



GECF

MONTHLY GAS MARKET REPORT

February 2024

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The Gas Exporting Countries Forum (GECF or Forum) is an intergovernmental organisation gathering the world's leading gas producers and exporters, whose objective is to provide a framework for the exchange of views, experiences, information and data, and cooperation and collaboration amongst its Members in gas-related matters. The GECF comprises 12 Member Countries and 7 Observer Members. The Member Countries of the Forum are Algeria, Bolivia, Egypt, Equatorial Guinea, Iran, Libya, Nigeria, Qatar, Russia, Trinidad and Tobago, United Arab Emirates and Venezuela. Angola, Azerbaijan, Iraq, Malaysia, Mauritania, Mozambique, and Peru have the status of Observer Members.

The GECF Monthly Gas Market Report (MGMR) is a monthly publication of the GECF focusing on short-term developments in the global gas market related to the global economy, gas consumption, gas production, gas trade (pipeline gas and LNG), gas storage and energy prices.

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Highlights

Global economy: Global GDP growth for 2024 is projected at 2.4% by Oxford Economics. In the US, GDP growth is projected at 2.3%, while in the Euro area, GDP growth is projected at 0.6%. Looking forward to 2025, the global economy is anticipated to rebound slightly, with global GDP growth projected at 2.6%. Inflation is expected to continue its downward trend in 2024, though at a slower pace, with global inflation forecasted to decrease to 4.1%.

Gas consumption: In January 2024, EU gas demand witnessed a significant rebound, marking a return to double-digit growth (12%). This surge was primarily fuelled by the onset of colder weather, which increased heating needs in the residential sector. Additionally, there was a notable rise in gas consumption in the industrial sector, as natural gas prices recorded a declining trend during the month. The US experienced a 10% y-o-y increase in gas consumption to reach 102 bcm, driven by a cold snap. In December 2023, China's apparent gas demand rose significantly by 14% compared to the previous year to reach 38 bcm.

Gas production: Europe saw a 4.3% y-o-y decrease in gas production in December 2023, achieving a total of 17 bcm. This decline was largely due to reduced output in the Netherlands and the UK, key producers in the region along with Norway. In the US, the major shale gas-producing regions - Anadarko, Appalachian, Bakken, Eagle Ford, Haynesville, Niobrara and Permian regions - reported a 4% y-o-y increase in production to total 87 bcm in January 2024. Additionally, January 2024 witnessed a m-o-m surge of 20 units in the global number of gas drilling rigs reaching 392 rigs, a sign of intensifying upstream operations.

Gas trade: In January 2024, 13.3 bcm of PNG was imported to the EU, which was a 1% m-o-m decrease. In terms of LNG trade, global LNG imports surged by 7.4% y-o-y to a record high of 39.2 Mt. The Asia Pacific region played a significant role in this increase, fuelled by lower spot LNG prices that stimulated demand in price-sensitive markets and increased gas demand in certain countries. China, India, Pakistan, Singapore, and Thailand led the growth in LNG imports in this region. Moreover, the LAC, MENA, and North America regions also experienced notable rises in LNG imports. Conversely, Europe saw its LNG imports decline for the seventh consecutive month, with Belgium, Poland, Turkey, and the UK leading the decrease. Meanwhile, global LNG exports hit an all-time high of 37.5 Mt, marking a 6.9% y-o-y increase, driven by increased exports from Malaysia, Mozambique, Nigeria, Qatar, Russia, and the US.

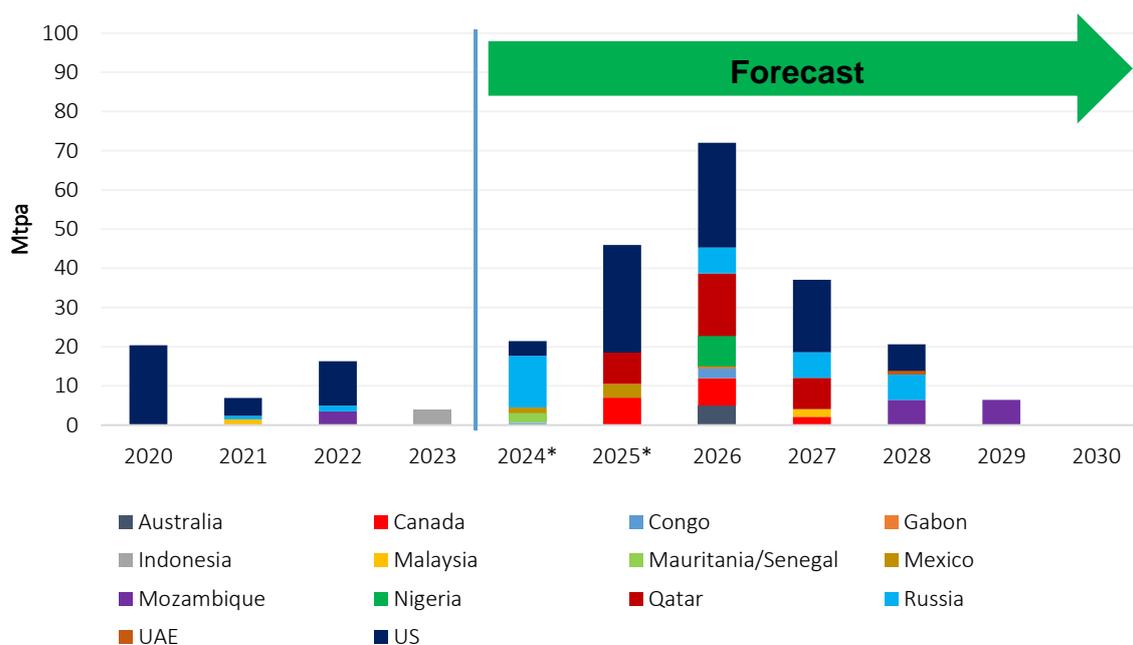
Gas storage: The net gas withdrawal season continued in the northern hemisphere. In January 2024, the average volume of gas in storage in the EU decreased to 81.1 bcm, representing 78% of the regional storage capacity. In the US, the average storage level declined to 85.2 bcm, or 64% of the country's capacity. In Asia, the estimated combined volume of LNG in storage in Japan and South Korea decreased to 12.0 bcm.

Energy prices: Gas and LNG spot prices in Europe and Asia saw a marked decrease for the second consecutive month due to sustained bearish fundamentals including strong supply, elevated storage levels and weak demand across these regions. The average TTF spot price stood at \$9.5/MMBtu, reflecting a significant decline of 16% m-o-m. In addition, the average NEA spot LNG price experienced a 22% m-o-m decrease, reaching \$10.1/MMBtu. Going forward, weather conditions are expected to play a significant role in shaping spot prices.

Feature Article: The impact of the temporary pause on approval for US LNG export authorisations to non-FTA countries

Between 2024 and 2030, approximately 205 Mtpa of new liquefaction capacity is expected to be commissioned globally, encompassing projects currently under construction post-FID (Figure 1). Leading this expansion is the US with 85 Mtpa, trailed by Qatar (33 Mtpa), Russia (33 Mtpa), Canada (16 Mtpa) and Mozambique (13 Mtpa). The capacity build-up is anticipated to peak in 2026 before declining sharply by the end of the decade. Additional new liquefaction capacity may be required to meet the rising global LNG demand. Typically, an LNG project takes approximately 4-6 years for construction post-FID, emphasising the importance of timely approvals for sustained supply growth.

Figure 1: Liquefaction capacity addition by country

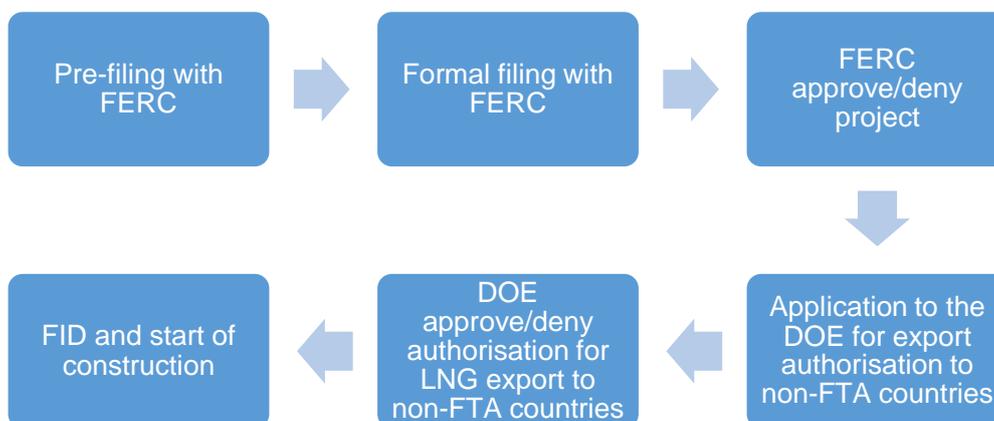


Source: GECF Secretariat based on data from Argus, ICIS LNG Edge, Refinitiv and Project Updates

In 2023, the US emerged as the largest LNG exporter and is projected to drive global LNG export growth for the remainder of the decade. In this regard, developments in the US market, including those on the regulatory side, will likely have a critical impact on the global gas market. In the medium term, US export growth will rely on new liquefaction capacity additions, which largely depend on outcomes of regulatory approvals for specific LNG projects. The regulatory approval process for US LNG export projects involves two regulatory bodies: The Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE). FERC is responsible for granting approval for the siting and construction of onshore and near-shore LNG export facilities. The DOE is responsible for issuing LNG export authorizations to non-FTA countries (countries with whom the US does not have free trade agreements) following a thorough public interest assessment, which includes an evaluation of the economic and environmental aspects of the proposed LNG facility. In the meantime, LNG exports to FTA countries are deemed to be in the public interest, with the DOE automatically granting the export authorisations.

FERC's approval and DOE's issuance of LNG export authorisation for an LNG facility are prerequisites for a US LNG export project to advance to a final investment decision (FID) and commence construction (Figure 2). It is worth highlighting that an application to the DOE for LNG export authorisation to non-FTA countries can be submitted at any point during the regulatory approval process; however, the DOE's authorisation will only be granted after FERC's approval. The deadline for the start of LNG exports for an LNG facility is usually seven years from the date of approval for the export authorisation; however, the deadline may be extended at the request of the project's developers.

Figure 2: Regulatory approval process for US LNG export facilities



Source: GECF Secretariat based on information from the Center for LNG

In this context, the decision of the US Administration to announce a temporary pause on the approval of US LNG export authorisations to non-FTA countries, made on 26 January 2024, has raised multiple concerns and ignited heated discussions in the gas industry. The US Administration has stated that, during this temporary pause, the DOE will conduct a comprehensive review and update of the process used to approve LNG export authorisations for facilities exporting LNG to non-FTA countries, ensuring that an LNG facility is in the public interest¹. This reassessment will consider potential increases in energy costs for American consumers and manufacturers, the environmental impact of greenhouse gas emissions from an LNG facility and security of US natural gas supply.

Presently, there are 20 liquefaction projects in the US at various stages of implementation, with a total liquefaction capacity of 229 Mtpa.

First, five LNG export projects, with a combined liquefaction capacity of 85 Mtpa, are under construction, having already taken FID, with Corpus Christi LNG Phase 3 standing as an expansion project (Table 1).

¹ US Administration - <https://www.whitehouse.gov/briefing-room/statements-releases/2024/01/26/fact-sheet-biden-harris-administration-announces-temporary-pause-on-pending-approvals-of-liquefied-natural-gas-exports/>

Table 1: US LNG export projects under construction with FID already taken

LNG Export Project	Capacity (Mtpa)	FERC Approval	DOE Approval (non-FTA)	Start of Exports Deadline
Corpus Christi LNG Phase 3	11.4	Yes	Yes	10-02-27
Golden Pass LNG	18	Yes	Yes	30-09-25
Plaquemines LNG	24	Yes	Yes	16-10-26
Port Arthur LNG Trains 1-2	13.5	Yes	Yes	18-06-28
Rio Grande LNG	17.6	Yes	Yes	10-02-27

Source: GECF Secretariat based on data from Argus, DOE, FERC, ICIS LNG Edge, Refinitiv, and Project Updates

Second, eight US LNG export projects, with a total liquefaction capacity of 85 Mtpa, are fully permitted but have not proceeded with FID (Table 2). Notably, construction has begun on the Driftwood LNG Phase 1 project, despite not having taken FID yet. The deadlines for commencing LNG exports from Delfin LNG and Lake Charles LNG are approaching. The Delfin LNG facility has not yet applied to the DOE for an extension for the start of LNG exports, while the review of the application for an extension for the Lake Charles LNG facility has not been completed yet.

Table 2: US LNG export projects that are fully permitted but have not proceeded with FID

LNG Export Project	Capacity (Mtpa)	FERC Approval	DOE Approval (non-FTA)	Start of Exports Deadline
Delfin LNG	13.2	n/a	Yes	01-06-24
Lake Charles LNG	16.5	Yes	Yes	16-12-25
Driftwood LNG	11	Yes	Yes	02-05-26
Cameron LNG Train 4	5	Yes	Yes	05-05-26
Freeport LNG Train 4	5	Yes	Yes	28-05-26
Gulf LNG	10.8	Yes	Yes	31-07-26
Texas LNG	4	Yes	Yes	10-02-27
Alaska LNG	20	Yes	Yes	20-08-32

Source: GECF Secretariat based on data from Argus, DOE, FERC, ICIS LNG Edge, Refinitiv, and Project Updates

Third, seven US LNG export projects, with a total liquefaction capacity of 59 Mtpa, are under the regulatory approval process (Table 3). Three of these projects with a combined capacity of 32 Mtpa — Commonwealth LNG, Magnolia LNG and Port Arthur LNG trains 3 and 4 — have received approval from FERC and are currently under review by the DOE. Additionally, four other projects with a combined capacity of 27 Mtpa – Calcasieu Pass LNG 2, Corpus Christi Midscale Trains 8 and 9, Elba Island LNG optimisation and Plaquemines LNG design increase – are undergoing review by both FERC and the DOE.

Table 3: US LNG export projects pending export authorization from the DOE

LNG Export Project	Capacity (Mtpa)	FERC Approval	DOE Approval (non-FTA)
Calcasieu Pass LNG 2 (CP2)	20	Pending	Pending
Commonwealth LNG	9.3	Yes	Pending
Corpus Christi Midscale Trains 8-9	3.28	Pending	Pending
Elba Island LNG Optimisation	0.4	Pending	Pending
Magnolia LNG	8.8	Yes	Pending
Plaquemines (Design Increase)	3.2	Pending	Pending
Port Arthur LNG Trains 3-4	13.5	Yes	Pending

Source: GECF Secretariat based on data from Argus, DOE, FERC, ICIS LNG Edge, Refinitiv, and Project Updates

The temporary halt on US LNG export authorisations may affect up to 124 Mtpa of new US liquefaction capacity which will be commissioned in any case beyond 2029. The impact on the US LNG projects will vary depending on the stage of their implementation as shown below:

- US LNG export projects under construction with FID already taken will not be affected (85 Mtpa).
- US LNG export projects that are fully permitted but have not proceeded with FID may be partially affected, because most of them will likely need to apply for an extension of the DOE’s LNG export authorisation due to the inability to commission these projects before the deadlines for start of LNG exports (65 Mtpa out of 85 Mtpa).
- US LNG export projects pending export authorisation from the DOE will be directly affected because of delays in receiving LNG export authorisation and, consequently, in taking FID and starting construction (59 Mtpa).

To sum up, the temporary pause on approvals for LNG export authorisations is expected to have minimal impact in the short and medium term, but may affect LNG supply in the long term, depending largely on the duration of the pause. The decision on the temporary pause, perceived by many as a political move aimed at garnering support from environmental groups ahead of the November 2024 US presidential elections, has sparked criticism from various stakeholders. However, despite the pressure on the US Administration, the pause will most likely end only after the elections. If the current Administration wins the elections, the updated approval process may be issued in early 2025, with potential changes to it possibly affecting the pending LNG projects. If the Administration loses the elections, the temporary pause will most likely end without any significant impact on the industry.

In the meantime, this pause may have a positive impact on gas exporting countries. A significant easing of the market may arise from the expected commissioning of around 160 Mtpa in 2025-2027, which may exert downward pressure on gas prices, with LNG supply growth outpacing LNG demand growth. In this context, the delay in the commissioning of various LNG projects in the US may result in the global LNG market rebalancing beyond 2028, while enabling it to overcome the challenges associated with potential LNG oversupply in the medium term.

1 Global Perspectives

1.1 Global economy

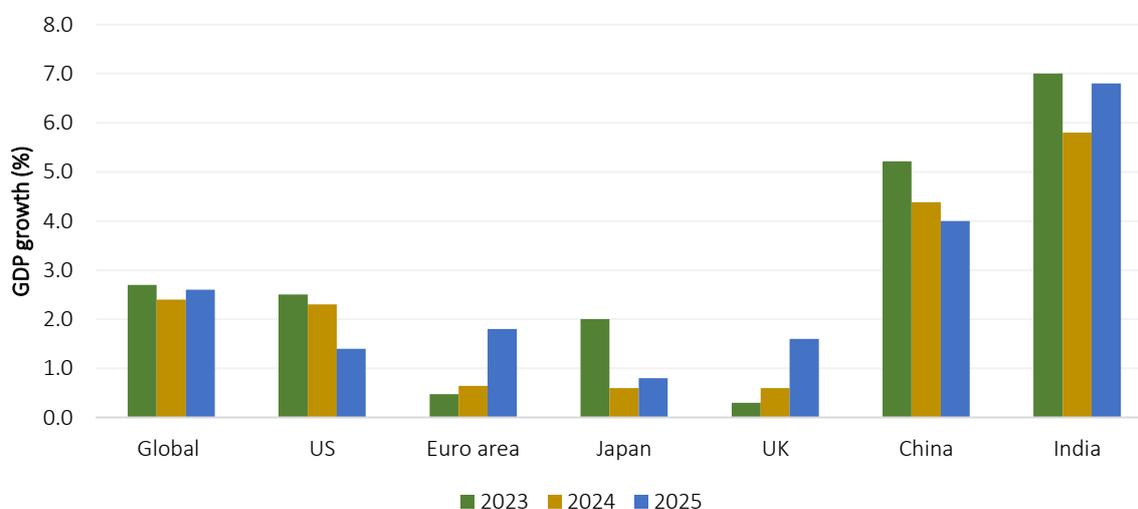
In the World Economic Prospects report for February 2024, Oxford Economics revised its forecast for global GDP growth for 2024, based on the market exchange rates method, upward by 0.1 percentage points to 2.4%. In the US, GDP growth forecast has been revised upward by 0.3 percentage points to 2.3%, which was primarily attributed to the strengthening of the labour market, as well as growth in consumer spending and business investment. In the Euro area, the GDP growth forecast for 2024 remains unchanged at 0.6%. The economy remains relatively weak, with only gradual improvement expected in the second half of this year. In China, the GDP growth forecast was revised upward by 0.1 percentage points to 4.4%, which was largely driven by monetary policy easing and infrastructure support, as well as increased external demand.

In the meantime, the Oxford Economics projection for global GDP growth for 2024, based on purchasing power parity (PPP), was 2.8%.

Furthermore, in its World Economic Outlook January 2024, the IMF revised its forecast for global GDP growth in 2024 upwards by 0.2 percentage points to 3.1%, based on PPP. In the meantime, the IMF projection for global GDP growth for 2024, based on market exchange rates, was 2.6%. Similarly, in its Economic Outlook Interim Report for February 2024, the OECD raised its global GDP growth forecast for 2024, based on PPP, by 0.2 percentage points to 2.9%. These upward revisions were primarily attributed to expectations of further easing in inflation and the anticipated resilience of the US economy.

Looking ahead to 2025, the global economy is anticipated to rebound slightly, with global GDP growth, based on market exchange rates, projected at 2.6% by Oxford Economics. In the US, the GDP growth forecast for 2025 is projected to decelerate to 1.4%. Meanwhile, in the Euro area, GDP growth is projected to accelerate to 1.8%. Additionally, in China, the GDP growth for 2025 is expected to slow down to 4% (Figure 3).

Figure 3: GDP growth (based on market exchange rates)



Source: GECF Secretariat based on data from Oxford Economics

It is worth highlighting that historical estimates and future forecasts for the global GDP growth from different organizations may vary mainly due to the methodology being used, as well as slightly differing views on developments in some of the major economies. To calculate the global GDP growth, the weights of individual countries must be derived, requiring the conversion of the GDP of individual countries into one common currency, usually the US dollar. There are two main methods of converting a country's GDP in its national currency to US dollar: 1) GDP based on market exchange rates (nominal GDP); 2) GDP based on purchasing power parity (PPP).

The nominal GDP uses the rate prevailing in foreign exchange markets, while the PPP method allows for the use of the rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country. Since the national currencies of most countries across the world are undervalued compared to the US dollar, the value of global GDP based on PPP is higher than the nominal GDP. For instance, according to the IMF estimates for 2022, global nominal GDP reached \$100 trillion, while the global GDP based on PPP was \$164 trillion.

This substantial difference between global GDP values based on the two different methods stems from the high contributions of economies with undervalued national currencies to global GDP. For emerging markets and developing economies (EMDEs), there is a significant gap in calculations based on both methods. Since their national currencies are significantly undervalued, the PPP method gives them a higher share in global GDP. Additionally, growth rates in EMDEs are usually higher than in other types of countries. In the meantime, for advanced economies (AEs), GDP calculations based on the market exchange rates and PPP methods tend to have a slight difference. For example, according to IMF estimates for 2022, in terms of nominal GDP, China's GDP was \$18 trillion, lagging behind the US with a GDP of \$25 trillion, while, in terms of GDP based on PPP, China was the leader with \$30 trillion, surpassing the US with the same \$25 trillion value. Consequently, global GDP calculations based on the PPP method are typically more optimistic compared to nominal GDP.

Table 4 below shows the comparison of global GDP estimates and forecasts headlined by major international organizations. Notably, most organizations publish global GDP growth rates using both methods, however, each has its preferred method of calculating global GDP, which is highlighted in their reports. This may lead to some misperception and confusion, when benchmarking these estimates and forecasts. For instance, the World Bank (WB) and the United Nations (UN) highlight global GDP growth rates based on market exchange rates. On the other hand, the IMF and OECD highlight their global GDP growth rates based on PPP. In this context, the latest headlined forecast of the IMF for 2024 is 3.1%, while the headlined forecast of the WB for the same year is only 2.4%.

In the GECF Monthly Gas Market Reports (MGMR), we refer to the GDP growth rates headlined in Oxford Economics reports, which are calculated based on market exchange rates. These rates are aligned with those from the WB and UN, however, they are lower compared to the IMF and OECD, because of the above-mentioned reasons.

Table 4: Global GDP growth rates headlined by various organizations (2022 – 2025)

	2022	2023	2024	2025
IMF* (Jan 24)	3.5	3.1	3.1	3.2
OECD* (Jan 24)	3.3	3.1	2.9	3.0
Oxford Economics** (Feb 24)	3.1	2.7	2.4	2.6
WB** (Jan 24)	3.0	2.6	2.4	2.7
UN** (Jan 24)	3.0	2.7	2.4	2.7

Source: GECF Secretariat based on data from Oxford Economics, IMF, WB, OECD and UN

Note: *Global GDP growth based on PPP. ** Global GDP growth based on market exchange rates.

All forecasts using the same methods tend to be aligned, with only slight differences based on the organizations' expectations for performance of specific economies. For instance, Table 5 provides a comparison of global GDP growth rates based on the market exchange rates method from Oxford Economics, IMF and WB.

Table 5: Global GDP growth (market exchange rates)

	2022	2023	2024	2025
Oxford Economics	3.1	2.7	2.4	2.6
IMF	3.0	2.7	2.6	2.7
WB	3.0	2.6	2.4	2.7

Source: GECF Secretariat based on data from Oxford Economics, IMF and WB

Table 6 provides a comparison of global GDP growth rates based on the PPP method from Oxford Economics, IMF and WB.

Table 6: Global GDP growth (PPP)

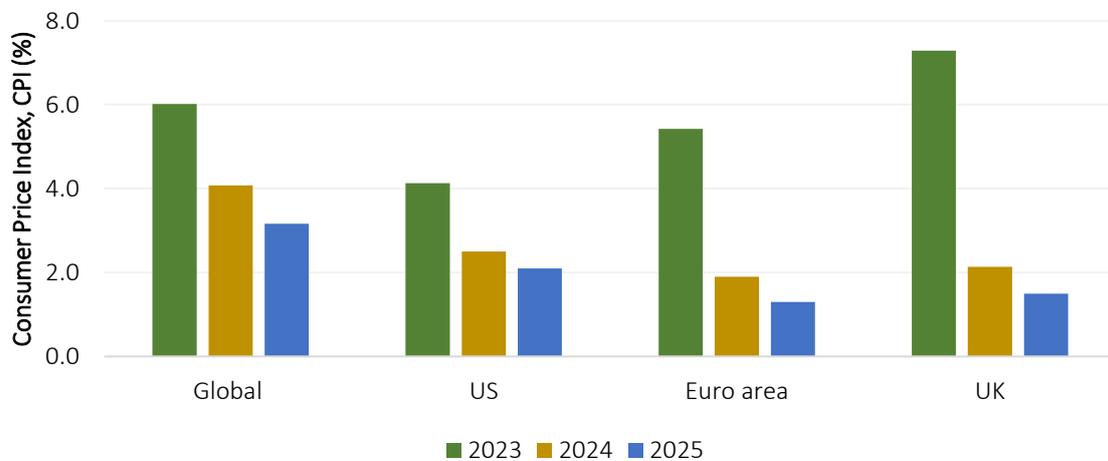
	2022	2023	2024	2025
Oxford Economics	3.3	3.1	2.8	3.1
IMF	3.5	3.1	3.1	3.2
WB	3.3	3.0	2.9	3.1

Source: GECF Secretariat based on data from Oxford Economics, IMF and WB

To sum up, global GDP growth estimates and forecasts from all international organizations and consultancies are relatively similar once the same methodology is considered.

According to the latest forecast from Oxford Economics, global inflation is expected to average 4.1% in 2024, declining from 6% in 2023. Furthermore, in 2025, global inflation is projected to fall to 3.2%. In the Euro area, inflation is projected to fall to 1.9% in 2024 and 1.3% in 2025. In the UK, inflation is expected to be 2.1% in 2024 and 1.5% in 2025. In the US, inflation is expected to decline to 2.5% in 2024 and 2.1% in 2025 (Figure 4).

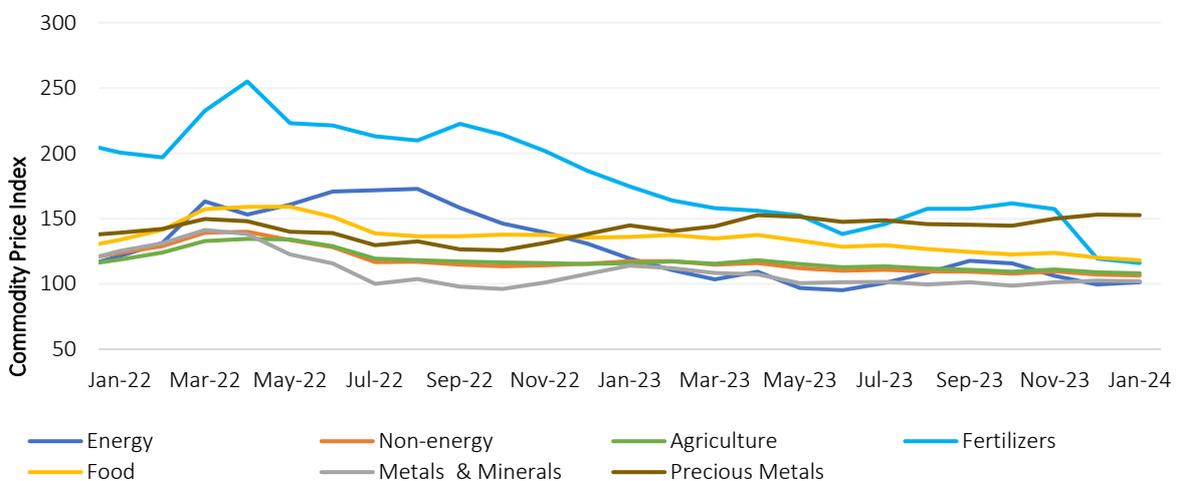
Figure 4: Inflation rates



Source: GECF Secretariat based on data from Oxford Economics

In January 2024, commodity prices in the energy sector rebounded after a three-month decline. The energy price index experienced a 2% increase m-o-m, but was 15% lower y-o-y. This uptick was primarily due to a rise in oil prices during the month. Meanwhile, the non-energy price index fell by 1% m-o-m, reflecting a 9% decrease y-o-y. A significant contributor to this trend was the drop in the fertilizer price index, which decreased by 3% m-o-m and 34% y-o-y (Figure 5).

Figure 5: Monthly commodity price indices



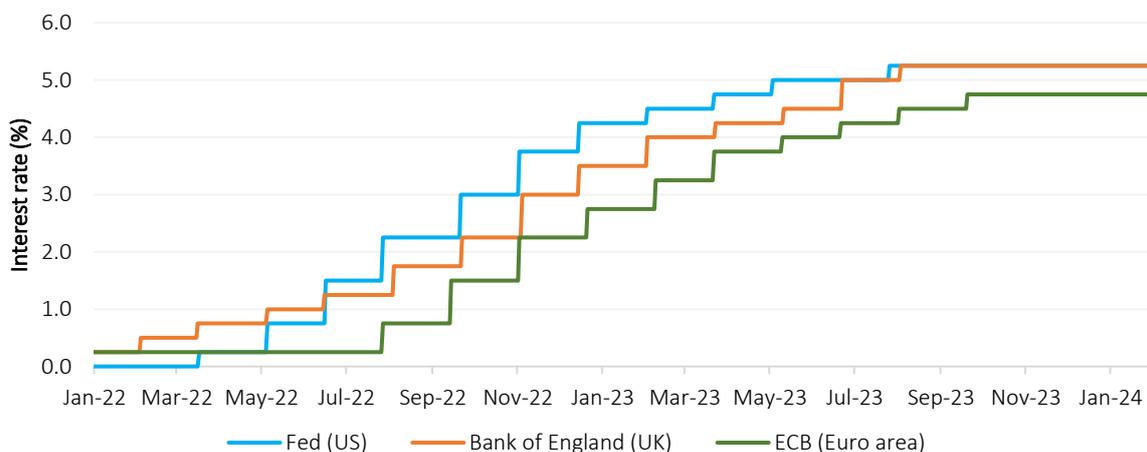
Source: GECF Secretariat based on data from World Bank Commodity Price Data

Note: Monthly price indices based on nominal US dollars, 2010=100. The energy price index is calculated using a weighted average of global crude oil (84.6%), gas (10.8%) and coal (4.7%) prices. The non-energy price index is calculated using a weighted average of agriculture (64.9%), metals & minerals (31.6%) and fertilizers (3.6%).

