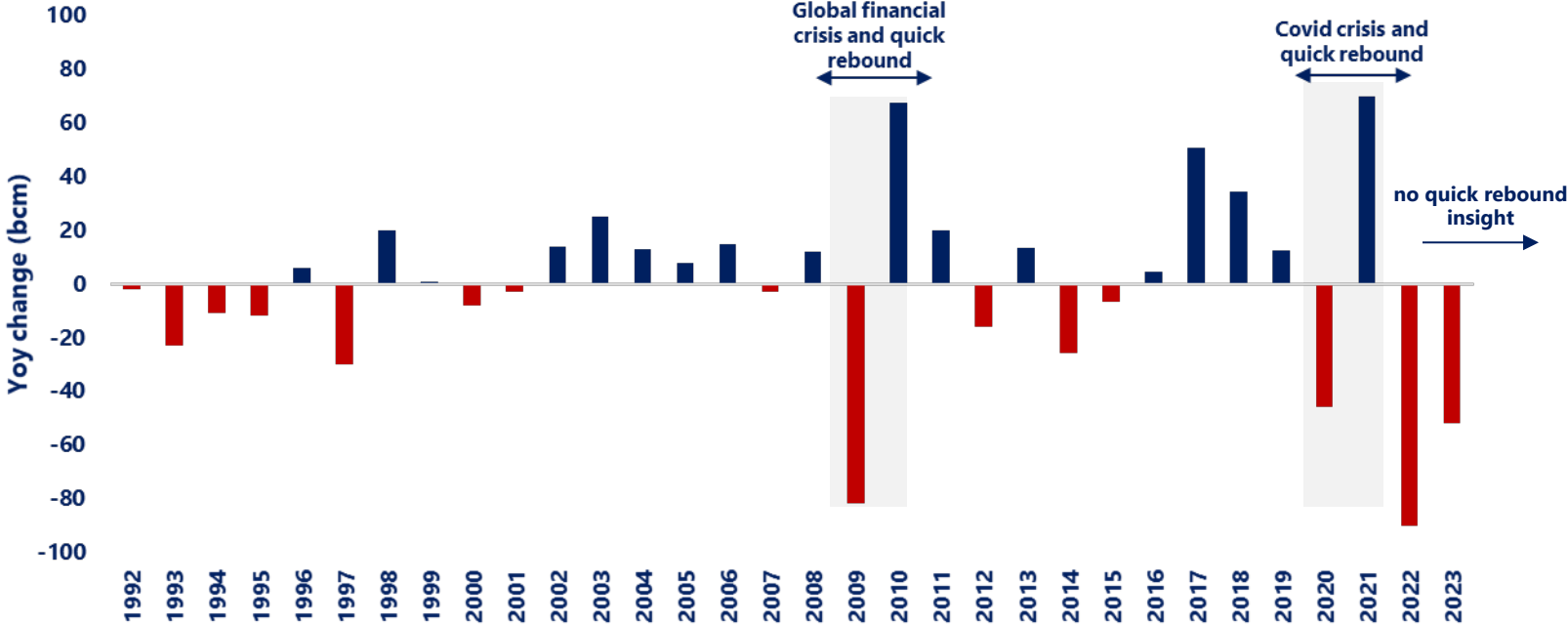
The share of Russian gas and non-Russian LNG in EU gas demand (2001-2023)



The share of Russian piped gas is set to drop below 10% in EU gas demand, while LNG is expected to account for over 35% of EU gas supplies in 2023 –replacing Russia as a baseload supplier.

