

Gas Market Report, Q2-2025



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Abstract

Global natural gas demand continued to expand through the 2024/25 heating season, with growth primarily driven by Europe and North America. Underground storage facilities and reserve mechanisms provided crucial flexibility to the gas system and ensured stable and secure gas supplies over the 2024/25 heating season. In 2025, global gas demand growth is forecast to slow from the previous year amid tighter market conditions, while heightened macroeconomic uncertainties may also weigh on demand.

Low gas storage levels and reduced piped gas exports from Russia to the European Union are expected to keep market fundamentals tight. Supported by higher storage injection needs, Europe's LNG imports are forecast to increase in 2025 to near their all-time highs. In contrast, China's LNG imports are forecast to decline due to weaker domestic demand growth and the strong competition from Europe for flexible LNG cargoes.

With the global gas balance remaining fragile in an increasingly complex geopolitical context, responsible producers and consumers need to work together to reinforce efforts to ensure reliable gas supplies. This will be among the topics addressed at the international [Summit on the Future of Energy Security](#), convened by the IEA, in partnership with the UK Government, on 24-25 April 2025.

Beyond the growing complexity of gas supply security both in the short and long term, the decarbonisation of gas and the broader energy system will require the deployment and scaling up of low-emissions gases. Part of the IEA's Low-Emissions Gases Work Programme, this quarterly *Gas Market Report* includes a special section on the nascent trade in low-emissions gases.

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Executive summary

Global gas demand growth is expected to slow in 2025 amid macroeconomic uncertainties

Following the gas supply shock of 2022/23, natural gas demand returned to structural growth in 2024 and **continued to expand through the 2024/25 heating season**¹. Growth was primarily **concentrated in Europe and North America**, with weather conditions, including lower temperatures, leading to stronger gas use in buildings and the power sector. In contrast, **gas demand growth slowed in Asia** amid higher spot liquefied natural gas (LNG) prices and a milder winter in the People's Republic of China (hereafter "China").

Tighter market fundamentals put upward pressure on gas prices across all key markets, while **geopolitical tensions** have also continued to fuel price volatility. Below-average growth in global LNG output together and lower piped gas exports from the Russian Federation (hereafter "Russia") to the European Union have kept supply tight and increased **the call on gas storage** and reserve mechanisms.

Global gas demand growth is expected to slow to around 1.5% in 2025 due to a combination of initially tight market conditions and heightened macroeconomic uncertainties. The **global gas balance remains fragile** in an increasingly complex geopolitical context, and dialogue between producers and consumers is important to ensure **secure gas supplies**. On 24-25 April 2025, the IEA will convene an

international [Summit on the Future of Energy Security](#), in partnership with the UK government. The Summit will address traditional and emerging risks related to energy security, including those affecting natural gas and LNG value chains.

Europe and North America led demand growth through the 2024/25 winter season while Asian markets slowed

Natural gas demand patterns varied significantly across key gas markets, largely driven by weather conditions. Preliminary data indicate that **natural gas consumption increased by 1.8%**, or just below 35 billion cubic metres (bcm), year-on-year (y-o-y) through the 2024/25 heating season in the selected markets covered in the current market update². In contrast with previous years, this relatively strong growth was largely **driven by Europe and North America**.

In **Europe**, gas consumption increased by nearly 10% y-o-y as lower renewable electricity output supported higher gas burn in the power sector. Periods of low wind power generation highlighted the key role gas-fired power plants can play in ensuring electricity supply security in energy markets increasingly dominated by variable renewables. In **North America**, a colder winter pushed natural gas consumption to an all-time high, with demand growth largely supported by stronger gas use in buildings. In contrast, gas demand growth slowed significantly in **Asia**, with China's gas demand declining by around

¹ The heating season (or gas winter) in the markets of the Northern Hemisphere refers to the period between 1 October and 31 March.

² Asia Pacific, Central and South America, Eurasia, Europe and North America.

2% y-o-y in the November 2024-February 2025 period. Milder weather in northern China, together with weaker macroeconomic performance and high LNG spot prices, weighed on gas demand expansion in Asia. In **Eurasia**, natural gas consumption declined by an estimated 3% y-o-y through the 2024/25 heating season amid an unseasonably mild winter in Russia.

Natural gas storage and reserve mechanisms played a key role in ensuring stable gas supply over the 2024/25 winter

Underground storage facilities and reserve mechanisms provided crucial flexibility to the gas system and ensured stable and secure gas supplies over the 2024/25 heating season.

In **Europe**, lower piped gas imports from Norway and Russia, together with higher natural gas demand, increased the call on underground storage facilities. In the European Union, net storage withdrawals grew by more than 50% y-o-y, accounting for over 30% of natural gas demand through the November-March period. In the **United States**, higher gas consumption drove up storage draws by more than 40% compared with a year earlier. Altogether, net storage withdrawals accounted for nearly 15% of natural gas demand in the United States through the November-March period. **Japan's** Strategic Buffer LNG mechanism provided additional gas supply security for the country. Under the scheme, Japan secured one LNG cargo each month during the winter peak demand period between December 2024 and February 2025.

Supply fundamentals are expected to remain tight in 2025, weighing on global demand growth

Global LNG supply grew by 2% (or 6 bcm) y-o-y through the 2024/25 heating season. This relatively small increase was largely supported by the Plaquemines LNG facility in Louisiana, which started operations in late 2024 and alone accounted for almost half of incremental LNG supply through the winter. LNG supply growth is forecast to accelerate to 5%, or 27 bcm, in 2025 amid the expected starts and ramping up of several large LNG projects. **North America** is expected to account for about 85% of global incremental LNG supply in 2025. This includes Phase 1 of the Plaquemines LNG project, the Corpus Christi Stage 3 expansion, and LNG Canada. **Africa** and **Asia** are also expected to contribute to LNG supply growth in 2025. **Russia's Arctic LNG 2 project** is not considered as a source of firm LNG supply in the current forecast due to the broader sanctions environment. Growth in LNG supply in 2025 is set to be partially offset by lower Russian piped gas deliveries to Europe. This forecast assumes **no Russian piped gas deliveries through Ukraine for the remainder of the year**, which would **reduce Russian piped gas supplies** to the European Union by around 15 bcm in 2025 compared with 2024. Notably, **natural gas inventory levels in the European Union** closed the heating season 25 bcm below their level a year earlier, potentially increasing demand to replenish storage sites this summer. These factors, taken together, would necessitate higher European LNG imports this year, tightening the global gas balance.

Growth in global gas demand is forecast to slow to around 1.5% in 2025. Asia's natural gas demand is forecast to expand by just over 2%, representing a significant slowdown compared with 2024, when the region's demand grew by 5.5%. Still, Asia is expected to remain the largest contributor to global demand growth, accounting for around one-third of incremental gas demand in 2025.

Europe is set to drive LNG demand growth in 2025, with LNG inflows climbing to near all-time highs

Following the sharp decline in 2024, Europe's LNG imports are set to recover in 2025. Europe's LNG imports declined by 18% (or close to 30 bcm) in 2024. This trend was reversed in Q1 2025, when Europe increased its LNG imports by more than 20% (or over 9 bcm) y-o-y amid lower piped gas imports and stronger domestic demand. **Higher storage injection needs** together with lower piped gas inflows are expected to support stronger LNG imports throughout the filling season³. For the full year of 2025, Europe's LNG imports are expected to increase by 25% (or over 30 bcm) and **reach levels near to their all-time highs**.

In contrast, **Asia's LNG imports are forecast to decline** due to the strong competition from Europe for flexible LNG cargoes. China's LNG imports declined by around 25% y-o-y in Q1 2025, their steepest decline since the 2022 global gas crisis. This highlights **the growing balancing role of China** in the global gas market,

supported by its gas-to-coal switching capability and flexibility options embedded in its vast portfolio of long-term LNG contracts.

The development of trade in low-emissions gases requires closer international cooperation and greater policy support

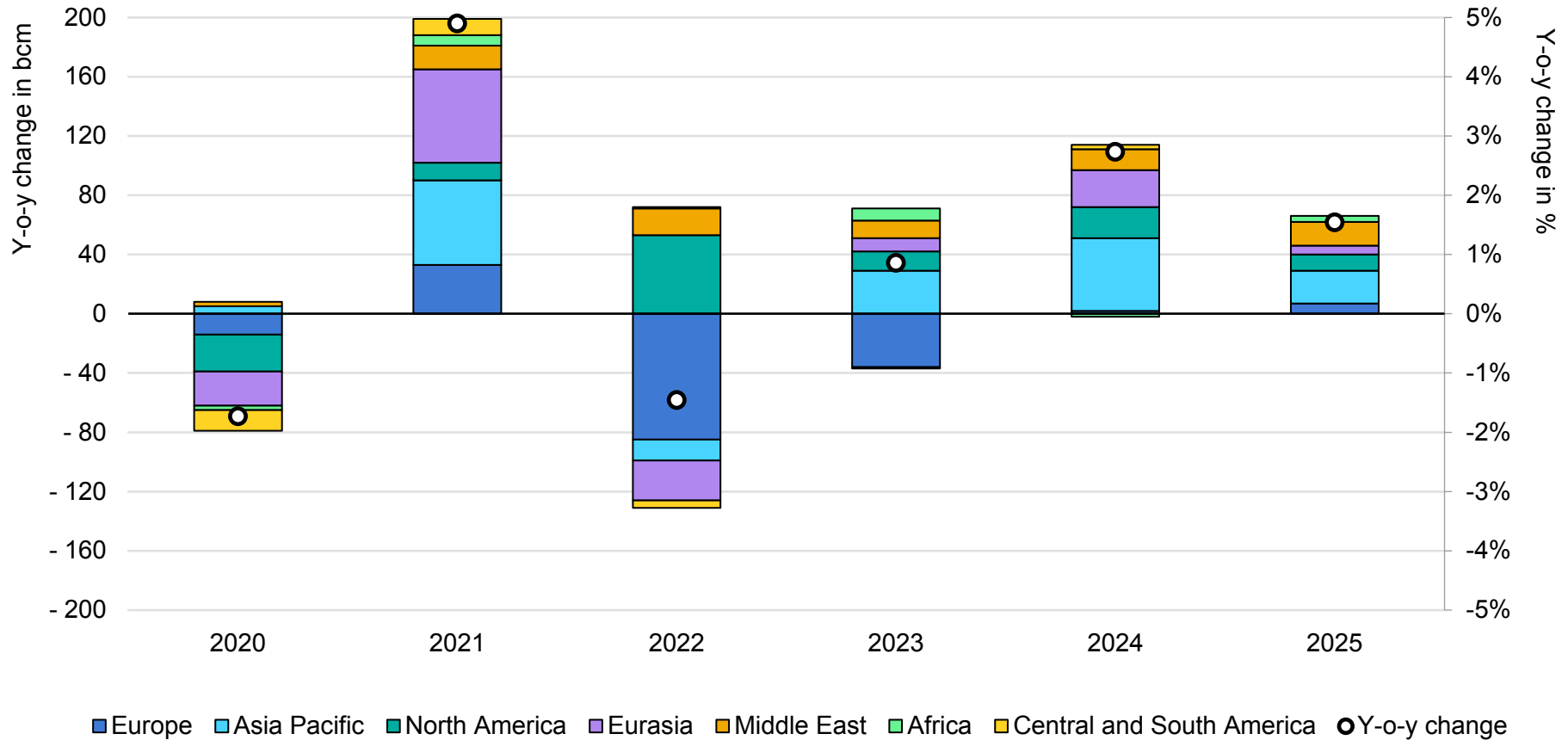
This edition of the quarterly *Gas Market Report* provides an overview of the key policy initiatives and market developments related to the **nascent trade in low-emissions gases**, which can play an important role in decarbonising gas supply chains and the broader energy system.

Trade in low-emissions gases is gradually taking off. Japan imported its first bio-LNG cargo in the spring of 2024, while Ukraine delivered the first piped biomethane supplies to the European Union in early 2025. The European Commission plans to launch a hydrogen pilot mechanism by September 2025, and Japan continues to advance e-methane trade projects with its international partners. **Fostering the development of low-emissions gases trade** will require the establishment of mutually agreed emissions standards and internationally applicable greenhouse gas accounting rules. Furthermore, **policy support** would need to focus on mechanisms which can support the conclusion of long-term sales and purchase contracts between emerging producers and consumers.

³ The filling season (or gas summer) in the markets of the Northern Hemisphere refers to the period between 1 April and 30 October.

Global gas demand growth is forecast to slow to around 1.5% in 2025

Year-on-year change in natural gas demand in key regions, 2020-2025



Gas market update

Demand patterns for natural gas varied across key regions during the 2024/25 heating season

Natural gas markets returned to structural growth in 2024. Global gas demand continued to expand from October 2024 to March 2025 – the heating season in the Northern Hemisphere. Colder weather in North America drove consumption to all-time highs, while weaker renewables output in Europe bolstered gas-to-power demand. By contrast, demand growth in Asia, including China, slowed.

Preliminary data suggest that **natural gas demand grew by 1.8%** – or just below 35 bcm – in the selected markets featured in the current market update⁴, led by Europe and North America. Demand growth was mainly fuelled by increased residential and commercial consumption, as well as stronger gas use in the power sector.

In **North America**, natural gas demand **increased** by an estimated 2.5% (or just over 15 bcm) y-o-y during the 2024/25 gas winter, reaching its highest level on record. This was driven mostly by colder temperatures, which increased space heating needs across Canada and the United States. Stronger gas demand provided upward pressure on natural gas prices. Benchmark (Henry Hub) gas prices rose by almost 95% from a year earlier, to an average of just over USD 4/MBtu in Q1 2025 -their highest quarterly average since Q4 2022.

In **Central and South America**, preliminary data suggests that gas demand remained broadly flat over the October 2024 to March 2025 period. In **Brazil**, gas-fired power generation during this period surged by around 35% y-o-y. Higher gas demand led to a stronger reliance on LNG imports, which increased by nearly 60% y-o-y through October 2024-March 2025.

Following a very strong expansion in the first three quarters of 2024, natural gas **demand growth in Asia slowed significantly** during the 2024/25 heating season. This was mainly due to weaker demand in **China** and other emerging Asian economies. Initial data suggests that Asian natural gas demand grew by less than 1% (or below 5 bcm) y-o-y during the 2024/25 winter. Milder weather in China, along with weaker macroeconomic performance and high LNG spot prices constrained natural gas demand growth in the region. In China, following very strong year-on-year growth of nearly 9% from January to October 2024, demand fell by around 2% y-o-y for the subsequent November 2024 to February 2025 period. Combined natural gas demand in **Japan and Korea** increased by an estimated 2% y-o-y during the October to January period, amid colder winter weather. **India's** natural gas demand for the period from October 2024 to March 2025 decreased slightly, by 2% compared to the same period a year earlier. In **Emerging Asia**, natural gas consumption increased

⁴ Asia Pacific, Central and South America, Eurasia, Europe and North America.

marginally year-on-year during the October 2024 to March 2025 period, as a more than 8% increase in LNG imports into the region was largely offset by weaker domestic production.

In **OECD Europe**, natural gas demand rose by around 9% (or 25 bcm) y-o-y through the 2024/25 heating season. This was the largest year-on-year increase for any heating season since 2016/17. The power sector was the biggest driver of higher gas use, accounting for almost half of the incremental demand due to lower wind and hydro power generation. Colder temperatures lifted demand for gas in the residential and commercial sectors, while higher gas prices weighed on natural gas use in industry in Q1 2025.

In contrast to other markets, natural gas consumption in **Eurasia** declined by an estimated 3% y-o-y through the 2024/25 heating season. This was primarily due to an unseasonably mild winter in Russia, which reduced space heating requirements and dampened natural gas use for district heating. Russia's natural gas production fell by 1% (or 3 bcm) y-o-y in the October 2024 to February 2025 period. While natural gas output increased in Q4 2024, production fell by 7.5% (or almost 10 bcm) y-o-y through January-February due to lower domestic demand and a decline in piped gas exports to the European Union following the termination of Ukrainian transit. In **Central Asia**, natural gas production continued to decline, with the combined gas output from Uzbekistan and Kazakhstan falling by an estimated 5% y-o-y from October to February. In **Azerbaijan**, natural gas production rose by a 5.5% (or 0.9 bcm) during the same period, thanks largely to higher gas exports.

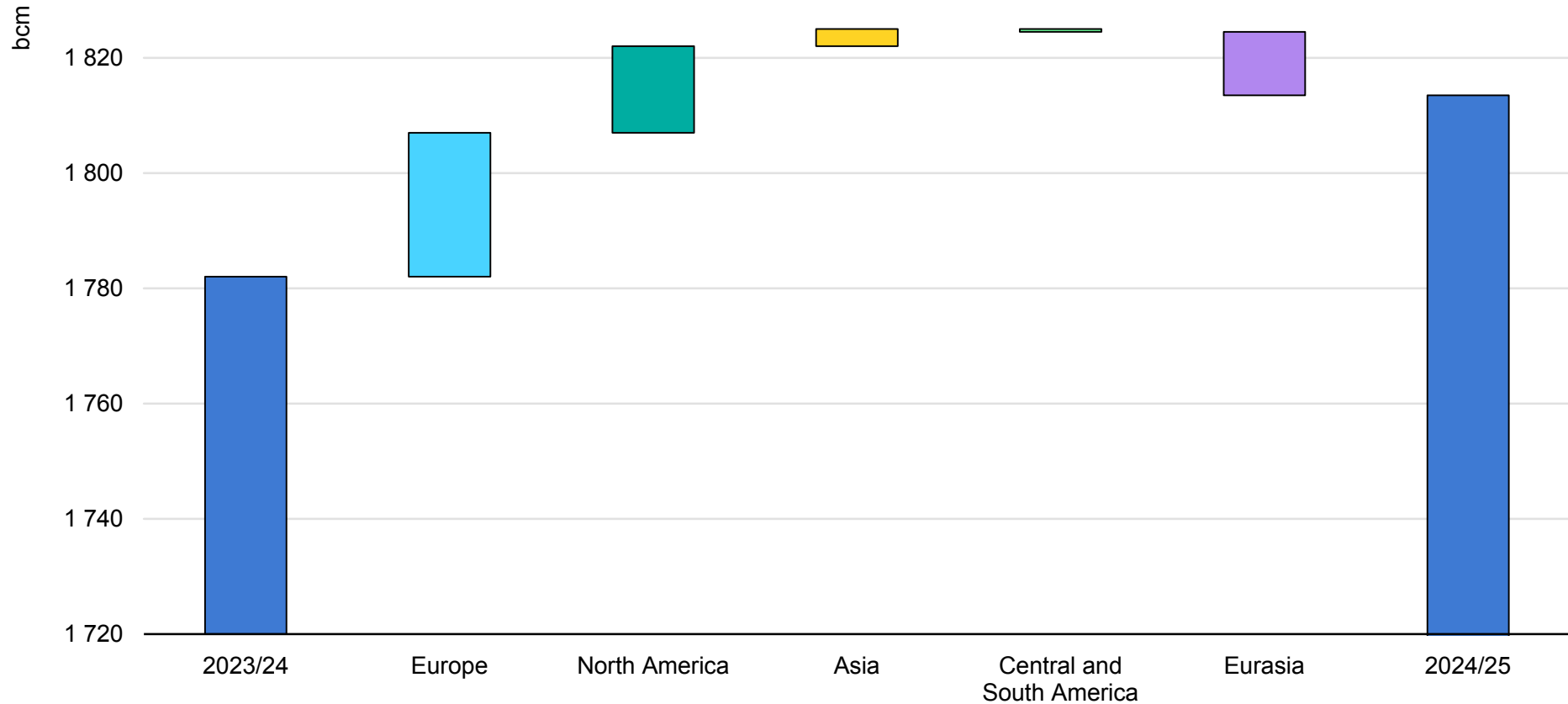
Global gas demand growth is forecast to slow to around 1.5% in 2025, amid an increasingly uncertain macroeconomic outlook. Tighter market conditions are expected to weigh on global gas demand growth, particularly in price-sensitive import markets. LNG supply is forecast to grow by 5% (or 27 bcm) in 2025. However, the halt of Russian gas flows through Ukraine, combined with higher storage injection needs in Europe, is likely to tighten market fundamentals, especially in the first half of the year.