In January 2024, the US Federal Reserve (Fed) maintained its benchmark interest rate within the range of 5.25% to 5.50%. The Fed's last rate hike occurred in July 2023 (

Figure 6). Similarly, the Bank of England (BOE) kept its key interest rate at 5.25%, following its most recent increase in August 2023. The European Central Bank (ECB) also held its key interest rates, with the main refinancing operations, marginal lending facility and deposit facility rates at 4.5%, 4.75% and 4.0%, respectively, since their last hike in September 2023. Central banks are expected to approach a potential reduction in interest rates with considerable caution.

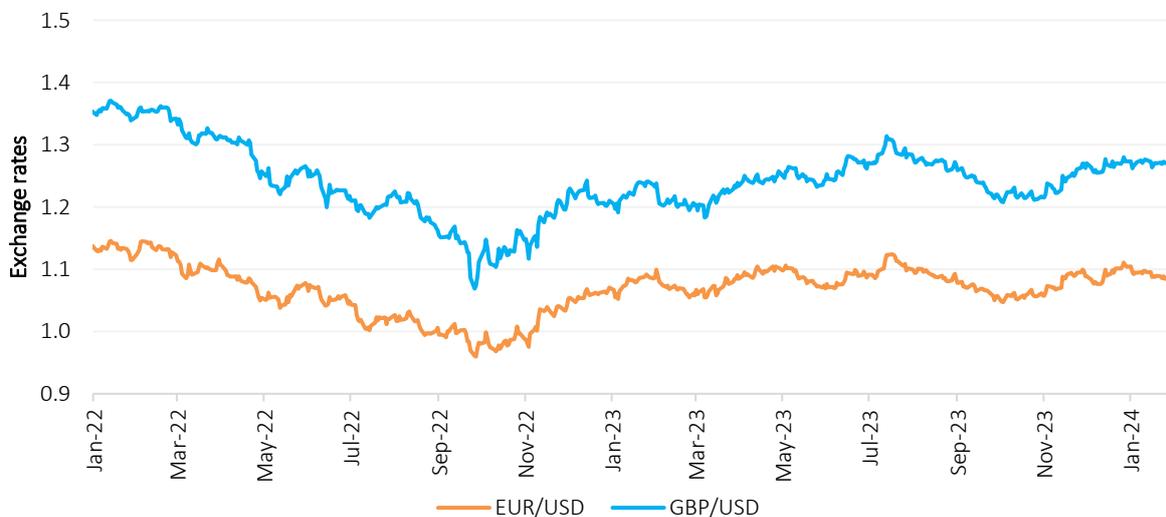
Figure 6: Interest rates in major central banks



Source: GECF Secretariat based on data from US Federal Reserve, European Central Bank and Bank of England

In January 2024, the euro maintained its value against the US dollar, resulting in an average exchange rate of \$1.0909. While it was relatively stable compared to the previous month, it reflected a 1% y-o-y increase. Similarly, the British pound also maintained its value against the US dollar, as the average exchange rate reached \$1.2706. However, it experienced a 4% increase y-o-y (Figure 7).

Figure 7: Exchange rates



Source: GECF Secretariat based on data from Refinitiv Eikon

1.2 Other Developments

World Economic Forum (WEF) 2024: The 54th World Economic Forum Annual Meeting was held on 15-19 January 2024 in Davos, Switzerland. Delegates from global business, government, civil society, media and academia, convened under the overarching theme of “Rebuilding Trust”. The agenda featured high-level discussions on critical issues such as achieving security and cooperation in a fragmented world, fostering growth and employment for a new era, leveraging artificial intelligence as a catalyst for economic and societal advancement, and developing a long-term strategy for climate, nature and energy. In discussions related to the global economy, heads of major banks highlighted inflationary pressures stemming from increased shipping costs and the potential for rising oil prices. Additionally, some banking executives voiced concerns about the incorrect pricing of interest rate cuts and the intensification of geopolitical risks.

Moreover, the World Economic Forum's Global Risks Report 2024 was in the spotlight. This report evaluates global risks over one-, two-, and ten-year horizons. Two-thirds of respondents identified extreme weather events (66%) as the top risk for 2024. El Niño is expected to strengthen and persist until May this year, potentially setting new records for heat conditions, including extreme heatwaves, droughts, wildfires and flooding. AI-generated misinformation and disinformation was considered the second largest short-term risk (53%). While energy and food crises were among the top risks in 2023, only 14% of respondents saw disruptions in energy supply chains as a severe risk for 2024.

2 Gas Consumption

2.1 Europe

2.1.1 European Union

In January 2024, the EU gas demand witnessed a significant rebound, marking a return to double-digit growth. This surge, estimated at 12%, was primarily fuelled by the onset of colder weather, which increased heating needs in the residential sector. Additionally, there was a notable rise in gas consumption in the industrial sector, further contributing to the overall increase in demand, as natural gas prices recorded a declining trend during the month. This uptick reflects a dynamic shift in energy usage patterns, highlighting the pivotal role of weather conditions and industrial activity in driving gas consumption in the EU (Figure 8). Furthermore, the shift from coal to gas significantly impacted the power generation sector, as natural gas became more cost-effective than coal for power production.

With regards to electricity production, gas-based generation in the EU witnessed a 9% y-o-y growth, while total electricity production rose by 3%, reaching 239 terawatt-hours (TWh). This notable increase in gas consumption in the power sector is attributed to the switching from coal to gas across numerous EU countries. This shift occurred despite the expansion of renewable energy sources, as well as increases in hydroelectric and nuclear power production. Nuclear, hydro, solar and wind power generation registered considerable increases of 7%, 13%, 37% and 3% y-o-y, respectively. Conversely, electricity generated from coal experienced a substantial decrease of 22% y-o-y, equivalent to 8 TWh (Figure 9). In the power mix, renewables constituted the largest share at 31%, followed by nuclear (25%), gas (18%), hydro (14%) and coal (12%).

Figure 8: Gas consumption in the EU

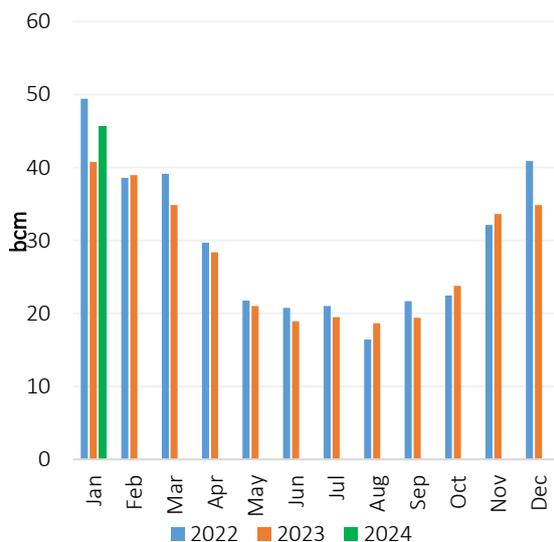
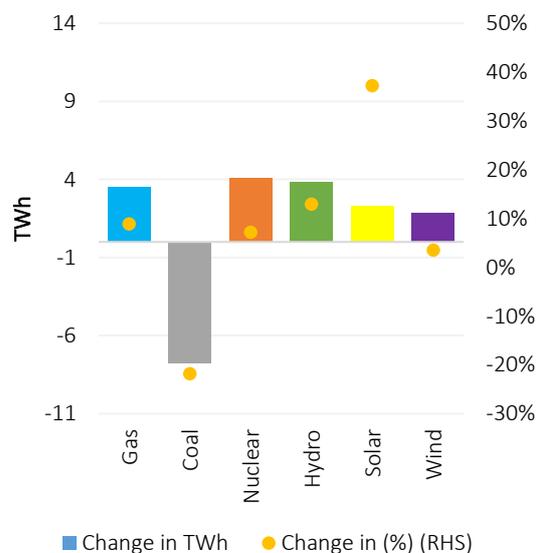


Figure 9: Trend in electricity production in the EU in January 2024 (y-o-y change)



Source: GECF Secretariat based on data from Entso-g and Refinitiv

Source: GECF Secretariat based on data from Ember

2.1.1.1 Germany

In January 2024, Germany experienced a 16% y-o-y increase in gas consumption, with natural gas consumption reaching 9.2 bcm (Figure 10). This increase was observed across the residential, power generation and industrial sectors. This rise can be attributed to several factors: colder than usual weather, a reduction in natural gas prices that boosted the use of gas in the industrial sector, and the coal-to-gas switch in the power generation sector (Figure 11).

Figure 10: Gas consumption in Germany

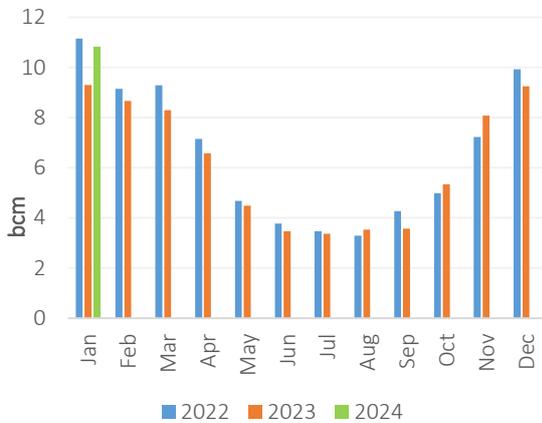
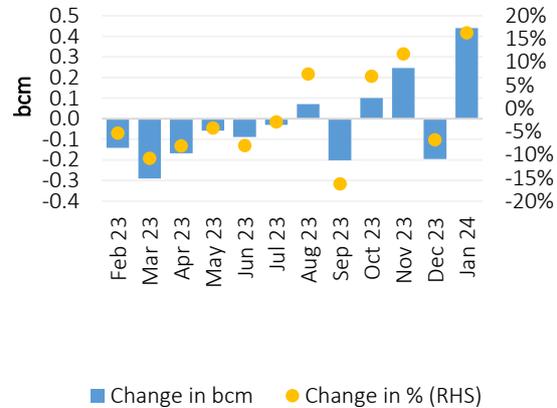


Figure 11: Trend in gas consumption in the industrial sector in Germany (y-o-y change)



Source: GECF Secretariat based on data from Refinitiv

Source: GECF Secretariat based on data from Refinitiv

Gas-fired power generation experienced a 13% y-o-y increase, while the overall electricity production declined by 4% y-o-y, totalling 45 TWh. By contrast, hydro, solar and wind energy generation saw significant increases of 34%, 66% and 6% y-o-y, respectively. In contrast, electricity production from coal decreased by 22% y-o-y. These shifts were largely attributed to favourable weather conditions boosting hydro, solar and wind energy generations (Figure 12). In the energy mix, renewables continued to dominate with a 53% share, followed by coal at 24%, gas at 19% and hydro at 4% (Figure 13).

Figure 12: Trend in electricity production in Germany in January 2024 (y-o-y change)

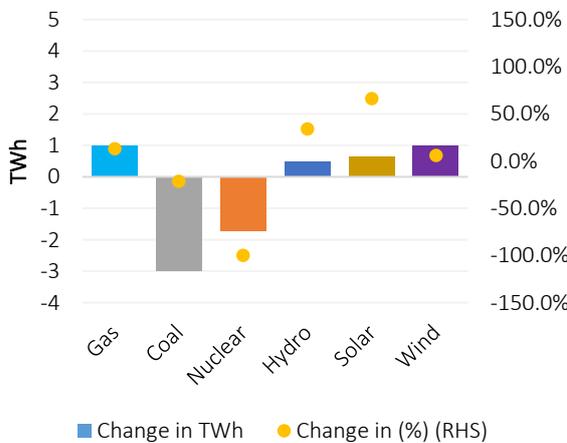
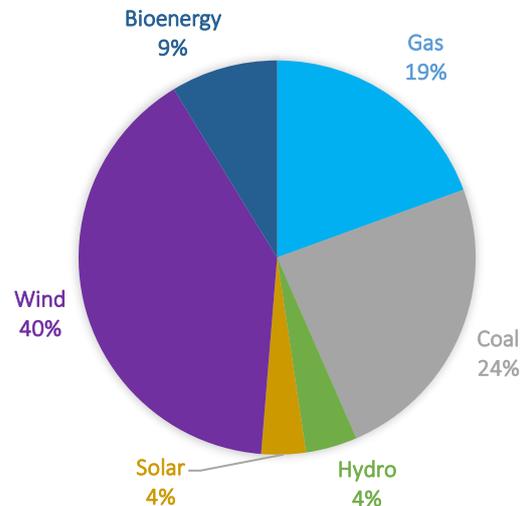


Figure 13: German electricity mix in January 2024



Source: GECF Secretariat based on data from Refinitiv and Ember

Source: GECF Secretariat based on data from Refinitiv and Ember

2.1.1.2 Italy

In January 2024, Italy witnessed a 4% y-o-y increase in gas consumption, totalling 7.9 bcm (Figure 14). The residential sector was the primary contributor to this growth, largely due to the cold weather, with a 6% y-o-y increase in consumption to reach 4.8 bcm. The industrial sector experienced a 1.3% y-o-y increase to reach 1 bcm, primarily fuelled by the reduction in gas prices. Notably, after 20 consecutive months of y-o-y declines, the industrial sector marked its fifth consecutive month of increased gas consumption (Figure 15).

Figure 14: Gas consumption in Italy

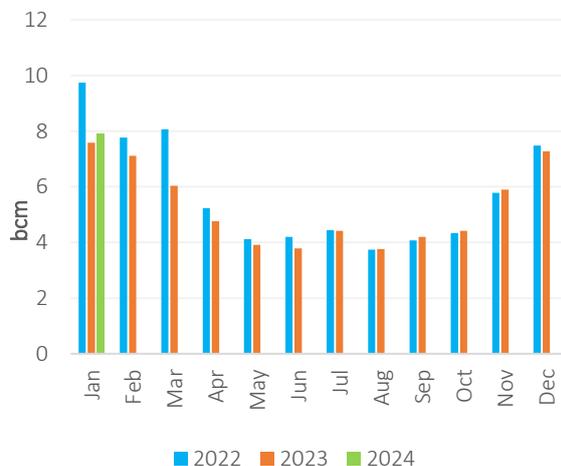
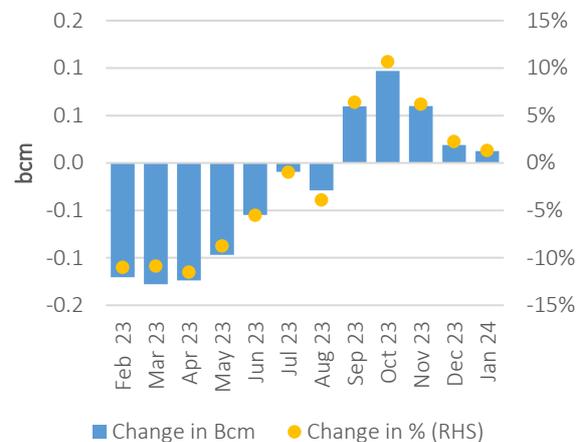


Figure 15: Trend in gas consumption in the industrial sector in Italy (y-o-y change)



Source: GECF Secretariat based on data from Snam Source: GECF Secretariat based on data from Snam

Gas-based electricity production rose by 2.7% y-o-y, while the total electricity production declined by 1.2% y-o-y, reaching 19 TWh. Additionally, there was a notable y-o-y increase in energy generation from hydro (36%), wind (24%) and solar (27%) (Figure 16). Meanwhile, gas continued to be the dominant fuel in the power mix, accounting for 54% of the total, followed by renewables (29%), hydro (15%), and coal (2%) (Figure 17).

Figure 16: Trend in electricity production in Italy in January 2024 (y-o-y change)

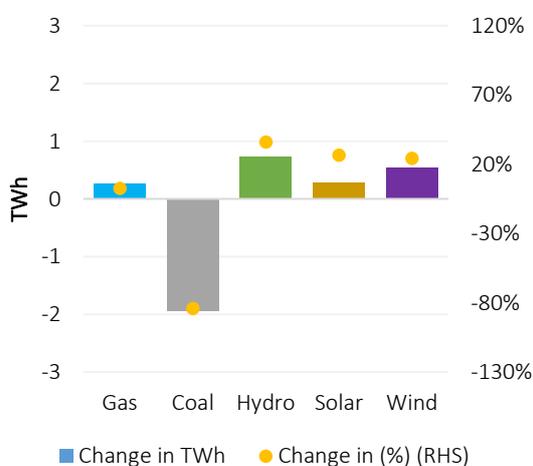
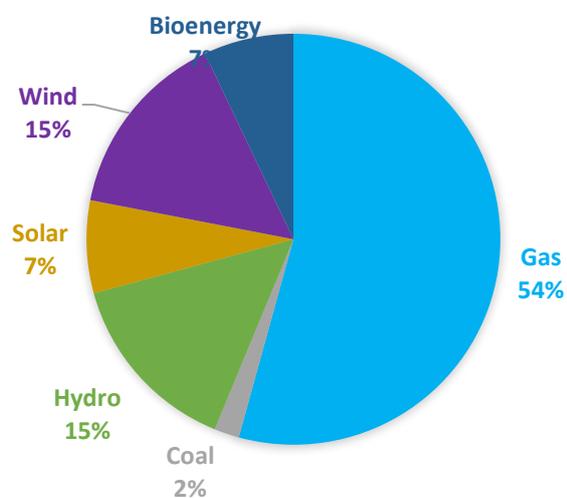


Figure 17: Italian electricity mix in January 2024



Source: GECF Secretariat based on data from Refinitiv and Ember

Source: GECF Secretariat based on data from Refinitiv and Ember

2.1.1.3 France

In January 2024, France witnessed a 3% y-o-y increase in gas consumption, totalling 5 bcm. This marked the first increase after ten consecutive months of decline (Figure 18). The primary catalyst for this growth was a remarkable 4.7% rise in the residential sector consumption, reaching 3.6 bcm, largely because of the chilly temperatures in the country. The industrial sector also reported increases in gas consumption, with a 7% y-o-y rise to 1 bcm (Figure 19).

Figure 18: Gas consumption in France

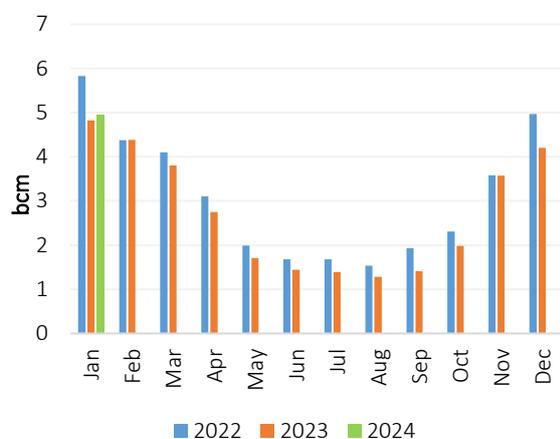
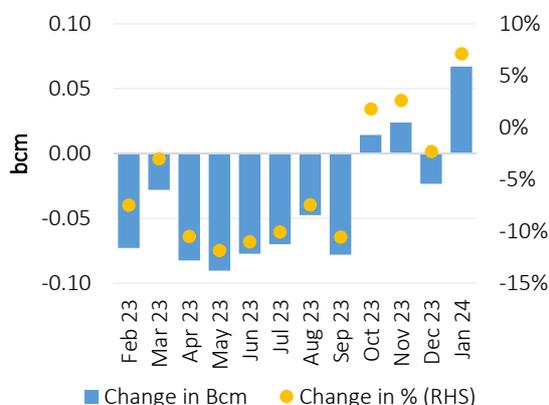


Figure 19: Trend in gas consumption in the industrial sector in France (y-o-y change)



Source: GECF Secretariat based on data from GRTgaz

Source: GECF Secretariat based on data from GRTgaz

Electricity production from gas in France saw a 13% y-o-y decrease, while the country's total electricity production increased by 12% y-o-y, reaching 52 TWh. This month marked a significant rebound in nuclear power generation, which rose by 17% y-o-y. The availability of nuclear capacity increased by 15% y-o-y and 10% m-o-m (Figure 21). Notably, in the week of January 13, French nuclear production reached its highest level in more than two years. Additionally, there were higher levels of electricity production from hydro (21% y-o-y) and solar (26%). In contrast, electricity production from coal and wind plummeted by 50% and 5% y-o-y, respectively (Figure 20). In France's energy mix, nuclear power continued to be the dominant source with a 68% share, followed by renewables (12%), hydro (13%) and gas (7%).

Figure 20: Trend in electricity production in France in January 2024 (y-o-y change)

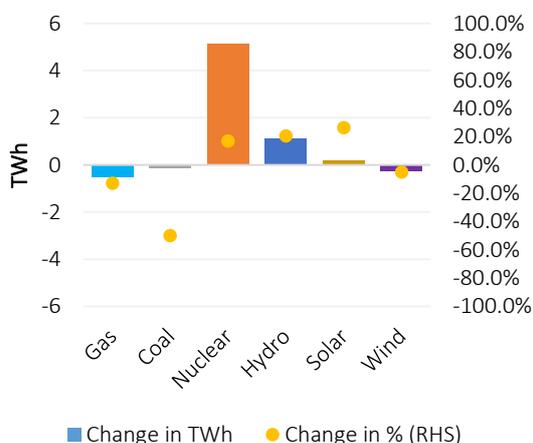
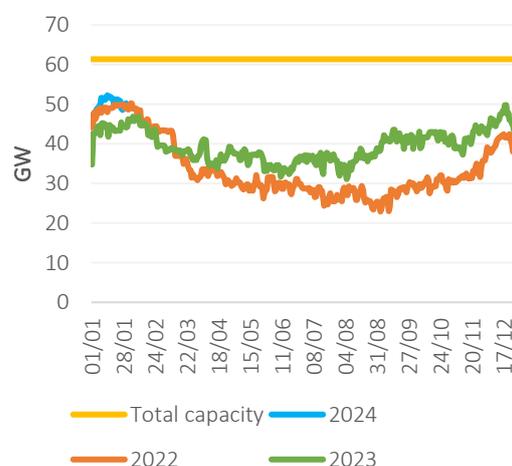


Figure 21: French nuclear capacity availability



Source: GECF Secretariat based on data from Ember

Source: GECF Secretariat based on data from Refinitiv and RTE

2.1.1.4 Spain

In January 2024, Spain experienced a 13% y-o-y increase in gas consumption, reaching 3 bcm (Figure 22). This rise was primarily due to increased gas usage in the industrial and residential sectors. The industrial sector marked its eight consecutive month of expansion, with an 11% y-o-y increase (Figure 23). This growth was propelled by heightened gas consumption across various industries, notably in refineries (89% y-o-y increase), pharmaceuticals (66%), paper (16%), agrifood (14%) and metallurgy (7.4%). Additionally, gas consumption in the residential sector experienced a significant increase due to a cold spell during the first half of the month. In contrast, the power generation sector continued its downward trend, influenced by increased production from hydro, wind and solar energy sources, coupled with the end of electricity exports to France.

Figure 22: Gas consumption in Spain

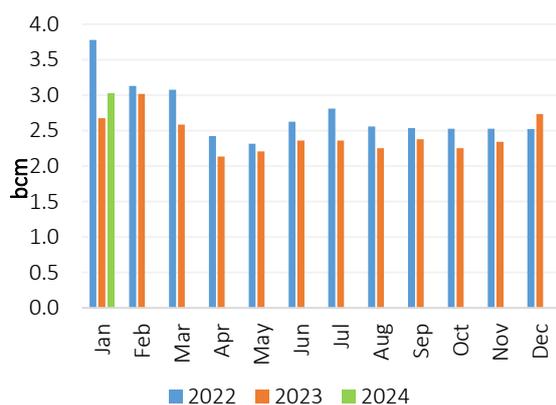
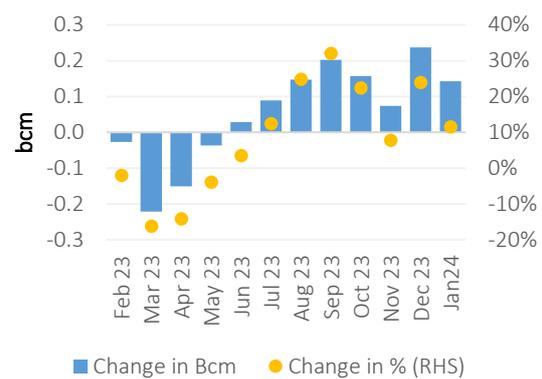


Figure 23: Trend in gas consumption in the industrial sector in Spain (y-o-y change)

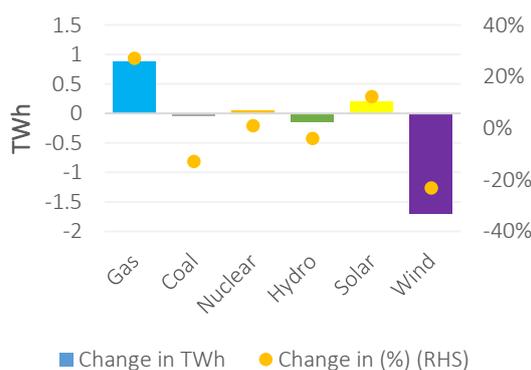


Source: GECF Secretariat based on data from Enagas

Source: GECF Secretariat based on data from Enagas

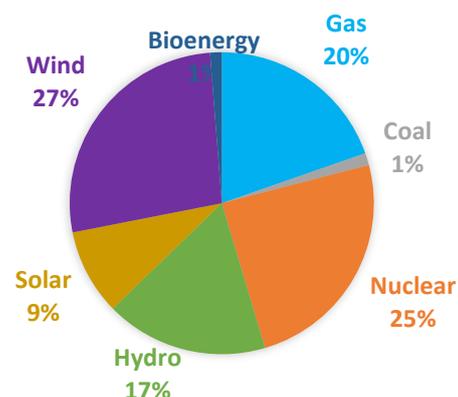
Electricity generation from gas experienced a 27% y-o-y increase, while the overall electricity production in the country dropped by 3.3% y-o-y, totalling 21 TWh. Additionally, there were notable reductions in electricity production from coal, hydro and wind sources, decreasing by 13%, 4% and 23% y-o-y, respectively. In contrast, increases were observed in electricity generation from solar (12% y-o-y) and nuclear (1%) (Figure 24). Renewables maintained the dominant position in the power mix, accounting for 37% of the total, followed by nuclear (24%), gas (20%), hydro (18%) and coal (1%) (Figure 25).

Figure 24: Trend in electricity production in Spain in January 2024 (y-o-y change)



Source: GECF Secretariat based on data from Ember and Ree

Figure 25: Spanish electricity mix in January 2024

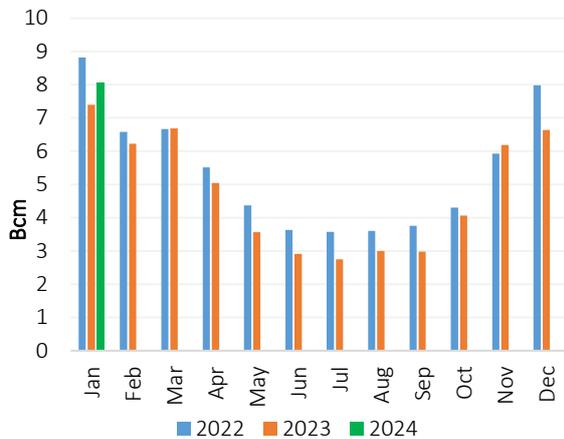


Source: GECF Secretariat based on data from Ember and Ree

2.1.2 United Kingdom

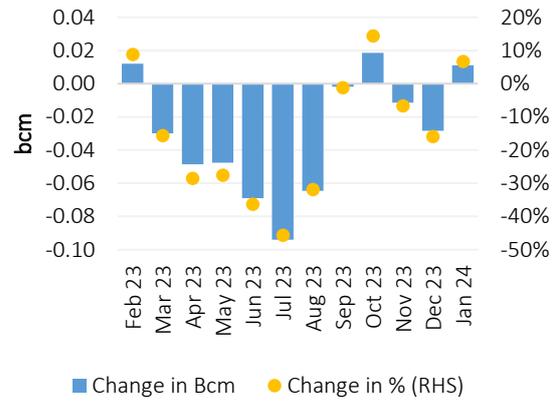
In January 2024, following a decrease in gas consumption in the previous month, the UK experienced a return to an increasing trend in gas consumption, recording a 9% y-o-y growth, with a total of 8.1 bcm (Figure 26). This rise was observed in the residential, industrial, and power generation sectors, with increases of 4%, 7%, and 31% y-o-y, respectively (Figure 27). Factors contributing to this increase included colder than usual temperatures for most of the month, and a recovery in the industrial and power generation sectors following a drop in natural gas prices.