Russia's gas production is set to decline by over 50 bcm in 2023

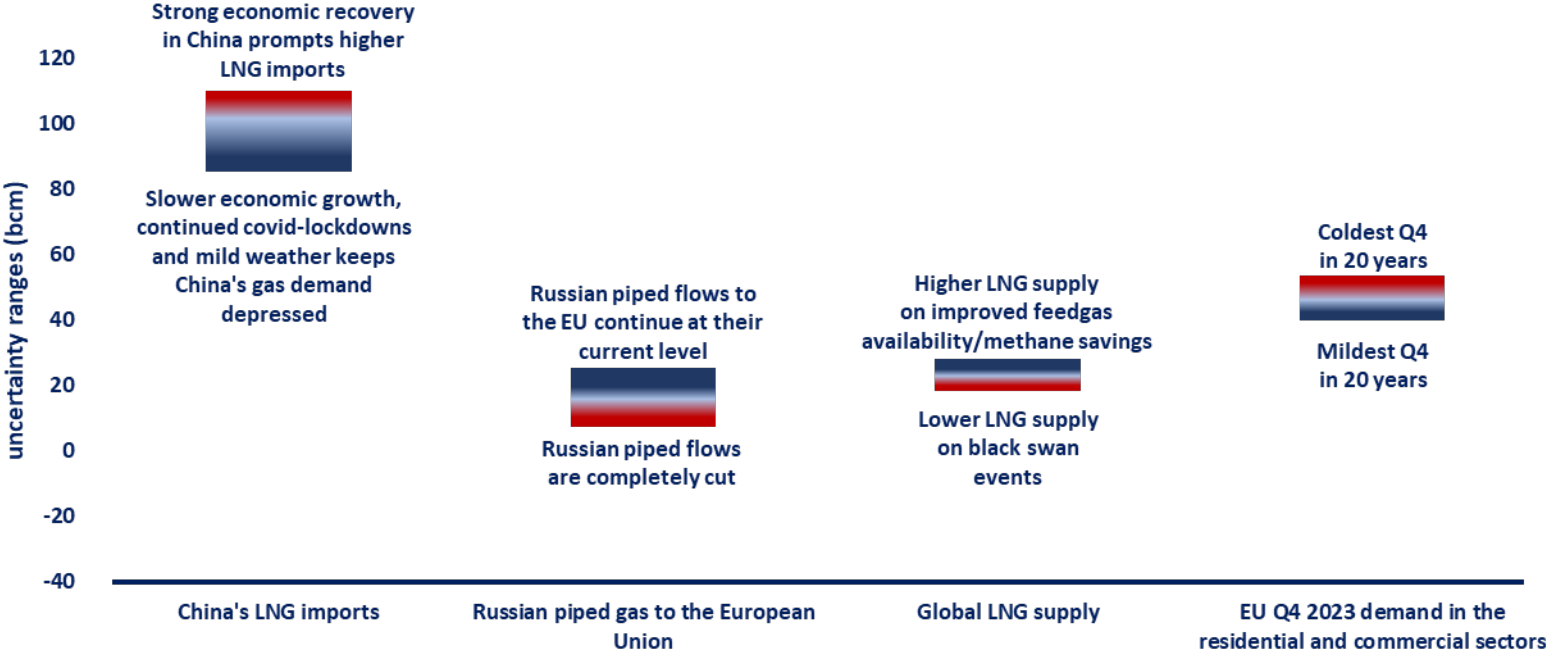
Year-on-year change in Russia's natural gas production (1990-2022)



Russia's gas output displays significant flexibility, although steep demand reduction in two consecutive years would be unprecedented and could test the flexibility of the Russian gas system.

Natural gas markets in 2023 face an unusually wide range of risks

Uncertainty ranges of key exogenous risks to the European and global gas balance in 2023