Following colder weather conditions in the first quarter, the **residential and commercial sectors** emerge as the primary driver behind stronger gas use and account for almost 45% of incremental gas demand in 2025. In contrast, higher gas prices are expected to limit gas demand growth in **industry** and the energy sectors to below 1.5%. **Gas-to-power** demand is expected to increase only marginally in 2025, amid the continued expansion of renewables.

Natural gas demand in the **Asia-Pacific region** is expected to expand by just over 2% compared to 2024, a significant slowdown compared to 2024, when demand grew by 5.5%. Following a cold first quarter, natural gas consumption in **North America** is projected to increase by just below 1% compared to 2024 and remain broadly flat in **Central and South America**. In **Europe**, natural gas demand is expected to increase by 1.5% compared to 2024, albeit remaining almost 20% below its 2021 levels. Combined demand in **Africa and the Middle East** is forecast to increase by 2.5%. **Eurasian** gas demand is projected to grow by almost 1%, supported by higher demand from industry and the power sector.

Europe and North America drove global gas demand growth over the 2024/25 gas winter

Estimated year-on-year changes in natural gas demand in key regions for the October 2024-March 2025 period

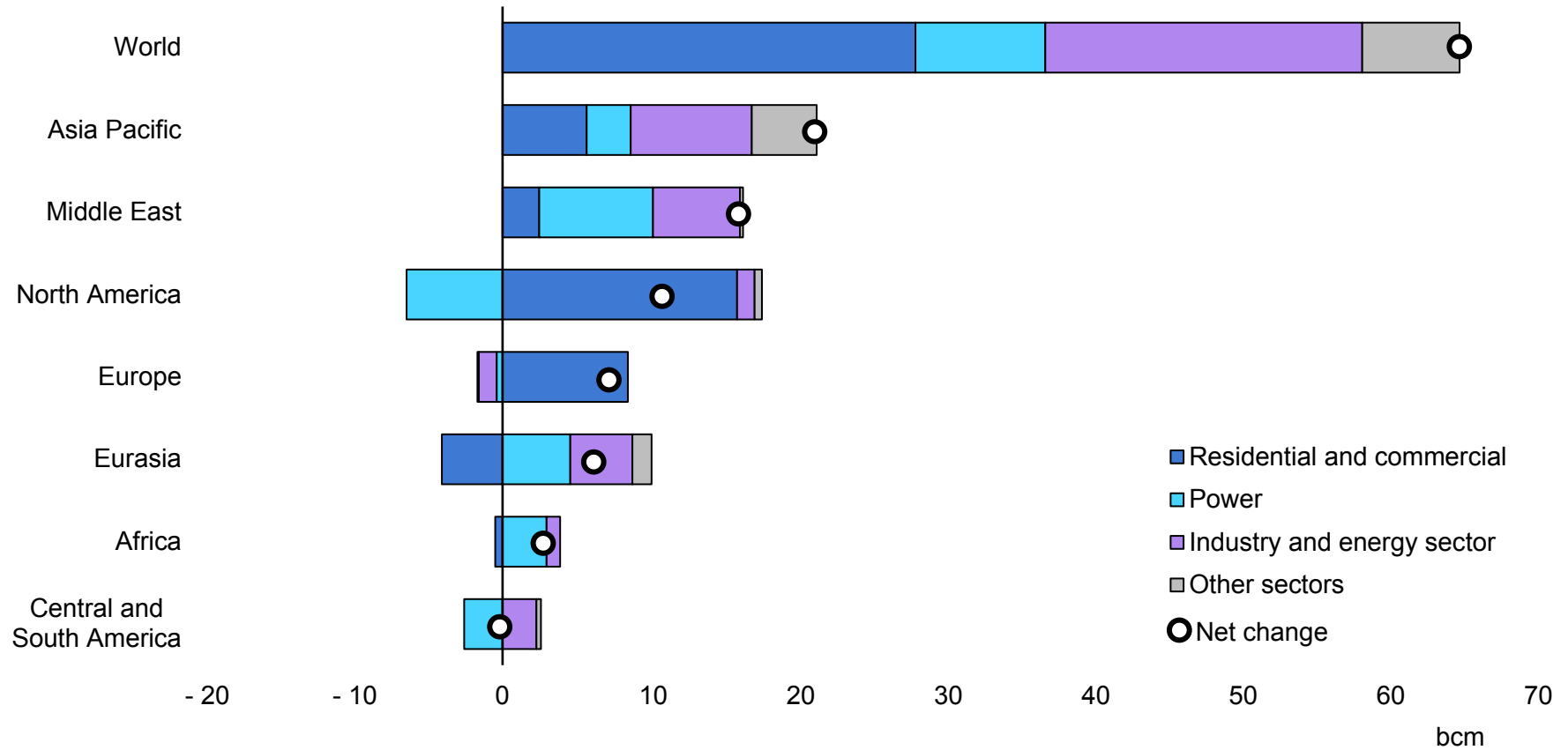


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Notes: Asia includes Bangladesh, China, India, Indonesia, Japan, Korea, Malaysia, Pakistan, Philippines, Singapore and Thailand.

The residential and commercial sectors are expected to drive gas demand growth in 2025

Forecast change in natural gas consumption by region and sector, 2025 vs 2024



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A colder winter supported strong gas demand growth in North America...

Natural gas consumption in North America increased by an estimated 2.5% (or just over 15 bcm) y-o-y through the 2024/25 gas winter to reach its highest level for any heating season in our records. This strong demand was primarily driven by colder temperatures, which increased space heating requirements across Canada and the United States. The residential and commercial sectors alone accounted for around 70% of the region's incremental gas demand. Gas-fired power generation continued to expand, primarily driven by stronger electricity demand. Gas use in industry increased marginally compared to the previous heating season.

In the **United States**, natural gas consumption increased by close to 3% (or almost 15 bcm) y-o-y through the 2024/25 winter. Heating degree days were up by 5.5% compared to the previous heating season, which naturally increased space heating requirements. First estimates indicate that gas demand in the residential and commercial sectors increased by around 6% (or 10 bcm) y-o-y. Heating intensities in the residential and commercial sectors declined marginally, which suggests that factors other than weather may have moderated the use of natural gas in buildings.

Gas-to-power demand continued to expand, rising by around 1.5% (or 2 bcm) compared to the 2023/24 heating season. This increase was primarily due to higher electricity demand, which increased an estimated 3% y-o-y. The strong rise in natural gas prices through Q1 2025 eroded the cost-competitiveness of gas-fired power plants

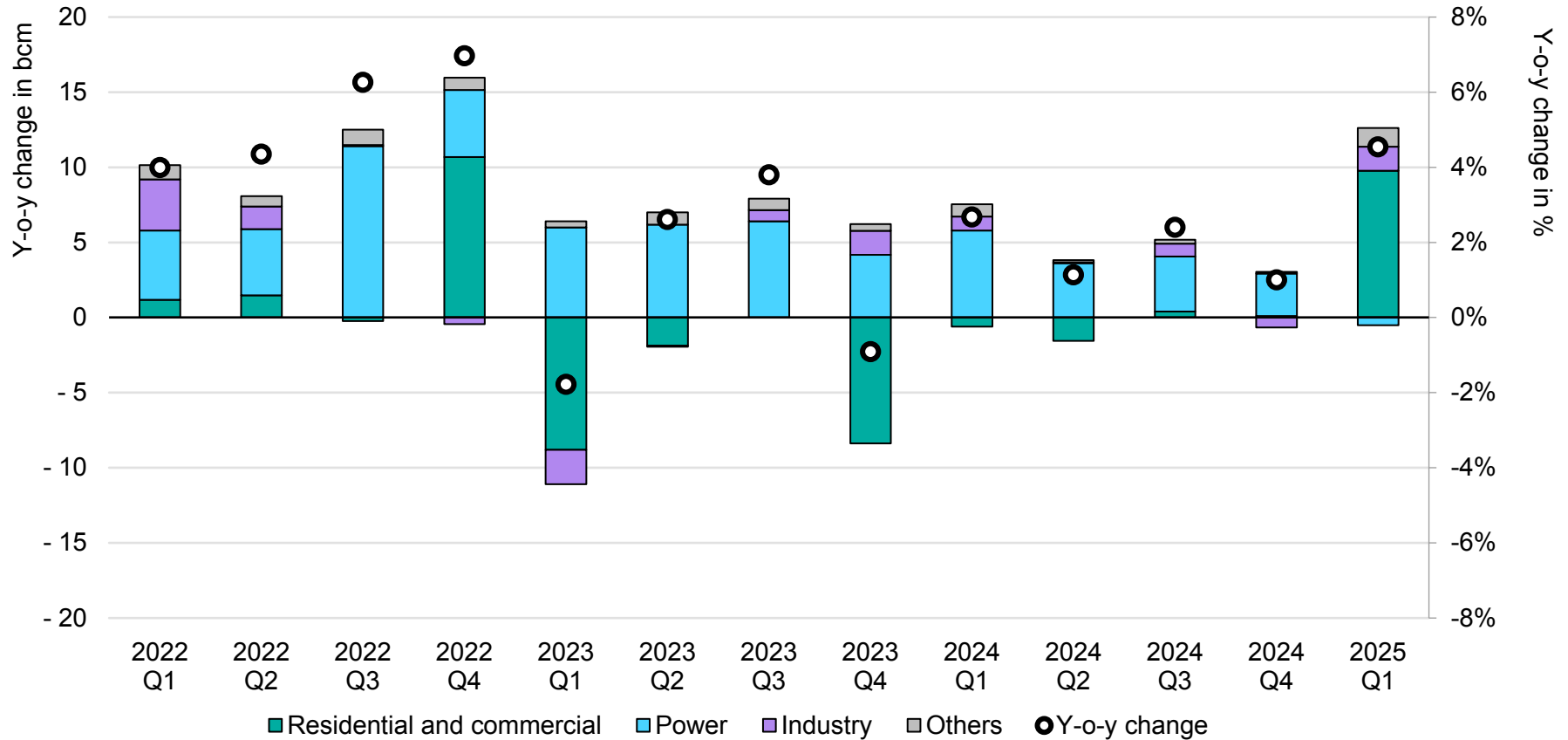
vis-à-vis coal-based generation: while their power output increased by nearly 20% y-o-y, gas-fired power generation marginally declined. Consequently, the share of natural gas in power generation declined marginally from 41% through the 2023/24 winter to 39% over the 2024/25 heating season. Natural gas demand in the **industry and energy sectors** increased by an estimated 1% (or 1 bcm) y-o-y, partly driven by higher gas use from the country's growing LNG liquefaction fleet.

In **Canada**, natural gas demand rose by an estimated 3% y-o-y through the 2024/25 heating season. Colder weather led to higher gas use in the residential and commercial sectors, which rose by 3.5% y-o-y during the October 2024 to January 2025 period. Combined gas demand in the industrial and power sectors rose by 0.5% y-o-y during the same period, largely due to increased gas-fired generation. In **Mexico**, natural gas consumption declined by an estimated 2% (or 1 bcm) y-o-y during October 2023 to March 2024, amid lower gas-to-power demand.

Following the relatively strong growth recorded in the first quarter, **natural gas demand in North America is forecast to increase by almost 1% in 2025**. After reaching an all-time high in 2024, gas-to-power demand is expected to marginally decline in 2025 amid the continued expansion of renewables. In contrast, gas use in the residential and commercial sectors is expected to increase, assuming average weather conditions through the rest of the year.

...primarily driven by the residential and commercial sectors

Estimated year-on-year changes in quarterly natural gas demand by sector in the United States, 2022-2024



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Sources: IEA analysis based on EIA (2025), [Natural Gas Consumption](#); [Natural Gas Weekly Update](#).

Gas demand rose in Central and South America in 2024, but growth is set to halt in 2025

Following a decline of 0.8% in 2023, natural gas consumption in Central and South America rose by 2.3% (or 3.4 bcm) y-o-y in 2024, driven by increased usage for power generation and in the residential and commercial sectors. Preliminary data indicate that demand remained broadly flat over the October 2024 to March 2025 period, while LNG imports increased by almost 10% y-o-y.

In **Argentina**, natural gas production increased by 5.4% (or 2.6 bcm) y-o-y in 2024, surpassing 50 bcm for the first time since 2008. Demand grew by 1.8% (or 0.9 bcm) y-o-y but stayed below 2022 levels, as Q4 trends diverged from previous quarters. A 17% decline in residential and commercial demand in Q4, driven by a shift to more affordable LPG, limited annual sectoral growth to 2.2% (or 0.25 bcm) y-o-y. Stronger industrial consumption in Q4 moderated the annual decline to 3% (or 0.39 bcm) y-o-y. Gas-to-power demand grew by 5.3% (or 0.69 bcm) y-o-y in 2024, driven by an 18% y-o-y increase in Q4. Despite higher shale gas output, Argentina relied on imports from Chile and Bolivia to secure supply during heatwaves in early 2025, due to insufficient gas infrastructure. Initial data show demand rose 1.2% y-o-y during this period, driven by strong growth in the industrial sector – 14% y-o-y in January 2025.

In **Brazil**, natural gas consumption grew by 5.9% (or 1.8 bcm) y-o-y in 2024, driven by a 32% (or 1.85 bcm) y-o-y rise in gas-to-power demand amid low hydro availability. Supply is expected increase in 2025, following the start-up of Petrobras' Rota 3 pipeline and

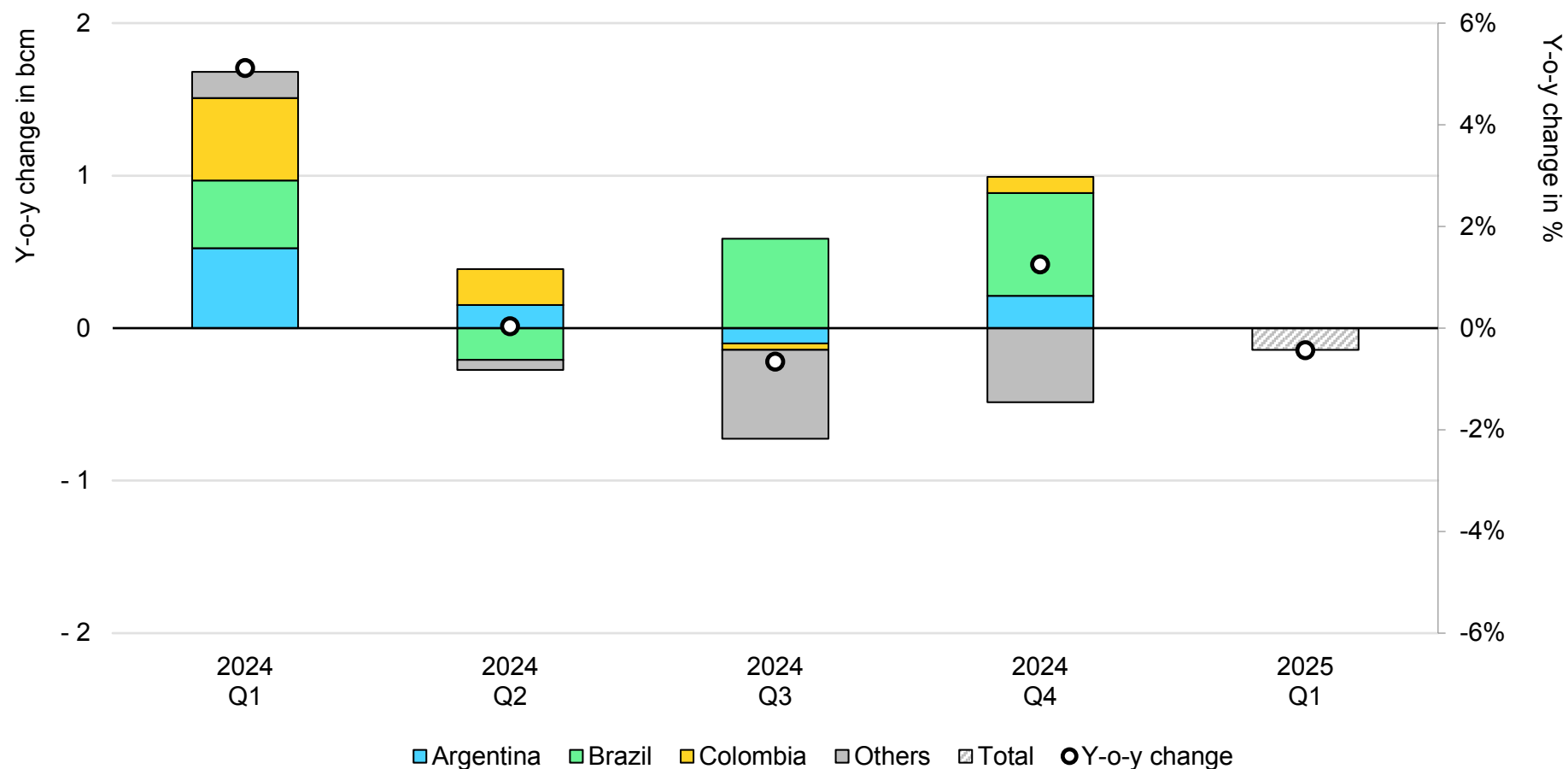
processing unit in Q4 2024 – with its 18 mcm/d capacity – as well as agreements to ramp up piped imports from Argentina. Additionally, a new decree allows the National Petroleum Agency (ANP) to mandate reduced gas reinjection for oil recovery at new wells, as reinjected volumes reached 54% of wet gas output in 2024, up from 18% in 2014. Initial data suggest a 5.5% y-o-y rise in demand in Q1 2025, driven by 8% growth in gas-to-power and energy sector use.