Figure 26: Gas consumption in the UK



Source: GECF Secretariat based on data from Refinitiv

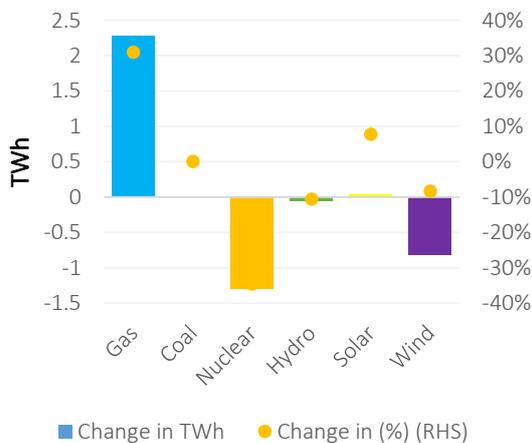
Figure 27: Trend in gas consumption in the industrial sector in the UK (y-o-y change)



Source: GECF Secretariat based on data from Refinitiv

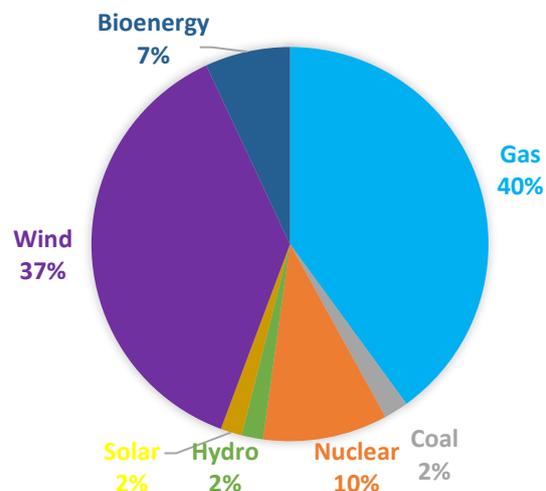
In the UK, electricity production from gas witnessed a 31% y-o-y increase, contributing to a total electricity production rise of 2.7% y-o-y to 24 TWh. Electricity generation from nuclear, hydro and wind sources fell by 35%, 11% and 8% y-o-y, respectively. In contrast, solar energy production experienced significant increase, surging by 8% y-o-y (Figure 28). In the power mix, renewables took the lead, comprising 46% of the total electricity production, followed by gas at 40%, nuclear at 10%, hydro at 2% and coal at 2% (Figure 29).

Figure 28: Trend in electricity production in UK in January 2024 (y-o-y change)



Source: GECF Secretariat based on data from Refinitiv

Figure 29: UK electricity mix in January 2024



Source: GECF Secretariat based on data from Refinitiv

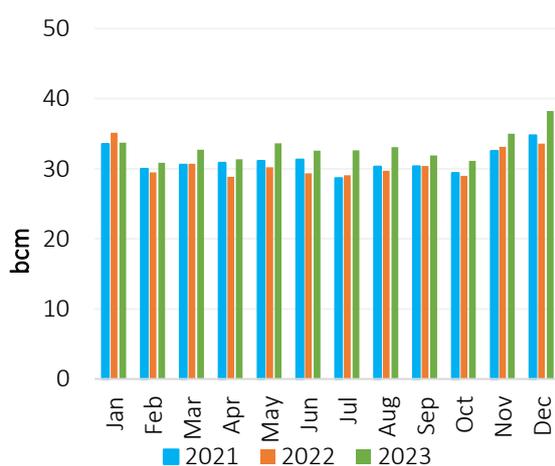
2.2 Asia

2.2.1 China

In December 2023, China's apparent gas demand, encompassing pipeline imports, LNG imports and domestic production, rose by 14% compared to the previous year, reaching 38 bcm (Figure 30). This increase in natural gas consumption is linked to the revival of economic activities following the relaxation of stringent COVID-19 lockdown restrictions and the cold weather that was recorded at the end of the month.

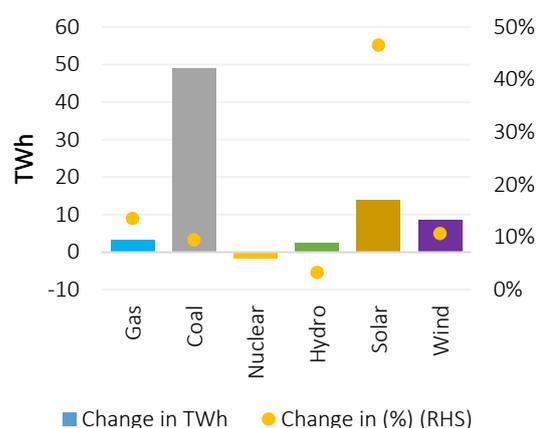
Electricity production from gas in China increased by 14% y-o-y, while the total electricity production rose by 10%, reaching 862 TWh. The month witnessed a significant surge in electricity generation from hydro (3%), solar (47%), wind (11%) and coal (9%) (Figure 31). Coal remained the dominant fuel in the power mix, accounting for 66% of the total, followed by renewables (18%), hydro (9%), nuclear (4%) and gas (3%).

Figure 30: Gas consumption in China



Source: GECF Secretariat based on data from Refinitiv

Figure 31: Trend in electricity production in China in December 2023 (y-o-y change)



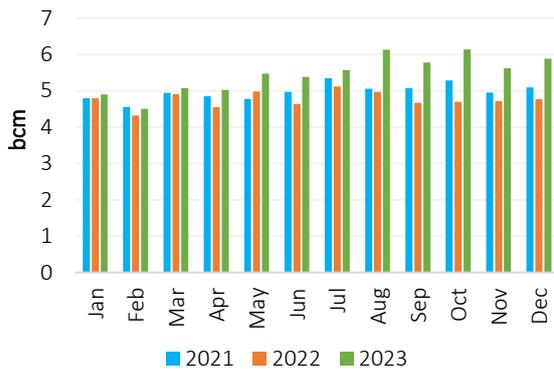
Source: GECF Secretariat based on data from Ember

2.2.2 India

In December 2023, India's gas consumption marked its twelfth consecutive month of growth with a 24% y-o-y increase, reaching 5.9 bcm (Figure 32). This increase was driven by the fertilizer, city gas, refinery and petrochemical sectors, which registered growth rates of 16%, 18%, 60% and 29% y-o-y, respectively, amidst declining gas prices. The reliance on LNG imports to meet gas demand accounted for 47% of the country's total consumption.

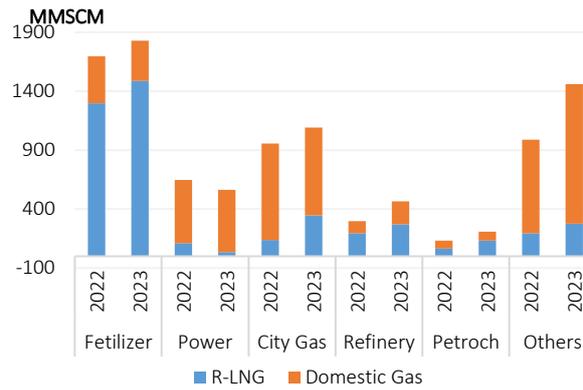
Power generation surged to 132 TWh, marking a 1.4% y-o-y increase. Following the conclusion of the monsoon season after September, Indian gas-based power utilities have operated at their optimal capacity. To address an expected increase in power demand, the power ministry has prolonged the duration of its previous instructions for utilities to direct gas-based utilities to function at maximum capacity. Within the sectoral breakdown, the fertilizer sector accounted for 32% of gas demand, followed by city gas distribution (20%), power generation (11%), refining (8%) and the petrochemical sector (4%) (Figure 33).

Figure 32: Gas consumption in India



Source: GECF Secretariat based on data from PPAC

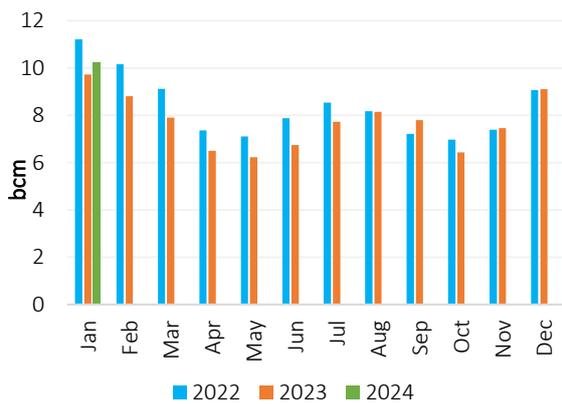
Figure 33: India's gas consumption by sector in Dec



2.2.3 Japan

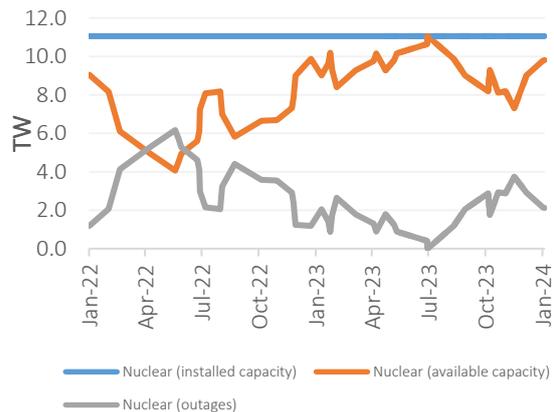
In January 2024, Japan experienced a 5% y-o-y increase in gas consumption, totalling 10.2 bcm (Figure 34). This rise was mainly driven by increased demand in the power generation sector due to the cold weather. Specifically, the power generation sector experienced an 11% y-o-y growth, reaching 5.6 bcm. On the other hand, the city gas sector witnessed a 1.5% y-o-y decline in consumption. The month also saw an 11% y-o-y reduction in Japan's Heating Degree Days (HDD), a measure of heating demand, which averaged 9.5. This suggests a greater heating requirement compared to the previous year. Additionally, the availability of nuclear power was 1% lower than in the same month of the previous year, contributing to an increased reliance on gas for power generation (Figure 35).

Figure 34: Gas consumption in Japan



Source: GECF Secretariat based on data from Refinitiv

Figure 35: Nuclear availability in Japan

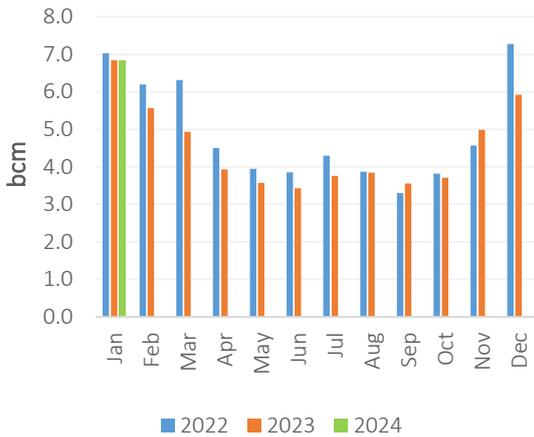


Source: GECF Secretariat based on data from Refinitiv

2.2.4 South Korea

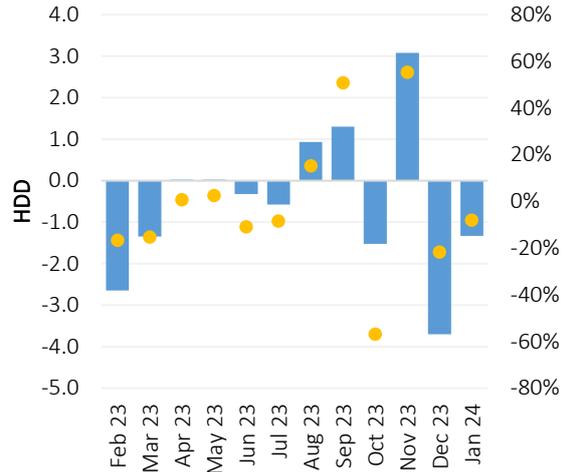
In January 2024, gas consumption in South Korea experienced a modest decrease of 0.1% compared to the previous year, reaching 6.8 bcm. This reduction was primarily attributed to a significant 4% drop in the consumption of gas in the city gas sector. Conversely, the power generation sector witnessed a 3.6% increase in gas consumption y-o-y (Figure 36). Additionally, the Heating Degree Days (HDD) for South Korea in January 2024 averaged at 15, marking an 8% decrease from the year before. This indicates a reduced demand for heating relative to the prior year (Figure 37).

Figure 36: Gas consumption in South Korea



Source: GECF Secretariat based on data from Refinitiv

Figure 37: HDD in South Korea (y-o-y change)



Source: GECF Secretariat based on data from Refinitiv

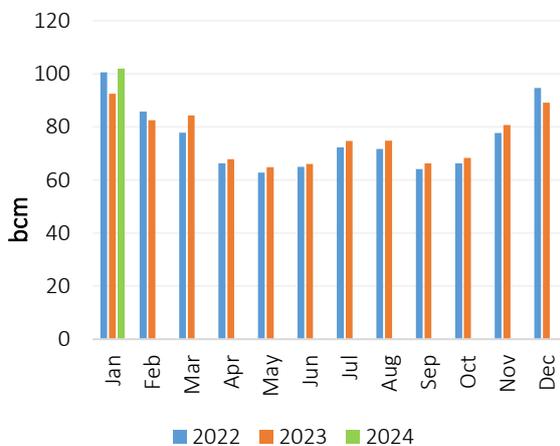
2.3 North America

2.3.1 US

In January 2024, the US experienced a 10% y-o-y increase in gas consumption, reaching 102 bcm. The cold snap during the month significantly boosted natural gas consumption in both the residential and power generation sectors, with increases of 13% and 14% y-o-y, respectively. Likewise, the industrial and commercial sectors also witnessed rises in gas consumption, with growth of 4% and 12% y-o-y, respectively.

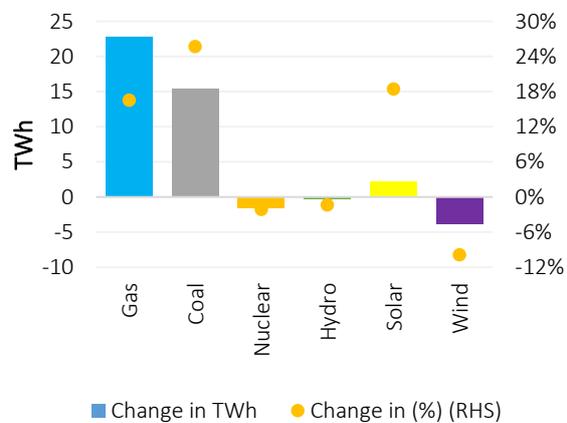
Electricity generation from gas experienced a 14% y-o-y increase, whereas the overall electricity production rose by 10%. The month was marked by a decline in generation from nuclear, hydro and wind, which decreased by 2%, 1% and 10%, respectively. On the other hand, coal and solar energy production saw a significant surge, increasing by 18% and 26% y-o-y respectively (Figure 39). In the power mix, gas continued to lead with a 42% share, followed by coal (20%), nuclear (18%), renewable energy sources (14%) and hydro (6%).

Figure 38: Gas consumption in the US



Source: GECF Secretariat based on data from EIA and Refinitiv

Figure 39: Electricity production in the US in January 2024 (y-o-y change)



Source: GECF Secretariat based on data from Ember and Refinitiv

2.3.2 Canada

In January 2024, Canada experienced a 7.2% y-o-y increase in gas consumption, increasing to 14 bcm (Figure 40). This rise was mainly due to an increase in gas usage in the residential, commercial and combined industrial and power generation sectors of 11%, 9% and 7% respectively. The Heating Degree Days (HDD) in Canada averaged 1462 for January, indicating a 12% increase compared to the same period last year (Figure 41).

Figure 40: Gas consumption in Canada

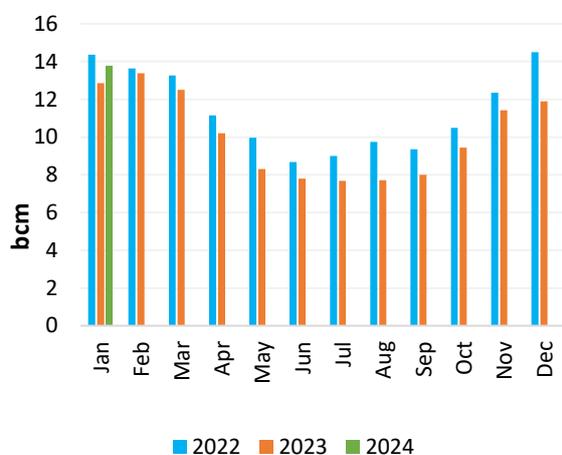
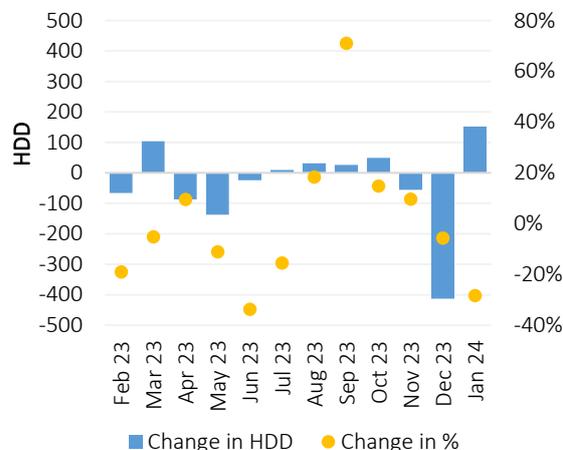


Figure 41: HDD in Canada (y-o-y change)



Source: GECF Secretariat based on data from Refinitiv

Source: GECF Secretariat based on data from Refinitiv

2.4 Weather Forecast

The weather and precipitation conditions have a significant impact on gas consumption. Below normal temperatures in winter and above normal temperatures in summer boost heating and cooling demand, respectively. Additionally, below normal precipitation levels result in lower hydro output, which can increase gas demand in the power generation sector.

2.4.1 Temperature Forecast for February to April 2024

According to the Climate Outlook by the APEC Climate Center published on 15 January 2024, a pronounced likelihood of experiencing above normal temperatures is predicted for most of the globe (excluding some region of the southeastern South Pacific and the Antarctic Ocean between South America and the Antarctic) for the period February to April 2024 (Figure 42).

2.4.2 Precipitation Forecast for February to April 2024

According to the same source, above normal precipitation is expected for the western equatorial Pacific, off-equatorial North Pacific, the western Indian Ocean, the southern Indian Ocean and Indonesia. While below normal precipitation is expected for the central and western off-equatorial North Pacific, eastern off-equatorial South Pacific, the eastern Indian Ocean, western tropical South Pacific, off-equatorial Atlantic, and southern Africa and Australia for the period February to April 2024 (Figure 43).

Figure 42: Temperature forecast February to April 2024

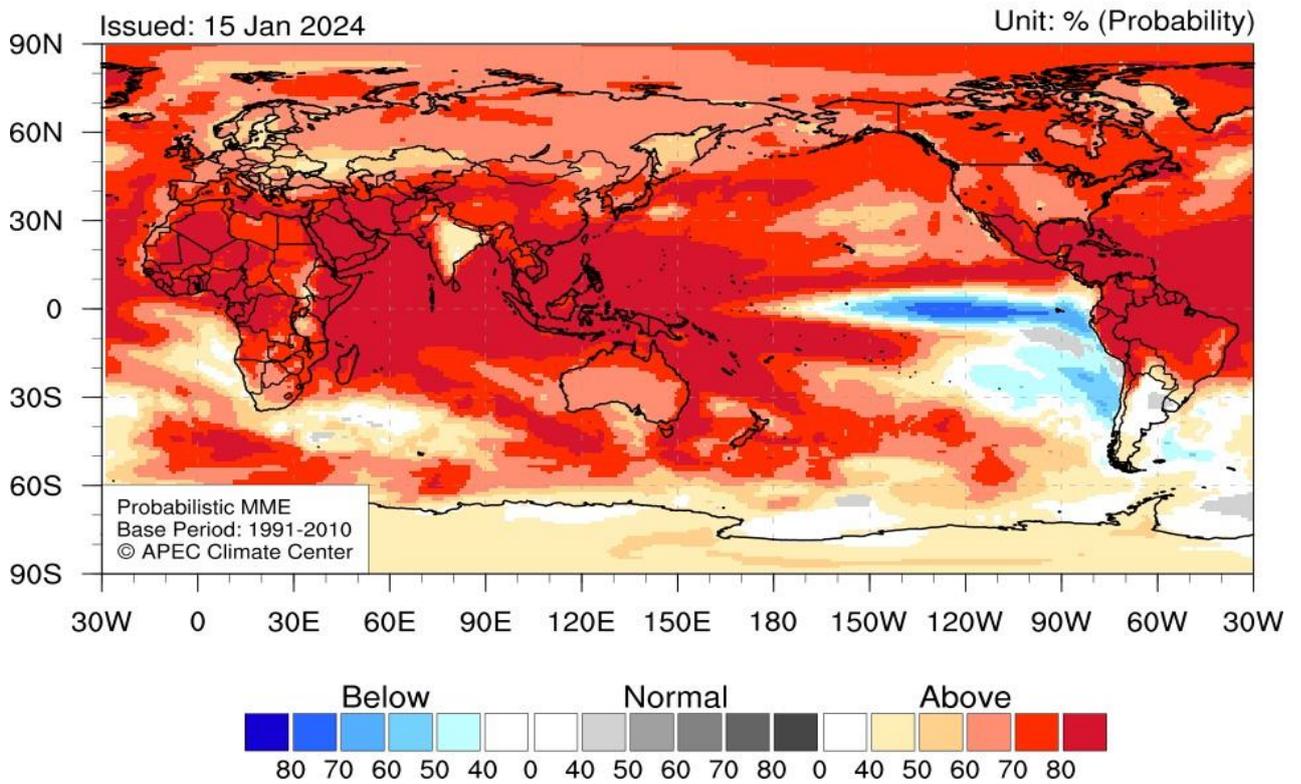
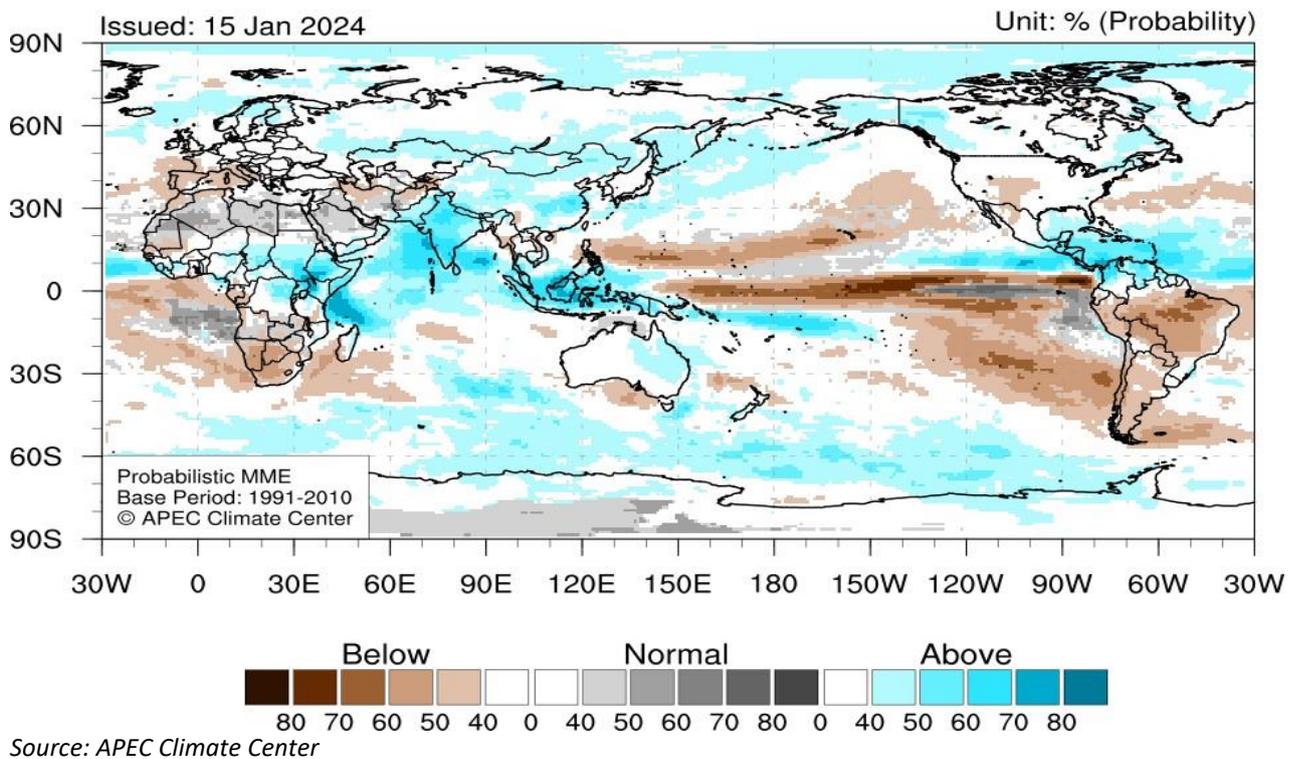


Figure 43: Precipitation forecast February to April 2024



3 Gas Production

3.1 Global

The 2023 global gas production data indicates a modest uptick of 0.8% (Table 7). This increase mainly took place in regions such as North America, the Middle East and Asia Pacific, while production in Europe and the CIS regions declined. Countries outside the GECF are estimated to raise their gas production by 2.3%, amounting to 2,388 bcm. The US is estimated to register growth of 42 bcm compared to the previous year, largely due to increased associated gas production from shale oil fields. Additionally, the Middle East is estimated to witness a notable increase in gas production of approximately 19 bcm, with Iran, Qatar and Saudi Arabia as the primary contributors.

Table 7: Global gas production forecast by region (bcm)

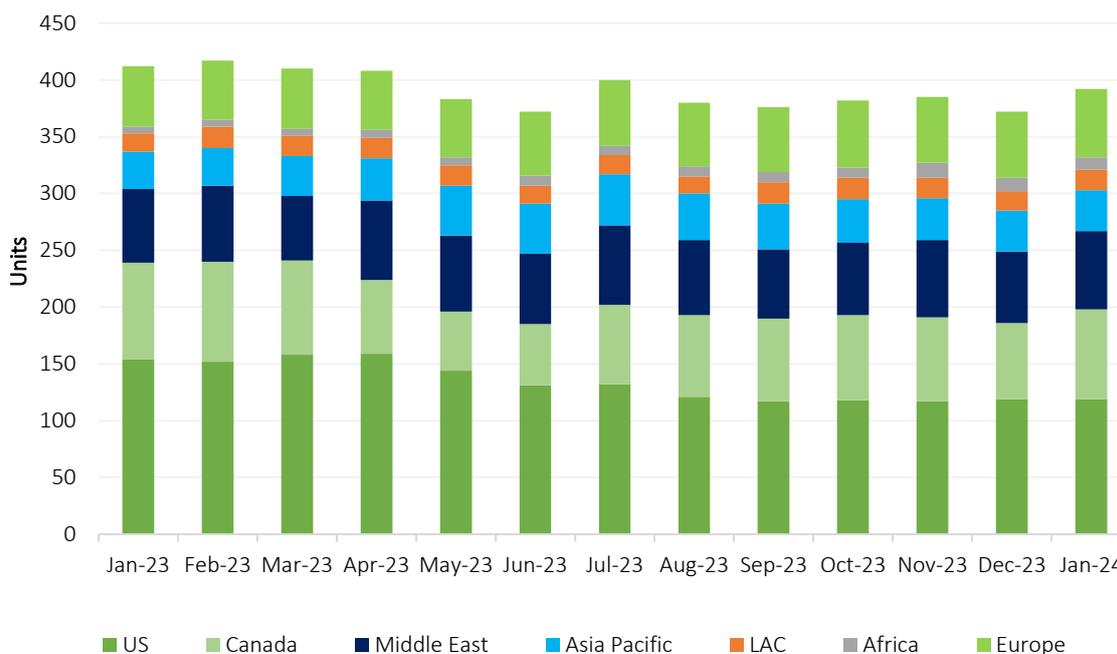
Region	2021	2022	2022 Revision*	2023	2023 Revision*	2024 Forecast
Africa	258	252	-0.5%	252	-0.1%	264
Asia Pacific	643	649	0.1%	657	-0.2%	671
CIS	910	813	0.0%	784	0.4%	817
LAC	157	161	0.5%	161	-0.1%	162
Europe	225	233	0.0%	214	-0.2%	220
Middle East	669	681	-0.1%	700	-0.2%	723
North America	1164	1228	-0.1%	1279	-0.3%	1305
World	4026	4017	-0.03%	4048	-0.1%	4162
GECF	1760	1682	0.0%	1660	0.2%	1717
non-GECF	2266	2335	0.0%	2388	-0.3%	2445

Source: GECF Secretariat based on Rystad Energy Ucube

*Revision for 2022 and 2023 gas production compared to previous estimate

January 2024 witnessed a m-o-m surge of 20 units in the global number of gas drilling rigs reaching 392 rigs, a sign of intensifying upstream operations. This marked a decrease from the 412 rigs recorded in January 2023. The m-o-m growth predominantly resulted from a rise in gas rigs throughout Canada, the Middle East, Europe and Latin America (Figure 44).

Figure 44: Trend in monthly global gas rig count



Source: GECF Secretariat based on data from Baker Hughes

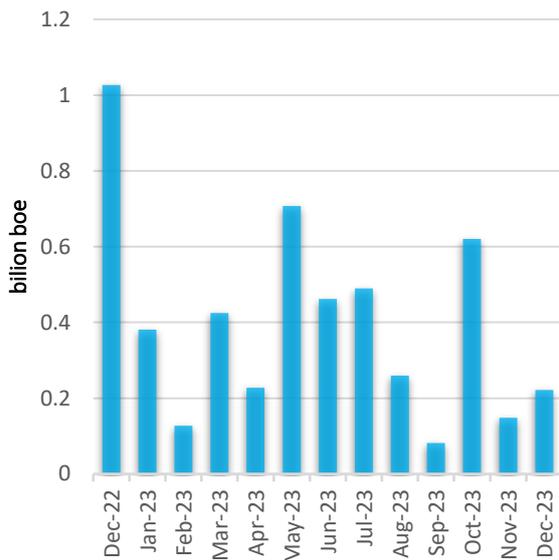
Note: Excludes data for Eurasia and Iran

In December 2023, the total volume of discovered gas and liquids amounted to 222 million barrels of oil equivalent (boe). Of this, natural gas accounted for the majority with 77% (30 bcm), while oil constituted 23% (50 million boe). The cumulative volume of discoveries for 2023 reached 5 billion boe with an average monthly discovered volume of 415 million boe, compared to a cumulative discovered volume of 9.4 billion boe in 2022 (Figure 45). The decline in discovered volumes to record lows reflects the challenges confronting global exploration activity. Approximately 73% of the total discoveries were made offshore.