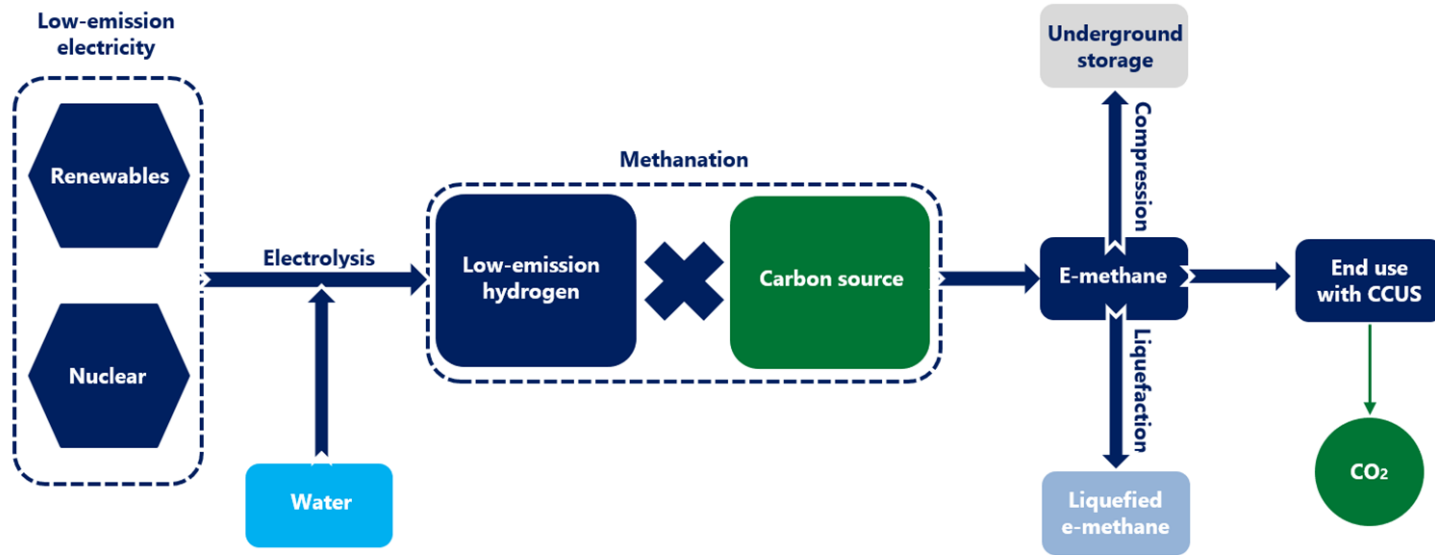


The global and European natural gas balance is subject to an unusually wide range of uncertainties in 2023. If not mitigated through proper policies, we will see heightened market tensions

Spotlight on e-methane

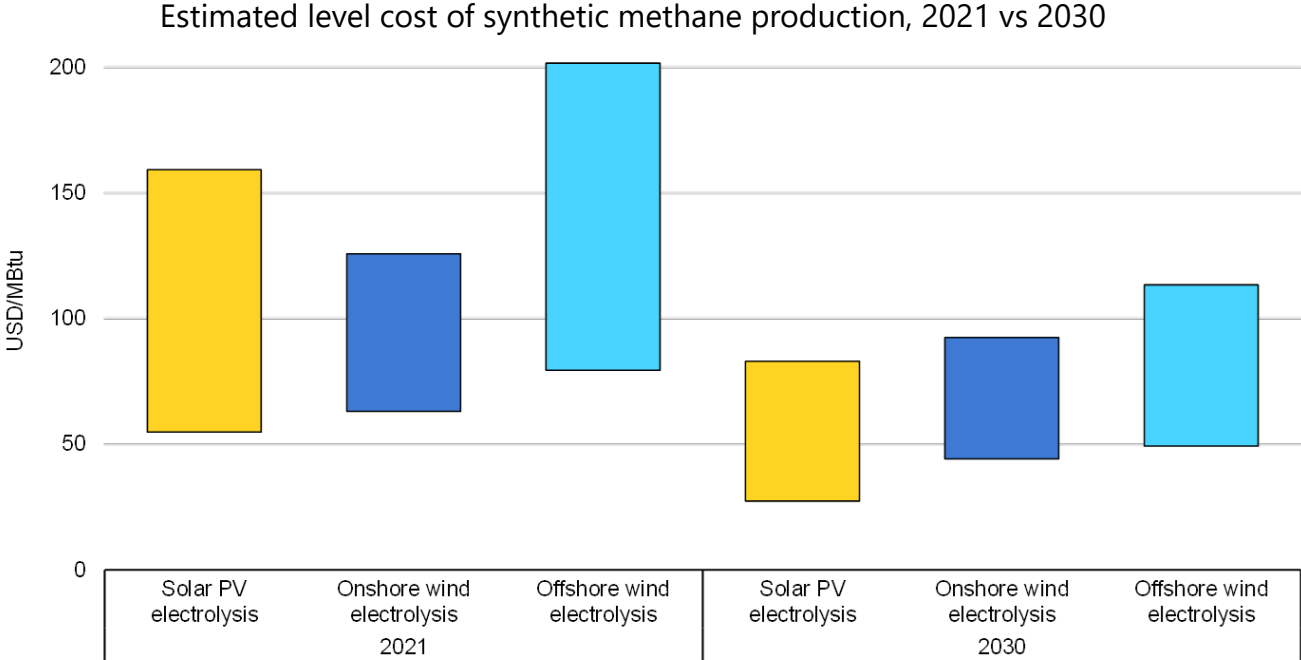
E-methane is produced through a two-step process