In **Trinidad and Tobago**, production increased significantly in Q4 2024, with LNG exports showing a 12% (or 0.31 bcm) y-o-y increase. This helped moderate a drop in exports in 2024 to 2.4% (or 0.26 bcm) y-o-y. Observed consumption in **Venezuela** increased by 4% (or 0.66 bcm) y-o-y in 2024, despite Q4 2024 figures being almost 10% below the previous year. Gas-to-power demand in **Colombia** remained elevated in Q4 2024, up by 11% y-o-y. However, reservoir levels improved to 53% by early March 2025, around 20 pp higher than a year earlier, resulting in a 50% y-o-y reduction in gas input to power plants in Q1 2025. Combined with flat demand in other sectors, this led to a 53% y-o-y decline in LNG imports. Demand decreased marginally in **Central America** and the **Caribbean**, where combined LNG imports declined by 1.6% y-o-y in Q1 2025.

This **forecast** expects gas demand in Central and South America to remain broadly flat in 2025. While stronger industry and energy sectors demand is expected, gas-fired power generation is set to decrease as weather conditions support greater hydro availability.

Gas demand in Central and South America declined in Q1 2025, reversing growth trends from 2024

Estimated y-o-y changes in quarterly natural gas demand, Central and South America, Q1 2024-Q1 2025



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Sources: IEA analysis based on ANP (2025), [Boletim Mensal da Produção de Petróleo e Gás Natural](#); BMC (2025), [Informes Mensuales](#); Central Bank of Trinidad and Tobago (2025), [Statistics](#); MEEI (2024), [Monthly bulletins](#); CNE (2025), [Generación bruta SEN](#); ENARGAS (2025), [Datos Abiertos](#); ICIS (2025), [ICIS LNG Edge](#); IEA (2025), [Monthly Gas Data Service](#); JODI (2025), [Gas Database](#); OSINERG (2024), [Reporte diario de la operación de los sistemas de transporte de gas natural](#).

Asian gas demand growth slowed markedly during the 2024/25 winter season

Following a very strong expansion in the first three quarters of 2024, natural gas demand growth in Asia slowed significantly

over the 2024/25 heating season, primarily due to weaker demand fundamentals in China and across Emerging Asian markets.

Preliminary data suggests that Asian natural gas demand grew by less than 1% (or below 5 bcm) y-o-y over the 2024/25 winter.

Milder weather in China, coupled with **weaker macroeconomic performance** and **higher LNG spot prices**, limited demand growth. In contrast, the region's mature markets, including Japan and Korea, faced colder winter temperatures, which supported higher natural gas use over the winter. **For the whole of 2025, Asia's natural gas demand is forecast to increase by just over 2%**, representing a significant slowdown compared to 2024, when demand grew by 5.5%.

Exceptionally, Chinese gas demand is estimated to have decreased y-o-y in the winter months, notably in late 2024 and in February 2025. In contrast to the 9% y-o-y growth during the January-October 2024 period, demand fell by about 2% y-o-y over the November 2024 to February 2025 period. Milder winter weather reduced heating demand for natural gas, contributing to the decline, but the steepest drop by far came from the industrial sector, reflecting a slowdown in economic activity and a steady rise in international gas prices through much of 2024. The drop in demand in late 2024 followed a gradual slowdown in growth across the

major demand sectors in the second half of the year. As a result, the total annual growth rate approached 8% in 2024, down slightly from 2023.

Annual growth in Chinese gas demand is set to slow further in 2025, with economic forecasts pointing to softening growth, particularly in the context of growing uncertainty around trade tariffs with the United States. Gas use across different sectors also remains sensitive to fuel switching amid continued volatility in global gas market fundamentals. As such – and in a break with recent trends – the industrial sector is expected to play a much smaller role than the residential and commercial segments in terms of incremental demand. After a buoyant 2024, gas demand growth from the road transport sector is expected to taper off in 2025, with fuel competition remaining a key factor. Overall, we expect Chinese natural gas demand to grow by less than 4% in 2025.

Supply trends are set to remain robust in 2025. Piped gas imports are expected to grow by close to 10%, with the Power of Siberia pipeline operating at maximum capacity for its first full year. Incremental volumes from domestic gas production should remain strong, although they are likely to ease slightly from the previous year. As a result of these dynamics and increasing global competition for LNG cargoes, Chinese LNG imports are expected to decline in 2025, an exceptional shift compared to recent trends for the country.

Japan's gas demand between October 2024 and January 2025 increased by 1.5% y-o-y, mainly due to colder temperatures over the period. Total gas demand in 2024 increased by 1%, driven by the power generation sector. While nuclear output and renewable availability increased, gas-fired generation rose mainly because of a summer heatwave. Meanwhile, demand from the industrial sector fell by 2.5% and residential and commercial demand was mostly unchanged year-on-year. Gas demand in 2025 is forecast to decrease by 3% y-o-y, driven by declines in the power generation sector. In 2024, two nuclear power plants (Onagawa 2 and Shimane 2) resumed operations. This restored nuclear capacity is expected to significantly reduce gas-fired power generation in 2025, while generation from renewable sources is also expected to increase in 2025.

Korea's gas demand in October 2024 to January 2025 increased by 3% year-on-year, supported by cold winter temperatures. Total gas demand in 2024 increased by 6% y-o-y, driven by the city gas sector and demand for power generation. Although a new nuclear power plant (Shin Hanul 2) came online in April 2024, a summer heatwave also boosted overall electricity consumption and demand for gas-fired power. In 2025, total gas demand is expected to increase marginally from the previous year, with slight increases expected from power generation, industry, and the residential and commercial sector. While nuclear output and renewable availability are forecast to increase, the combination of growing electricity

demand and reduced coal-fired generation is expected keep gas-fired generation levels relatively stable.

Based on preliminary data, **India's** natural gas demand for the period from October 2024 to February 2025 decreased by 2% compared to the same period a year earlier. While consumption increased in the transport (+9%), and the residential and commercial (+10%) sectors, these gains were outweighed by a sharp 19% drop in demand from the power sector. The decline in gas-fired power generation was driven by higher LNG prices, rapid growth in renewables and hydro generation, and relatively weak overall growth in electricity demand. Despite a 16% y-o-y rise in spot LNG prices, India's LNG imports remained steady from October 2024 to March 2025 compared to the same period the previous year. However, this reflects a slowdown in import growth, which had surged by 31% in the corresponding period a year earlier, driven by a 44% y-o-y decline in spot LNG prices. Meanwhile, domestic gas production has been declining year-on-year since July 2024, due to slowing output from the KG-D6 fields and continuing declines in legacy basins. Government incentives and increased exploration activity are expected to support long-term production growth and enhance energy security. On 12 March 2025, the Indian government approved a series of amendments to the Petroleum Act of 1948 to encourage oil and gas exploration. The new legislation aims to improve policy stability, allow companies to use international arbitration, and extend lease periods. By making the domestic exploration sector more attractive

to investors, India seeks to reduce its dependence on imports and stimulate long-term investment in the energy sector. In 2025, India's natural gas demand is expected to grow by 3% (or 2 bcm) – a notable deceleration from the 10% growth (or 7 bcm) recorded in 2024. This forecast assumes a recovery in the following months, driven by India's expanding energy needs in line with its rapid economic growth, under average weather conditions. However, this growth will be moderated by lower demand for power generation compared to the same period last year, which contributed to the slowdown seen in January and February 2025.

Emerging Asia's gas consumption increased marginally during the October 2024 to March 2025 period, as a more than 8% increase in LNG imports into the region was almost entirely offset by declines in domestic production. Available data for Q4 2024 indicate that y-o-y production declines were most pronounced in Bangladesh (-6%), Pakistan (-6%) and the Philippines (-19%). Although LNG import growth remained positive, year-on-year growth rates slowed substantially – from well over 25% in Q4 2023 and Q1 2024 to less than 4% by Q1 2025 – as higher LNG prices reduced the appetite for spot LNG cargoes across South and Southeast Asia.

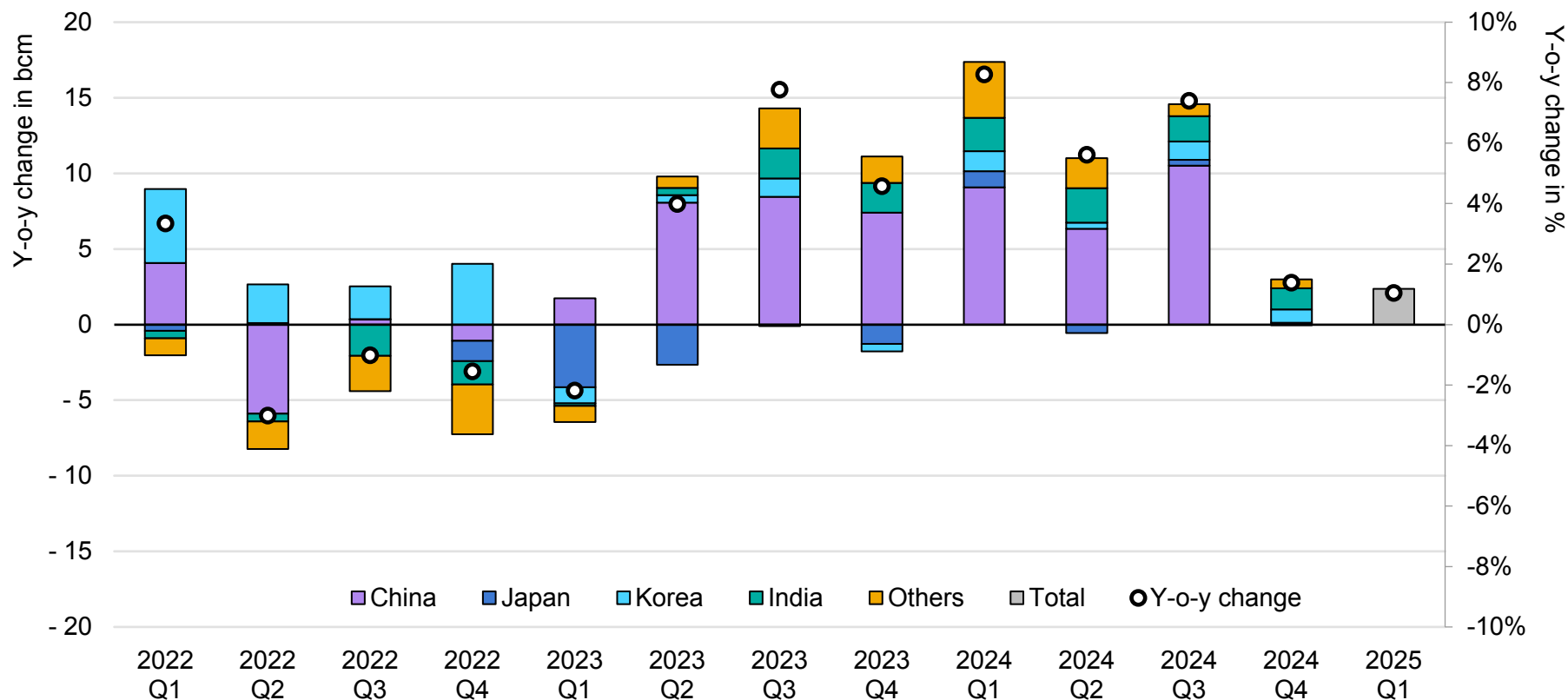
Thailand's natural gas consumption dipped by an estimated 1% y-o-y in the October 2024 to January 2025 period, driven in particular by declining gas use from the industrial (-10%) and transport sectors (-15%). **Indonesia's** total consumption increased by 8% y-o-y over the same period as healthy growth in industry and the

energy sector offset a 3% decline in the power generation sector. **Malaysia's** gas demand rose by an estimated 2%, while **Singapore** saw a 9% y-o-y increase between October 2024 and January 2025, driven by the power sector. **Pakistan** experienced a 2% y-o-y decline in total gas consumption in Q4 2024, primarily due to reduced demand in the power sector. Domestic production fell by 6% y-o-y during the fourth quarter, while LNG imports declined marginally during the October 2024 to March 2025 period as a whole, amid growing fiscal strains, deferrals on contracted LNG cargoes, and calls to renegotiate a long-term LNG contract with Qatar. **Bangladesh's** natural gas demand rose by 2% in Q4 2024, led by growing consumption in the power generation sector. A sharp 50% y-o-y jump in LNG imports offset steep production declines in the six months to 31 March 2025, following a period of suppressed LNG demand in the first three quarters of 2024 amid civil unrest, plant outages, and a brief suspension of spot LNG purchases in Q3 2024. However, fiscal challenges, accumulated debts, and a weak currency have once again started to slow the pace of spot LNG procurement toward the end of Q1 2025.

In 2025, natural gas demand in Emerging Asia is forecast to increase by around 2%, following a 2.7% expansion in 2024. The slowdown is attributed to the dampening effect of higher price expectations and higher projected LNG flows to Europe, which are expected to weigh on the region's LNG receipts and industrial gas consumption in particular. LNG demand growth in Emerging Asia is projected to slow from a strong 17% in 2024 to below 3% in 2025.

Asia's gas demand growth slowed to 1% through the October 2024 to March 2025 period

Year-on-year change in quarterly gas demand in Asia, Q1 2021-Q4 2024



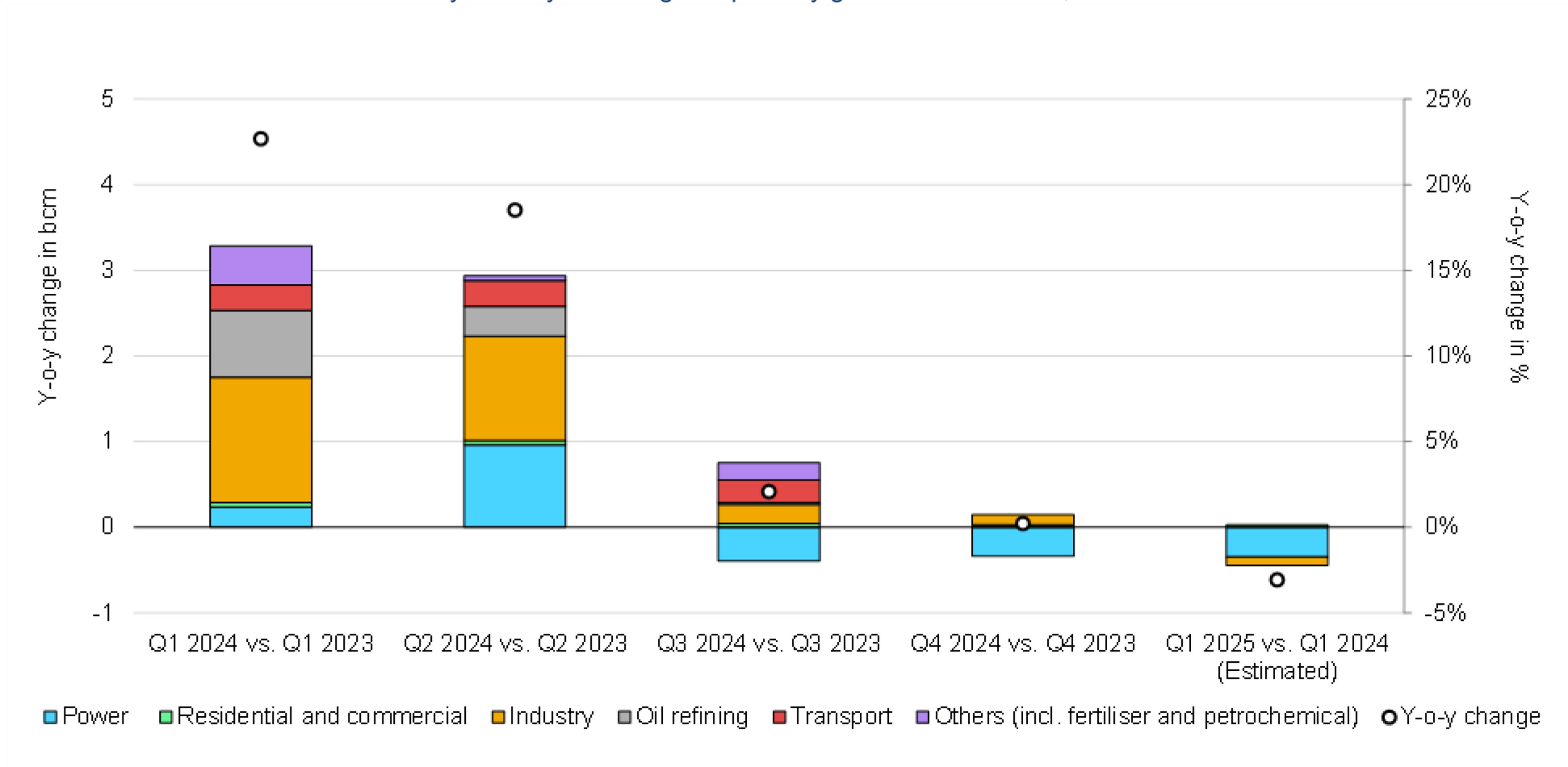
IEA. CC BY 4.0.

Notes: Others includes Bangladesh, Indonesia, Malaysia, Pakistan, the Philippines, Singapore and Thailand.