Seven discoveries were announced in December 2023, two of which were offshore. The Asia Pacific region dominated the new discovered volumes with 81%, mainly in Indonesia and China, followed by Europe and Africa with 8% and 6%, respectively. No significant discoveries were reported in the Middle East and North America (Figure 46).

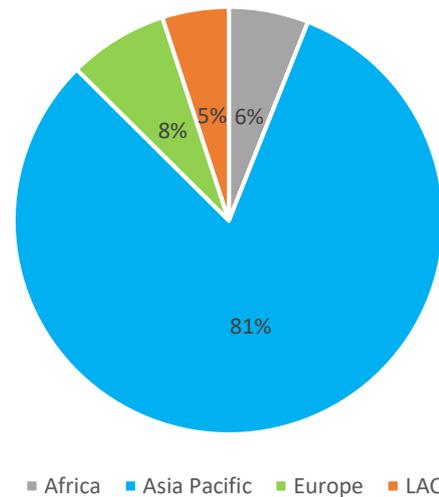
Layaran gas discovery, in the South Andaman area, offshore Indonesia, was the largest gas discovery announced in December 2023 and one of the most significant in 2023. The discovery was made through the exploration well Layaran-1. According to Mubadala Energy, the well was drilled at a depth of 4208m and a water depth of 1207m, encountered a gas column of 230m thickness reservoir and was successfully tested with 30 mmcf/d. This discovery was communicated to de-risk nearly 170 bcm of original gas in place from the block. This discovery is considered the second consecutive success story for Mubadala Energy in the Andaman area, following the discovery made through the exploration well Timpan-1.

Figure 45: Monthly gas and liquid discovered volumes



Source: GECF Secretariat based on Rystad Energy Ucube

Figure 46: Discovered volumes in December 2023 by region

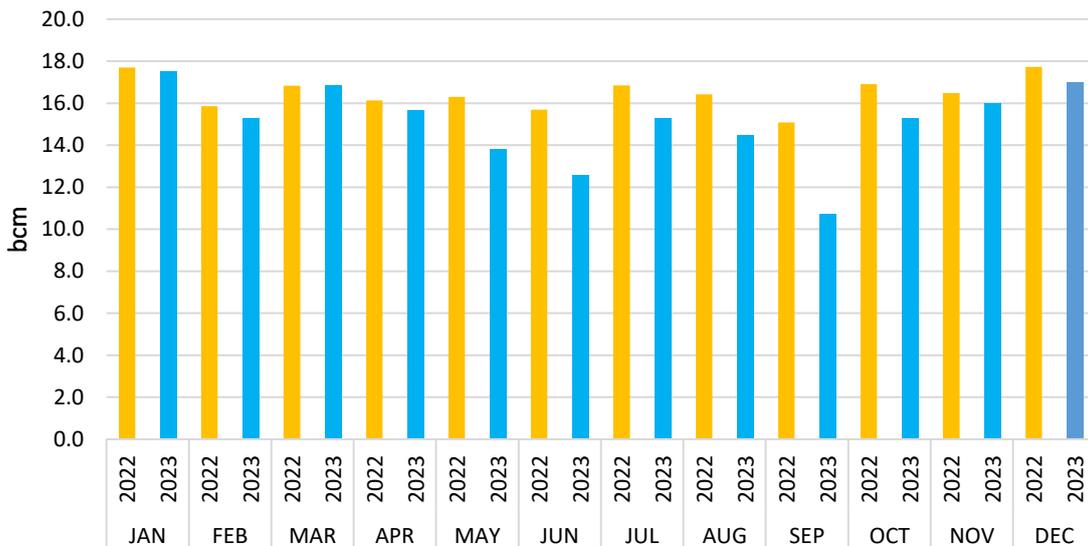


Source: GECF Secretariat based on Rystad Energy Ucube

3.2 Europe

In December 2023, Europe experienced a 4.3% y-o-y decline in gas production, resulting in a total output of 17 bcm (Figure 47). This reduction primarily stemmed from lower production levels in the Netherlands and the UK, which alongside Norway, are significant contributors to the region's gas output.

Figure 47: Europe's monthly gas production



Source: GECF Secretariat based on data from Refinitiv, and Norwegian Petroleum Directorate

*Europe's production: UK, the Netherlands, Norway, Germany, Italy, Poland, Denmark, Austria and Romania

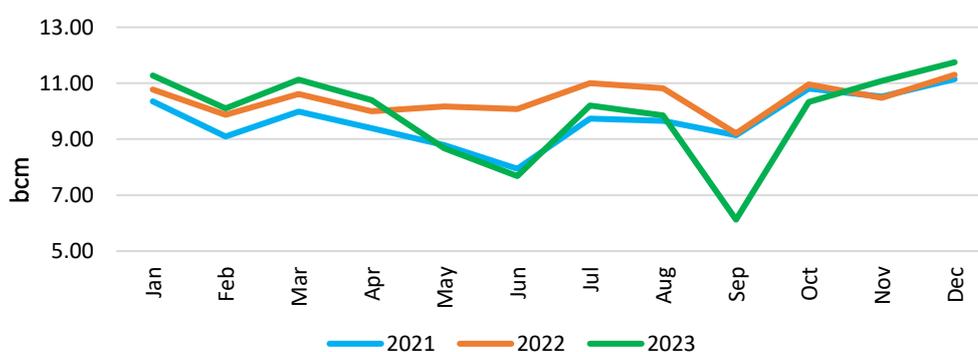
3.2.1 Norway

Preliminary data from the Norwegian Petroleum Directorate shows that Norway's gas production in December 2023 increased by 4% compared to the previous year, achieving 11.7 bcm (Figure 48).

Notably, the state-owned company Equinor reaffirmed its position on expanding the domestic oil and gas exploration and development, without any plans to slow them down. In Norway, the company is currently developing 21 offshore oil and gas fields, with most projects adopting the tie-in approach to the existing infrastructure, which brings both costs and emissions down.

Regarding maintenance activities in January 2024, a short unplanned outage in the 25.8 mcm/d Aasta Hansteen gas field reduced its output capacity to 16.7 mcm/d for a period of 4 days.

Figure 48: Trend in gas production in Norway



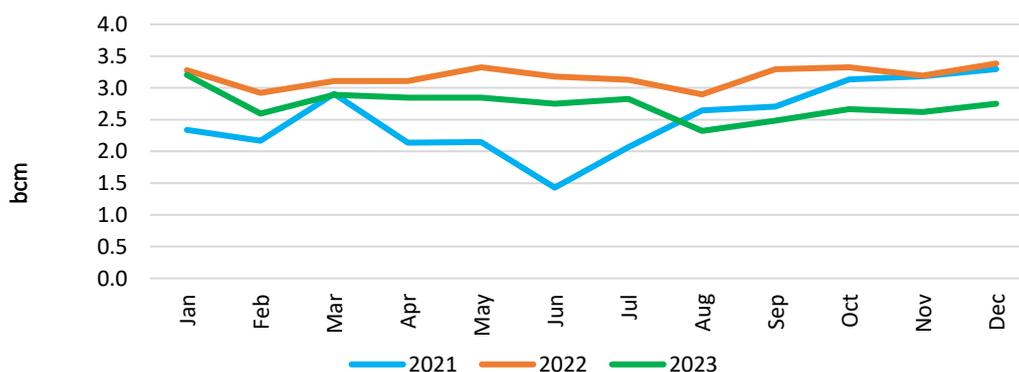
Source: GECF Secretariat based on data from Refinitiv and Norwegian Petroleum Directorate

3.2.2 UK

In December 2023, the UK saw a 19% y-o-y drop in gas production to reach 2.7 bcm (Figure 49).

In a recent development, the UK Government approved the development plan for Shell's Victory gas field in the west of Shetland area. The approval came after the environmental impact assessment conducted by the Offshore Petroleum Regulator for Environmental and Decommission (ORPED) concluded that there would be significant environmental impact attributed to Victory field development plan. Shell is planning to commence development operations in Q2 2024 with the field coming on stream in 2025 and peak production of 1.5 bcma. The produced gas would be processed at the existing Shetland gas plant, which would help to reduce costs and emissions.

Figure 49: Trend in gas production in the UK



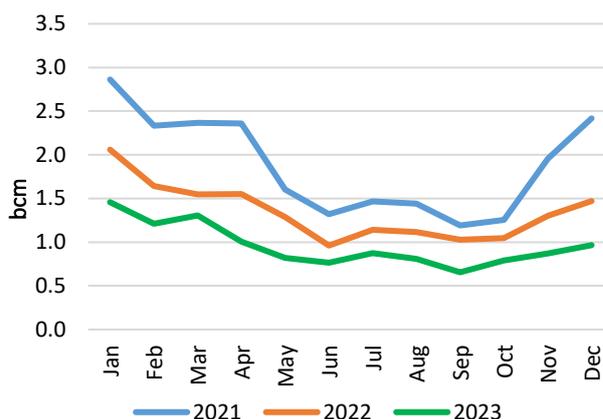
Source: GECF Secretariat based on data from Refinitiv

3.2.3 Netherlands

In December 2023, the Netherlands experienced a 34% y-o-y decline in gas production, with a recorded output of 0.97 bcm (Figure 50).

This decrease in gas production is mainly due to reduced output from aging fields and the cessation of production at the Groningen field.

Figure 50: Trend in gas production in the Netherlands



Source: GECF Secretariat based on data from Refinitiv, Dutch Central Bureau of Statistics

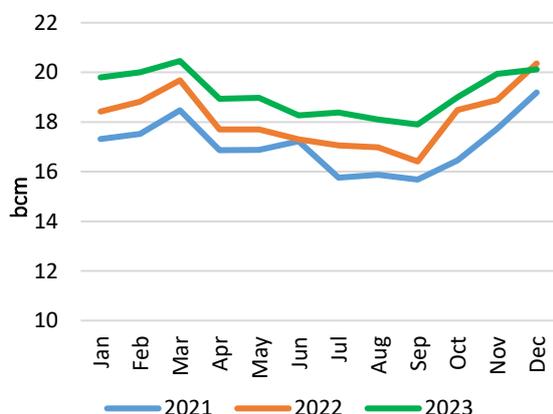
3.3 Asia Pacific

3.3.1 China and India

In December 2023, China witnessed a 1% y-o-y reduction in gas production, reaching 20.2 bcm (Figure 51). In a recent development, Sinopec announced a breakthrough discovery of an ultra-deep shale gas field in Hexingchang in the Sichuan basin, southwest of China. According to the Ministry of Natural Resources, the field is estimated to contain 133 bcm of proven gas reserves.

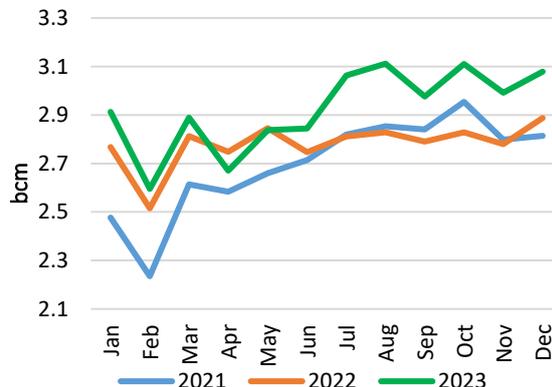
In December 2023, India saw its gas production grow by 7% compared to the previous year, reaching 3.1 bcm (Figure 52).

Figure 51: Trend in gas production in China



Source: GECF Secretariat based on data from the National Bureau of Statistics of China

Figure 52: Trend in gas production in India



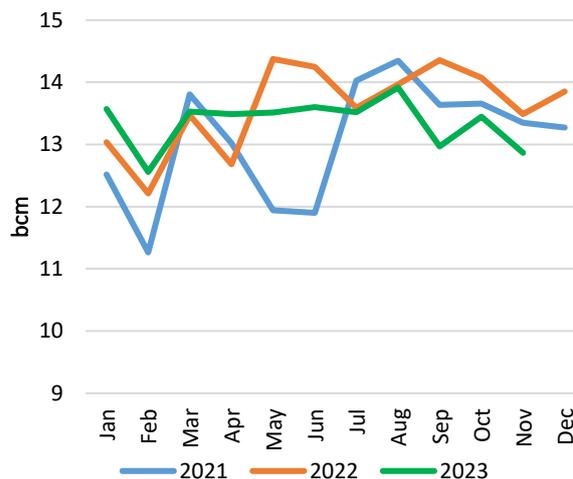
Source: GECF Secretariat based on data from Refinitiv, Ministry of Petroleum (India)

3.3.2 Australia

According to data from the Australian Department of Energy, the country’s gas production in November 2023 reached 12.9 bcm, representing a 5% y-o-y and 4.3% m-o-m decline (Figure 53). From January to November, there was a 1.7% y-o-y reduction in the cumulative gas production, reaching a volume of 147 bcm.

Notably, natural gas production from coal bed methane fields reached 3.2 bcm, representing 25% of the total production. These production volumes have maintained Australia as a global frontrunner in coal bed methane production.

Figure 53: Trend in gas production in Australia



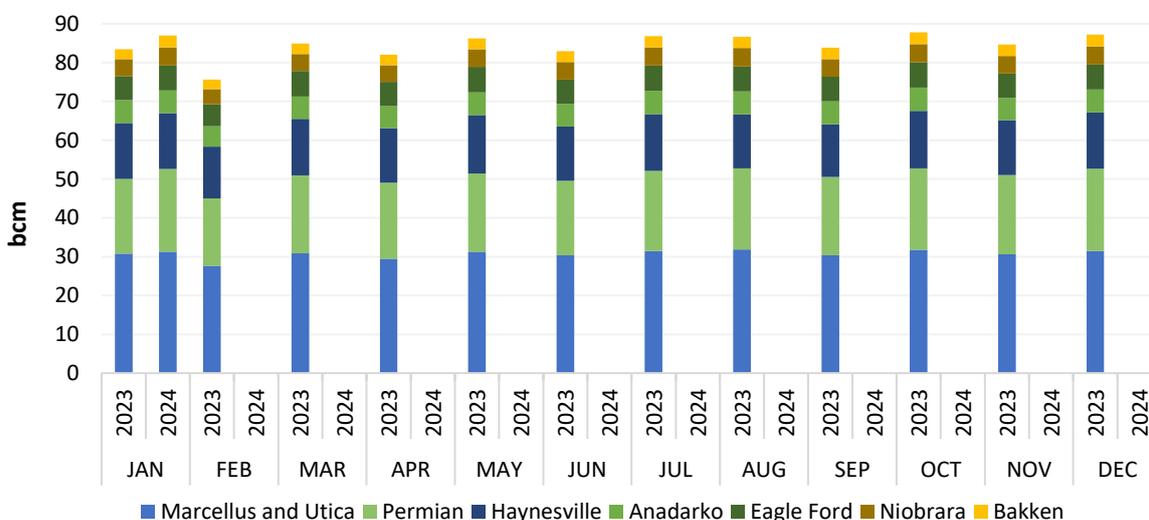
Source: GECF Secretariat based on data from the Australian Department of Energy

3.4 North America

3.4.1 US

In January 2024, the key shale gas-producing regions in the US - Anadarko, Appalachian, Bakken, Eagle Ford, Haynesville, Niobrara, and Permian regions - experienced a 4% y-o-y production growth, reaching a total of 87 bcm (Figure 54). The Appalachian region, which includes the Marcellus and Utica shale formations, accounted for 36% of this total production. Additionally, the Permian shale oil field saw its associated gas production climb by 11% y-o-y, totalling 21.3 bcm and comprising 24% of the total shale gas production.

Figure 54: Trend in shale gas production in the US shale oil/gas producing regions



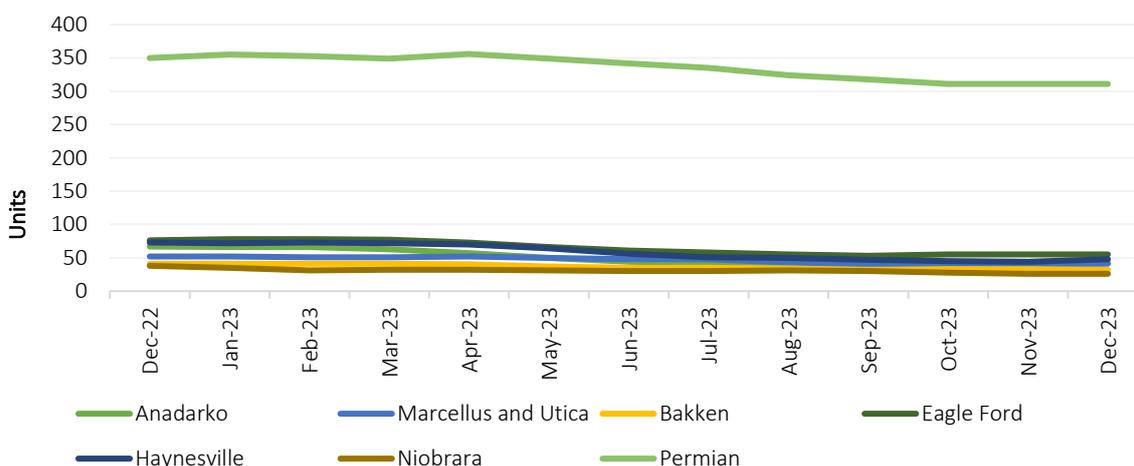
Source: GECF Secretariat based on data from Refinitiv, EIA

As of December 2023, the number of oil and gas drilling rigs operating in the seven key shale oil and gas regions in the US was 555. This represents a rise of 7 rigs since November 2023 and a decrease of 142 rigs from December 2022 (Figure 55).

Additionally, in December 2023, the total number of drilled but uncompleted (DUC) wells in the seven major regions amounted to 4,374, marking a decrease of 64 wells compared to the count in November 2023 (Figure 56).

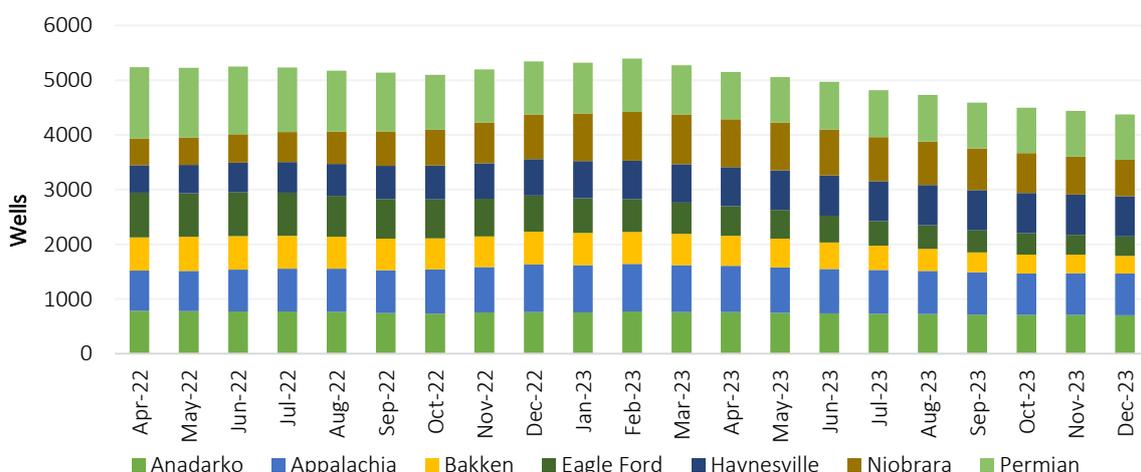
The Drilling Productivity Report for January 2024, released by the EIA, highlighted a rise in new well gas production per rig on both a monthly and yearly basis, by 1.8% and 5.9%, respectively (Figure 57). Consequently, the average daily gas production per rig across all regions increased to 5,755,000 cubic feet.

Figure 55: US shale region oil and gas rig count



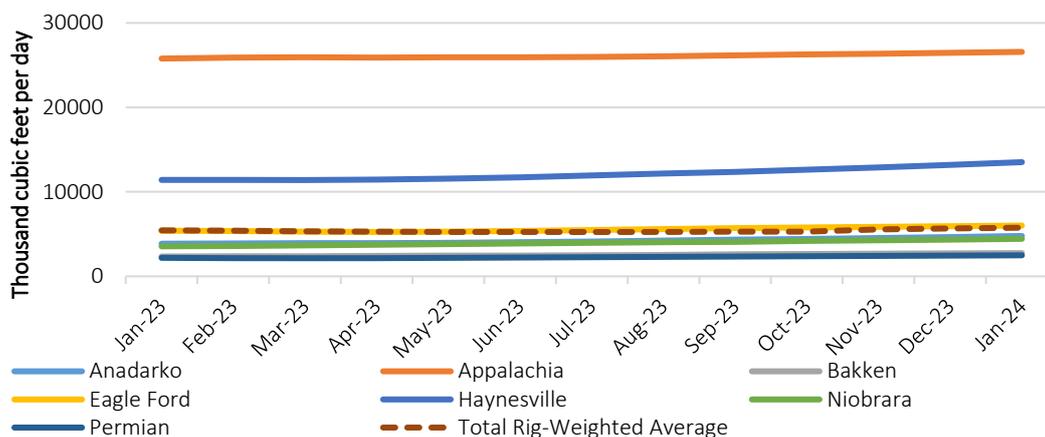
Source: GECF Secretariat based on data from Refinitiv and EIA

Figure 56: Drilled but uncompleted well (DUCs) counts in the US



Source: GECF Secretariat based on data from Refinitiv, US EIA

Figure 57: New-well gas production per rig

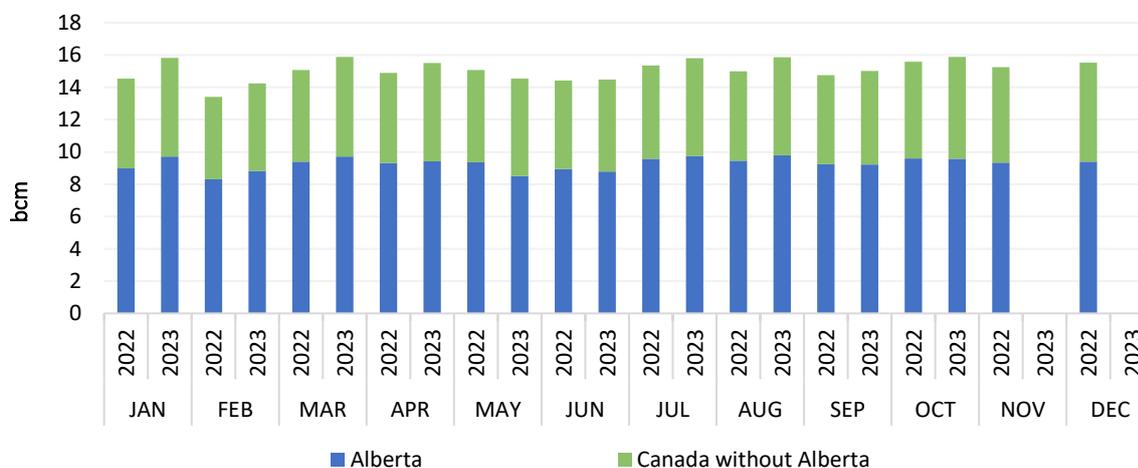


Source: GECF Secretariat based on data from Refinitiv, US EIA

3.4.2. Canada

In October 2023, the Canada Energy Regulator (CER) reported a 2% y-o-y increase in Canada's gas production, achieving 15.9 bcm, with Alberta accounting for 9.6 bcm of this total (Figure 58). Throughout the period from January to October 2023, there was a 3% y-o-y growth in total gas production, culminating in 153.1 bcm.

Figure 58: Trend in gas production in Canada



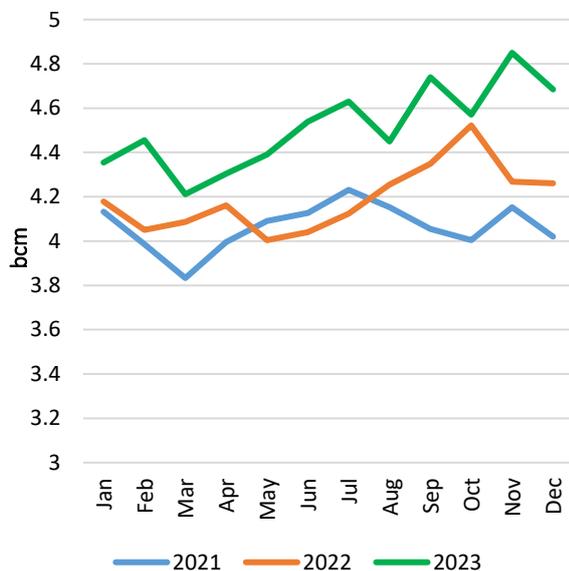
Source: GECF Secretariat based on data from the Canada Energy Regulator (CER)

3.5 Latin America and the Caribbean

In Brazil, gross gas production reached 4.68 bcm in December 2023, according to data from the Brazilian National Agency of Petroleum (ANP). This represented a 2.5% m-o-m decrease compared to November 2023 level and a 11.8% y-o-y increase compared to December 2022 level (Figure 59). Approximately 54% of the produced gas was reinjected into reservoirs. Additionally, gas flaring witnessed a 7.4% m-o-m drop. In terms of distribution, the Tupi field in the Santos pre-salt basin emerged as the largest gas-producing field at 1.24 bcm (6% decrease in production m-o-m). The FPSO facility in Guanabara in the shared Mero field was the highest gas producing facility with approximately 0.36 bcm, corresponding to 2.8% m-o-m increase. It is worth noting that 2023 marked a record high in terms of gross gas production with 54.7 bcm, an 8.6% y-o-y increase from 2022 level.

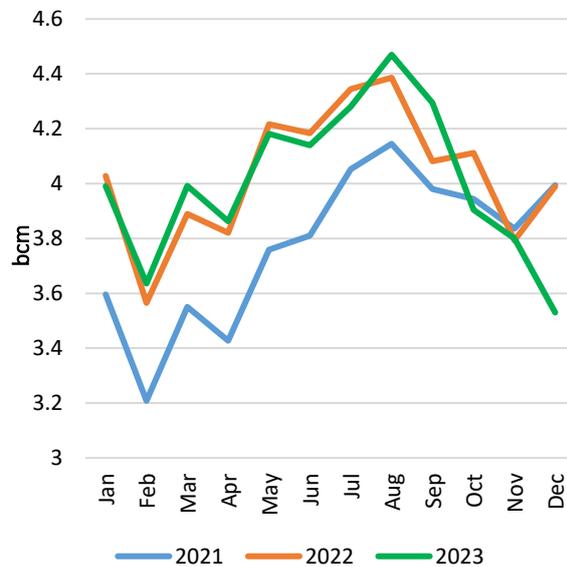
In Argentina, gross gas production reached 3.53 bcm in December 2023, based on data provided by the Argentinian Ministry of Economy. This represented a 7% decrease compared to the 3.8 bcm output in November 2023 and a significant 12% y-o-y drop (Figure 60). Shale gas production amounted to 1.58 bcm, representing 45% of the gross production, while tight gas reservoir production was 0.46 bcm, with 13% share. The remaining part of the production originated from the conventional gas fields.

Figure 59: Trend in gas production in Brazil



Source: GECF Secretariat based on data from the Brazilian National Agency of petroleum (ANP)

Figure 60: Trend in gas production in Argentina



Source: GECF Secretariat based on data from Argentinian Ministry of Economy

3.6 Other Regions

Nigeria commenced gas production from the Akpo West gas project: According to TotalEnergies, Nigeria started production from its Akpo West offshore gas and condensate project in February. The field is estimated to produce up to 1.46 bcma of gas and 14,000 bpd of condensate by 2028. The field production is tied back into the existing Akpo Floating, Production, Storage and Offloading facility (FPSO). The marketed gas production would be transported from the FPSO via a 150km pipeline to the Amenam-Kpono platform, through which the feedgas is transported to the Nigerian Bonny LNG plant.

Iran signed a 14 billion USD upstream investment deals: The Iranian government announced the signing of six deals for the development of eight oil and gas projects, with aggregated investments reaching 14 billion USD. The contracts were signed with private-sector Malaysian corporations and would add approximately 390,000 bpd of crude oil and 11 bcma of gas capacity to the country’s overall hydrocarbon production volumes. It is worth noting that this development came after Iran commenced production from new seven oil and gas projects in western Khuzestan, with combined capacity of 150,000 bpd of crude oil and 10 bcma of gas.

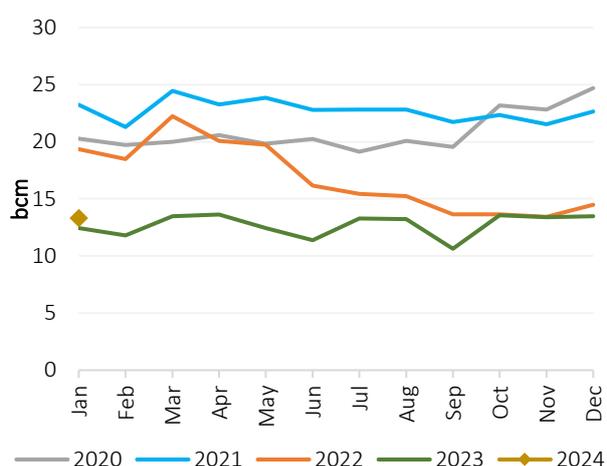
4 Gas Trade

4.1 Pipeline Natural Gas (PNG) Trade

4.1.1 Europe

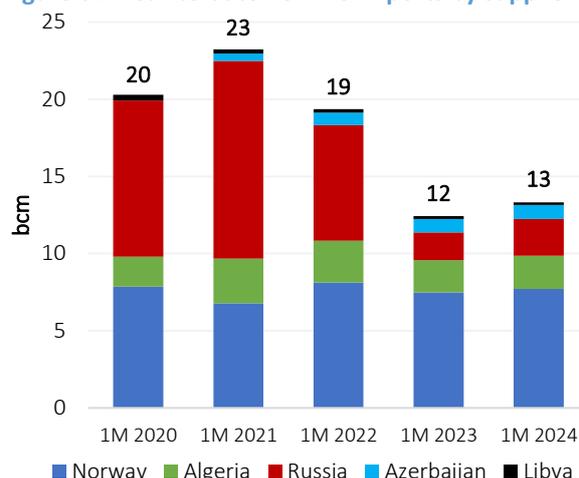
In January 2024, 13.3 bcm of PNG was imported into the EU (Figure 61). This quantity was 1% lower than the total volume imported in the previous month, but 7% higher than the level recorded in January 2023. The y-o-y increase in PNG imports in 2024 was driven mainly by a 31% increase in supply from Russia, with additional modest imports from Norway, Algeria, and Azerbaijan (Figure 62). The level of PNG imports to the region has been relatively stable since June 2023, except for the decline in September 2023, which was due to maintenance activities in Norway (Figure 63).