Simplified scheme showing e-methane production



Low-emission electricity is first converted to hydrogen by electrolysis and the resulting is converted via electrolysis into hydrogen, which is then reacted with a carbon source to obtain e-methane (methanation)

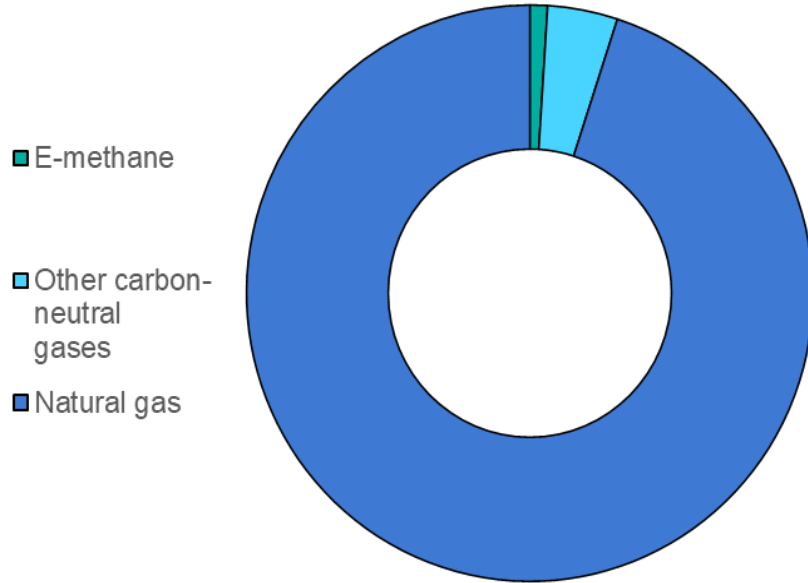
Both CAPEX and OPEX are high



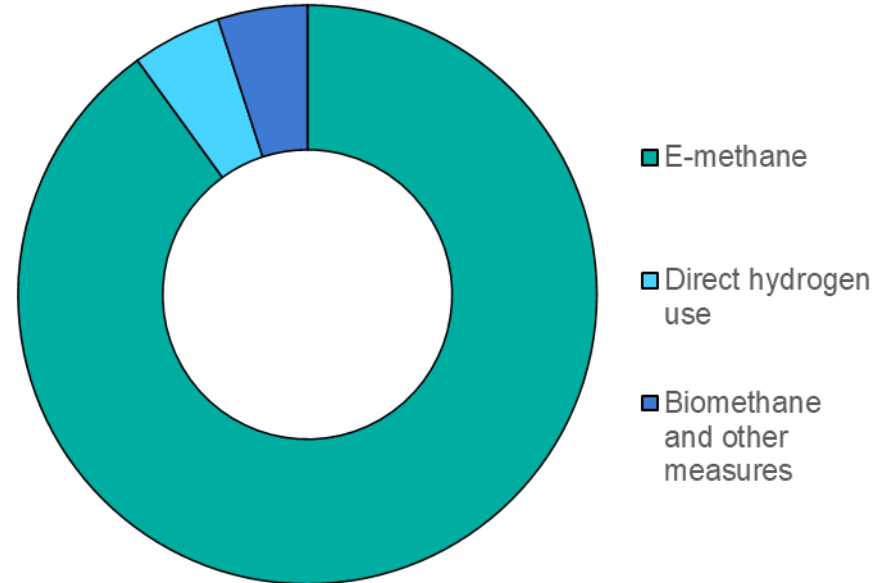
Current e-methane production costs are in the range of USD 50-200 per million British thermal units, which could be 70-160 % higher than low-emission hydrogen costs.