Sources: IEA analysis based on ICIS (2025), [ICIS LNG Edge](#); CQPGX (2025), [Nanbin Observation](#); JODI (2025), [Gas World Database](#); PPAC (2025), [Gas Consumption](#); EPPO (2025), [Energy Statistics](#), Korea Energy Economics Institute (2025), [Monthly Energy Statistics](#), Ministry of Economy, Trade and Industry of Japan (2025), [METI Statistics](#).

India's gas consumption growth has recently stalled amid a drop in power sector demand

Estimated year-on-year change in quarterly gas demand in India, Q1 2024 - Q1 2025

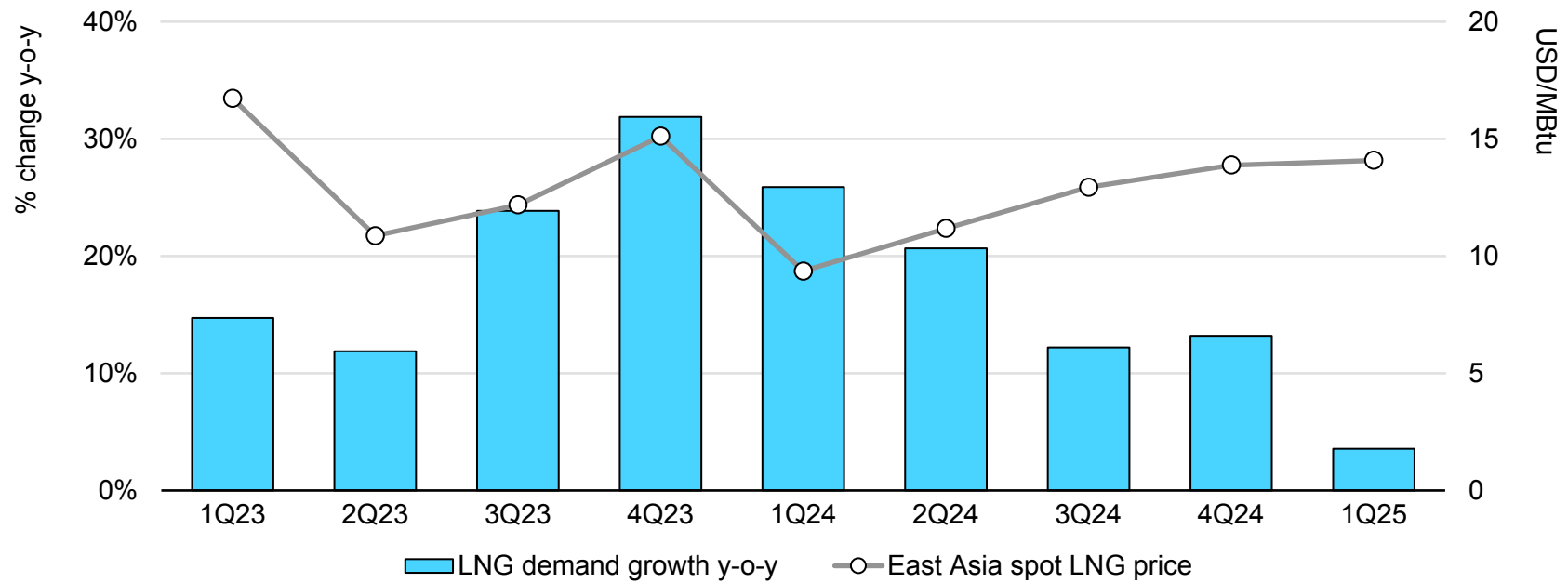


IEA. CC BY 4.0.

Notes: Transport includes deliveries via pipelines and compressed natural gas (CNG) consumption.
 Sources: IEA analysis based on Petroleum Planning and Analysis Cell (2025), [Sectoral Consumption](#).

Rising spot LNG prices have slowed LNG demand growth in Emerging Asia in recent quarters

Year-on-year change in quarterly LNG demand in Emerging Asia and average LNG spot price in Asia



IEA. CC BY 4.0.

Source: IEA analysis based on ICIS (2025), [ICIS LNG Edge](#).

Natural gas demand in Europe rose by 9% through the 2024/25 heating season...

Natural gas consumption in OECD Europe rose by 9% (or 25 bcm) y-o-y through the 2024/25 heating season. This represents the strongest year-on-year increase in any heating season since the 2016/17 winter. The power sector was the biggest driver of higher gas use and alone accounted for almost half of the incremental gas demand amid lower wind and hydro power generation. Colder temperatures supported stronger gas demand in the residential and commercial sectors. In contrast, high gas prices weighed on natural gas use in industry in Q1 2025.

Distribution network-related demand rose by an estimated 6% (or almost 8 bcm) y-o-y through the 2024/25 winter season. Heating degree days increased by 9% compared to the previous (milder) winter season, which drove up space heating requirements across households and commercial entities. Preliminary data suggests that heating intensity (gas use per heating degree days) continued to further decline through the 2024/25 winter season. This may indicate that gas-saving measures implemented since the 2022/23 gas crisis, along with the electrification of space heating, are reducing the temperature sensitivity of direct natural gas use in buildings.

Gas-to-power demand rose by more than 20% (or 14 bcm) y-o-y through the 2024/25 winter season. This steep increase was primarily supported by lower renewables power generation, which dropped by an estimated 7% y-o-y. Wind power output recorded a

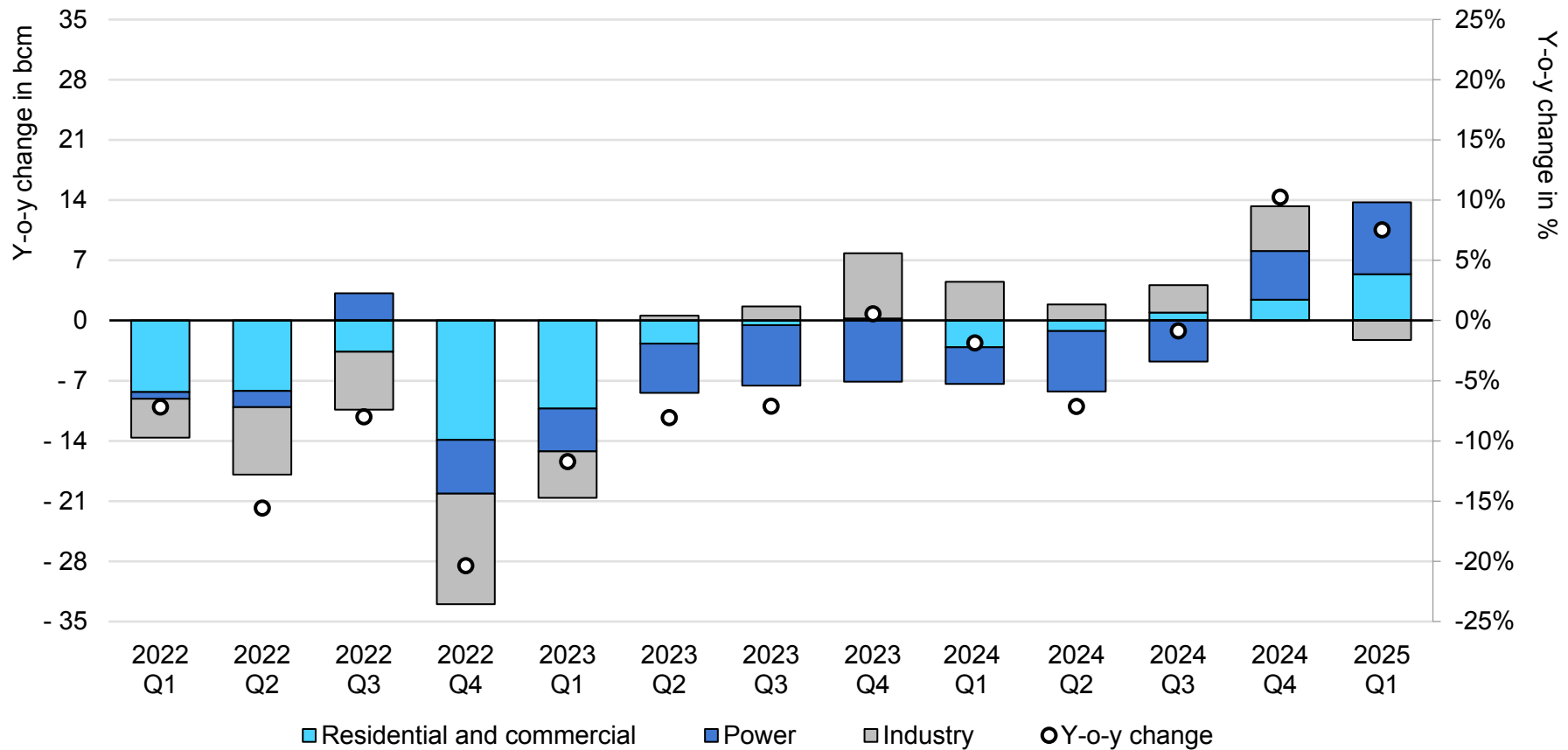
12% y-o-y decline amid slower wind speeds across Northwest Europe, while hydro power generation fell by almost 10% – mainly due to lower hydro availability in Southern Europe. Gas-fired power plants played a crucial role in ensuring electricity supply security during periods of low renewables power output by providing back-up to the power system.

Natural gas consumption by industry rose by an estimated 3% y-o-y through the heating season. This growth was entirely concentrated in the last quarter of 2024, while high gas prices weighed on natural gas use in industry over Q1 2025. Estimated industrial gas consumption declined by 8% y-o-y in Belgium, by 4% in France, by 7% in the Netherlands and by 8% in Spain in Q1 2025.

For all of 2025, this **forecast** expects natural gas demand in **OECD Europe** to increase by 1.5% compared to 2024, as higher gas use in buildings is not expected to be offset by lower gas burn in the power and industrial sectors. The continued expansion of renewables is projected to reduce gas-to-power demand by around 10% through the remainder of 2025, while gas demand in the residential and commercial sectors is expected to increase, assuming average winter weather conditions. Gas use in industry is forecast to decline through the remainder of the year, as higher gas prices are expected to weigh on gas- and energy-intensive industries.

...primarily supported by the power sector

Estimated year-on-year change in quarterly natural gas demand, OECD Europe, Q1 2022-Q1 2025



IEA. CC BY 4.0.

Sources: IEA analysis based on Enagas (2025), [Natural Gas Demand](#); ENTSG (2025), [Transparency Platform](#); EPIAS (2025), [Transparency Platform](#); Trading Hub Europe (2025), [Aggregated consumption](#).

The global LNG market is expected to remain tight in 2025

Global LNG trade expanded by 2% y-o-y through the 2024/25 the Northern Hemisphere heating season. Supply growth was led by the United States, which increased its LNG exports by 9% y-o-y, thanks in large part to the Plaquemines LNG facility, which started exports at the end of 2024. In terms of demand, Europe increased its LNG imports by about 6% y-o-y, with growth in the first quarter of 2025 more than compensating for declines in the fourth quarter of 2024. Asia's LNG inflows fell by 1% y-o-y, driven notably by China, whose LNG imports fell by about 12% y-o-y, amid weaker domestic demand and higher piped gas imports from Russia. LNG imports in Central and South America were up by 8% y-o-y through the October-March period, amid higher gas-to-power demand in Colombia and Brazil.

After two years of moderate growth, global LNG production is expected to increase more substantially in 2025, rising by 5% (or 27 bcm). However, significant shifts in demand-side dynamics are set to keep the market volatile as competition for incremental cargoes intensifies. This is particularly the case as low end-winter EU storage levels and further reductions in Russian pipeline flows tighten European supply fundamentals. As Europe's demand for LNG rises, Asia is set to forgo some volumes – a clear change in regional dynamics from 2024. Amid these fundamental shifts, the market is set to remain highly sensitive to any unexpected disruptions in gas supply.

North America is set to drive LNG supply growth in 2025

In 2025, we expect to see the return of the United States as a significant source of incremental LNG supply. In fact, US projects are set to account for around 85% of the upside in new LNG supply this year, led notably by the start of Plaquemines LNG, whose Phase 1 segment (18 bcm nameplate capacity) exported its first cargo in the final days of 2024. The project's modular configuration – split into two phases with 18 small-scale trains – contributed to its faster-than-average commissioning period. In the first quarter of 2025, exports from Phase 1 reached nearly 3 bcm, exceeding previous expectations and typical liquefaction project ramp-up rates.

The other new US liquefaction project due to start in 2025 is the Corpus Christi Phase 3 expansion, set to bring a total of 7 mid-scale trains online for a total nameplate capacity of about 14 bcm. While the first train loaded its first cargo in February 2025, the next two trains are expected to come online only in the fourth quarter of 2025. The phased commissioning schedule of the expansion is expected to limit incremental volumes this year.

Although not a new project, Freeport LNG is also expected to provide incremental cargoes in 2025 as utilisation rates improve following partial outages in 2024.

Canada and Mexico are also expected to provide incremental supply in 2025, further bolstering North American exports. The LNG Canada

project (19 bcm) is expected to deliver its first cargoes around mid-2025, progressively ramping up exports thereafter. In Mexico, the Fast LNG Altamira Train 1 is expected to continue ramping up deliveries after a start-up in the third quarter of 2024.

Outside of North America, little incremental LNG is expected to reach the market in 2025, with downside risks often offsetting most gains in other markets. In Africa, the anticipated mid-year launch of the Tortue FLNG project offshore of Mauritania and Senegal (3 bcm) is expected to be largely offset by bearish factors in other markets. Upstream fundamentals in Algeria have weakened compared to 2024, Egypt is not expected to return to LNG exports and acts of sabotage on feedgas pipelines at Nigeria LNG in February 2025 are likely to impact full-year export volumes. Despite upstream and operational improvements in markets such as Mozambique and Angola, total African LNG exports are set to decline marginally in 2025.

In Asia, LNG supply is set to remain flat or decline marginally, due to increasingly challenging feedgas conditions in certain markets. Although investments are being made to backfill or extend existing upstream assets in markets such as Malaysia, Indonesia or Papua New Guinea, these efforts are likely to maintain production near current levels rather than lead to significant short-term growth.

Russian LNG exports are also expected to be a downside factor on the global market in 2025. In January 2025, the United States announced sanctions on Russia's two small-scale liquefaction terminals (Vysotsk LNG and Portvaya LNG), which took effect at the

end of February. After combined exports of about 3 bcm in 2024, neither plant is expected to provide cargoes from March 2025 onward. International sanctions also continue to keep Arctic LNG 2 Train 1 (9 bcm nameplate capacity) idle in our outlook.

Despite accelerating LNG supply growth this year, the market remains vulnerable to unplanned supply risks. In 2024, unplanned outages were relatively limited; however unexpected downtime – albeit relatively minor – has already impacted Norway's Hammerfest LNG and Nigeria LNG in the first quarter of 2025. Furthermore, as 2025 progresses, the ramp-up schedules at new liquefaction plants will significantly influence LNG market fundamentals.

Europe is expected to lead LNG demand growth in 2025

In 2025, LNG trade flows are expected to go through a clear shift in response to evolving regional demand-side fundamentals, with LNG import growth expected to come increasingly from Europe and at the expense of growth in Asia. These full-year trends became apparent already in winter 2024/25 and are expected to intensify through the rest of the year.

In the final two months of 2024, Asian LNG imports deviated from the robust year-on-year growth observed in the first 10 months. Imports remained flat in November and fell by about 3% in December compared to the same months in 2023. The decline accelerated in early 2025, with Asian LNG imports falling by 6%, or 2 bcm, y-o-y in the first quarter. This was thanks to relatively mild winter conditions across a number of

markets, notably affecting China, where overall gas demand showed year-on-year declines throughout most of the winter months.

The shift in LNG flows was also underpinned by a clear pull from other markets: as they declined in Asia, LNG imports grew in other regions, notably in Europe, Africa and the Middle East. In Europe, the expiry of the Ukrainian pipeline transit agreement for Russian gas at the end of 2024, combined with slightly weaker pipeline flows from Norway and North Africa and sustained seasonal demand, led to tighter market fundamentals, increasing the continent's reliance on LNG to help balance the market. Over the first three months of the year, European LNG imports grew by 23%, or more than 9 bcm.

This increase in European LNG imports in the first quarter of 2025 was facilitated by the flexibility of US LNG supply, which is traded largely on a destination-free basis, allowing for cargoes to be resold in response to shifting inter-basin price dynamics. With European hub prices remaining relatively favourable compared to Asian spot LNG price benchmarks, US LNG increasingly targeted Europe. As US LNG exports grew by about 15% (nearly 5 bcm) y-o-y in the first three months of the year, a larger share of these volumes remained in the Atlantic basin compared to the same period in 2024. In the first quarter of 2025, markets in the Atlantic basin accounted for nearly 87% of US LNG exports, up from about 75% in the first three months of 2024. In effect, US LNG exports to Asia contracted by about 40%, in line with a shift in relative spot LNG pricing between the Atlantic and Pacific Basins.

While Europe accounted for the majority of this shift toward more Atlantic Basin deliveries in the first quarter of 2025, more US LNG volumes also reached the Middle East and Africa, particularly Egypt (which ceased LNG exports in mid-2024 and has turned to net imports) and Jordan. Total combined LNG imports in the Middle East and Africa (not just from the United States) increased by close to 2 bcm y-o-y during this period, representing a 125% jump y-o-y.

The suspension of Red Sea navigation from the end of 2023 contributed to a rise in European imports of Russian LNG in 2024. A European Union ban on the transshipment of Russian LNG via EU ports (which was adopted in June 2024 and entered into force in March 2025) could further limit viable alternative destinations for Yamal LNG exports. However, the progressive clearing of ice in Arctic waters through the summer months could enable the direct diversion of volumes to Asia through the Northern Sea route.

Over the whole of 2025, European LNG imports are expected to increase by 25%, or about 33 bcm, driven by lower pipeline supply from Russia, higher domestic demand and storage injection needs, and greater exports toward Ukraine. This contrasts sharply with the nearly 30 bcm y-o-y drop in European LNG imports in 2024, illustrating the rapidly changing state of the global gas market.

On the flipside, Asian LNG imports are expected to decline slightly year-on-year in 2025, effectively serving as a market balancer amid growing competition from European buyers. This contrasts sharply with 8% import growth in 2024. China is expected to lead the shift in

2025, as a slowdown in overall demand growth and robust alternative supply growth leads to a nearly 4% decline in forecast LNG imports (compared to 10% growth in 2024).