Figure 61: Monthly PNG imports to the EU



Source: GECF Secretariat based on data from Refinitiv

Figure 62: Year-to-date EU PNG imports by supplier

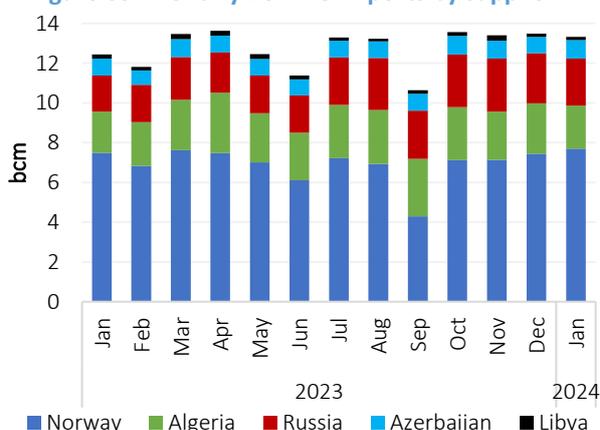


Source: GECF Secretariat based on data from Refinitiv

In January 2024, Norway was the major supplier of PNG to the EU, accounting for 58% of total imports, followed by Russia with 18% and Algeria with 16%. The monthly percentage supply from these five PNG exporters to the EU has been largely unchanged since October 2023.

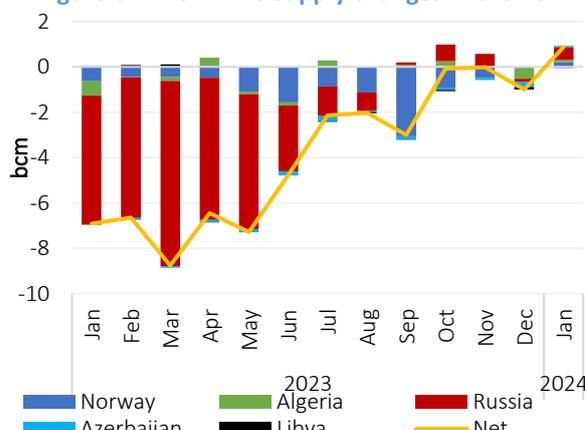
This is further illustrated in the changes in PNG supply to the EU, compared with the same month one year ago (Figure 64). Since Q4 2023, monthly imports from Russia have increased y-o-y. Norway also recorded y-o-y decreases throughout 2023.

Figure 63: Monthly EU PNG imports by supplier



Source: GECF Secretariat based on data from Refinitiv

Figure 64: Y-o-Y PNG supply changes in the EU



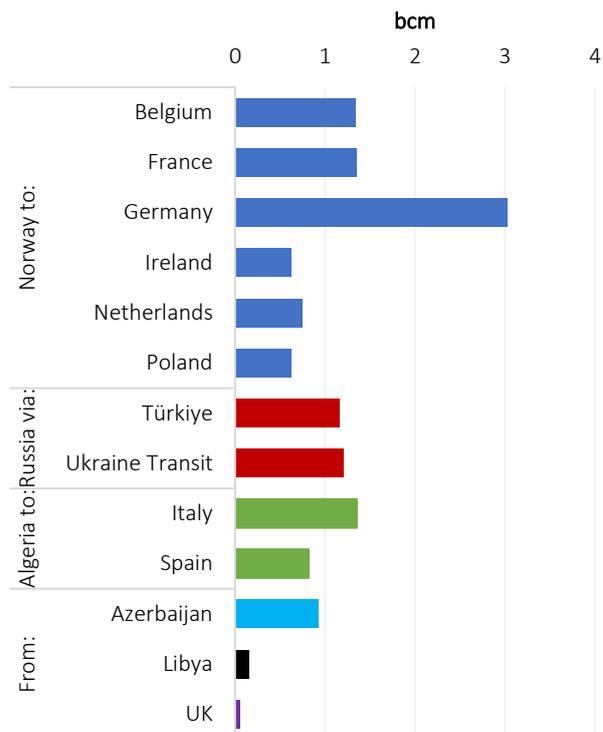
Source: GECF Secretariat based on data from Refinitiv

Figure 65 shows the PNG imports to the EU via the major supply routes in January 2024.

Total PNG supply from Norway to the region increased m-o-m. There was a 33% increase in supply to Ireland, while flows to Poland rose by 10% m-o-m. There were 3.0 bcm of flows to Germany, which was unchanged from the previous month. Russian PNG supply via both the Turkstream pipeline and the Ukraine transit recorded m-o-m decreases of 8% and 5%, respectively. Algeria's PNG supply to Italy decreased by 21% m-o-m, which resulted in its share of exports to Italy falling to 62% during the month. There were just 0.05 bcm of PNG flows from the UK.

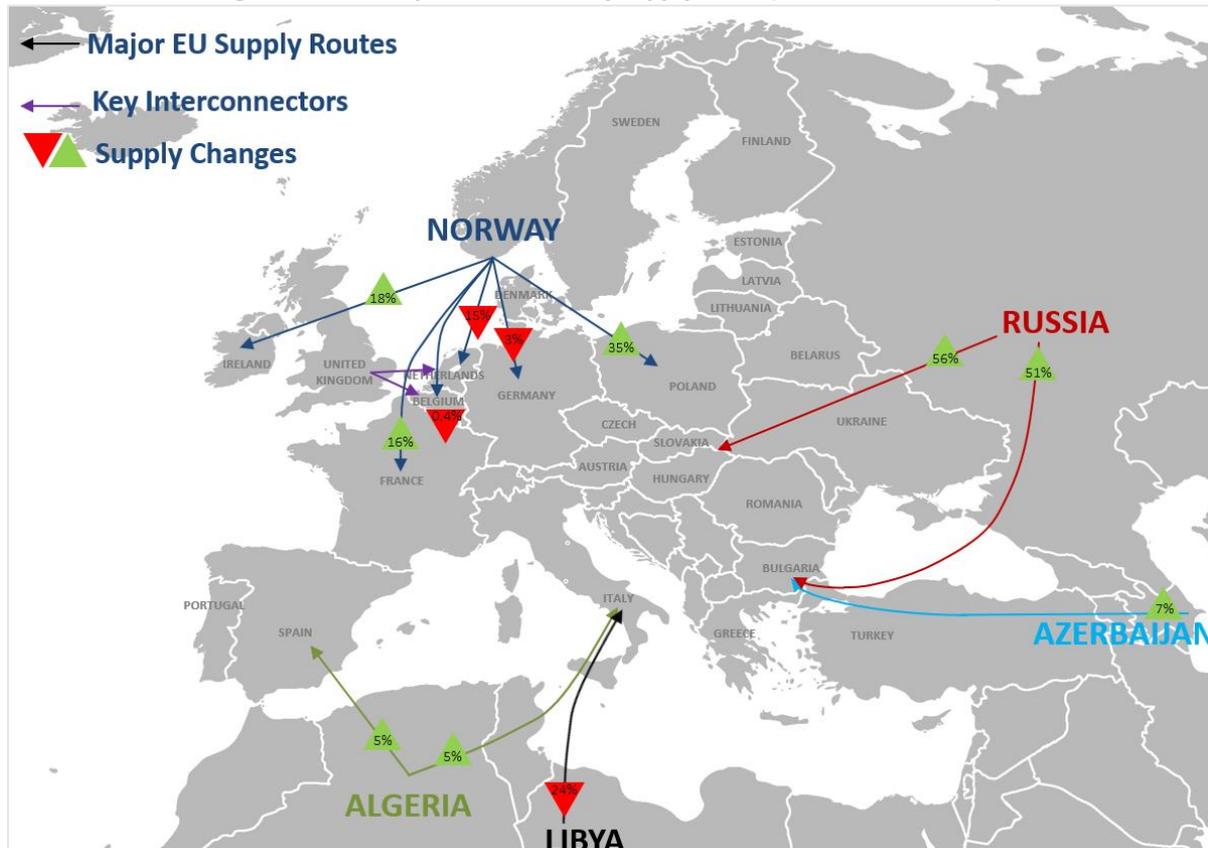
Figure 66 displays the PNG imports to the EU via the major supply routes January 2024, versus the same month in the previous year. Both Russia and Algeria recorded increases via all supply routes from each country. There was a 7% increase in supply from Azerbaijan.

Figure 65: EU PNG imports by supply route, in January 2024



Source: GECF Secretariat based on data from Refinitiv

Figure 66: PNG imports to the EU by supply route (1M 2024 v 1M 2023)

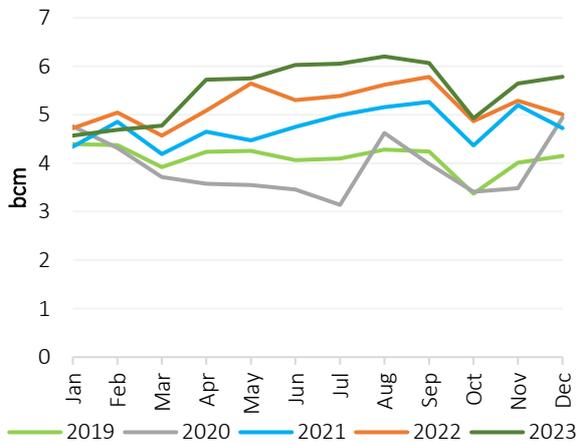


Source: GECF Secretariat based on data from Refinitiv

4.1.2 Asia

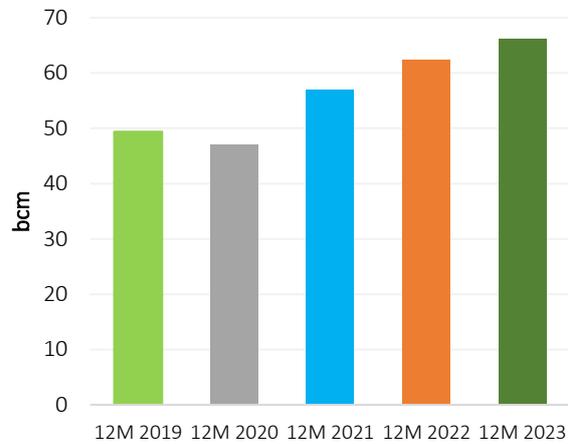
In December 2023, China imported 5.8 bcm of PNG, which marked a 2% increase m-o-m but represented a significant 15% increase over the level recorded one year before (Figure 67). Moreover, there was a surge in total gas imports to the country during the month, of which PNG imports accounted for 34%. For the period January to December 2023, there were 66 bcm of PNG imported, which represented a 6% increase compared to the total volume imported over the course of 2022 (Figure 68). In addition, the average monthly import rate in 2023 was 5.5 bcm, which was an increase from the 5.2 bcm level across 2022.

Figure 67: Monthly PNG imports in China



Source: GECF Secretariat based on data from Refinitiv and General Administration of Customs China

Figure 68: Year-to-date PNG imports in China

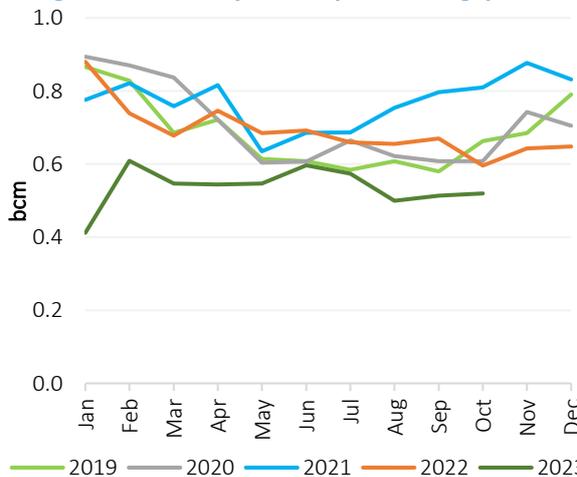


Source: GECF Secretariat based on data from Refinitiv and General Administration of Customs China

Singapore imported 0.52 bcm of PNG from Indonesia and Malaysia in October 2023. This amount represented a 1% increase from the level recorded one month earlier but was 13% lower y-o-y (Figure 69). During the period January to October 2023, total PNG imports totalled 5.4 bcm, which was 23% lower than during the same months of 2022.

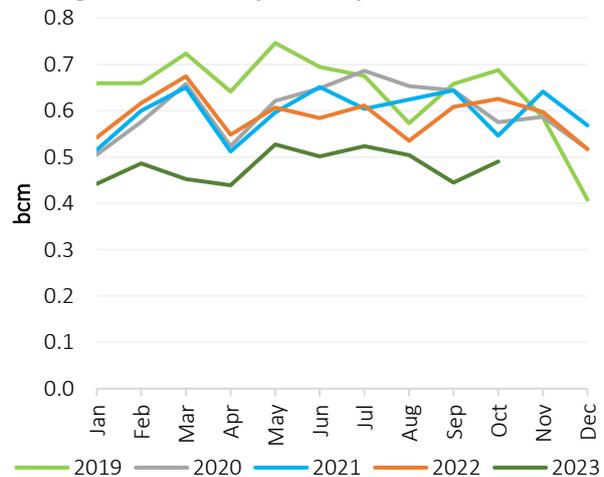
In Thailand, 0.49 bcm of PNG supply was imported from Myanmar in October 2023, marking an increase of 10% m-o-m, but 22% lower y-o-y (Figure 70). From January to October 2023, total PNG imports reached 4.8 bcm, a decrease of 19% y-o-y.

Figure 69: Monthly PNG imports in Singapore



Source: GECF Secretariat based on data from JODI Gas

Figure 70: Monthly PNG imports in Thailand

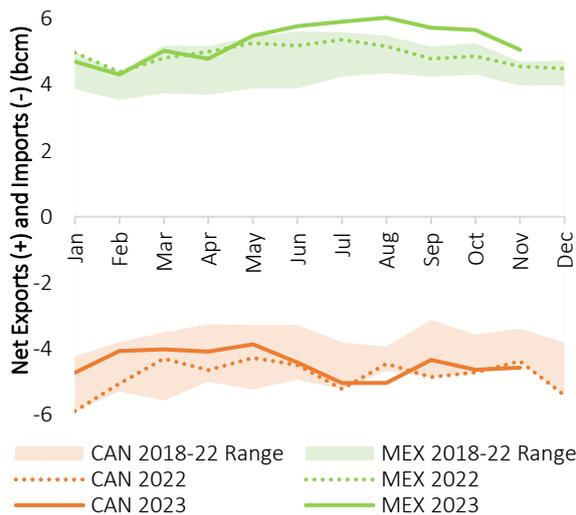


Source: GECF Secretariat based on data from JODI Gas

4.1.3 North America

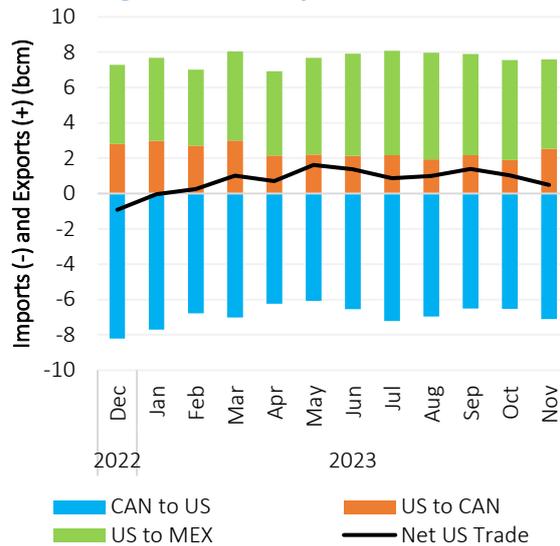
In November 2023, the US exported 5.1 bcm of PNG to Mexico (Figure 71). This volume represented an 11% decrease from the previous month but was 11% higher than at the same time one year ago. In addition, net imports of PNG from Canada were 4.6 bcm, the same level as the previous month, but 4% higher y-o-y. As a result, there was a net flow of 0.5 bcm of PNG from the US to the other countries during the month (Figure 72). Over the eleven months of 2023, net PNG imports from Canada to the US fell by 7% y-o-y, while conversely exports to Mexico increased by 8%. The average monthly flows in the region in 2023 thus far were 6.8 bcm from Canada to the US, 2.4 bcm from the US to Canada and 5.3 bcm from the US to Mexico.

Figure 71: Historical net PNG trade in the USA



Source: GECF Secretariat based on data from US EIA

Figure 72: Monthly US PNG trade



Source: GECF Secretariat based on data from US EIA

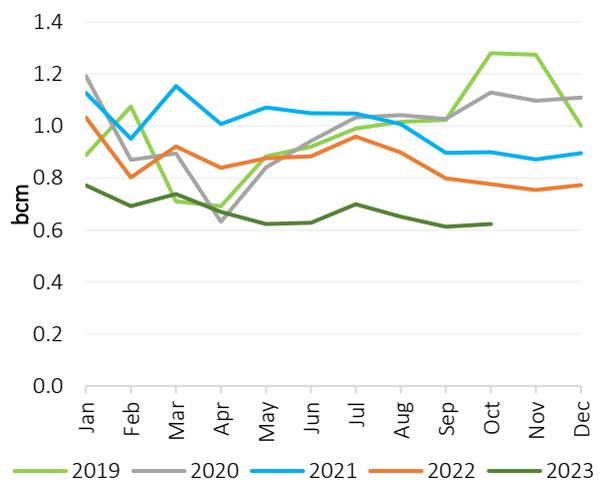
4.1.4 Latin America and the Caribbean

Bolivia exported 0.62 bcm of PNG to Brazil and Argentina in October 2023, which marked a 2% increase from the previous month but 20% lower than the level recorded one year ago (Figure 73).

Over the period from January to October 2023, a total of 6.7 bcm of PNG was exported by Bolivia, a decline of 24% compared with the same period in 2022.

In October 2023, Argentina exported 0.21 bcm of PNG to Chile, a notable 132% rise m-o-m but still 8% lower y-o-y. Total exports from January to October 2023 increased by 23% y-o-y to reach 1.8 bcm.

Figure 73: Monthly PNG exports from Bolivia



Source: GECF Secretariat based on data from JODI Gas

4.1.5 Other Developments

Russia pushes ahead with gas exports to China: Russia's state-owned energy major Gazprom has revealed that it has supplied some 22.7 bcm of natural gas to China via the Power of Siberia 1 (PoS1) pipeline over the course of 2023. In October 2023, Gazprom signed a short-term contract to increase gas flows along PoS1 until the end of the year, thus enabling the export of 700 mcm of additional supply for the year. Gazprom has stated that it will supply up to 30 bcm via PoS1 in 2024. In line with this increase, on 2 January 2024, Gazprom announced that it had set a record for daily quantity of gas flows through the pipeline.

Construction begins on the "Far East Route": China's national energy operator PipeChina has commenced construction on a section of the Hulin-Changchun gas pipeline in the north-eastern Jilin province. The pipeline, which will have a capacity of 10 bcma, starts at the border town of Hulin, where it is expected to receive gas flows from Russia as part of the Far East supply route. While this work has begun on the Chinese side of the project, the next phase will involve construction of a gas link on the Russian side, most likely to source gas from the Sakhalin-Khabarovsk-Vladivostok pipeline. Delivery via the Far East Route is expected to begin in 2027.

India expands its national gas grid: India is continuing with its ongoing expansion of the gas transmission pipeline infrastructure within the country. In January 2024, the Petroleum and Natural Gas Regulatory Board invited tenders for the construction of the Jammu-Srinagar gas pipeline. This new link is expected to have a capacity of 15.5 bcma. The pipeline will extend for 325 km, starting from the existing GAIL network in Jammu. The development of this project is expected to expand demand for natural gas within the region.

4.2 LNG Trade

4.2.1 LNG Imports

In January 2024, global LNG imports reached a historic peak of 39.16 Mt, marking a 7.4% (2.69 Mt) y-o-y expansion (Figure 74). The monthly y-o-y growth was the highest since November 2022. The Asia Pacific region was the primary driver behind the increase in global LNG imports, with smaller contributions from the LAC, MENA and North America regions. Conversely, Europe experienced a y-o-y decline in LNG imports in January (Figure 75).

Figure 74: Trend in global monthly LNG imports

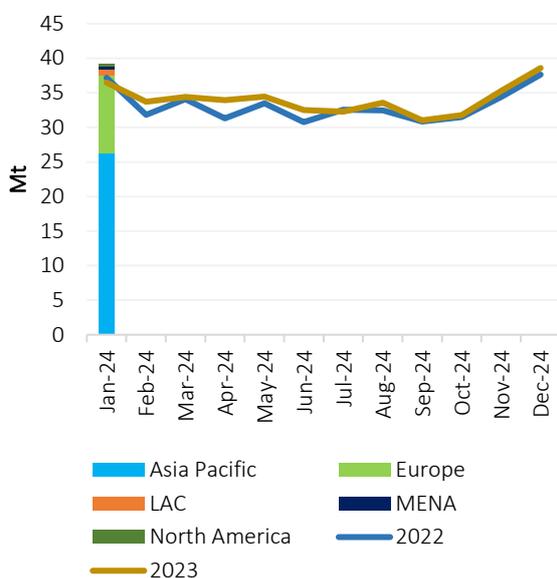


Figure 75: Trend in regional LNG imports



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.1.1 Europe

In January 2024, Europe's LNG imports fell by 8.5% (1.03 Mt) y-o-y to 11.15 Mt, representing the seventh consecutive monthly y-o-y decline (Figure 76). The drop in European LNG imports was mainly attributed to high gas storage levels, stronger pipeline gas imports and weaker gas demand in some markets. Additionally, the disruption in shipping via the Red Sea may have delayed the delivery of some Qatari LNG cargoes to Europe. Türkiye recorded the largest decline in Europe's LNG imports followed by the UK, Belgium and Poland. Conversely, Finland, Germany and the Netherlands experienced significant increases (Figure 77).

The decline in LNG imports in Türkiye was due to reduced gas demand in the power sector, with LNG imports from Egypt, Nigeria, Russia and Trinidad and Tobago falling sharply. In the UK, the decrease in LNG imports resulted from an increase in pipeline gas imports from Norway and lower LNG imports from Qatar. Similarly, the rise in pipeline gas imports from Norway through the Baltic gas pipeline led to a decrease in LNG imports in Poland. Furthermore, weaker pipeline gas imports from Belgium to Germany and the Netherlands contributed to reduced LNG imports in Belgium.

In contrast, the growing LNG imports through the Inkoo LNG facility, utilized by both Finland and Estonia, contributed to the increase in Finland's LNG imports. Similarly, the rise in LNG imports in Germany and the Netherlands was fuelled by stronger imports via the recently commissioned LNG import facilities in both countries.

Figure 76: Trend in Europe’s monthly LNG imports

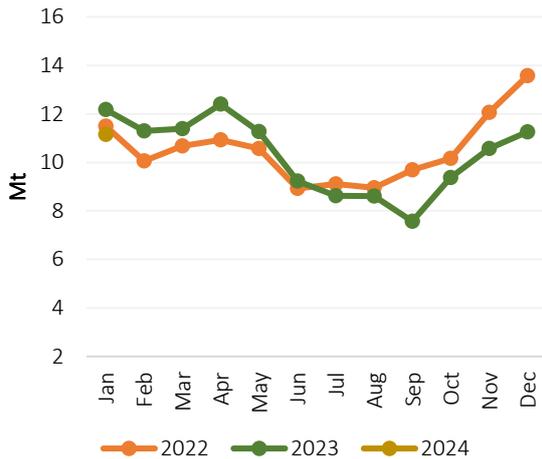
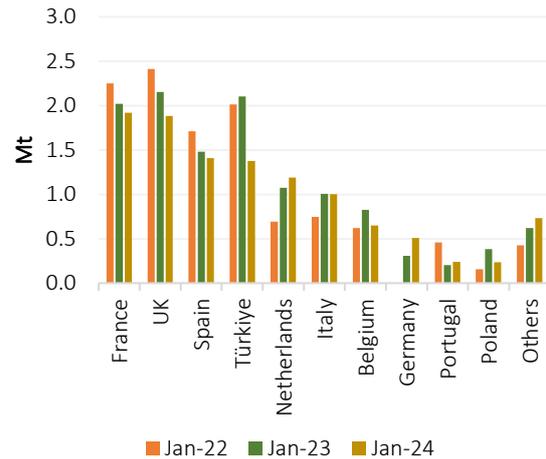


Figure 77: Top LNG importers in Europe



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.1.2 Asia Pacific

In January 2024, LNG imports in the Asia Pacific region grew by 12% (2.82 Mt) y-o-y to 26.33 Mt, marginally lower than the LNG imports in January 2021 (Figure 78). The rise in the region’s LNG imports was driven by lower spot LNG prices, which stimulated spot LNG demand in price sensitive markets, and increased gas demand in some countries. China, India, Pakistan, Singapore and Thailand contributed to the increased LNG imports, offsetting weaker imports in Japan (Figure 79).

The surge in LNG imports in China and India stemmed from increased gas demand and the availability of cheaper spot LNG cargoes. Additionally, the rise in long-term contractual LNG supplies from Qatar and the US contributed to China’s uptick in imports. Similarly, attractive spot LNG prices boosted imports in Pakistan, Singapore and Thailand. Singapore’s increase was further supported by enhanced long-term contractual supplies from Qatar, while lower domestic gas production contributed to Thailand’s rise in imports. However, Japan witnessed a decline in LNG imports due to reduced gas demand in the power sector, influenced by mild winter weather and increased nuclear availability.

Figure 78: Trend in Asia’s monthly LNG imports

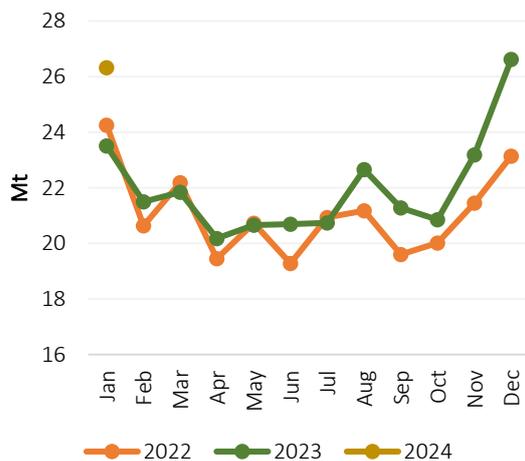
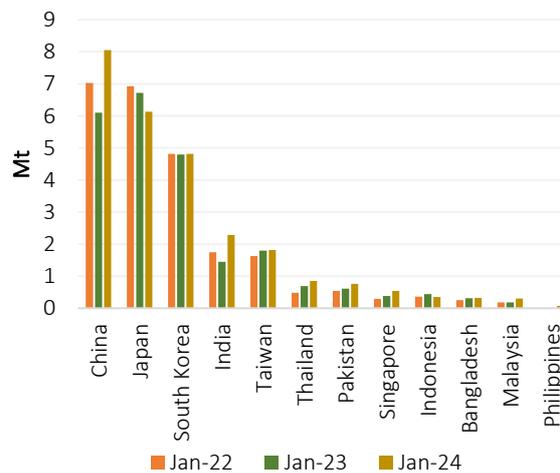


Figure 79: Top LNG importers in Asia Pacific



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.1.3 Latin America & the Caribbean (LAC)

In January 2024, LNG imports in the LAC region surged by 83% (0.42 Mt) year-on-year to 0.93 Mt, reversing the y-o-y decline recorded in December 2023 (Figure 80). This increase was driven by stronger LNG imports in Brazil, Colombia and the Dominican Republic (Figure 81).

In Brazil and Colombia, stronger gas demand in the power sector, prompted by reduced hydro output caused by the El Niño phenomenon, led to increased LNG imports in both countries. Similarly, in the Dominican Republic, the rise in gas demand for power generation, supported by the recent commissioning of gas-fired power plants, drove LNG imports higher.

Figure 80: Trend in LAC’s monthly LNG imports

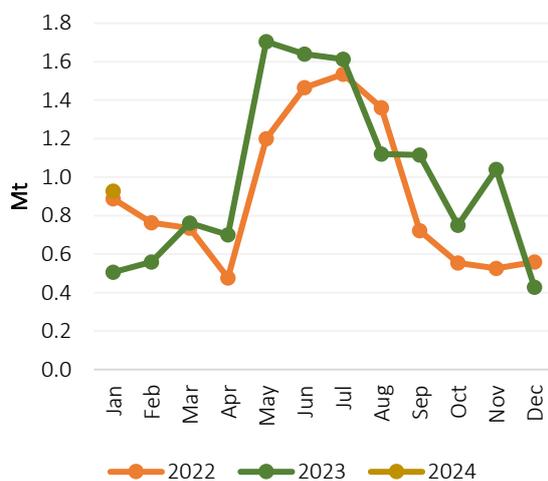
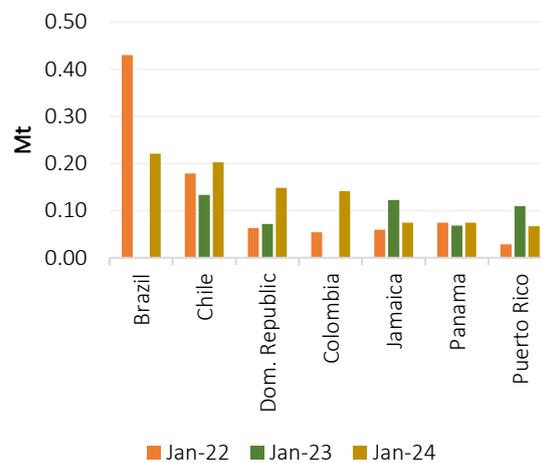


Figure 81: Top LNG importers in LAC



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.1.4 MENA

In January 2024, LNG imports in the MENA region rose sharply by 83% (0.15 Mt) y-o-y to 0.34 Mt (Figure 82). Kuwait was the sole LNG importer in the region for January, marking the highest LNG imports recorded for the month (Figure 83). Notably, Qatar, the exclusive LNG supplier to Kuwait in January, significantly increased its long-term contractual LNG supplies to the country during the month.