Japan's e-methane target: 90% of its city gas supply by 2050

City gas consumption of gaseous fuels, 2030



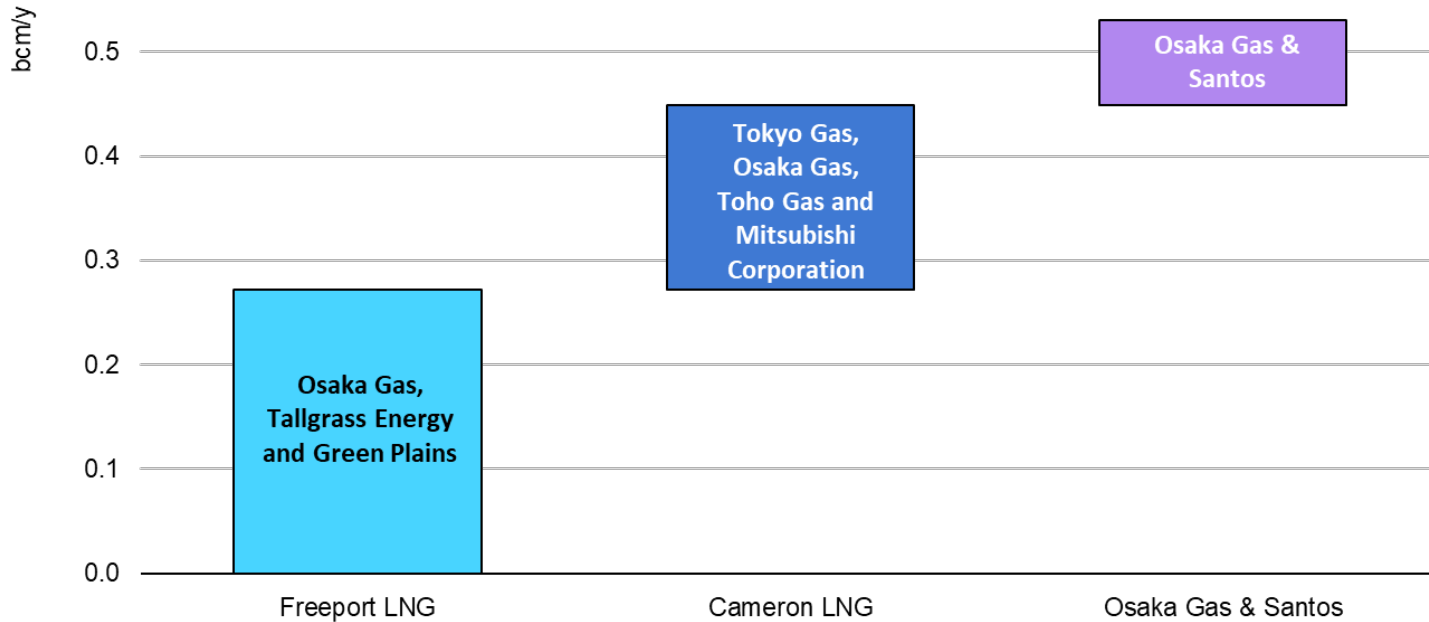
City gas consumption of gaseous fuels, 2050



Japan set a target for synthetic methane to comprise 1% of the gas supply in existing networks by 2030, increasing to 90% by 2050.

Japan is developing international e-methane supply chains

Key planned e-methane import projects led by Japanese companies



Japan is actively developing e-methane supply chains with LNG exporting countries. While no binding agreements have been reached yet, recent project proposals could enable 0.55 bcm/y imports by 2030.

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