LNG import growth in more price-sensitive markets such as India, as well as in smaller markets, is also forecast to slow considerably, while mature markets like Japan and Korea are expected to decrease their imports by a combined 2% y-o-y. Indonesia could be a notable exception in Asia, as a decrease in domestic gas production and increased domestic demand are set to lead to a larger share of Indonesian LNG cargoes being redirected for the domestic market, notably over the summer months. Although a degree of uncertainty remains regarding the magnitude of redirections, we expect the tighter Indonesian domestic gas balance to act as a bearish factor on global LNG supply availability.

Central and South America are also expected to weigh less heavily on the LNG market, with imports falling by about 20% (4 bcm), notably thanks to improving domestic production in Argentina and the easing of drought conditions in both Brazil and Columbia.

Overall, deteriorating supply fundamentals in the European natural gas market are expected to send ripples across the global LNG market again in 2025. Europe is expected to return to significant LNG import growth after two bearish years (-2% in 2023 and -18% in 2024), absorbing more incremental LNG than will come to the market in 2025. While the consequences are not expected to be nearly as marked as in 2022, increased competition for these cargoes is set to

soften LNG imports in other markets – notably across Asia and Central and South America – as the global gas market rebalances.

China's tariffs on US LNG are unlikely to disrupt global LNG supply

The recent tariff spat between the United States and China has raised questions about its potential effects on the LNG market, but we do not expect this to disrupt global gas and LNG supply.

On 10 February 2025, a 15% Chinese tariff on US imports came into effect, effectively raising the cost of US goods, including LNG, for Chinese buyers. Subsequent announcements raised tariffs to 84% as of 10 April, adding to this cost effect. This is expected to prompt long-term LNG contract holders to optimise their portfolios, reselling or swapping US volumes into other markets. A precedent for this effect was set during the 2018-2019 trade spat between the two countries, when China introduced tariffs of 10% and then raised them to 25%. US LNG deliveries to China progressively declined before reaching zero for a period of one year.

The recently-announced tariffs are unlikely to disrupt LNG supply to China – let alone in the global LNG market – although they add to uncertainty around demand-side fundamentals. Relatively low volumes of US LNG had been arriving in China in the months preceding the tariff announcements, as US volumes had increasingly been destined for Atlantic Basin markets, in line with overarching price dynamics.

European Commission Action Plan for Affordable Energy

In February 2025, the European Commission published its Action Plan for Affordable Energy, including a section on “ensuring well-functioning gas markets.” Among a number of points raised in the document, one in particular sticks out for its novelty in the European context. In addition to proposing the aggregation of demand and purchasing efforts across EU buyers (an element partly underpinning the existing AggregateEU mechanism), the Action Plan links this to the possibility for longer-term contractual commitments and potential support from the European Union or its Member States for importers investing directly in supply assets.

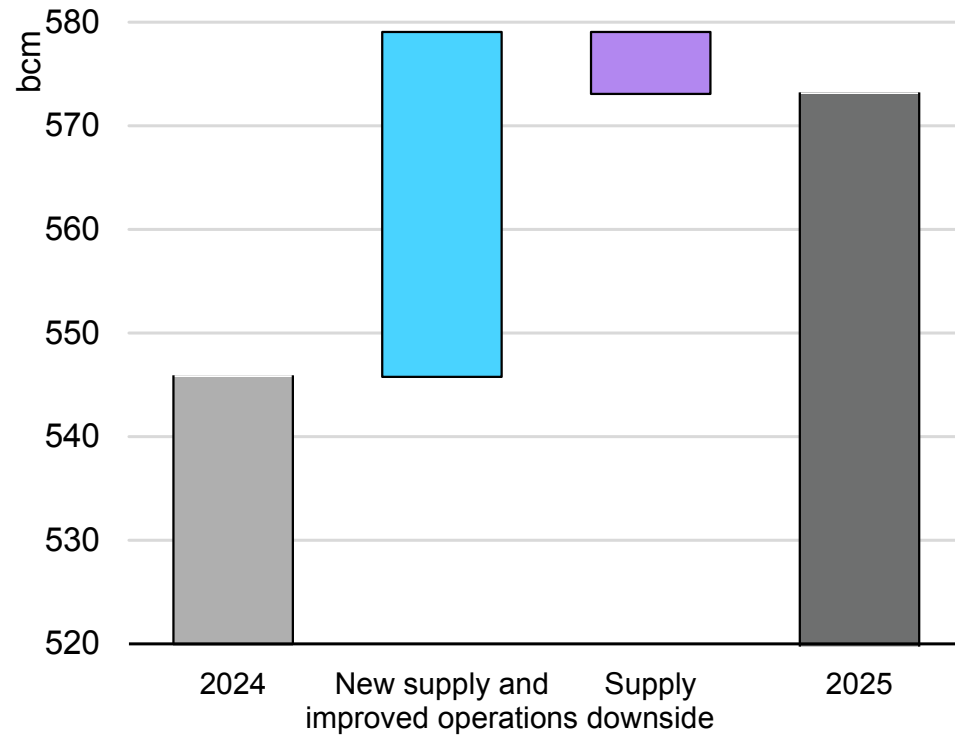
The Action Plan highlights these last two elements as central to Japan’s LNG procurement strategy, which prioritises long-term contracts (as opposed to spot supply) to stabilise import gas prices and leverages state-backed direct investment in LNG projects to secure volumes through purchasing options. For the first time, the document suggests that the European Union may be willing to allow state-backed support – notably through preferential loans – to help private investors secure investments in LNG export infrastructure abroad.

While this does not represent a policy decision, the Action Plan document signals a potential shift in how the European Union views securing its natural gas supply. Faced with a growing reliance on LNG imports in a tight market in the short-term and uncertainty over natural gas needs in the medium-term, EU policymakers are

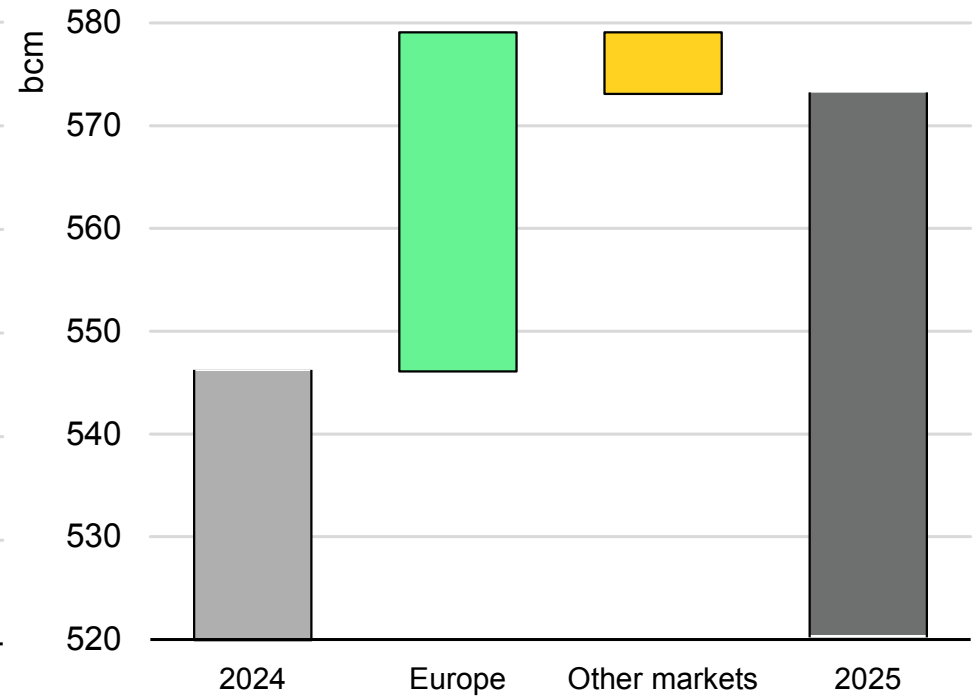
exploring new options to navigate market and price volatility. While the document represents only an initial step in a potential policy evolution, implementing these Action Plan elements could help stabilise European LNG import prices in the longer term – and, by extension, the broader market.

Increasing European LNG demand is offset by falling LNG demand in Asia and other countries

Breakdown of LNG supply change in 2025



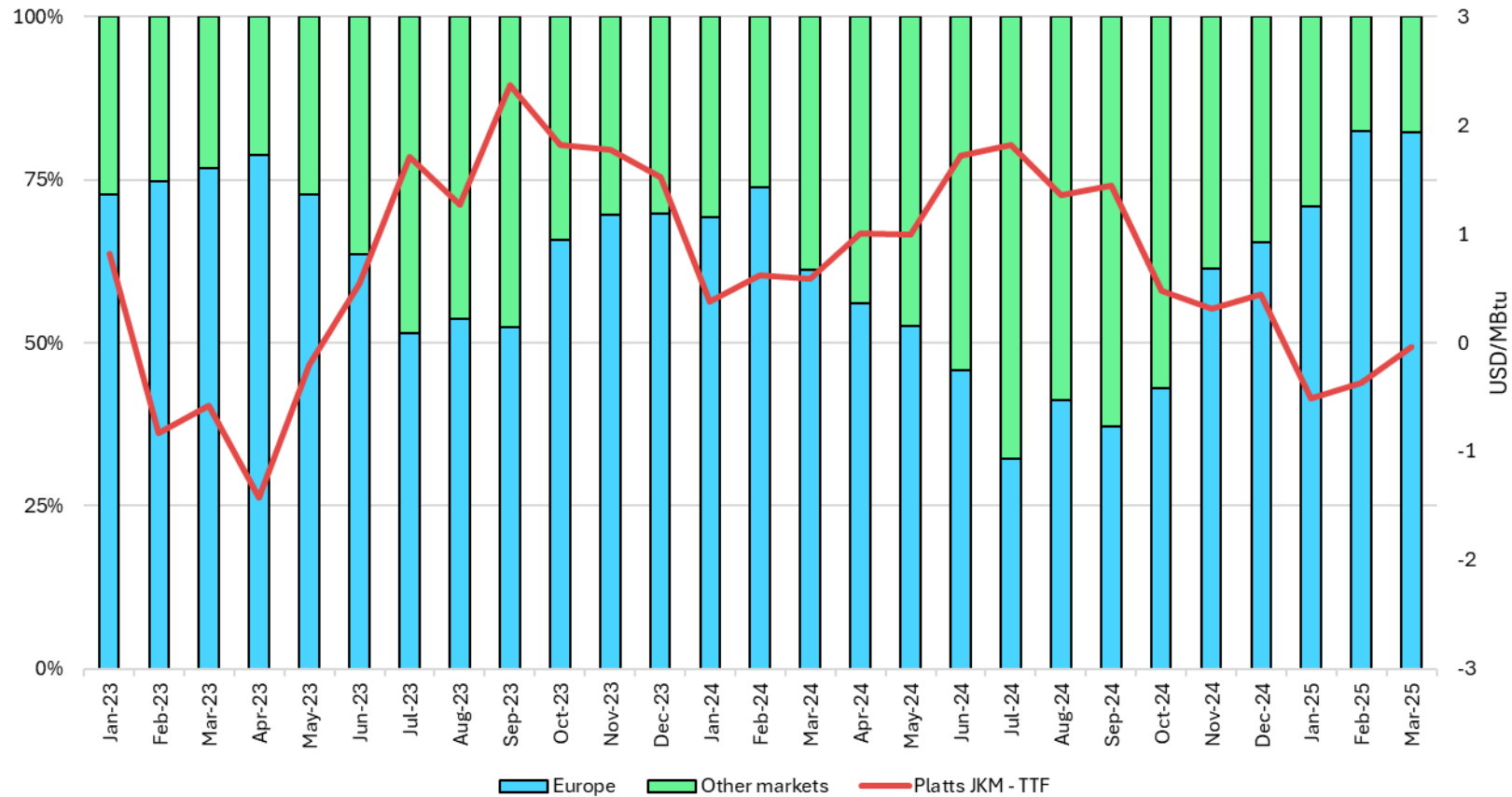
Breakdown of LNG demand change in 2025



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Soaring TTF prices draw more US LNG to Europe

Platts JKM-TTF spread and the destination of US LNG exports



IEA. CC BY 4.0.

Source: IEA analysis based on ICIS (2025), [ICIS LNG Edge](#).

Spot LNG charter rates hit record lows in Q1 2025, amid overcapacity and trade shifts

The decline in spot LNG charter rates that began in 2023 accelerated in 2024, with average spot charter rates dropping by more than 50% y-o-y and falling below the five-year average. Several factors influenced this drop. In Q4 2024, European gas prices rose amid weaker-than-expected LNG supply growth, geopolitical tensions and speculation over Russian piped gas flows via Ukraine for 2025 – making US LNG shipments to Europe more profitable than to Asia. By reducing shipping durations, vessel availability increased, sending spot charter rates sharply lower. The absence of a steep contango (where future prices are much higher than spot prices) also reduced the demand for floating LNG storage, lowering charter rates. More importantly, the LNG carrier fleet expanded by 68 vessels in 2024, double the growth seen in 2023. This growth was intended to support new LNG projects, but delays to some of these have left these vessels available on the spot market. Others were meant to replace older-generation ships; but legacy vessels, while less efficient, remain crucial for operational flexibility, thus discouraging scrapping.

Entering 2025, the LNG shipping market saw an even sharper decline. In the Atlantic Basin, spot charter rates plummeted further, reaching an all-time low of USD 5 000 per day by late January – well below the level required for cost-effective vessel operation. This collapse reflects a deepening capacity glut, as fleet expansion continues to outpace demand growth. By

contrast, the historical five-year average spot rate for January charters stood at approximately USD 100 000 per day, highlighting the extent of the market correction. Yet despite this challenging environment, there have been tentative signs of recovery. Spot charter rates increased to more than USD 20 000 per day in March 2025, pointing to potential stabilisation.

LNG shipping routes: Towards improved LNG transits via the Panama Canal

Meanwhile, disruptions in key shipping corridors, including the Panama Canal and the Red Sea, have necessitated adaptive routing strategies. Geopolitical developments have had a pronounced impact on LNG shipping routes. Challenges at the Panama Canal have reshaped LNG trade routes since 2023. Severe drought conditions and long wait times led to a 65% decline in US LNG transits to Asia via the canal for the October 2023 to October 2024 period, with transit numbers remaining below historical averages into early 2025. In response, the Panama Canal Authority has implemented a reservation system allowing shippers to secure transit slots up to a year in advance, in an effort to restore LNG trade through this key maritime passage. Additionally, the canal administration has outlined plans to expand its capacity to accommodate larger LNG carriers and floating storage units by June 2026.

LNG transits via the Red Sea: Tentative recovery amid ongoing security concerns

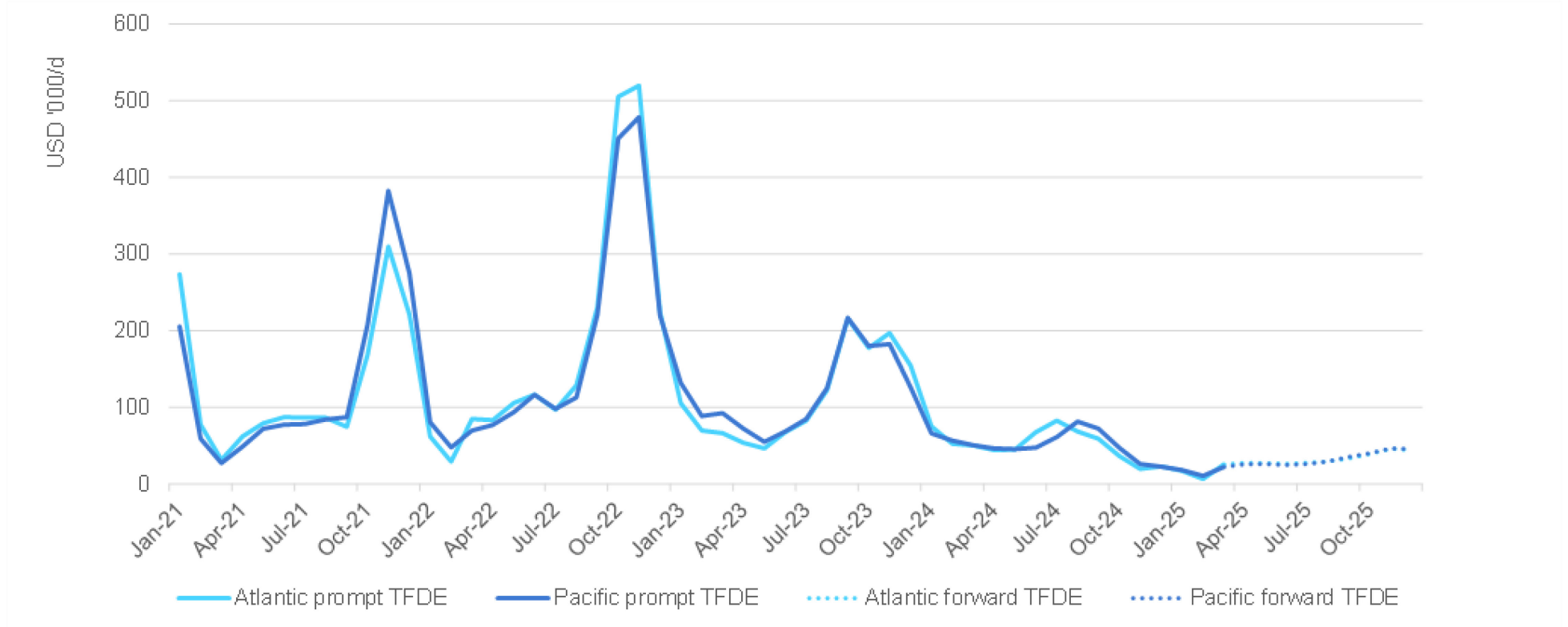
The security situation in the Red Sea remains a critical factor affecting shipping routes, especially LNG. Following Houthi militant attacks on vessels in late 2023, LNG transits through this chokepoint nearly ceased in 2024. A brief ceasefire between Israel and Hamas in early 2025 sparked hope of a gradual stabilisation of regional security, leading to a cautious resumption of Red Sea transits. Notably, in February 2025, the LNG tanker *Salalah LNG* became the first non-Russian LNG cargo to pass through the Bab-al-Mandeb Strait in over a year, followed by the *Trader III* LNG tanker. However, renewed hostilities in the region have reignited security concerns, following fresh U.S. strikes on Yemen's Houthi rebels in response to continued threats on commercial vessels. While there was a brief slowdown in attacks in early 2025, Houthi leaders have reaffirmed their intent to target vessels they deem hostile, deterring many LNG carriers from returning to the route. As a result, most operators continue to avoid the passage entirely, opting for longer journeys around the Cape of Good Hope. Persistently high insurance premiums and the uncertain security environment continue to discourage operators from fully re-engaging with the Red Sea passage.