Figure 82: Trend in MENA’s monthly LNG imports

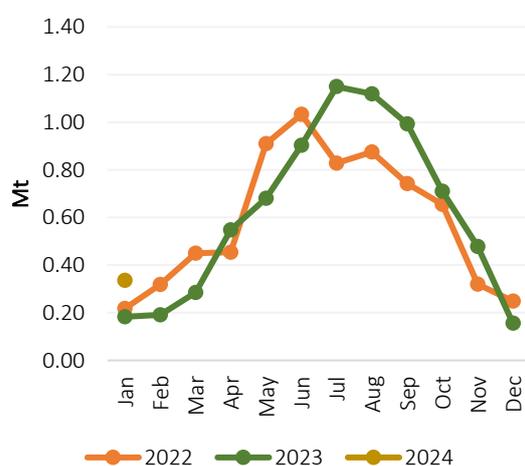
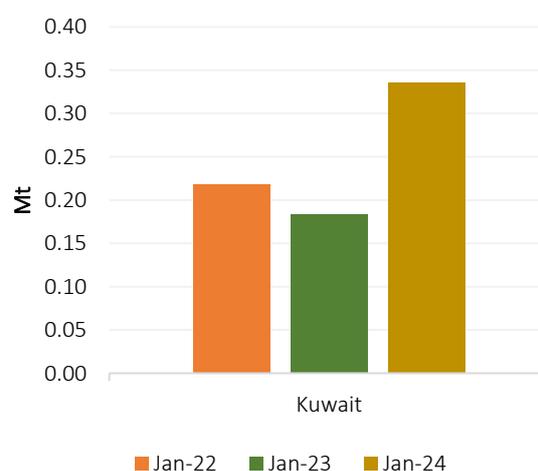


Figure 83: Top LNG importers in MENA



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.2 LNG Exports

In January 2024, global LNG exports soared to an unprecedented monthly peak of 37.53 Mt, marking a robust y-o-y growth of 6.9% (2.42 Mt) (Figure 84). This surge in monthly year-on-year growth was the most substantial since November 2022. The upsurge in global LNG exports was propelled by increased shipments from both GECF and non-GECF countries, with LNG reloads maintaining stability. Non-GECF nations claimed the largest market share in global LNG exports, accounting for 50.8%, while GECF member countries and reloads represented 48.2% and 1.0%, respectively. Comparatively, in contrast to January 2023, the market share of non-GECF countries modestly increased from 50.4%, while the share of GECF member countries experienced a marginal decline from 48.6%. Leading the pack of LNG exporters in January were the US, Qatar and Australia (Figure 85).

Figure 84: Trend in global monthly LNG exports

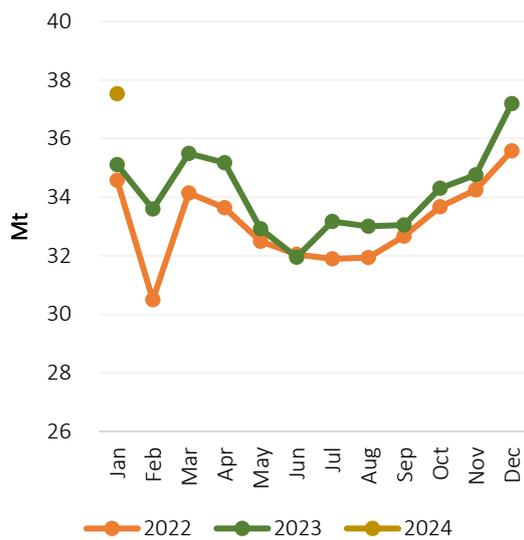
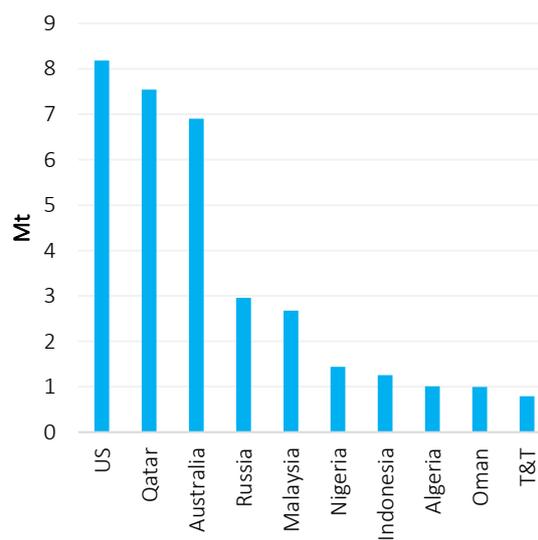


Figure 85: Top 10 LNG exporters in Jan 2024



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.2.1 GECF

In January 2024, LNG exports from GECF member countries and observers surged significantly by 6.1% (1.03 Mt) y-o-y, reaching a record high of 18.09 Mt (Figure 86). This marks the most substantial monthly year-on-year growth since November 2022. Malaysia, Mozambique, Nigeria, Qatar, Russia and Trinidad and Tobago drove the stronger increase in GECF's LNG exports, offsetting weaker exports from Angola and Egypt (Figure 87).

The uptick in Malaysia's LNG exports was fuelled by enhanced feedgas availability following the completion of repair work on the Sabah-Sarawak gas pipeline in December 2022. In Mozambique, the ongoing increase in production from the Coral South FLNG facility propelled its LNG exports upward. Reduced planned maintenance activities at the Bonny LNG facility bolstered Nigeria's LNG exports. Meanwhile, Qatar's LNG facility produced significantly above its nameplate capacity, contributing to the increase in LNG exports. Russia's increased LNG exports were attributed to higher exports from the Portovaya and Yamal LNG facilities. In Trinidad and Tobago, augmented feedgas availability drove the expansion of LNG exports. Conversely, lower feedgas availability resulted in a decline in LNG exports from Angola and Egypt.

Figure 86: Trend in GECF monthly LNG exports

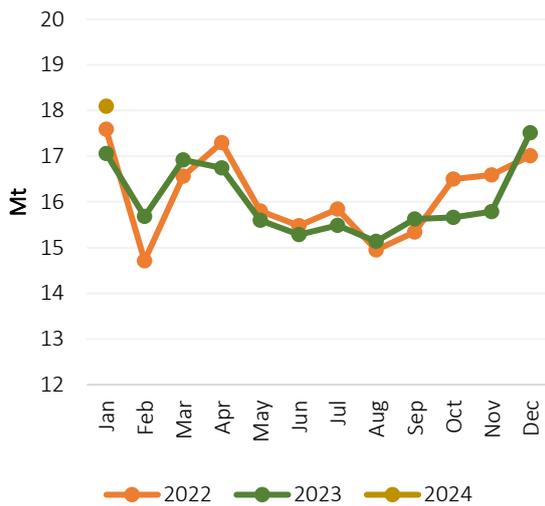
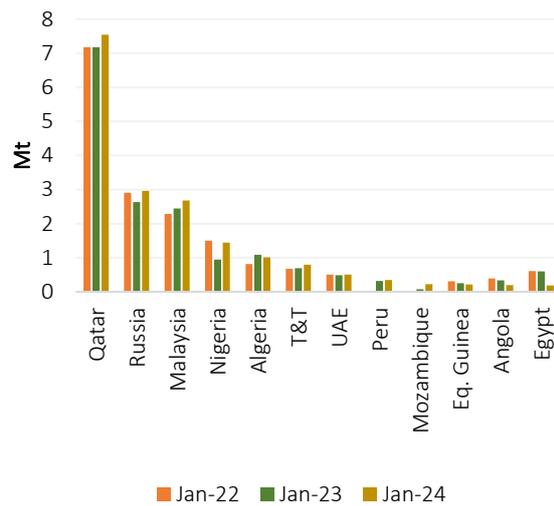


Figure 87: GECF’s LNG exports by country



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.2.2 Non-GECF

In January 2024, LNG exports from non-GECF countries jumped by 7.8% (1.37 Mt) y-o-y increase, reaching 19.06 Mt (Figure 88). This represented the highest monthly export volume for January. The US accounted for most of the increase in non-GECF LNG exports, with Australia making a smaller contribution, offsetting a decrease in LNG exports from Oman (Figure 89).

In the US, the surge in LNG exports was driven by higher LNG production from the Calcasieu Pass and Freeport LNG facilities. The increase in LNG export from Calcasieu Pass was attributed to lower maintenance activity. Meanwhile, the ramp-up in production from the Freeport LNG facility, following its restart in February 2023 after a seven-month outage, boosted its LNG exports. The uptick in Australia’s LNG exports was attributed to lower maintenance activity at the QCLNG facility. In contrast, weaker LNG exports from the Qalhat LNG facility contributed to the drop in Oman’s LNG exports.

Figure 88: Trend in non-GECF monthly LNG exports

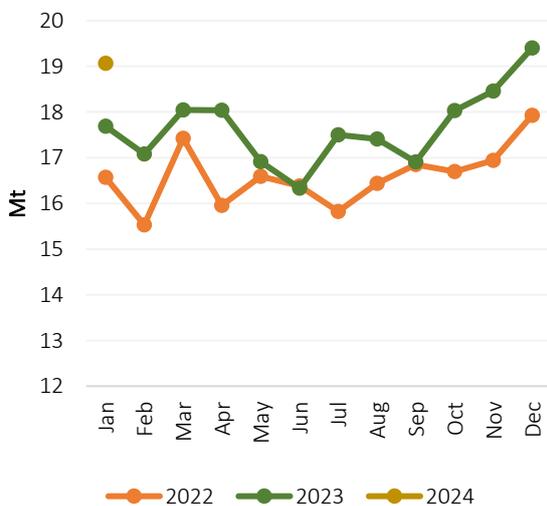
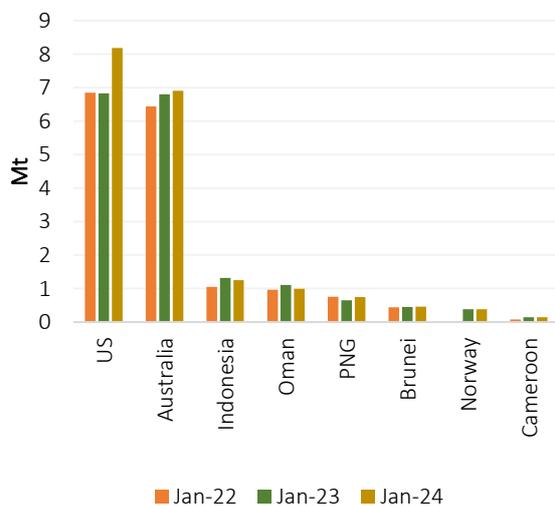


Figure 89: Non-GECF’s LNG exports by country



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.3 Global LNG Reloads

In January 2024, global LNG was relatively unchanged at 0.37 Mt compared to the same period in 2023 (Figure 90). Although global LNG reloads were stable, China, Lithuania and Singapore recorded significant increases in LNG reloads while the reloads from Spain fell sharply (Figure 91).

The increase in LNG reloads from China and Singapore stemmed from robust spot LNG demand in other Asian countries. Chinese LNG buyers have become increasingly active in the LNG trading business, leveraging their surplus contracted LNG supplies to trade excess volumes in the global market. Meanwhile, Lithuania reloaded one LNG cargo for re-export to Finland. Conversely, the decline in Spain's LNG reloads was driven by a reduction in intra-regional LNG trade, notably lower re-exports to Italy.

Figure 90: Trend in global monthly LNG reloads

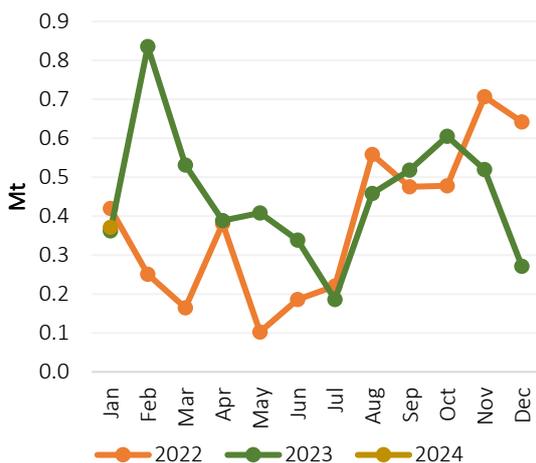
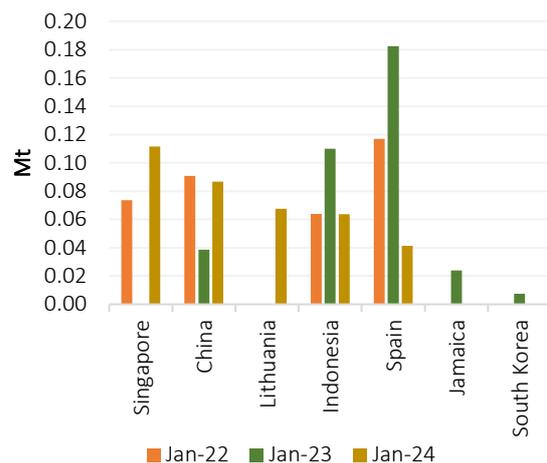


Figure 91: Global LNG reloads by country



Source: GECF Secretariat based on data from ICIS LNG Edge

4.2.4 Arbitrage Opportunity

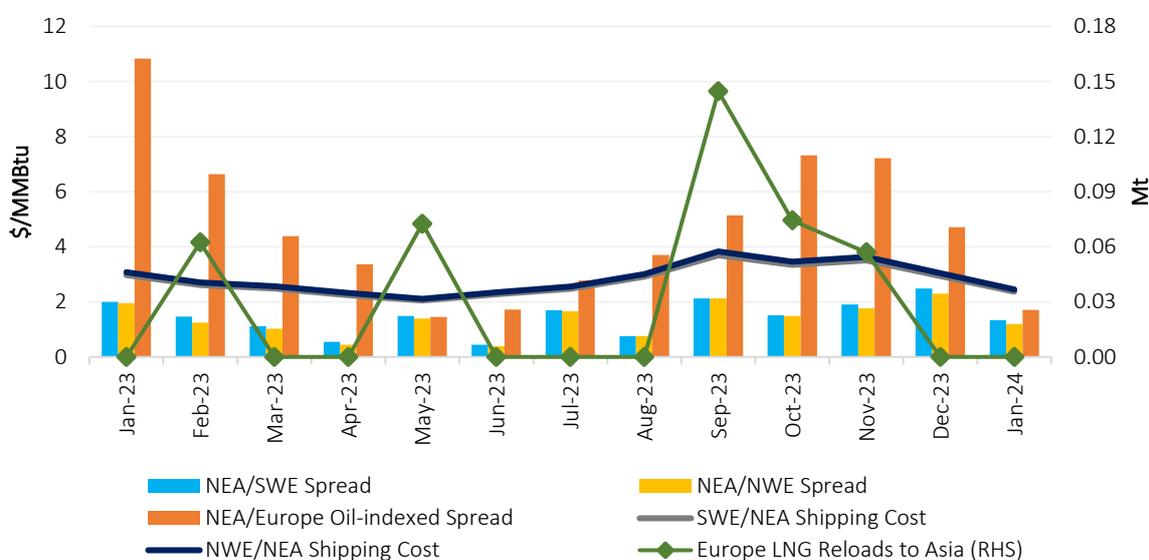
In January 2024, the arbitrage opportunity for LNG reloads from Europe to Asia Pacific was closed. The absence of the arbitrage opportunity was attributed to the spot LNG price spreads between Asia Pacific and Europe holding a significant discount to the spot LNG shipping costs between both markets (Figure 92). Similarly, the price spread between spot LNG prices in Asia Pacific and oil-indexed prices in Europe was at a discount to the spot LNG shipping cost.

The price differentials between NEA/SWE and NEA/NWE decreased by 46% (\$1.15/MMBtu) and 48% (\$1.10/MMBtu) month-on-month (m-o-m), reaching \$1.34/MMBtu and \$1.20/MMBtu, respectively. This drop in spot LNG price spreads between Asia Pacific and Europe was driven by a significant decline in Asian spot LNG prices compared to European ones. Similarly, the differential between spot LNG prices in Asia Pacific and oil-indexed prices in Europe decreased by 64% (\$3.00/MMBtu) m-o-m to \$1.71/MMBtu.

Shipping costs for the NEA/SWE and NEA/NWE spot routes declined by 19% (\$0.58/MMBtu) m-o-m each to \$2.37/MMBtu and \$2.45/MMBtu, respectively. However, it's important to note that shipping costs can vary based on the specific vessels used. Medium to long-term chartered vessels may have lower costs compared to spot shipping rates. There were no LNG reloads for re-export to Asia Pacific in January 2024.

Compared to January 2023, the NEA/SWE and NEA/NWE price spreads fell by 33% (\$0.66/MMBtu) and 39% (\$0.75/MMBtu) year-on-year (y-o-y), respectively. Likewise, the price spread between NEA spot LNG and European oil-indexed gas prices, as well as the NEA/SWE and NEA/NWE spot shipping costs decreased by 84% (\$9.12/MMBtu), 20% (\$0.60/MMBtu) and 21% (\$0.63/MMBtu) y-o-y, respectively.

Figure 92: Price spreads & shipping costs between Asia & Europe spot LNG markets

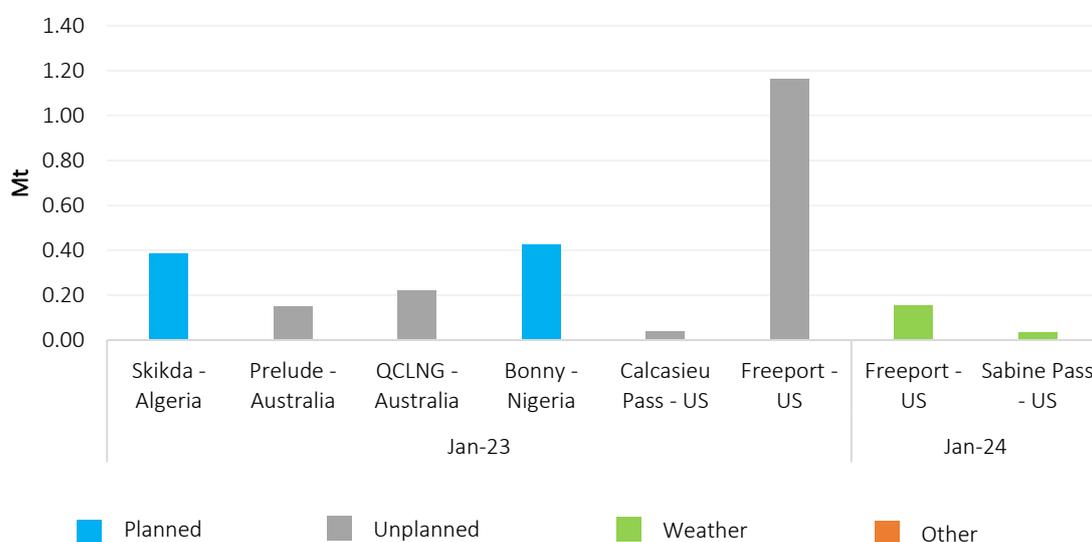


Source: GECF Secretariat based on data from GECF Shipping Model, Argus and ICIS LNG Edge

4.2.5 Maintenance Activity at LNG Liquefaction Facilities

In January 2024, the combined impact of scheduled maintenance, unexpected shutdowns, and other factors at liquefaction plants worldwide amounted to 0.19 Mt, marking a significant decrease from 2.37 Mt in January 2023 (Figure 93). The main activities at liquefaction facilities were weather related outages at the Freeport and Sabine Pass LNG facilities in the US.

Figure 93: Maintenance activity at LNG liquefaction facilities during January (2023 and 2024)



Source: GECF Secretariat based on information from Argus, ICIS LNG Edge and Refinitiv

4.2.6 Other Developments

EU joint gas purchasing platform to be expanded for medium-term tenders – PRISMA, the operator of the EU's joint gas purchasing platform, announced in mid-January 2024, the European Commission's plan to extend the platform's scope to encompass medium-term tenders, spanning up to five years. Since its establishment, the EU's joint gas purchasing platform has primarily facilitated gas demand aggregation and supply tenders for short-term contracts, covering the period until March 2025. This expansion means that EU gas buyers can submit their demand for seasonal six-month periods, covering the period April 2024 to October 2029 with the first medium-term tender expected in February 2024.

Sonatrach signs agreement for regasification capacity at UK's Grain LNG terminal – On January 31, 2024, the UK's National Grid announced a 10-year agreement with Algeria's Sonatrach for storage and redelivery capacity at the UK's Grain LNG import terminal. This extension builds upon an existing arrangement and grants access to 3 Mtpa (125 GWh/d) of regasification capacity at the LNG terminal starting January 2029. Previously, the National Grid launched a competitive auction, between September and November 2023, for 9 Mtpa of regasification capacity from the terminal, with this agreement marking the first awarded contract from the process.

Wilson New Energies starts pre-FEED for two FLNG projects in Nigeria – In late January 2024, Wilson New Energies commenced pre-front-end engineering and design (pre-FEED) for two floating LNG (FLNG) projects in Nigeria. These projects, owned by Ace Gas and FLNG, and Transoceanic Gas & Power, respectively, will each have a capacity of 3 Mtpa. Transoceanic's FLNG project is situated offshore Pennington, while the Ace Gas and FLNG project is located offshore Escravos. The LNG produced from both FLNGs will be exported to the international market. Additionally, each FLNG project will produce 0.15 Mtpa of liquefied petroleum gas (LPG) destined for the domestic market.

In terms of LNG agreements, five contracts were signed in January 2024 (Table 8).

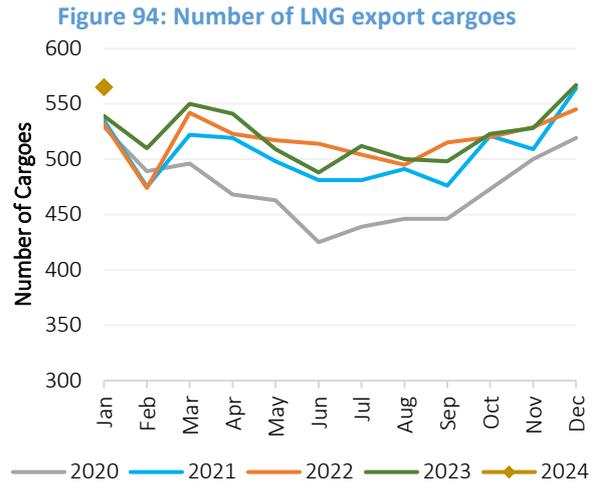
Table 8: New LNG sale agreements signed in January 2024

Contract Type	Exporting Country	Project	Seller	Importing Country	Buyer	Volume (Mtpa)	Duration (Years)
SPA	Portfolio		Vitol Asia	India	GAIL	1	10
SPA	Canada	Ksi Lisims LNG	Ksi Lisims LNG	Portfolio	Shell	2	20
SPA	Mexico	Saguaro Energia LNG	Mexico Pacific LNG	Portfolio	ExxonMobil	1.2	20
SPA	Qatar		QatarEnergy	Bangladesh	Excelerate	1	15
SPA	UAE		ADNOC	India	GAIL	0.5	10

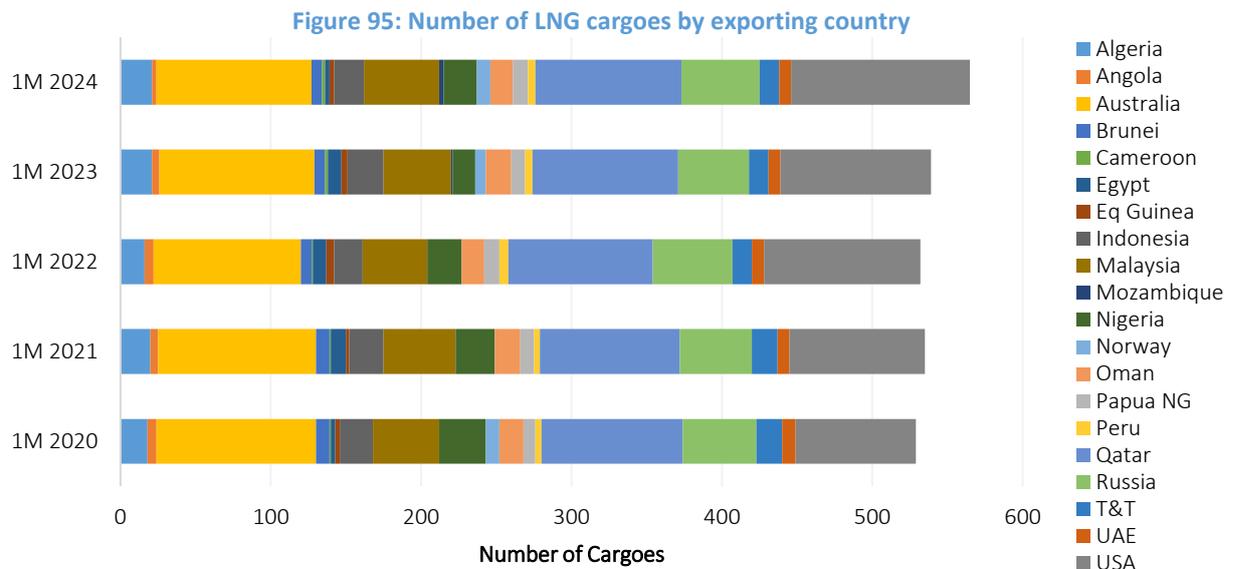
Source: GECF Secretariat based on Project Updates and News

4.2.7 LNG Shipping

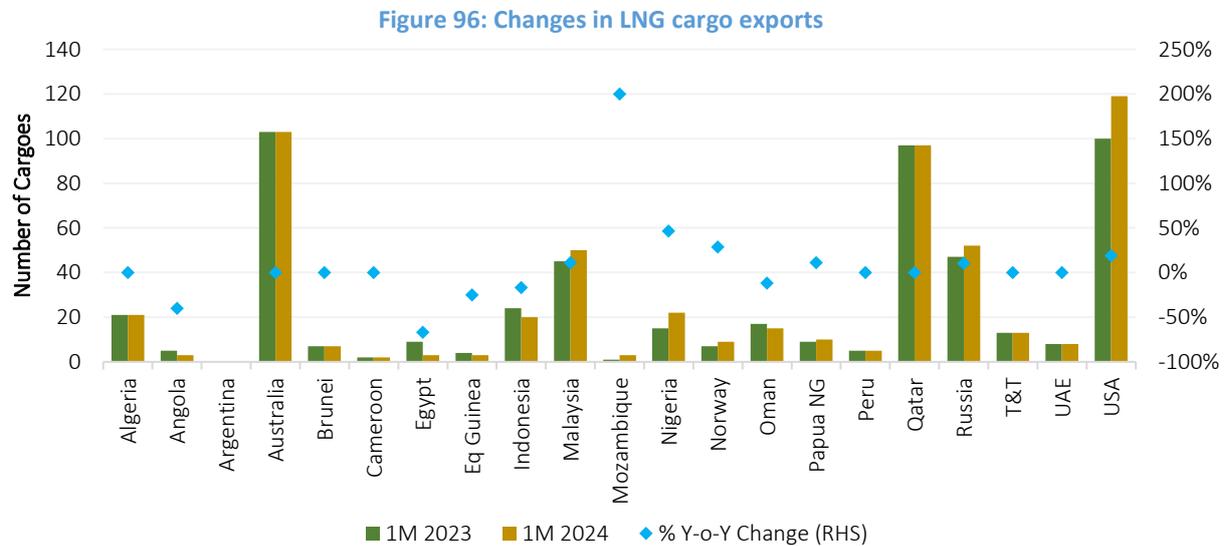
In January 2024, 565 LNG cargoes were recorded, just two shipments less than the previous month but marking a 5% increase compared to one year ago (Figure 94). There continues to be an increase in the number of LNG cargo exports each year, and January 2024 was by far the highest performing month of January over the past five years (Figure 95). Compared with 2023, the increase observed in January 2024 was driven by the US, which exported 19 more cargoes. GECF countries Nigeria (7), Russia (5) and Malaysia (5) also recorded a y-o-y increase in exports (Figure 96).



Source: GECF Secretariat based on data from ICIS LNG Edge



Source: GECF Secretariat based on data from ICIS LNG Edge

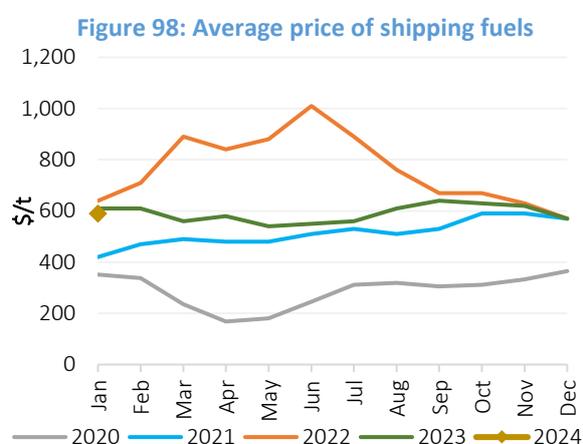
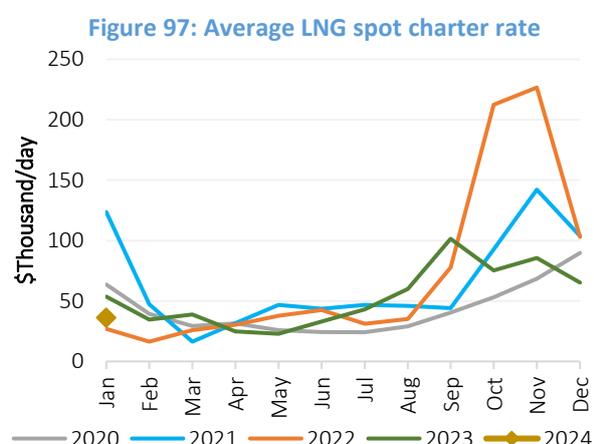


Source: GECF Secretariat based on data from ICIS LNG Edge

In January 2024, the monthly average spot charter rate for steam turbine LNG carriers decreased by 44% m-o-m, to reach \$36,300 per day (Figure 97). Charter rates have been on a downward trend in recent months and this month's average rate was also 32% lower y-o-y, as well as \$28,500 less than the five-year average price for the month. Softening of the average charter rates was also observed for the other segments of the global LNG carrier fleet during the month. The average spot charter rate for TDFE vessels decreased by 47% m-o-m to reach \$59,600 per day, while the average spot charter rate for two-stroke vessels decreased by 44% m-o-m to reach \$79,800 per day.

The average charter rate for January 2024 was the lowest level for five years, excluding 2022. This was driven by sustained softening of rates during the month, leading to losses of around 40% from the start of the month. The shipping market continued the trend of loosening, which was observed in December 2023 with the closing of the inter-basin arbitrage. Further softening was observed in January 2024, as a number of carriers completed short-term engagements for the winter season and returned to the spot market. Thus far, complications in the transit of LNG carriers through the Panama and Suez Canals have not made a significant impact to the waning charter rates.

In January 2024, the average price of the leading shipping fuels was \$590 per tonne (Figure 98), which was 4% higher m-o-m, but 3% lower y-o-y.



Source: GECF Secretariat based on data from ICIS LNG Edge and Argus

Source: GECF Secretariat based on data from Bunker Ports News Worldwide and Argus

The GECF's assessment of LNG spot shipping costs for steam turbine carriers in January 2024 is shown in Table 9.

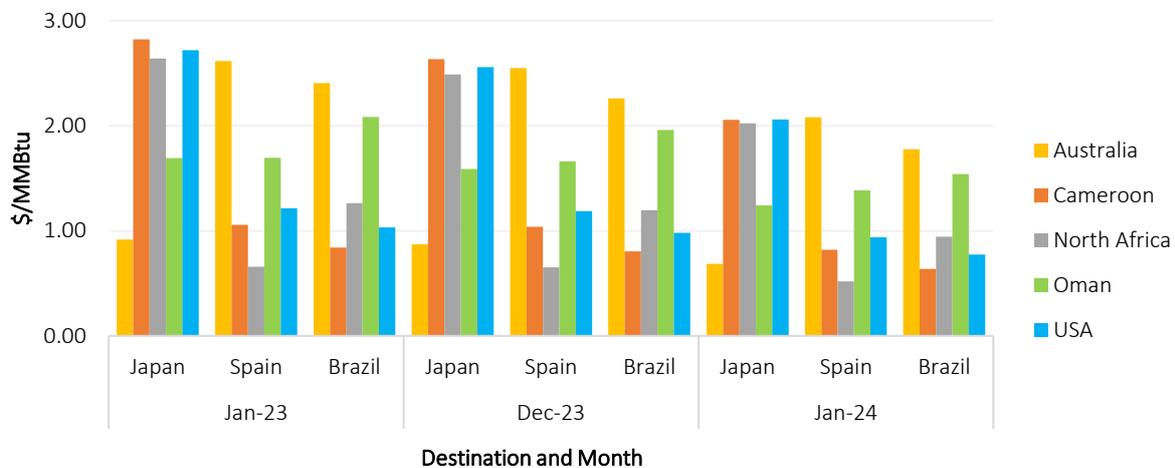
Table 9: Shipping costs for LNG spot cargoes from selected regions (\$/MMBtu) – January 2024

		Destination						
		Japan	China	India	UK	Spain	Argentina	Brazil
LNG Supplier	To							
	From							
	Spot LNG delivered price	10.05	10.05	9.60	8.67	8.85	8.95	8.90
	Australia	0.69	0.72	0.83	2.14	2.08	1.62	1.78
	Cameroon	2.06	2.03	1.36	0.89	0.82	0.96	0.64
	North Africa	2.02	2.01	1.14	0.59	0.52	1.34	0.94
	Oman	1.24	1.16	0.27	1.45	1.38	1.55	1.54
USA	2.06	2.26	2.20	0.96	0.94	1.28	0.78	

Source: GECF Shipping Cost Model

In January 2024, the average LNG carrier spot charter rate and the delivered spot LNG prices decreased relative to the previous month, while there was a slight increase in the cost of LNG shipping fuels. As a result, there was a net decrease in the LNG spot shipping costs for steam turbine carriers by up to \$0.58/MMBtu on certain routes, relative to the previous month (Figure 99). When compared with one year ago, in January 2024, the monthly average spot charter rate and delivered spot LNG prices were much lower, resulting in LNG shipping costs of up to \$0.77/MMBtu lower.

Figure 99: LNG spot shipping costs for steam turbine carriers



Source: GECF Shipping Cost Model

LNG trade faces continued disruptions in the Red Sea: The ongoing tensions in Middle East are having a notable effect on global maritime trade, including LNG exports. The hotspot in the region is the Bab el-Mandeb strait, which links the Gulf of Aden with the Red Sea, heading towards the Suez Canal. The Suez Canal is a major maritime route, accounting for around 8% of LNG cargo shipments in 2023. In January 2024, QatarEnergy rerouted at least six of its LNG carriers away from the Suez Canal. These vessels, which were on the Qatar-Europe delivery route, were then forced to add around 12 days to their transit, by taking the alternative passage around the Cape of Good Hope instead. The Cape of Good Hope route is also noted to add around six days to cargo deliveries from the US to India, compared with transit through the Suez Canal. Overall, a 70% drop in the number of LNG carriers sailing through the Suez Canal was reported in January 2024, compared with the previous month.

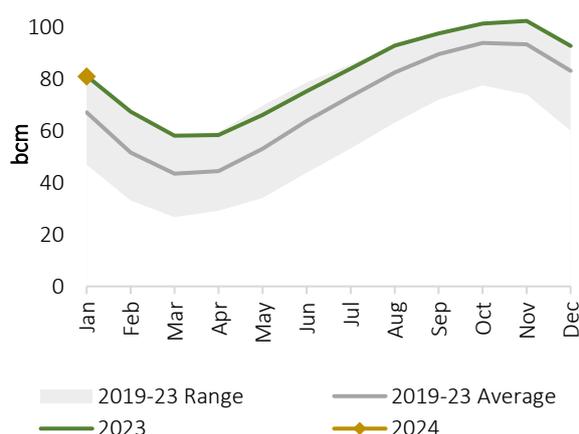
5 Gas Storage

5.1 Europe

EU countries continue to experience net gas withdrawals as the 2023/24 winter season progresses. In January 2024, the average daily volume of gas in storage decreased to 81.1 bcm, down from 93.0 bcm in the previous month (Figure 100). The average capacity utilisation of the UGS sites in the region fell to 78% with 0.2 bcm less gas in storage than the average level recorded in January 2023.

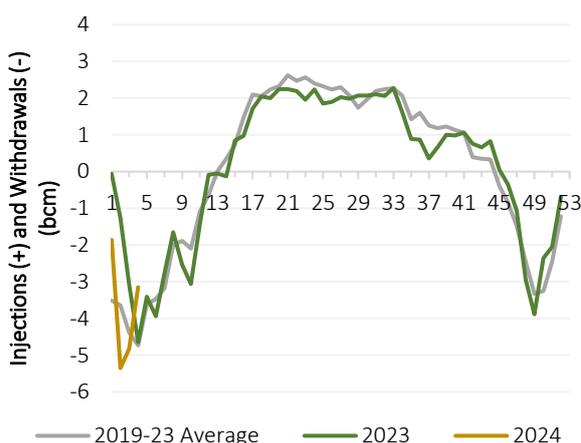
In addition, there was 13.9 bcm more gas in storage than the five-year average for the month of January. Net gas withdrawals were observed during all thirty-one days of the month, with a total of 17.7 bcm of gas taken out of storage, compared with 0.9 bcm of gas injections into UGS sites.

Figure 100: Underground gas storage in the EU



Source: GECF Secretariat based on data from AGSI+

Figure 101: Weekly rate of EU UGS level changes



Source: GECF Secretariat based on data from AGSI+

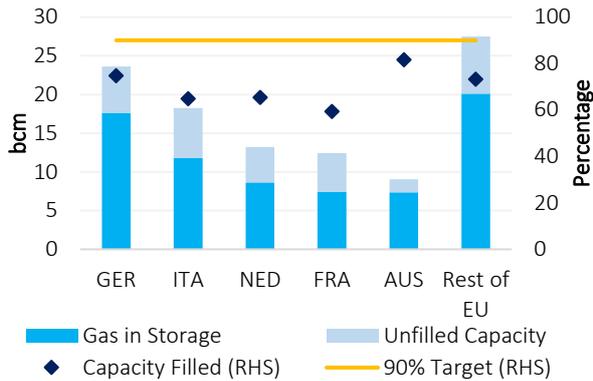
Starting in 2022, the European Commission mandated EU member states to fill UGS sites according to targets set throughout the year. In 2023, the target was set to a minimum of 90% filled capacity by November 1. However, EU countries went beyond this minimum target, and the capacity utilisation in the region reached almost 100% by the middle of November 2023.

In January 2024, the average rate of gas withdrawal was 3.8 bcm/week, greater than the 2.3 bcm/week recorded in 2023 but lower than the five-year average withdrawal rate for that particular month at 4.1 bcm/week (Figure 101). As of 31 January 2024, a total of 30.6 bcm of gas was taken out of storage during the 2023/24 winter season.

The top EU countries for UGS capacity are Germany, Italy, Netherlands, France and Austria. By the end of January 2024, gas storage levels in Austria and Germany were still at least three-quarters of capacity, standing at 82% and 75%, respectively (Figure 102). The gas storage level in France declined to 59%.

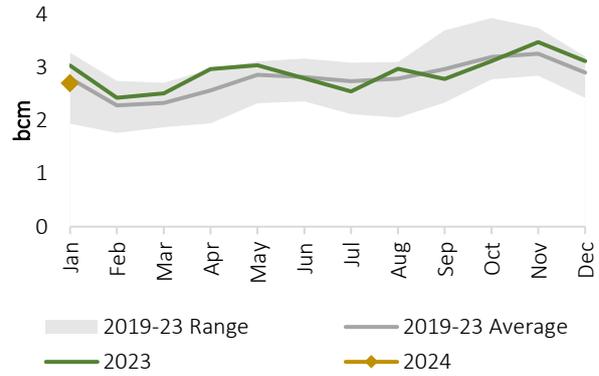
The EU has 5.0 bcm of LNG storage capacity, primarily concentrated in Spain (40%) and France (16%). In January 2024, the combined amount of LNG stored in the EU countries was 2.7 bcm (Figure 103). This quantity represented a 13% decrease m-o-m and was 3% lower than the five-year historical average for that month.

Figure 102: UGS in EU countries as of Jan 31, 2024



Source: GECF Secretariat based on data from AGSI+

Figure 103: Total LNG storage in the EU

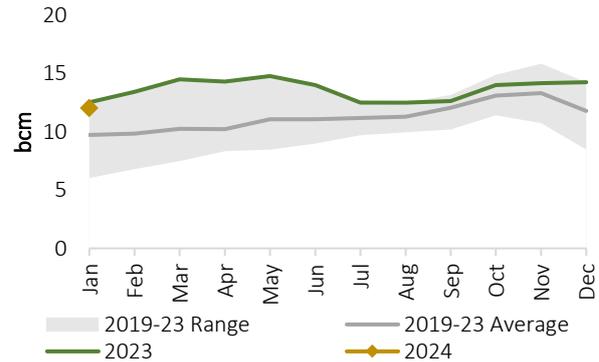


Source: GECF Secretariat based on data from ALSI

5.2 Asia

Japan and South Korea possess a combined capacity of 17 bcm of LNG storage. The combined volume of LNG in storage in both countries was estimated at 12.0 bcm in January 2024, which was 16% lower than one month ago (Figure 104). This volume was also 4% lower y-o-y but was 2.3 bcm higher than the five-year average for the month. Storage in Japan and South Korea accounted for 5.9 bcm and 4.6 bcm, respectively.

Figure 104: LNG in storage in Japan and South Korea

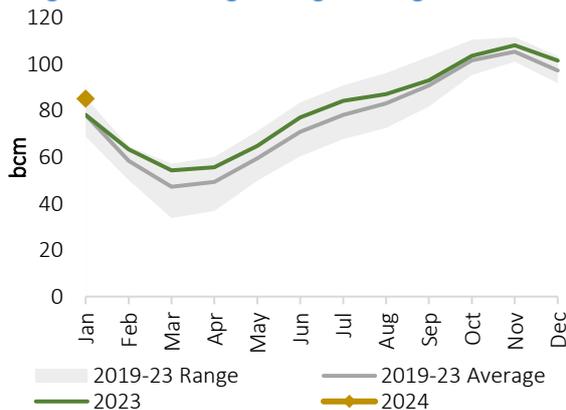


Source: GECF Secretariat based on data from Refinitiv

5.3 North America

The US is also experiencing net gas withdrawals, and the average daily volume of gas in storage in January 2024 decreased to 85.2 bcm, down from 101.5 bcm in the previous month (Figure 105). The average capacity utilisation of UGS sites in the country dropped to 64%. Nevertheless, the high rate of gas stocking in 2023 meant that the level of gas in storage in January 2024 was still 7.0 bcm higher than one year ago, and 7.1 bcm higher than the five-year average. Gas withdrawals during the month was observed at an average rate of 5.8 bcm per week, compared with 2.2 bcm/week in January 2023, and the five-year rate of 3.9 bcm/week (Figure 106).

Figure 105: Underground gas storage in the US



Source: GECF Secretariat based on data from US EIA

Figure 106: Weekly rate of UGS changes in the US



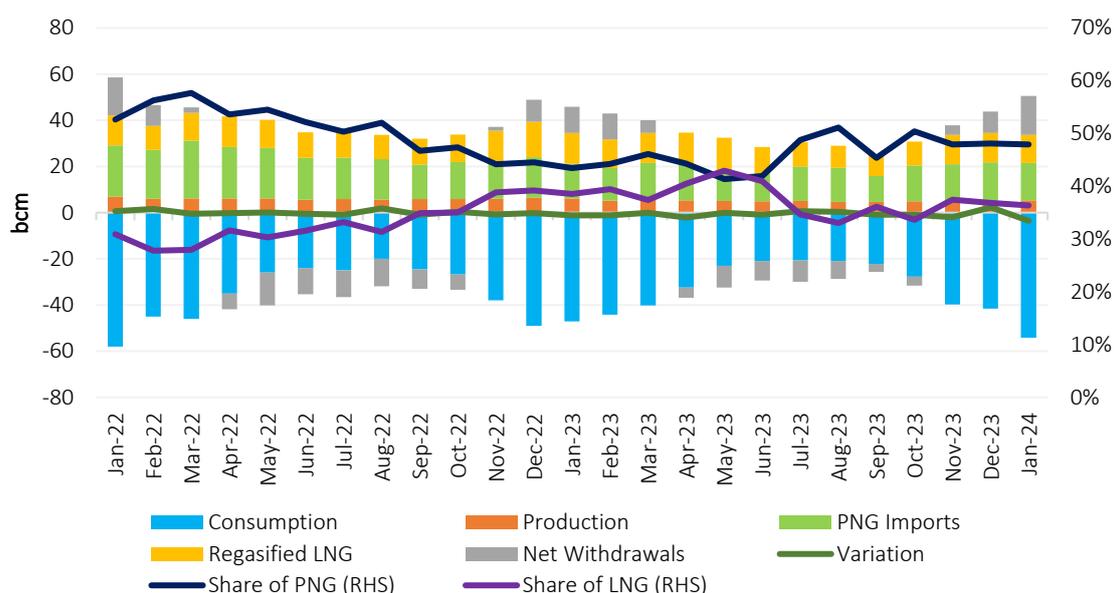
Source: GECF Secretariat based on data from US EIA

6 Gas Balance

6.1 EU + UK

In January 2024, the share of regasified LNG in the gas supply for the EU and the UK decreased marginally to 36% compared to the previous month, marking a significant decline from January 2023. Meanwhile, the share of gas imports via pipelines remained stable at 48%, indicating a notable increase from 43% a year earlier. (Figure 107). The m-o-m decrease in the share of regasified LNG was primarily due to a sharper decline in regasified LNG send-out compared to pipeline gas imports. This trend, compared to January 2023, resulted in a reduced share of regasified LNG and an increase in the share of pipeline gas imports in the gas supply for the EU and the UK.

Figure 107: EU + UK monthly gas balance



Note: Variation refers to losses and statistical differences

Source: GECF Secretariat based on data from AGSI+, JODI Gas and Refinitiv

Table 10 below provides data on the gas supply and demand balance for the EU + UK for the month of January 2024.

Table 10: EU + UK gas supply/demand balance for January 2024 (bcm)

	2023	Jan-23	Jan-24	YTD 2023	YTD 2024	Change* y-o-y	Change** 2023/2022
(a) Gas Consumption	380.85	47.10	54.10	47.10	54.10	15%	15%
(b) Gas Production	61.60	6.21	5.30	6.21	5.30	-15%	-15%
Difference (a) - (b)	319.25	40.89	48.80	40.89	48.80	19%	19%
PNG Imports	174.88	15.01	16.18	15.01	16.18	8%	8%
Regasified LNG	143.15	13.31	12.26	13.31	12.26	-8%	-8%
Net Withdrawals	-4.86	11.40	16.85	11.40	16.85	48%	48%
Variation	6.08	1.18	3.51	1.18	3.51		

Source: GECF Secretariat based on data from AGSI+, JODI Gas and Refinitiv

Note: variation refers to statistical differences and losses

(*): y-o-y change for Jan 2024 compared to Jan 2023

(**): y-o-y change for YTD 2024 compared to YTD 2023

6.2 OECD

Table 11 below provides data on the gas supply and demand balance for all OECD countries, including OECD Americas, OECD Asia Oceania and OECD Europe for the month of October 2023.

Table 11: OECD's gas supply/demand balance for October 2023 (bcm)

	2022	Oct-22	Oct-23	YTD 2022	YTD 2023	Change* y-o-y	Change** 2023/2022
(a) OECD Gas Consumption	1806.4	129.4	131.5	1461.2	1428.6	1.6%	-2.2%
(b) OECD Gas Production	1671.8	144.3	143.9	1387.7	1407.6	-0.3%	1.4%
Difference (a) - (b)	134.6	-14.9	-12.4	73.5	21.0	-16.9%	-71.4%
OECD LNG Imports	346.9	27.3	25.3	279.8	270.6	-7.5%	-3.3%
LNG Imports from GECF	161.8	12.2	10.8	128.0	116.6	-11.3%	-8.9%
LNG Imports from Non-GECF	185.1	15.2	14.5	151.8	154.0	-4.5%	1.4%
OECD LNG Exports	223.2	18.7	20.4	184.4	196.3	9.0%	6.5%
Intra-OECD LNG Trade	152.7	12.4	12.1	123.4	125.5	-1.8%	1.8%
OECD Pipeline Gas Imports	632.0	47.7	39.1	542.2	410.4	-17.9%	-24.3%
OECD Pipeline Gas Exports	565.1	45.9	38.2	476.2	399.0	-16.7%	-16.2%
Stock Changes and losses	56.0	25.2	18.1	87.9	64.6		

Source: GECF Secretariat based on data from ICIS LNG Edge and IEA Monthly Gas Statistics

(*): y-o-y change for Oct 2023 compared to Oct 2022

(**): y-o-y change for YTD 2023 compared to YTD 2022

6.3 India

Table 12 below provides data on the gas supply and demand balance for India for the month of December 2023.

Table 12: India's gas supply/demand balance for December 2023 (bcm)

	2022	Dec-22	Dec-23	2022	2023	Change* y-o-y	Change** 2023/2022
(a) India Gas Consumption	60.24	5.02	5.47	60.24	62.31	8.9%	3.4%
(b) India Gas Production	33.46	2.89	3.08	33.46	35.09	6.6%	4.9%
Difference (a) - (b)	26.78	2.14	2.39	26.78	27.22	12.1%	1.6%
India LNG Imports	28.07	1.69	2.64	28.07	30.27	56.5%	7.9%
LNG Imports from GECF	22.15	1.31	1.97	22.15	23.57	51.0%	6.4%
LNG Imports from Non-GECF	5.92	0.38	0.67	5.92	6.70	75.0%	13.2%
Stock Changes and losses	1.29	-0.45	0.25	1.29	3.05		

Source: GECF Secretariat based on data from ICIS LNG Edge and India's PPAC

(*): y-o-y change for Dec 2023 compared to Dec 2022

(**): y-o-y change for 2023 compared to 2022

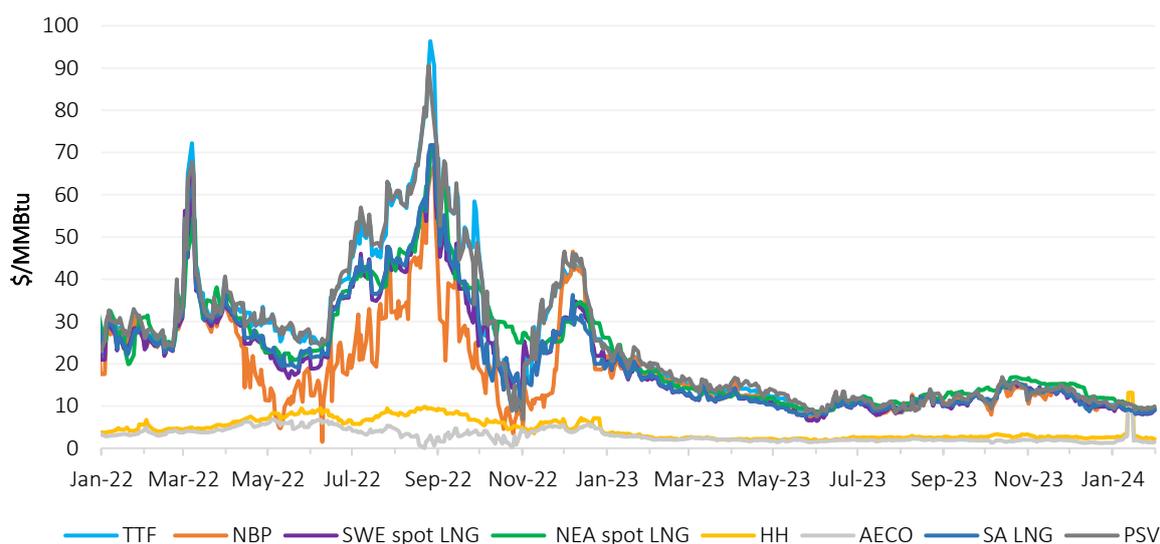
7 Energy Prices

7.1 Gas Prices

7.1.1 Gas & LNG Spot Prices

In January 2024, gas and LNG spot prices in Europe and Asia witnessed a marked decrease for the second consecutive month, with volatility staying relatively low (Figure 108 and Figure 109). The downward trend in prices was sustained by bearish fundamentals, including strong supply, elevated storage levels and weak demand across these regions. Moreover, despite several LNG vessel diversions from the Red Sea, escalating geopolitical tensions had only a marginal effect on prices. Going forward, weather conditions are expected to play a significant role in shaping spot prices.

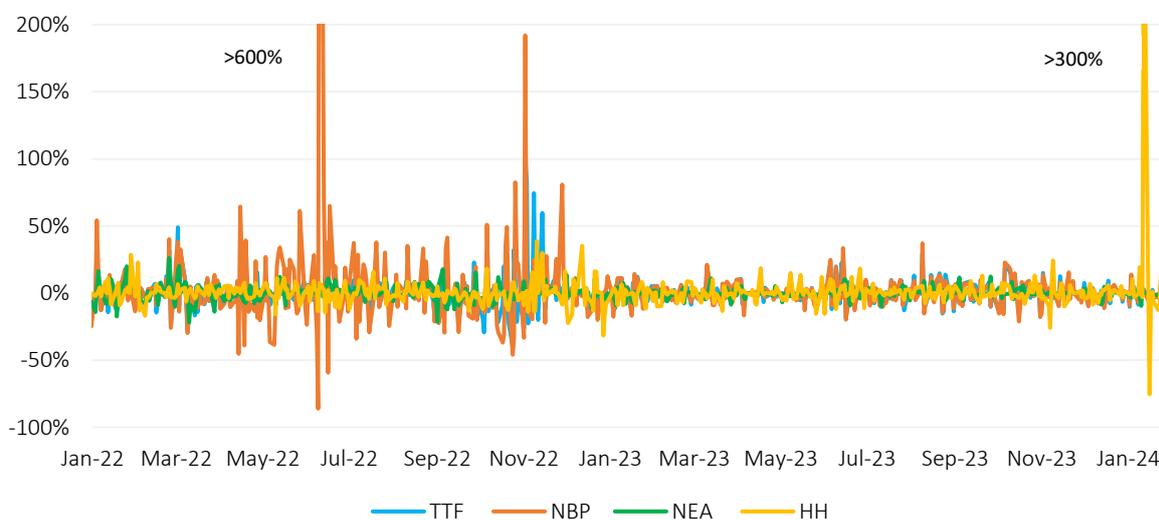
Figure 108: Daily gas & LNG spot prices



Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

Note: SA LNG price is an average of the LNG delivered prices for Argentina, Brazil and Chile based on Argus assessment.

Figure 109: Daily variation of spot prices



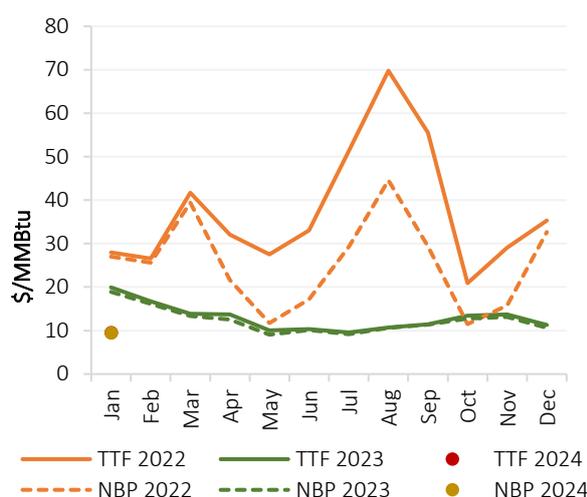
Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

7.1.1.1 European Spot Gas and LNG Prices

In January 2024, TTF spot gas prices averaged \$9.54/MMBtu, reflecting a significant 16% decline m-o-m and a 52% decline y-o-y. In addition, NBP spot prices averaged \$9.46/MMBtu, reflecting an 11% decrease m-o-m and a 50% decrease y-o-y (Figure 110). The SWE spot LNG prices averaged \$8.76/MMBtu in January 2024 (17% decrease m-o-m and 53% decrease y-o-y). As for the PSV spot price, it averaged \$9.95/MMBtu in January 2024, a 15% decrease m-o-m and a 54% decrease y-o-y.

European gas and LNG spot prices fell for the second consecutive month, with market fundamentals maintaining a relative balance. Despite a few cold spells, overall mild weather conditions prevailed, leading to moderately soft gas demand. A steady gas supply from Norway, robust LNG supplies and storage withdrawals contributed to a stable supply side. In the UK, strong winds disrupted berthing at Milford Haven, affecting some LNG deliveries at the Dragon regasification terminal and impacting LNG send-out. However, this did not significantly influence prices. Daily TTF spot prices stayed below \$11/MMBtu throughout the month.

Figure 110: Monthly European spot gas prices



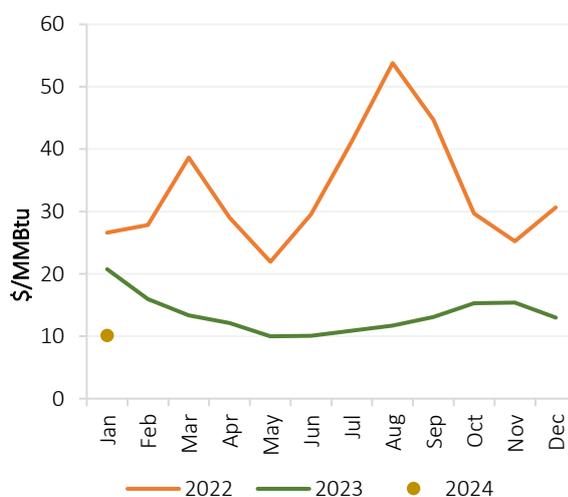
Source: GECF Secretariat based on data from Refinitiv Eikon

7.1.1.2 Asian Spot LNG Prices

In January 2024, the average North East Asia (NEA) spot LNG price experienced a decrease of 22% m-o-m, reaching an average of \$10.10/MMBtu. This represents a 51% decrease y-o-y (Figure 111).

Asian LNG prices continued their downward trend, influenced by persistently weak demand attributed to mild weather, strong supply and high inventory levels. Additionally, although escalating tensions in the Middle East led to some cargo diversions, the impact on spot prices was minimal. Throughout the month, daily NEA spot LNG prices remained below \$12/MMBtu.

Figure 111: Monthly Asian spot LNG prices



Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

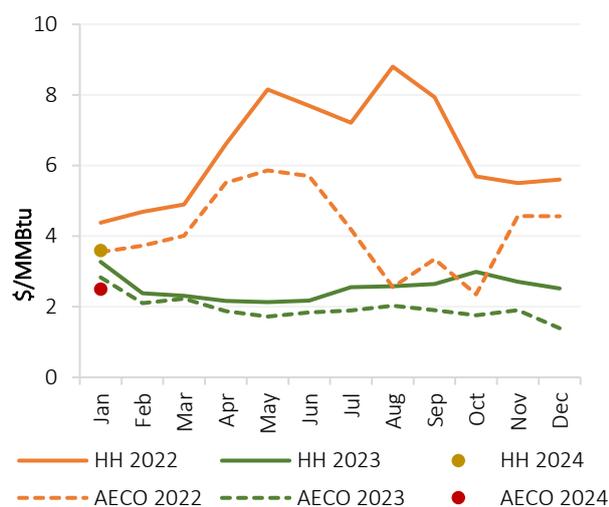
7.1.1.3 North American Spot Gas Prices

In January 2024, the HH spot gas price averaged \$3.59/MMBtu, reflecting an increase of 42% m-o-m and 10% higher than the average price of \$3.27/MMBtu observed in January 2023. (Figure 112).