Looking ahead, the future of LNG shipping will depend on several factors, including the resolution of security risks in the Middle East, the effectiveness of mitigation measures at the

Panama Canal, and the broader balance between LNG fleet capacity and global demand growth. Forward curves as of late March 2025 indicate that LNG charter rates are expected to average slightly above USD 33 000 per day for the April to December 2025 period, down 33% from the same period in 2024.

Forward prices for Q2-Q4 2025 fall 33% vs. 2024, as March spot rates show weak recovery

Average day rate for LNG carriers in Atlantic and Pacific basins, January 2021-December 2025



IEA. CC BY 4.0.

Notes: TFDE = Tri-fuel diesel electric vessel.
 Source: [Spark Commodities](#)

US dry gas production expected to return to growth in 2025

Following a marginal net decline in 2024, US dry natural gas production is set to return to growth in 2025. Buoyant demand-side forces – particularly from growing export requirements – along with the domestic gas price recovery in the second half of 2024, are expected to be key drivers behind this shift in dynamics. Early signs of a production recovery emerged in the winter 2024/25 period and trends are expected to gradually strengthen over the second half of 2025.

US natural gas production declined y-o-y in eight out of 12 months in 2024. Production posted some modest gains in December, however, marking a cautious start toward stronger domestic market fundamentals. This shift continued in the first quarter of 2025, with relatively robust pricing (compared to early 2024) providing support to upstream players. Cold weather episodes led to some well freeze-offs in January and February, but production was much less affected than during more extreme weather storm episodes in recent years. As a result, total first-quarter dry gas production is estimated to have remained up by about 0.5% y-o-y.

Associated gas production in the Permian basin remained a key driver of production growth in the early months of the year, thanks to robust oil market fundamentals, and we expect this to be the case through the rest of 2025. A turnaround in Haynesville production – a higher-cost play that was heavily impacted by the low-price

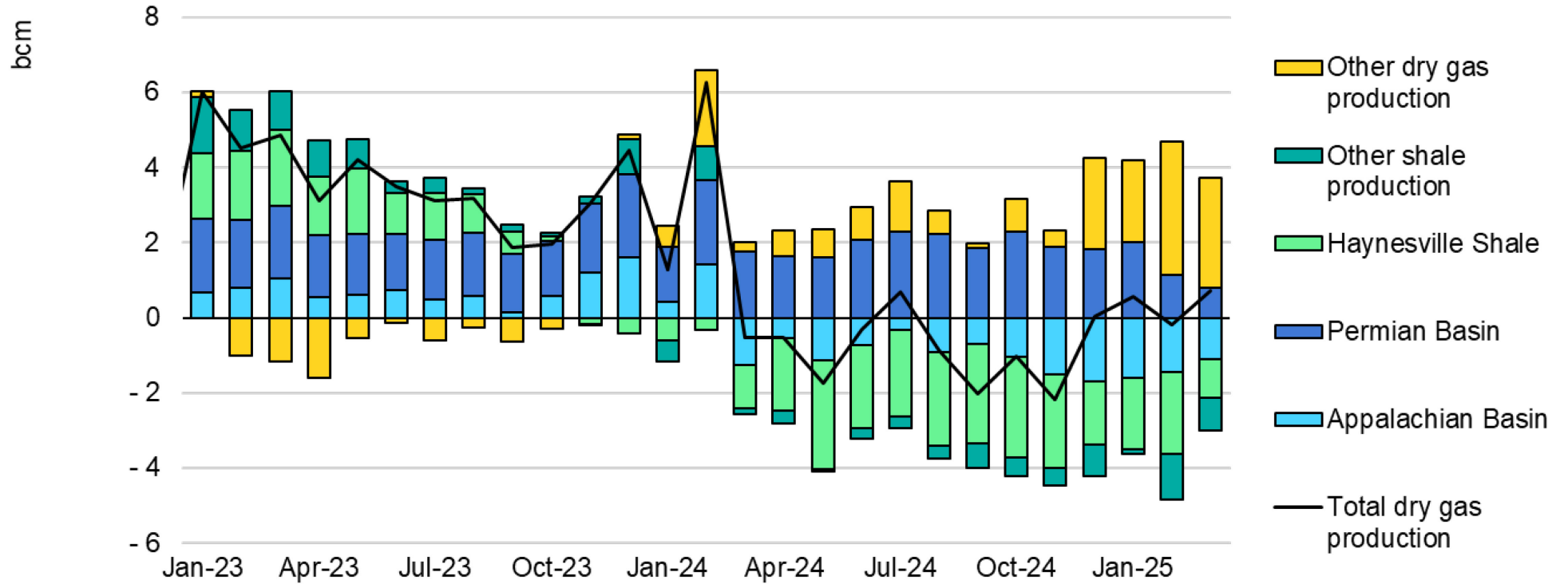
environment in 2024 – is expected, but with a longer lag to improving gas market fundamentals.

Production growth in 2025 is expected to be supported by two key factors that were less present in 2024. The first is higher storage injection requirements compared to 2024. The deficit compared to last year's levels is expected to lead to stronger filling needs through summer, though storage levels may not reach the record highs of November 2024 before next winter. The second – and more significant – factor is rising US gas and LNG exports. Increased exports at the Altamira LNG project in Mexico (supplied by US pipeline gas) and, to an even larger extent, the ramping up of new US liquefaction projects (Plaquemines LNG and the Corpus Christi expansion) will likely put pressure on supply requirements this year.

The return to production growth in 2025 is likely to be driven by the evolution of these demand-side forces, but potential mismatches in the pace of change on either side of the equation could lead to temporary imbalances in the domestic market. Increasing US dry gas production is also likely to require clear and consistent market signals for upstream players. Nevertheless, we expect more favourable market dynamics to carry US natural gas production growth to close to 3% in 2025.

US natural gas production is starting to recover in Q1 2025 from bearish 2024 dynamics

Year-on-year change in monthly dry gas production, United States, 2023-2025



IEA. CC BY 4.0.

Notes: February and March include estimated data.

Sources: IEA analysis based on EIA (2025), [Natural Gas Data](#), [Natural Gas Weekly Update](#).

Europe is ramping up its LNG imports amid higher demand and lower piped gas imports...

OECD Europe's primary natural gas supply rose by an estimated 1% (nearly 2 bcm) y-o-y during the 2024/25 heating season. Lower piped gas imports from Norway and Russia, along with higher natural gas demand, increased reliance on storage withdrawals and led to higher LNG imports in Q1 2025.

Europe's **LNG imports** increased by 5% (or almost 4.5 bcm) compared to the 2023/24 heating season. LNG inflows continued to decline in Q4 2024 and dropped by 12% (or 5 bcm) y-o-y amid lower than expected LNG supply growth and relatively strong competition from Asia. This trend was reversed in Q1 2025, when Europe increased LNG imports by more than 20% (or over 9 bcm) y-o-y, effectively offsetting the losses recorded in Q4 2024. Strong domestic demand, together with lower piped gas imports and rapidly depleting storage pushed European hub prices above Asian spot LNG prices. This in turn encouraged flexible LNG cargoes to flow toward Europe. LNG held its position as Europe's dominant source of primary gas and its share increased from 34% through the 2023/24 heating season to 36% during the 2024/25 winter. LNG flows from the United States increased by 8% (or 3.5 bcm) y-o-y.

The United States maintained its position as Europe's largest LNG supplier, accounting for more than half of Europe's imports through the 2024/25 heating season. **Russian LNG** inflows rose by 2.5% (or 0.3 bcm) y-o-y, maintaining its position as Europe's second largest LNG supplier. Belgium, France and Spain accounted

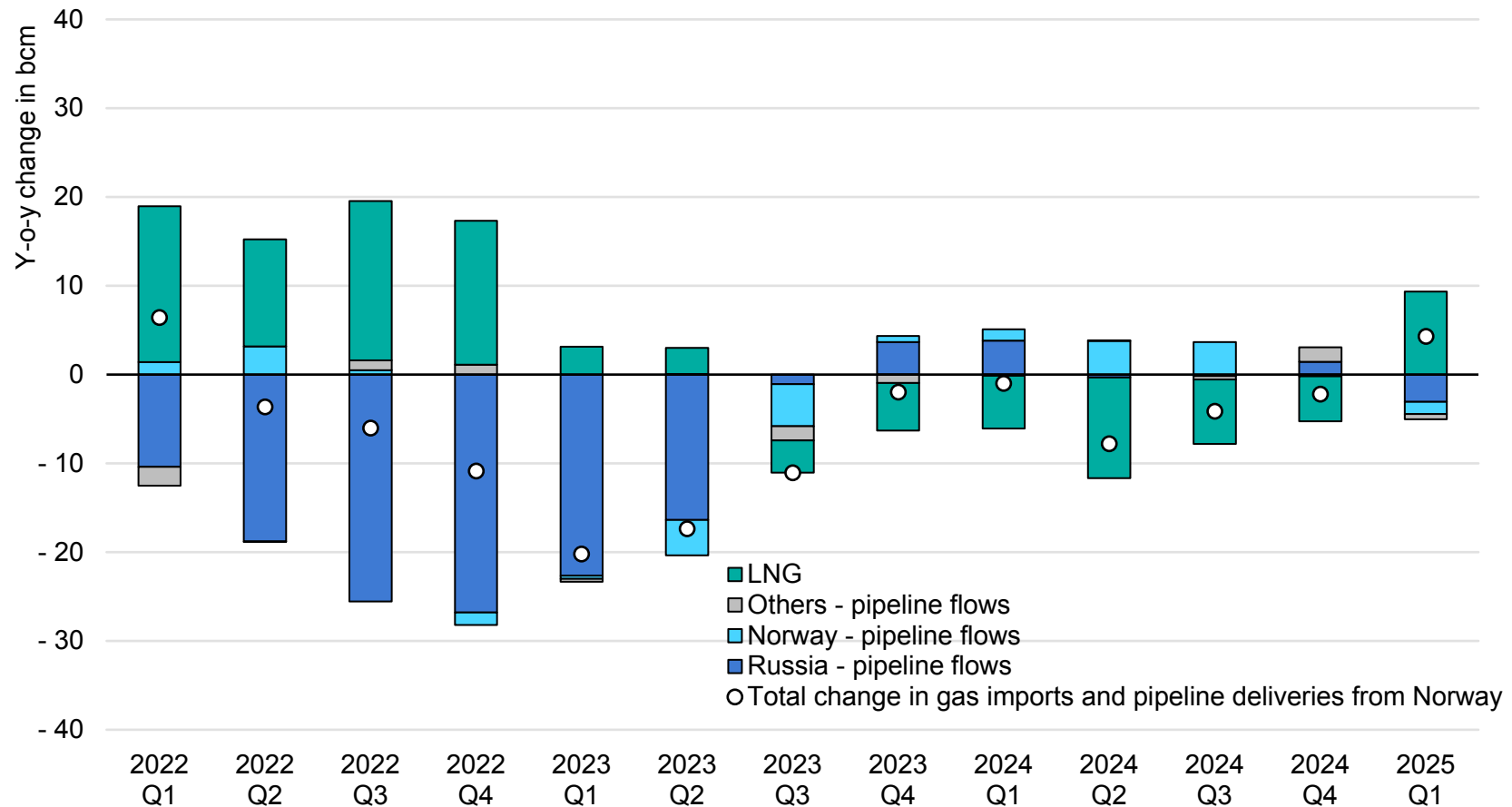
for 85% of Europe's total LNG imports from Russia through the 2024/25 heating season.

Norway's piped gas deliveries to the rest of Europe declined by 2.5% (or 1.5 bcm) y-o-y compared to the previous gas winter, amid unplanned outages and increased maintenance works. **Non-Norwegian domestic production** declined by around 1% (or 0.25 bcm) y-o-y during the October-January period. This was primarily driven by the **United Kingdom** amid output reduction from aging gas fields in the North Sea. **Russia's piped gas supplies** fell by an estimated 6% y-o-y through the 2024/25 winter. Deliveries to the European Union fell by almost 20% (or 2.5 bcm) amid the halt of gas transit via Ukraine. Exports to Türkiye rose 6% y-o-y during the October-February period. The share of Russian piped gas in Europe's gas demand stood below 10% through the 2024/25 heating season. Piped gas supplies from **North Africa** grew by 5% y-o-y, while **Azeri flows** via the TAP pipeline remained near last year's levels through the 2024/25 heating season.

This **forecast** does not assume a restart of Russian gas transit flows via Ukraine, after these were halted on 1 January 2025. This could translate into a decline of 13 bcm of Russian piped deliveries to the European Union compared to 2024. Lower Russian and Norwegian piped gas supplies, together with stronger storage injection requirements, are expected to increase Europe's LNG imports by 25% in 2025.

...with the region's LNG inflows rising by more than 20% year-on-year in Q1 2025

Year-on-year change in quarterly European natural gas imports and deliveries from Norway, Q1 2022-Q1 2025



IEA. CC BY 4.0.

Sources: IEA analysis based on ENTSOG (2025), [Transparency Platform](#); Eurostat (2025), [Energy Statistics](#); Gassco (2025), [UMM Platform](#); Gas Transmission System Operator of Ukraine (2025), [Transparency Platform](#); [ICIS LNG Edge](#); JODI (2025), [Gas World Database](#).

Tight fundamentals supported higher gas prices across all key markets in Q1 2025

Natural gas prices recorded strong year-on-year gains across all key markets in Q1 2025 amid tight supply fundamentals, adverse weather and geopolitical uncertainty.

In **Europe**, Title Transfer Facility (TTF) spot prices rose by more than 65% y-o-y to an average USD 14.5/MBtu in Q1 2025 – their highest quarterly average since Q1 2023. Strong demand growth (+9% y-o-y), lower piped gas imports from Russia and Norway and rapidly declining storage levels drove up European hub prices. TTF regained its premium over Asian spot LNG prices and traded USD 0.4/MBtu above Platts JKM in Q1 2025. This drew more LNG flows to Europe, rising by more than 20% y-o-y in Q1. Geopolitical tensions heightened short-term price variability across European gas hubs. TTF month-ahead prices displayed a volatility of 55% in Q1 2025 -well above the average first-quarter volatility of 40% recorded over the 2010-2019 period.

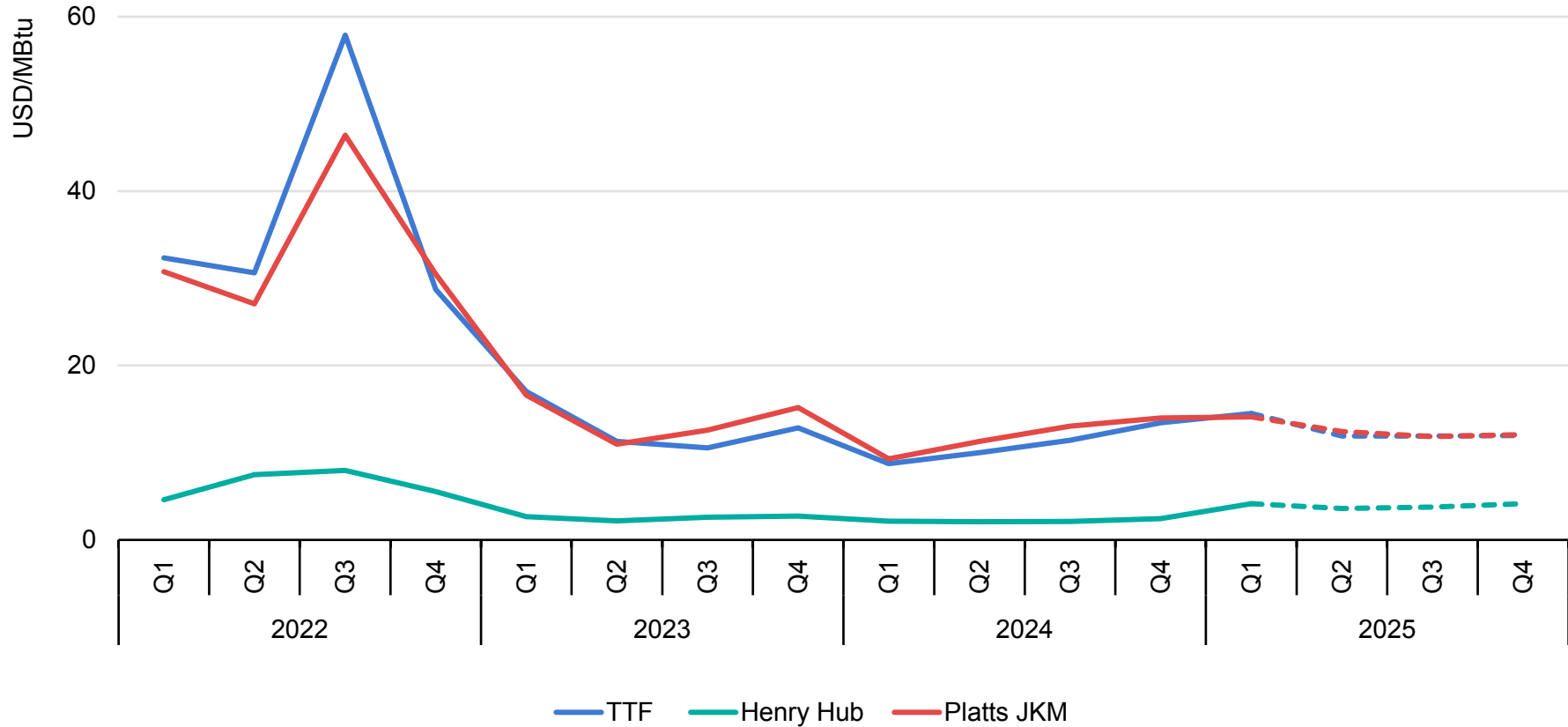
In **Asia**, Platts JKM prices followed a similar trajectory and rose by more than 50% y-o-y to an average of over USD 14/MBtu in Q1 2025 – their highest quarterly average since Q4 2023. Weaker-than-expected LNG supply growth, along with strong competition from Europe for flexible LNG cargoes, put upward pressure on Asian spot prices. Oil-indexed LNG prices traded in an estimated range of USD 11-13/MBtu – encouraging Asian buyers to reduce their spot LNG procurements and nominate higher volumes through long-term contracts.