Henry Hub prices surged significantly due to freezing temperatures causing supply disruptions and increased demand for heating. On January 12, 2024, daily HH spot prices spiked to \$13.20/MMBtu. However, prices quickly retreated to below \$3/MMBtu thereafter.

Similarly, in Canada, the AECO spot price averaged \$2.50/MMBtu in January 2024, reflecting an increase of 80% m-o-m. However, it was 12% lower y-o-y.

Figure 112: Monthly North American gas spot prices



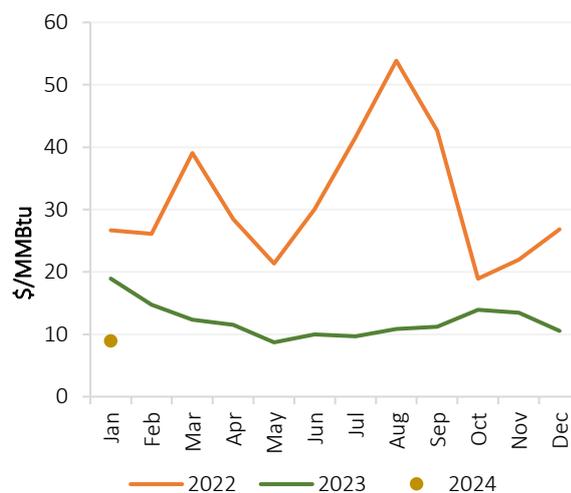
Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

7.1.1.4 South American Spot LNG Prices

In January 2024, the South American (SA) LNG price experienced a 15% m-o-m decrease, averaging \$8.96/MMBtu. Additionally, the SA LNG price was 53% lower compared to the average price of \$18.93/MMBtu observed in January 2023 (Figure 113).

LNG spot prices in South America continued to align with the trends observed in European and Asian spot prices. The average delivered prices for LNG in Argentina, Brazil and Chile averaged \$9.03/MMBtu, \$8.70/MMBtu and \$9.15/MMBtu, respectively.

Figure 113: Monthly South American LNG spot prices



Source: GECF Secretariat based on data from Argus
 Note: SA LNG price is an average of the LNG delivered prices for Argentina, Brazil and Chile based on Argus assessment

7.1.2 Spot and Oil-indexed Long-Term LNG Price Spreads

In January 2024, the average Oil-indexed I LNG price was \$13.02/MMBtu, remaining relatively stable m-o-m, but reflecting a 7% decrease y-o-y. Similarly, the Oil-indexed II LNG price averaged \$9.74/MMBtu, showing a 2% decrease m-o-m and a 6% decrease y-o-y (Figure 114). Furthermore, Oil-indexed I prices maintained an average premium of \$3/MMBtu over NEA spot LNG prices. Additionally, Oil-indexed II prices were at a level similar to NEA spot LNG prices, reversing the discount seen in the previous month.

In Europe, the Oil-indexed III price averaged \$8.39/MMBtu in January 2023, reflecting a 1% increase m-o-m and an 18% y-o-y decrease (Figure 115). Moreover, Oil-indexed III prices were similar to SWE LNG prices.

Figure 114: Asia: Spot and oil-indexed price spread

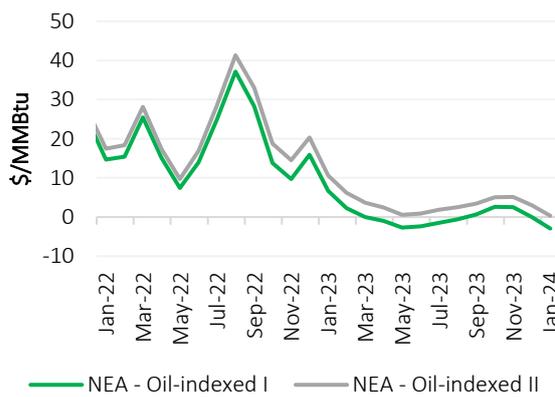
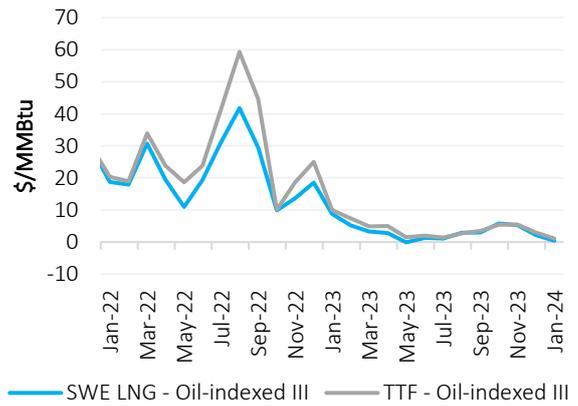


Figure 115: Europe: Spot and oil-indexed price spread



Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

Note: Oil-indexed I LNG prices are calculated using the traditional LTC slope (14.9%) and 6-month historical average of Brent. Oil-indexed II LNG prices are calculated using the 5-year historical average LTC slope (11.4% for 2024) and 3-month historical average of Brent. Oil-indexed III LNG prices are based on Argus' assessment for European oil-indexed long-term LNG prices.

7.1.3 Regional Spot Gas & LNG Price Spreads

In January 2024, the NEA-TTF price spread remained slightly positive, but decreased compared to the previous month. The average premium of NEA LNG spot price over the average TTF spot price was \$0.56/MMBtu. Both benchmark prices experienced bearish movement during the month (Figure 116).

NBP traded at a discount of \$0.08/MMBtu compared to TTF, which was lower than the average discount of \$0.65/MMBtu in the previous month (Figure 117). The NBP-TTF spread remained negative but narrowed due to tightening in the UK gas market, which limited flows along the IUK/BBL pipelines. This situation resulted due to several LNG vessels inability to berth because of high winds, leading to a decrease in LNG send-out in the UK.

Furthermore, the NWE LNG-TTF spread remained negative, with the NWE LNG spot price trading at a discount of \$0.64/MMBtu compared to TTF, indicating high LNG sendout in the region (Figure 118). The NWE LNG-SA LNG price spread was negative, averaging \$0.06/MMBtu (Figure 119). Meanwhile, the NEA-HH and TTF-HH spreads both narrowed to \$6.51/MMBtu and \$5.95/MMBtu, respectively (Figure 120 and Figure 121). The premium of the Asian and European spot prices over North American spot prices decreased during the month.

Figure 116: NEA-TTF price spread

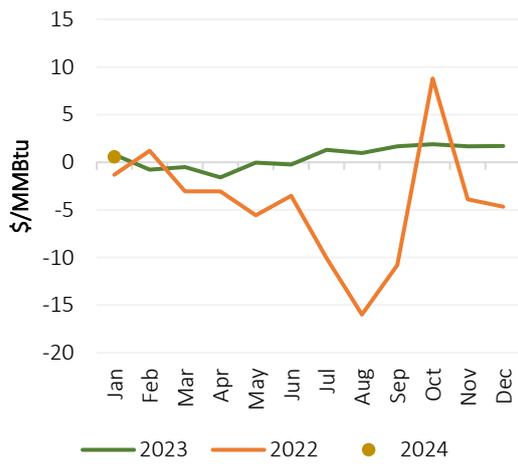


Figure 117: NBP-TTF price spread

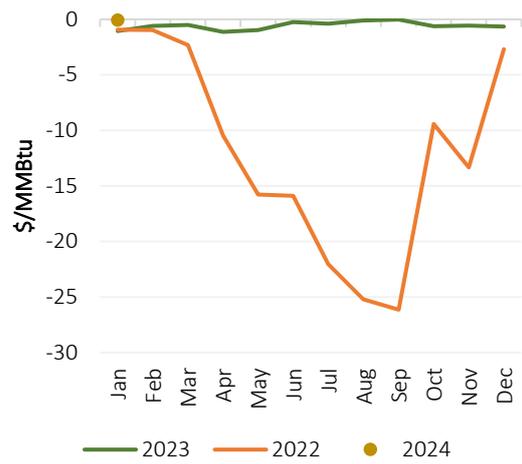


Figure 118: NWE LNG-TTF price spread

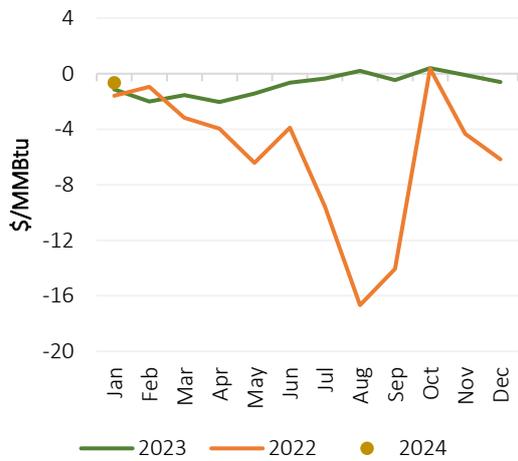


Figure 119: NWE LNG – SA LNG price spread

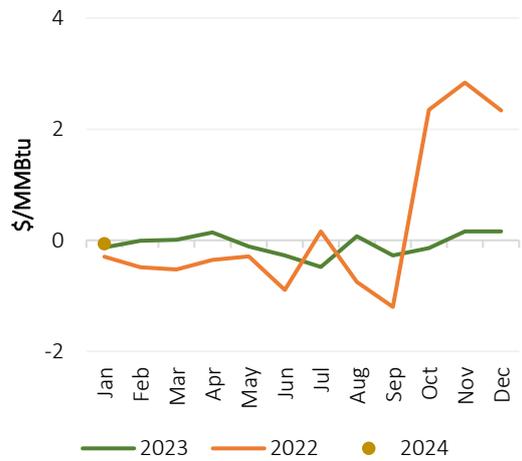


Figure 120: NEA-HH price spread

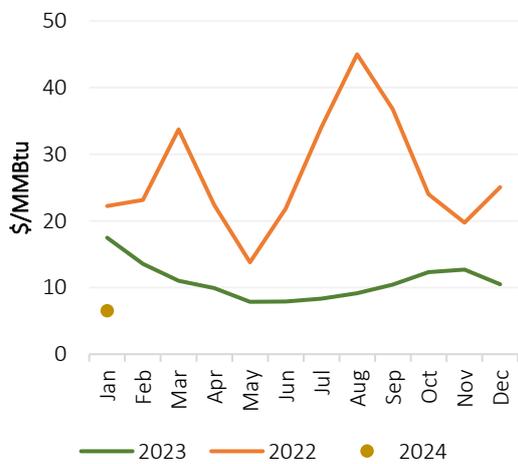
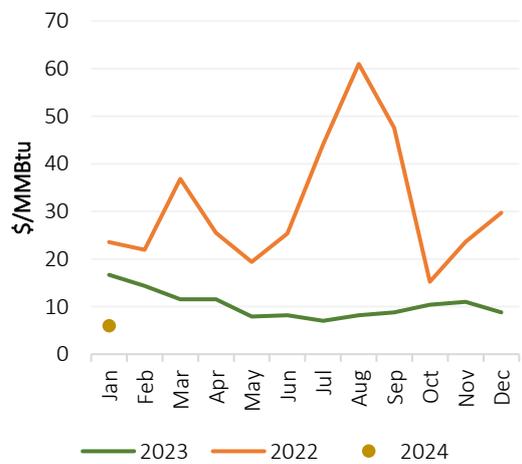


Figure 121: TTF-HH price spread



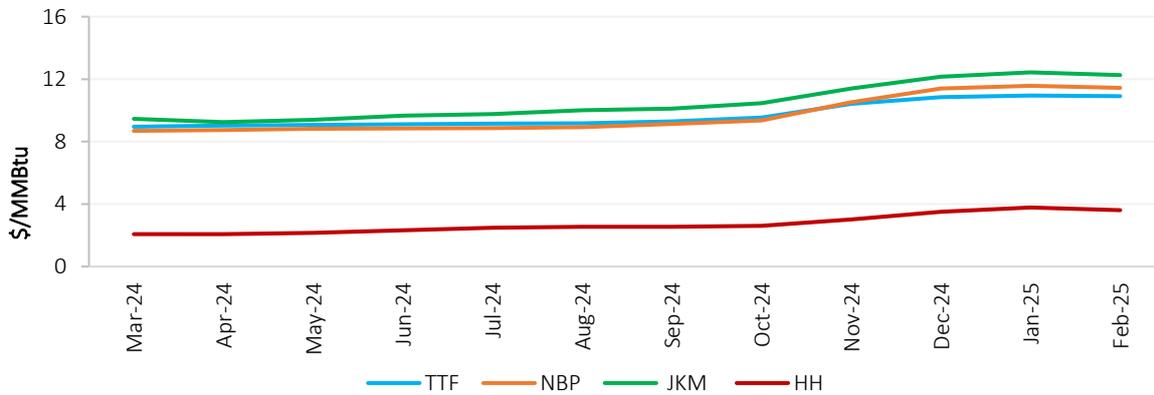
Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

7.1.4 Gas & LNG Futures Prices

For the six-month period spanning from March to August 2024, the JKM-TTF futures price spread is expected to remain positive, reflecting the likelihood for Asian LNG prices to maintain a premium over European spot prices. Moreover, in March 2024, JKM is expected to trade at a premium of \$0.5/MMBtu compared to TTF. Subsequently, in March and April 2024, the JKM-TTF spread is projected to narrow to \$0.2/MMBtu. Additionally, the NBP-TTF spread is expected to be negligible in the same six-month period, with both prices converging (Figure 122).

Moreover, gas and LNG futures prices for TTF, NBP and JKM for the six-month period from March to August 2024, (as of February 6, 2024) are lower than the futures prices expectations considered on January 9, 2023 (as reported in the GECF MGMR January 2024). Moreover, as of February 6, 2024, the average futures prices for TTF, NBP and JKM during the same six-month period are \$9.08/MMBtu, \$8.82/MMBtu and \$9.59/MMBtu, respectively. Meanwhile, the average HH futures price is \$2.28/MMBtu, which is also lower than previous expectations (Figure 123).

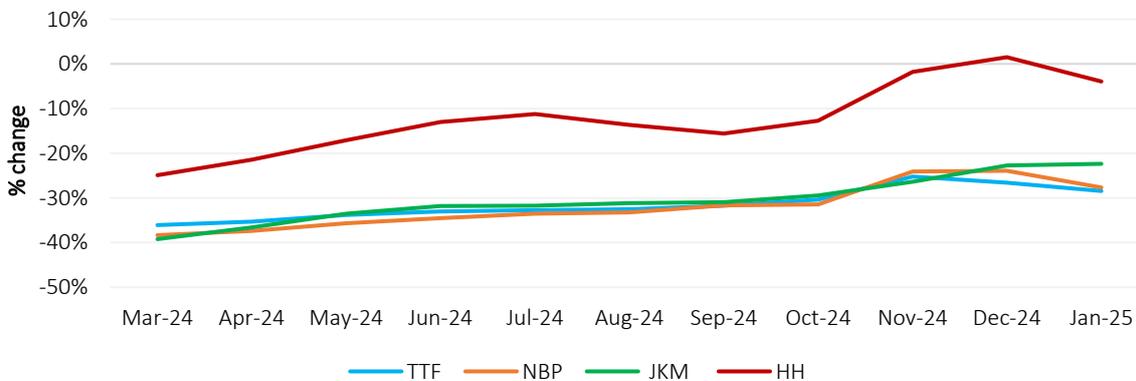
Figure 122: Gas & LNG futures prices



Source: GECF Secretariat based on data from Refinitiv Eikon

Note: Futures prices as of February 6, 2024.

Figure 123: Variation in gas & LNG futures prices



Source: GECF Secretariat based on data from Refinitiv Eikon

Note: Comparison with the futures prices as of January 9, 2024, as reported in GECF MGMR January 2024.

7.2 Cross Commodity Prices

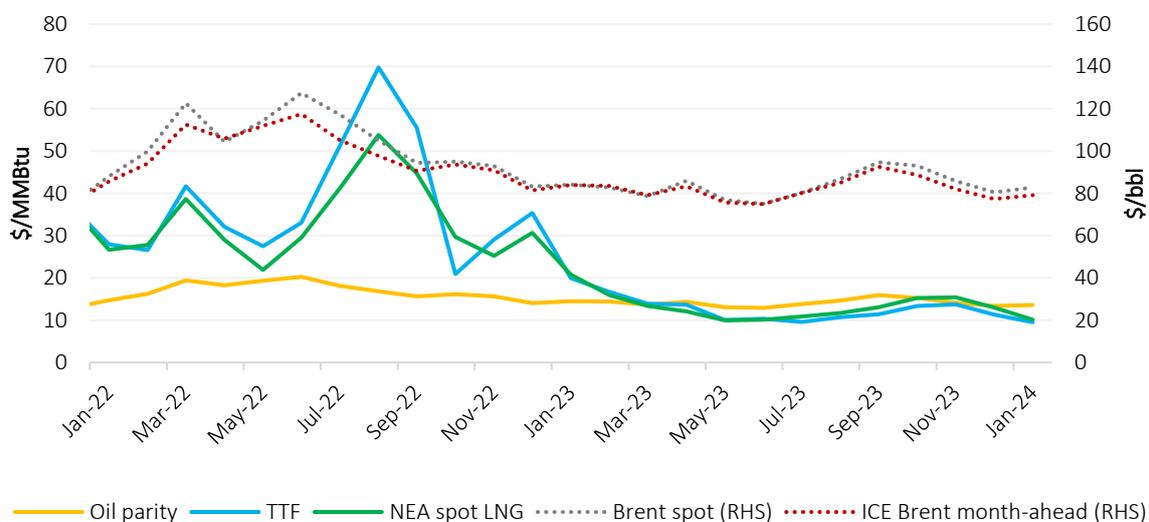
7.2.1 Oil Prices

In January 2024, the average Brent spot price was \$82.72/bbl, reflecting an increase of 3% m-o-m and a decrease of 2% y-o-y (Figure 124). The Brent month-ahead price averaged \$79.15/bbl, marking a 2% increase m-o-m and a 6% decrease y-o-y.

Oil prices saw an uptick, reversing three consecutive months of decline, driven by heightened concerns over escalating tensions in the Middle East. However, the price gains were tempered by bearish market fundamentals, including slowed global economic growth and lacklustre industrial activity. By the end of the month, daily Brent spot prices had risen, climbing above \$86/bbl.

Furthermore, in January 2024, TTF spot prices traded at a higher discount to the oil parity price of \$4.1/MMBtu, compared to the previous month. Similarly, NEA LNG spot prices maintained a discount of \$3.5/MMBtu to the oil parity price.

Figure 124: Monthly crude oil prices



Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

Note: Conversion factor of 5.8 was used to calculate the oil parity price in \$/MMBtu based on the ICE Brent month-ahead price.

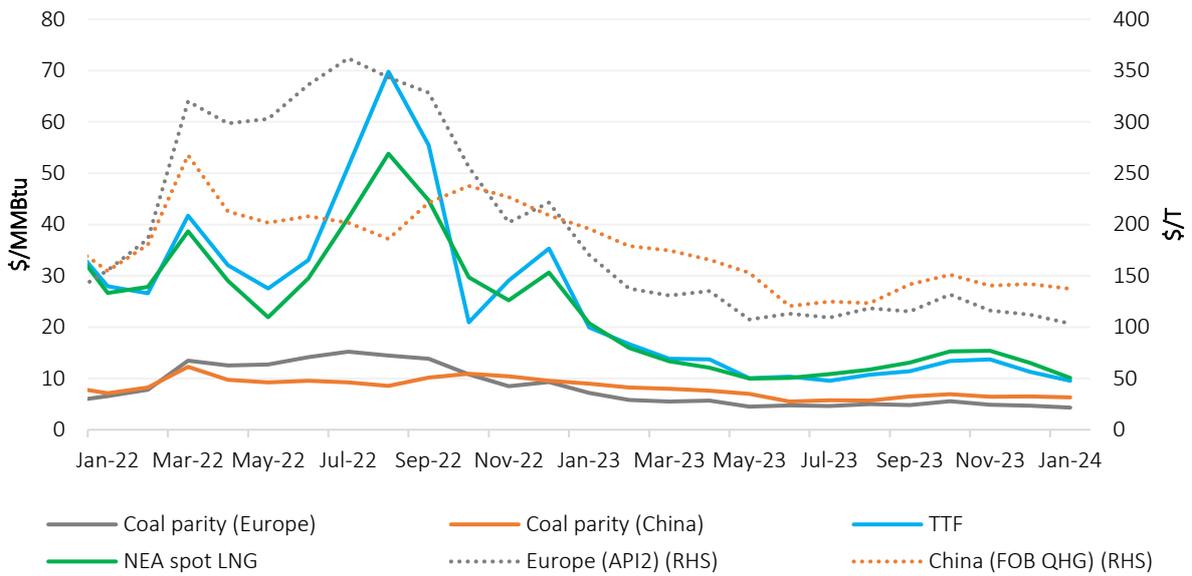
7.2.2 Coal Prices

In January 2024, the European coal price (API2) averaged \$103.32/T, decreasing by 8% m-o-m and 39% y-o-y. Meanwhile, in China, the QHG coal price averaged \$137.43/T, reflecting a decrease of 3% m-o-m and a decline of 30% y-o-y (Figure 125).

European coal prices experienced a decline for the fourth consecutive month. Although occasional cold spells across the region may have boosted coal demand, overall market fundamentals remained relatively weak. Furthermore, the continued downward movement of gas prices also influenced the coal market in Europe.

The premium of TTF spot price over the API2 parity price decreased by 21% m-o-m to \$5.2/MMBtu in January 2024. Additionally, the premium of NEA spot LNG price over the QHG parity price decreased by 41% m-o-m to \$3.8/MMBtu.

Figure 125: Monthly coal parity prices



Source: GECF Secretariat based on data from Argus and Refinitiv Eikon

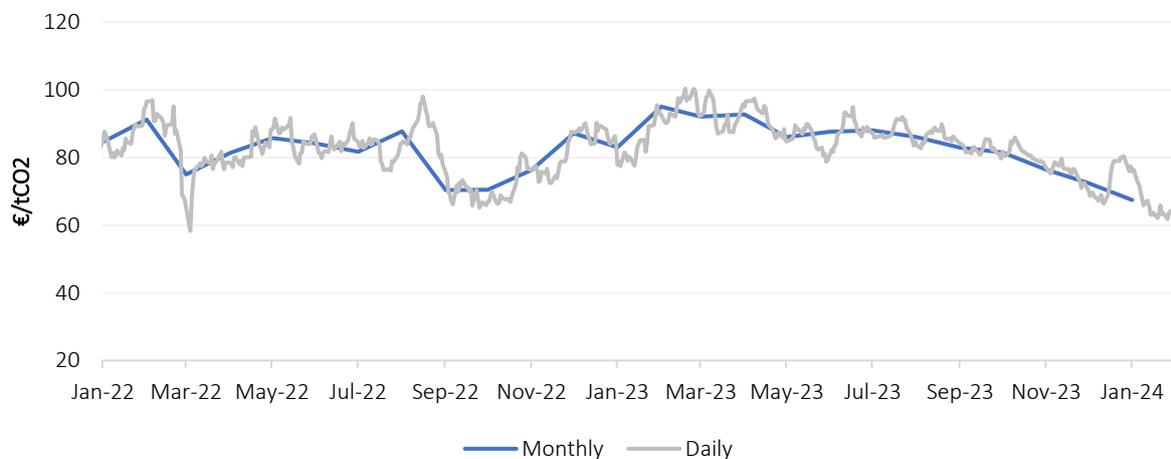
Note: Conversion factors of 23.79 and 21.81 were used to calculate the coal prices in \$/MMBtu for Europe (API2) and China (QHG) respectively.

7.2.3 Carbon Prices

In January 2024, EU carbon prices averaged €67.43/tCO₂, reflecting a 7% decline m-o-m, and 19% y-o-y (Figure 126).

EU carbon prices continued to decline, with daily prices hitting a 22-month low of €62/tCO₂ during the month. This persistent bearish trend is primarily due to overall weak energy demand, leading to reduced demand for EU Allowances (EUAs). However, the low prices may attract compliance buyers, potentially supporting prices in the upcoming months.

Figure 126: EU carbon prices

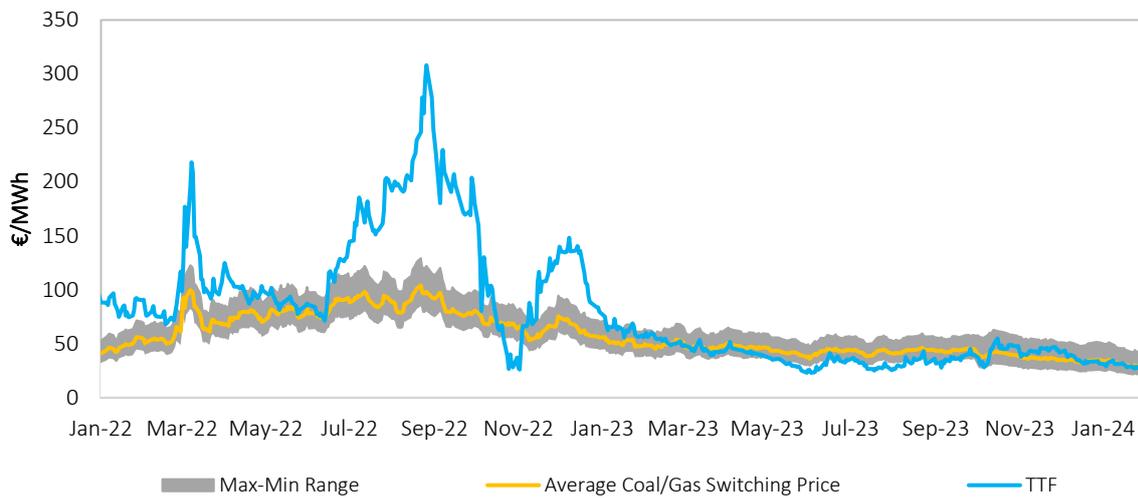


Source: GECF Secretariat based on data from Refinitiv Eikon

7.2.4 Fuel Switching

In January 2024, daily TTF spot prices stayed within the range that is favorable for coal-to-gas switching. The average coal-to-gas switching price experienced a decline of 8% m-o-m to reach €31.13/MWh. Additionally, as TTF spot prices also continued to fall, the monthly spread between the TTF spot price and the coal-to-gas switching price became negative, averaging -€1/MWh (Figure 127). Looking ahead to March 2024, the TTF spot price is expected to remain below the average coal-to-gas switching price, potentially encouraging coal-to-gas switching in Europe.

Figure 127: Daily TTF vs coal-to-gas switching prices



Source: GECF Secretariat based on data from Refinitiv Eikon

Note: Coal-to-gas switching price is the price of gas at which generating electricity with coal or gas is equal. The estimate takes into consideration coal prices, CO₂ emissions prices, operation costs and power plant efficiencies. The efficiencies considered for gas plants are max: 56%, min: 46%, avg: 49.13%. The efficiencies considered for coal plants are max: 40%, min: 34%, avg: 36%.

8 Abbreviations

Abbreviation	Explanation
AE	Advanced Economies
AECO	Alberta Energy Company
bcm	Billion cubic metres
bcma	Billion cubic metres per annum
bcm/yr	Billion cubic metres per year
CBAM	Carbon Border Adjustment Mechanism
CBM	Coal bed methane
CCS	Carbon, Capture and Storage
CCUS	Carbon Capture, Utilization and Storage
CDD	Cooling Degree Days
CNG	Compressed Natural Gas
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
CPI	Consumer Price Index
DOE	Department of Energy
EC	European Commission
ECB	European Central Bank
EEXI	Energy Efficiency Existing Ship Index
EMDE	Emerging Markets and Developing Economies
EU	European Union
EU ETS	European Union Emissions Trading Scheme
EUA	European Union Allowance
Fed	Federal Reserve
FID	Final Investment Decision
FSU	Floating Storage Unit
FSRU	Floating Storage Regasification Unit

G7	Group of Seven
GDP	Gross Domestic Product
GECF	Gas Exporting Countries Forum
GHG	Greenhouse Gas
HDD	Heating Degree Days
HH	Henry Hub
IEA	International Energy Agency
IMF	International Monetary Fund
IMO	International Maritime Organization
JKM	Japan Korea Marker
LNG	Liquefied Natural Gas
LAC	Latin America and the Caribbean
LT	Long term
MMBtu	Million British thermal units
mmcm	Million cubic metres
MENA	Middle East and North Africa
METI	Ministry of Trade and Industry in Japan
m-o-m	month-on-month
Mt	Million tonnes
Mtpa	Million tonnes per annum
MWh	Megawatt hour
NEA	North East Asia
NBP	National Balancing Point
NDC	Nationally Determined Contribution
NGV	Natural Gas Vehicle
NZBA	Net-Zero Banking Alliance
OECD	Organization for Economic Co-operation and Development
PNG	Pipeline Natural Gas

PPAC	Petroleum Planning & Analysis Cell
QHG	Qinhuangdao
R-LNG	Regasified LNG
SA	South America
SPA	Sales and Purchase Agreement
SWE	South West Europe
T&T	Trinidad and Tobago
TANAP	Trans-Anatolian Natural Gas Pipeline
TCFD	Task Force on Climate-Related Financial Disclosure
Tcm	Trillion cubic metres
tCO₂	Tonne of carbon dioxide
TTF	Title Transfer Facility
TWh	Terawatt hour
UGS	Underground Gas Storage
UAE	United Arab Emirates
UK	United Kingdom
UQT	Upward Quantity Tolerance
US	United States
y-o-y	year-on-year

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