In the **United States**, Henry Hub prices surged by almost 95% y-o-y and averaged just over USD 4/MBtu in Q1 2025 – their highest quarterly average since Q4 2022. Colder winter temperatures coupled with weaker gas production and relatively low storage levels pushed up gas prices. The United States faced several cold spells in Q1 2025, fuelling gas price volatility across regional gas hubs. Henry Hub prices surged to near USD 10/MBtu on 17 January 2025 as a polar vortex brought freezing temperatures across the United States, including in southern states. Natural gas prices at the Transco Zone 6-NY pricing point (serving New York City) soared to near USD 43/MBtu on the same day. Cold weather and infrastructure constraints kept New England gas prices at an average of USD 14.5/MBtu during January-February 2025.

Forward curves as of early April 2025 suggest that TTF prices could increase by 18% in 2025 and average at just over USD 12.5/MBtu. Higher storage injections through the summer, together with lower piped gas imports and strong competition with Asia for flexible LNG cargoes, are expected to support higher prices. Forward curves indicate that JKM prices could increase by more than 5% in 2025 to an average of just over USD 12.5/MBtu. A tight TTF-JKM spread is expected to encourage stronger LNG flows toward Europe. Based on forward curves, Henry Hub prices in the United States are expected to increase by over 75% to average just below USD 4/MBtu amid tighter market fundamentals.

The TTF-JKM spread is expected to remain tight through the summer of 2025

Main spot and forward natural gas prices, 2022-2025



IEA. CC BY 4.0.

Note: Future prices are based on forward curves as of 8 April 2025 and do not represent a price forecast.

Sources: IEA analysis based on CME Group (2025), [Henry Hub Natural Gas Futures Quotes](#), [Dutch TTF Natural Gas Month Futures Settlements](#), [LNG Japan/Korea Marker \(Platts\) Futures Settlements](#); EIA (2025), [Henry Hub Natural Gas Spot Price](#); Powermex (2025), [Spot Market Data](#); S&P Global (2025), [Platts Connect](#).

Storage withdrawal's balancing role was evident in winter 2024/25 amid tight market conditions

The essential balancing role of storage withdrawals was on full display in the 2024/25 northern hemisphere winter. Starting from above-average levels at the start of winter in both Europe and the United States, storage fill ended the season well below average – and in a much weaker position than at the end of winter 2023/24. Looking forward, low end-winter storage fill sets the stage for robust injection needs throughout the rest of 2025.

EU storage fill reached approximately 95% ahead of winter 2024/25, but drawdowns began earlier and were more intense than in previous winters, helping balance the impact of an early cold snap. By the start of 2025, volumes in storage had fallen below the five-year average and, despite a year-on-year increase in LNG sendout to the grid in February and March, the deficit compared to the average grew steadily over the first quarter of 2025 amid colder weather and higher gas-to-power demand. Over the full winter season, net withdrawals reached about 65 bcm, about 50% above the previous winter and 30% above the five-year average. EU underground gas storage ended the winter with only 35 bcm of gas in storage, equivalent to a 34% fill level. In this situation, and to meet with the 90% fill target ahead of next winter, the EU market faces an incremental injection requirement of close 20 bcm (+50%) compared to last year, by 1 November 2025.

In Ukraine, storage fill ahead of winter was at its lowest level in many years. A tight gas balance led to a strong winter drawdown, leaving

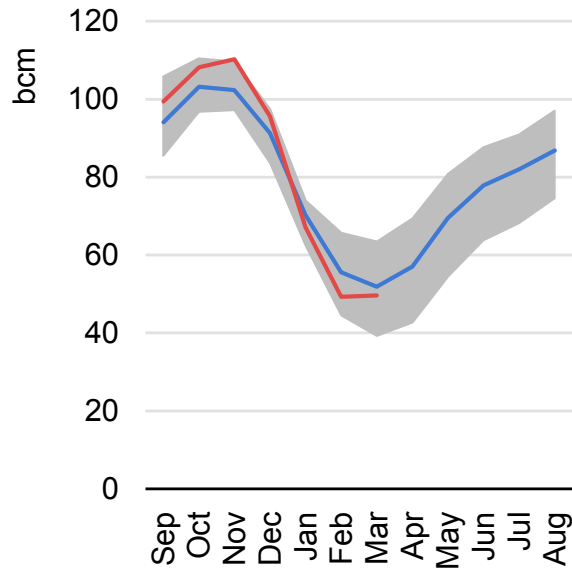
end-winter volumes in storage at the lowest historic levels – roughly 75% below levels at the end of March 2024. Injection needs are likely to surge year-on-year if storage facilities are to be refilled to recent historical levels, contributing to a relatively tight European market balance.

Similar storage dynamics played out in the United States over the same period. After reaching its highest volumetric level in recent years in November 2024, US storage fill fell below the recent average by mid-January and the deficit continued to widen through February 2025. Higher demand year-on-year (due to heating needs and an increased reliance on gas in the power sector), limited production growth and growing LNG exports led to an above-average call on storage to balance the domestic market. However, storage switched from net withdrawals to net injections in the first half of March, earlier than usual. So while early-March stocks were about 18 bcm (27%) below the same point last year, the end-March deficit had eased to 14 bcm (22%) and storage levels stood just 4% below the 5-year average. Going forward, higher storage injection needs year-on-year, slow production growth recovery and new LNG export capacities ramping up are likely to put increased pressure on the US gas balance.

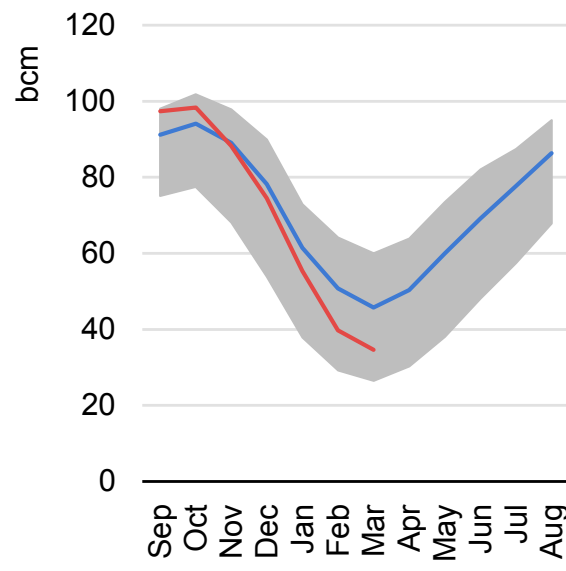
Combined LNG storage levels in Japan and Korea trended below last-year's levels but above the 5-year average in the first part of the winter, guided by higher heating demand and robust LNG imports.

Above-average winter drawdown sets the stage for significant summer filling requirements

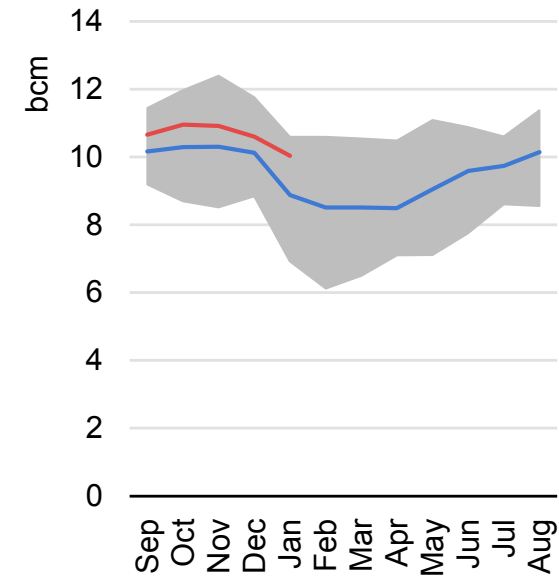
US underground storage inventories



EU underground storage inventories



Japan and Korea LNG stock inventories



■ 5-year range — 5-year average — 2024/25

IEA. CC BY 4.0.

Sources: IEA analysis based on EIA (2025), [Weekly Working Gas in Underground Storage](#); GIE (2025), [AGSI+ Database](#); IEA (2025), [Monthly Gas Data Service](#); JODI (2025), [Gas World Database](#).

Low-emissions gases

New policy initiatives can facilitate the development of global trade in low-emissions gases

Low-emission gases (including biomethane, low-emission hydrogen⁵ and e-methane⁶) can play an important role in decarbonising gas supply chains and the broader energy system. Recognising their growing importance, the International Energy Agency (IEA) has developed a **Low-Emissions Gases Work Programme** to track closely market developments in this sphere and facilitate dialogue between emerging producers and consumers. This section provides an overview of the key policy initiatives and market developments related to the nascent trade in low-emissions gases.

An uneven regional distribution of low-emissions supply and demand might lead to the development of long distance trade in low-emissions gases. Markets with abundant resources for producing low-emissions gases – such as large agricultural sectors or significant potential for solar or wind generation – stand to benefit from the export of low-emissions gases. Meanwhile, markets with limited domestic resources for low-emissions gases production could import these fuels to support the gradual decarbonisation of their gas and energy systems.

Existing natural gas and LNG infrastructure could be used to accelerate the development of trade in biomethane, bio-LNG and e-methane. In 2024, for example, Japan took its first deliveries of bio-LNG from the United States, transported entirely via existing natural gas and LNG infrastructure. Similarly, Ukraine exported the first volumes of biomethane in early February 2025 to the European Union through existing natural gas pipelines.

In the case of e-methane, existing LNG infrastructure could enable long-distance trade, as has already been proposed by several LNG producers and importers. For low-emissions hydrogen and its derivatives, existing gas infrastructure (including pipeline systems) could also be repurposed, offering significant cost-savings compared to newbuilds and potentially accelerating cross-border trade.

The development of low-emissions gases trade will require closer international cooperation. This includes establishing mutually agreed emissions standards and internationally recognised greenhouse gas accounting rules. Policy support mechanisms and subsidy schemes will be needed to bridge price gaps faced by low-emissions gases (i.e. differences between production costs and purchase prices).

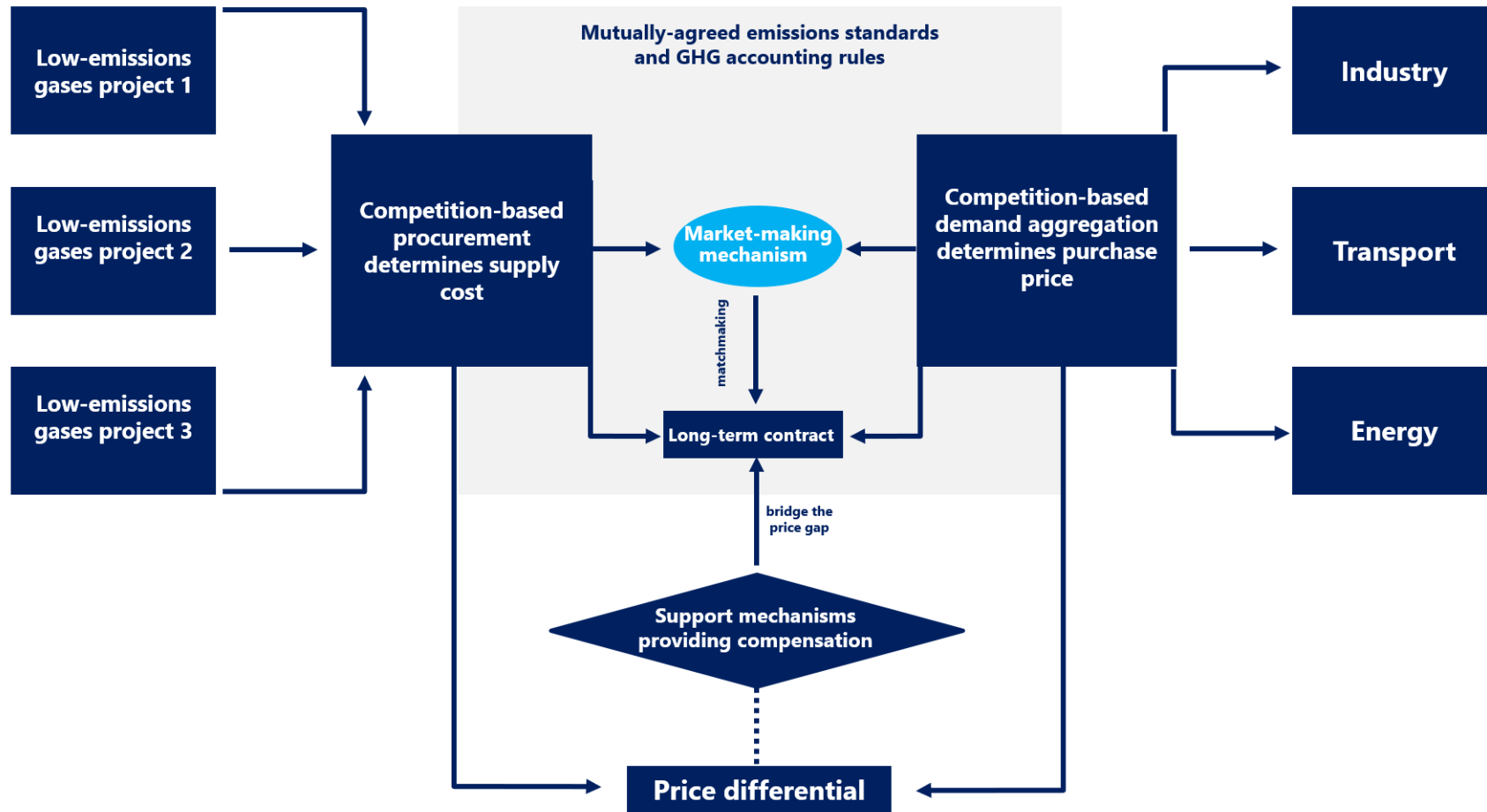
⁵ Low-emission hydrogen includes hydrogen produced via electrolysis, where the electricity is generated from a low-emission source (renewables or nuclear), biomass or fossil fuels with carbon capture utilisation and storage (CCUS).

⁶ E-methane refers to synthetic methane produced from electrolytic hydrogen. The definition of low-emission synthetic methane used by the IEA for analytical purposes in its reports considers that any carbon inputs

(e.g. from CO₂) are not from fossil fuels or process emissions. Beyond this definition, a commercial proposition for carbon-neutral e-methane could consider the use of CO₂ that is captured at industrial or power plants and offset through carbon credits (similar to the commercial offers of carbon-neutral LNG).

The development of low-emissions gases trade will require closer international cooperation

Illustrative scheme of market-making mechanisms for developing low-emissions gas trade



Cross-border biomethane trade is making steady, if slow, progress – led by Europe

Since 2024, cross-border trade in biomethane has advanced through a mix of regulatory and market-driven developments, primarily – though not exclusively – in Europe.

The [European Union's Union Database for Biofuels \(UDB\)](#) was launched in January 2024 and was recently expanded to include gaseous fuels, including biomethane. The UDB is a tool designed to ensure the traceability and sustainability compliance of biomethane transactions. The database is expected to facilitate intra-EU trade with a standardised certification framework, but it may pose challenges for trade with third countries using different certification systems.

On the commercial side, the French energy group ENGIE signed a seven-year biomethane purchase agreement with the German chemical giant BASF in July 2024. Under the terms of the deal, ENGIE will supply 2.7 to 3.0 terawatt-hours (TWh) of certified biomethane to BASF's industrial sites in Germany and Belgium. Meanwhile, Denmark emerged as the European Union's leading biomethane exporter, according to data for the first half of 2024 from the [European Renewable Gas Registry \(ERGaR\)](#). This reflects the country's significant output – 0.8 billion cubic meters (bcm) in 2024 – and deep integration into regional markets.

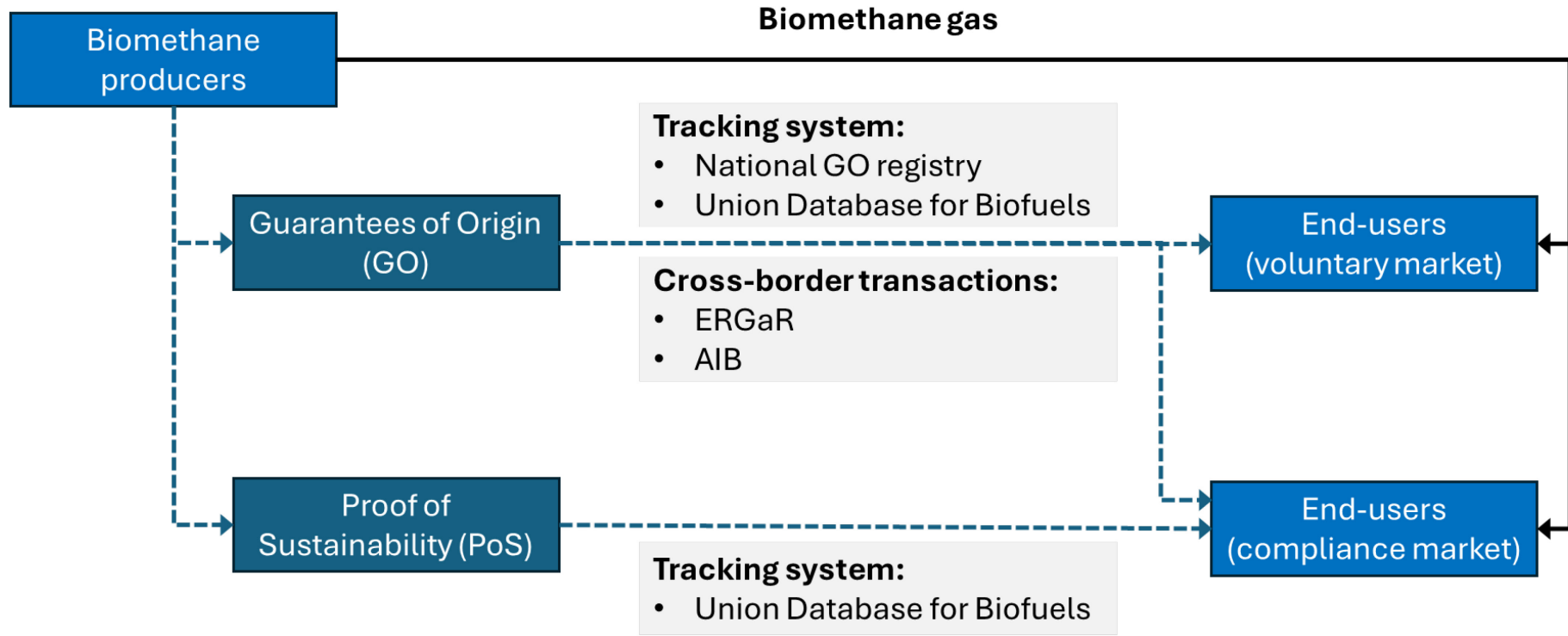
A milestone for international biomethane trade came in March 2024, when Tokyo Gas in Japan received an LNG shipment from

Cameron LNG in Louisiana, containing 40 000 cubic meters of biomethane sourced from landfills in the United States.

In a small but significant step toward greater cross-border trade, Ukraine exported its first batch of biomethane to the European Union in February 2025. The test delivery to Germany by [Vitagro](#) was modest – just 68 000 cubic metres (equivalent to 720 MWh) – but it demonstrated the compatibility of Ukraine's gas infrastructure and regulatory framework with the European Union, paving the way for future shipments. Vitagro's first biomethane plant in Khmelnytskyi is expected to produce 3 million cubic meters (mcm) annually. The current project pipeline suggests that Ukraine could reach 0.11 bcm of production capacity by the end of 2025. Meanwhile recent estimates from [Green Deal Ukraina and the Ukrainian Climate Office](#) suggest that Ukraine could export up to 1 bcm of biomethane per year to the European Union by 2030. For now, small-scale exports to Europe are possible using voluntary sustainability certificates and proofs of sustainability for each shipment. However, under the third revision of the [EU Renewable Energy Directive \(RED III\)](#), biomethane from outside the European Union will no longer be eligible for certification under current rules. Scaling up Ukraine's exports will require a dedicated biomethane registry and full integration with UDB. This process is underway but requires legislative changes in Ukraine and close coordination with the Energy Community and the European Commission.

Guarantees of origin have been key enablers for biomethane trade in the European Union

Biomethane certification in the European Union



IEA. CC BY 4.0.

Source: IEA adapted from S&P Global Commodity Insights (2024), [Renewable gas tracking systems](#).

Market-making mechanisms enhance transparency in hydrogen trade: the European example

Hydrogen consumption and production centres are generally concentrated near one another, requiring minimal long-distance trade. To play a larger role in the energy mix, however, hydrogen markets will need to evolve from these cluster-based structures to support more intra- and inter-regional trade. While infrastructure developments will be critical for this evolution, policy initiatives also play a key role in structuring and fostering trade.

The European Union provides a recent example of efforts to establish a hydrogen marketplace and facilitate trade. By September 2025, the European Commission plans to launch a hydrogen pilot mechanism aimed at connecting international hydrogen producers with European off-takers. Given the current uncertainty around supply and demand commitments, the platform is designed to make interest from both sides of the market more visible, enhancing transparency and allowing for a degree of market discovery.

Designed to operate through multiple rounds per year, the mechanism gathers expressions of demand-side interest from European buyers (not just from the European Union) and then allows producers (European and international) to respond with supply offers. The hope is that increased visibility within an organised marketplace will help build support for developing other aspects of the hydrogen markets, notably infrastructure. Developing market structures for trade is a key step in the development of international supply chains

that can support the European Union's ambitions to import large quantities of low-emissions hydrogen.

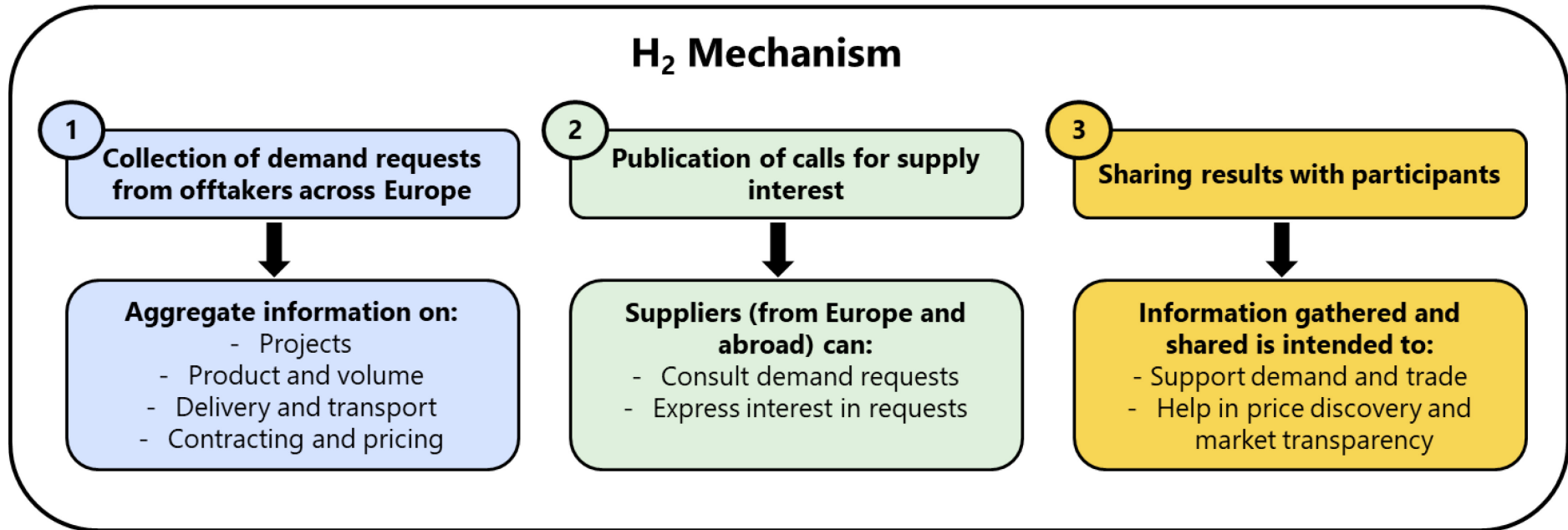
This mechanism complements other efforts at the EU Member State level, such as Germany's [H2Global](#) initiative. Introduced in 2021, H2Global works on a double-auction principle, gathering bids from hydrogen suppliers and off-takers simultaneously. Unlike the European Commission's pilot mechanism, H2Global also functions as an active intermediary, serving as an initial buyer of hydrogen and then reselling it to end users.

This intermediary function effectively introduces a subsidy by buying hydrogen at prices that cover suppliers' costs and reselling it to consumers at more competitive prices. State funding helps bridge the gap between these two price levels. Much like the European Commission's mechanism, H2Global acts as a market maker, aiming to reduce risks related to market uncertainty and a lack of transparency.

While the development of deep and liquid hydrogen markets, supported by intra- and inter-regional trade, will require significant infrastructure investments, initiatives such as these mechanisms also play a key role in reducing risks and boosting confidence in market functioning.

Connecting demand and supply for hydrogen in Europe

Functioning of the H₂ Mechanism



IEA. CC BY 4.0.

Source: IEA adapted from presentation given by European Commission (2025), [IEA Low Emissions Gases Day 2025](#).

E-methane can contribute to global trade in low-emissions gases

E-methane is produced by combining low-emissions hydrogen with carbon resources and could play a key role in decarbonising gas networks without the need for retrofitting. As e-methane can be interchangeable with natural gas, it is easy to inject and mix it into existing gas infrastructure. A switch from natural gas to e-methane can be done seamlessly while maintaining gas supply security. As the United States, Australia and Europe explore ways to produce e-methane, this could help expand global trade in low-emissions gases.

International collaboration on e-methane is advancing. In 2025, for example, the Electric Natural Gas Coalition (e-NG Coalition) announced the addition of 11 new members. Officially established by nine companies in 2024, this global coalition aims to accelerate the development of e-methane projects in a reliable, cost-effective and sustainable way. Meanwhile in December 2024, the European Commission approved an estimated EUR 1.7 billion state aid programme in Denmark to support production of renewable gas – including biogas and e-methane – for injection into the country's grid. The scheme requires e-methane plants to prove compliance with renewable fuels of non-biological origin (RFNBO) criteria set out in the delegated acts on renewable hydrogen. The aid will consist of a

price premium per gigajoule of renewable gas produced, added to the market price for natural gas, and paid over a 20-year period. In Finland, Gasgrid and Nordic Ren-Gas announced a cooperation to prepare the connection of e-methane production plants to the Finnish gas system. The May 2024 announcement also noted that existing gas infrastructure would allow for efficient and flexible distribution of e-methane to Finnish and other European customers.

In February 2025, Japan's Cabinet approved the country's Seventh Strategic Energy Plan, which included a statement highlighting how e-methane could contribute to the smooth decarbonisation of gas by using existing infrastructure. The plan also set a target of injecting e-methane or biogas equivalent to 1% of total gas supply into the nation's pipelines by 2030. Japan aims to improve production efficiency, reduce costs and establish basic technologies by 2030, with the goal of achieving mass production capacity by the 2040s. Under its Hydrogen Society Promotion Act, Japan plans to support low-carbon hydrogen and its derivatives suppliers for 15 years, focusing on the price gap. The country also plans to introduce a system that will allow utilities to incorporate the costs of meeting their 2030 e-methane and biogas introduction targets in the rates charged to end users.

E-methane production projects are under consideration worldwide

Key global e-methane production projects

Companies involved	Country of production	Description
Tokyo Gas, Toho Gas, Mitsubishi Corporation and Sempra Infrastructure	United States	Agreement to conduct a feasibility study of the production of e-methane in proximity to Cameron LNG terminal in the United States. This project aims to reach a Final Investment Decision in 2025.
TotalEnergies and Tree Energy Solutions	United States	Studying a large-scale production unit in the United States. This project is expected to produce 0.10 to 0.20 Mt per year of e-methane by 2030.
Osaka Gas USA, Tallgrass and Green Plains	United States	Agreement to conduct a feasibility study on e-methane production at the Freeport LNG export terminal in the United States. E-methane supply could reach 0.20 Mt per year by 2030.
Tokyo Gas, Osaka Gas Australia, Toho Gas and Santos	Australia	Preliminary front-end engineering design (FEED) -FEED study on a project to produce e-methane at Moomba in the Cooper Basin. The project aims to produce 0.13 Mt/yr or more of e-methane and export to Japan from 2030 at the earliest.
Marubeni, Osaka Gas and Peru LNG	Peru	A project to study the production of e-methane in Peru and its delivery to Japan and Peru. The production of e-methane could reach 0.06 Mt per year by 2030.
Nordic Ren-Gas	Finland	Planning six projects to produce e-methane in Finland (Tampere, Lahti, Kotka, Mikkeli, Pori and Kerava). Construction of the Tampere project is set to begin in 2025, and commercial operations will start in 2027.
Freija	Finland	Front-end engineering design (FEED) study for e-methane project in Nokia, Tampere region. Production would start in 2029.
Masdar, INPEX, Tokyo Gas and Osaka Gas	United Arab Emirates	Agreement to conduct a feasibility study of e-methane production in Abu Dhabi. Tokyo Gas and Osaka Gas are planning to offtake e-methane in volumes equivalent to 1% of each company's annual urban gas demand.
Oman LNG and Hitachi Zosen	Oman	Memorandum of Understanding to study the commercial feasibility of a small pilot plant at a site adjacent to the existing LNG plant and produce 1 200 normal cubic meters per hour of e-methane.

Annex

Summary table

World natural gas consumption and production by region and key country (bcm)

	Consumption					Production				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
Africa	168	169	177	175	178	260	250	255	243	248
Asia Pacific	891	877	906	955	977	647	660	675	690	710
<i>of which China</i>	367	364	393	424	439	205	216	230	245	258
Central and South America	153	148	147	150	150	142	150	147	147	151
Eurasia	649	622	631	656	662	960	865	830	860	870
<i>of which Russia</i>	516	487	495	517	521	762	672	638	685	692
Europe	609	524	488	490	497	222	230	215	220	215
Middle East	562	580	592	606	622	690	715	725	740	762
North America	1 091	1 144	1 157	1 178	1 189	1 172	1 240	1 288	1285	1320
<i>of which United States</i>	874	919	928	946	951	984	1 021	1 061	1 060	1 090
World	4 123	4 063	4 098	4 210	4 275	4 093	4 110	4 135	4 185	4 275

Regional and country groupings

Africa – Algeria, Angola, Benin, Botswana, Cameroon, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Morocco, Mozambique, Namibia, Nigeria, Senegal, South Africa, Sudan, United Republic of Tanzania, Togo, Tunisia, Zambia, Zimbabwe and other countries and territories.¹

Asia Pacific – Australia, Bangladesh, Brunei Darussalam, Cambodia, Chinese Taipei, India, Indonesia, Japan, Korea, the Democratic People's Republic of Korea, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, the People's Republic of China,² the Philippines, Singapore, Sri Lanka, Thailand, Viet Nam and other countries and territories.³

Central and South America – Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, Venezuela and other countries and territories.⁴

Eurasia – Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Uzbekistan.

Europe – Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus,^{5,6} the Czech Republic, Denmark, Estonia, Finland, the Former Yugoslav Republic of North Macedonia, France, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Kosovo,⁷ Latvia, Lithuania, Luxembourg, Malta, the Republic of Moldova, Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Republic of Türkiye, Ukraine and the United Kingdom.

European Union – Austria, Belgium, Bulgaria, Croatia, Cyprus,^{5,6} the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain and Sweden.

Middle East – Bahrain, the Islamic Republic of Iran, Iraq, Israel,⁸ Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

North Africa – Algeria, Egypt, Libya, Morocco and Tunisia.

North America – Canada, Mexico and the United States.

¹ Individual data are not available and are estimated in aggregate for: Burkina Faso, Burundi, Cape Verde, the Central African Republic, Chad, Comoros, Djibouti, Equatorial Guinea, Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Reunion, Rwanda, Sao Tome and Principe, Seychelles, Sierra Leone, Somalia, Swaziland and Uganda.

² Including Hong Kong.

³ Individual data are not available and are estimated in aggregate for: Afghanistan, Bhutan, Cook Islands, Fiji, French Polynesia, Kiribati, the Lao People's Democratic Republic, Macau (China), Maldives, New Caledonia, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga and Vanuatu.

⁴ Individual data are not available and are estimated in aggregate for: Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Falkland Islands (Malvinas), French Guyana, Grenada, Guadeloupe, Guyana, Martinique, Montserrat, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Suriname and Turks and Caicos Islands.

⁵ Note by the Republic of Türkiye.

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. The Republic of Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, The Republic of Türkiye shall preserve its position concerning the "Cyprus issue".

⁶ Note by all the European Union Member States of the OECD and the European Union. The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

⁷ The designation is without prejudice to positions on status, and is in line with the United Nations Security Council Resolution 1244/99 and the Advisory Opinion of the International Court of Justice on Kosovo's declaration of Independence.

⁸ The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD and/or the IEA is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Abbreviations and acronyms

ANP	National Petroleum Agency (Brazil)	GST	goods and services tax
ANP	National Petroleum Agency (Brazil)	HDDs	heating degree days
BMC	Colombian Mercantile Exchange (Colombia)	HH	Henry Hub
CAPEX	capital expenditure	HoA	Head of Agreement
CCUS	Carbon Capture, Utilisation and Storage	IEA	International Energy Agency
CME	Chicago Mercantile Exchange (United States)	ICE	Intercontinental Exchange
CNE	National Energy Commission (Chile)	ICIS	Independent Chemical Information Services
CO ₂	carbon dioxide	IEA	International Energy Agency
CQPGX	Chongqing Petroleum Exchange (the People's Republic of China)	ITC	investment tax credit
EIA	Energy Information Administration (United States)	JKM	Japan Korea Marker
ENARGAS	National Gas Regulatory Entity (Argentina)	JODI	Joint Oil Data Initiative
ENTSOG	European Network of Transmission System Operators for Gas	JPY	Japanese yen
EPC	engineering, procurement and construction	LBG	liquefied biomethane
EPIAS	Energy Markets Operations Inc. (Republic of Türkiye)	LCFS	Low Carbon Fuel Standard
EPPO	Energy Policy and Planning Office (Thailand)	LCV	light commercial vehicles
EU	European Union	LEGWP	Low-Emission Gases Work Programme
EUR	Euro	LNG	liquefied natural gas
FID	final investment decision	METI	Ministry of Economy, Trade and Industry (Japan)
FLNG	floating liquefied natural gas	MoU	Memorandum of Understanding
FOB	free on board	MME	Ministry of Mines and Energy (Brazil)
FSRU	floating storage and regasification unit	MVP	Mountain Valley Pipeline
FY	fiscal year	NBP	National Balancing Point (United Kingdom)
GHGs	greenhouse gases	NDRC	National Development and Reform Commission (the People's Republic of China)
GIE	Gas Infrastructure Europe	NLNG	Nigeria liquefied natural gas
GMR	IEA Gas Market Report	OECD	Organisation for Economic Co-operation and Development

ONS	National Electric System Operator (Brazil)	kWh	kilowatt hour
OSINERG	Energy Regulatory Commission (Peru)	MBtu	million British thermal units
PPAC	Petroleum Planning and Analysis Cell (India)	Mt	million tonnes
PTC	production tax credit	Mt/yr	million tonnes per year
RNG	renewable natural gas	m ³ /hr	cubic metres per hour
RFS	Renewable Fuel Standard	m ³ /yr/hr	cubic metres per year per hour
SAF	sustainable aviation fuel	m ³ /yr	cubic metres per year
SBL	Strategic Buffer LNG	Nm ³	normal cubic metre
SMR	steam methane reforming	TWh	terawatt hour
SPA	Sales and Purchase Agreement		
TAP	Trans Adriatic Pipeline		
TFDE	Tri-fuel diesel electric		
TFFS	Task Force on Gas and Clean Fuels Market Monitoring and Supply and Security		
TTF	Title Transfer Facility (the Netherlands)		
UGS	underground storage		
USD	United States dollar		
y-o-y	year-on-year		

Units of measure

bcf	billion cubic feet
bcf/d	billion cubic feet per day
bcm	billion cubic metres
bcm _{eq}	billion cubic metre equivalent
bcm/yr	billion cubic metres per year
GJ	gigajoule
GW	gigawatt

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