FEATURE ARTICLE: Biased EU energy regulations could further undermine regional competitiveness and create uncertainty in the global gas market

The dramatic shift in the EU's energy policy, driven by the climate agenda, began largely with the 2007 Climate and Energy Package, a bundle of regulations and directives aimed at "replacing fossil fuels with renewable energy sources and, where necessary, lower-carbon fossil fuels such as natural gas" (Directive 2009/28/EC). The package also promoted energy savings and improvements in energy efficiency. It laid the foundation for the EU's broader climate agenda, paving the way for overarching strategies such as the European Green Deal (2019) and the Fit-for-55 Package (2021), as well as targeted regulations and directives, including the Carbon Border Adjustment Mechanism (CBAM, 2023), the Corporate Sustainability Due Diligence Directive (CSDDD, 2023), and the Methane Emissions Regulation (MER, 2024).

The impact of this shift is highly ambiguous. The EU energy consumption, which had steadily increased for decades, peaked in the mid-2000s but dropped by 22% over the following two decades, through 2024. This reduction was largely driven by a one-third cut in hydrocarbons use, which was not fully offset by growth in renewables (Figure i). As a result, the share of hydrocarbons in the primary energy mix fell only modestly, from 81% to 73%, reflecting lower overall energy demand rather than a substantial transition toward renewables.

Trends in fuel consumption varied by source, with coal being the primary focus of climate-driven policies. Between 2005 and 2024, coal consumption fell by 7 EJ (60%), while oil demand declined by 5.5 EJ (20%). Gas consumption decreased by 3.5 EJ (23%), but its trend was more nuanced. Between 2005 and 2021, EU gas consumption declined by only 0.7 EJ, or 22 bcm. However, the 2022 energy crisis, largely driven by the EU's decision to reduce pipeline gas imports amid geopolitical developments, forced sharp cuts in gas use, reinforced by Regulation (EU) 2022/1369 on coordinated gas demand reduction measures. As a result, natural gas experienced the steepest decline among hydrocarbons, dropping by another 2.8 EJ, or 74 bcm. In this context, the EU lost both its position as the third-largest gas-consuming region and its status as the world's largest gas importer to China.

While this declining trend in energy consumption partly mirrored developments in the US, it stood in stark contrast to China and India, where energy consumption has soared dramatically, becoming a critical cornerstone of their rapid economic growth and social development. Over the past two decades, the US saw a 5% decline, while China's energy use rose by 117% and India's by 144%, contributing to a 33% increase in global energy consumption (Figure ii).

Figure i: Trend in EU primary energy consumption by fuel

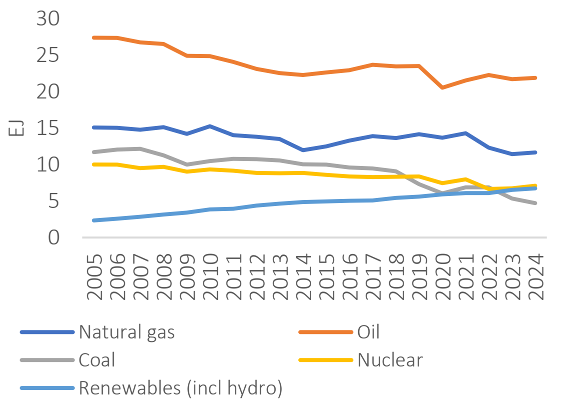
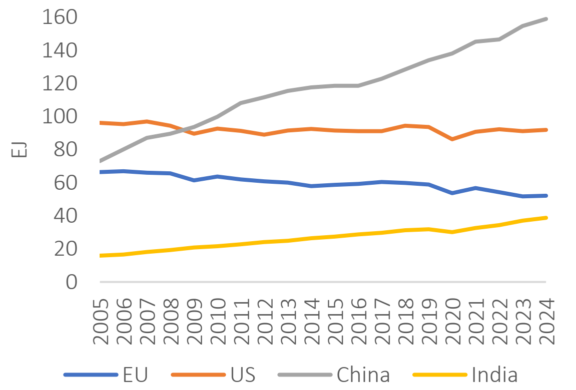


Figure ii: Trend in primary energy consumption by country



Source: GECF Secretariat based on data from Energy Institute Statistical Review of World Energy

The 2022 energy crisis drove spot gas prices across regions to unprecedented highs (Figure iii). The EU was hit hardest due to its heavy reliance on gas imports, which meet 90% of domestic demand. Notably, the EU depends heavily on volatile spot LNG markets, whereas Asian buyers are largely insulated through long-term, oil-indexed contracts. Soaring gas costs sharply increased expenses for EU industries that rely on natural gas as a feedstock or for direct heating. Fertilizers and chemicals were especially affected, resulting in production cuts and shutdowns.

Moreover, the dramatic surge in EU spot gas prices drove a sharp rise in electricity costs, with the EU's average industrial electricity prices reaching record highs (Figure iv). Under the EU merit-order mechanism, electricity prices are set by the marginal cost of the last unit needed to meet demand. In recent years, gas-fired generation has largely determined this marginal cost, as natural gas increasingly backs intermittent wind and solar output. While gas-fired baseload generation remains cost-competitive, the higher operating costs of dispatchable output make natural gas the main driver of electricity prices. Consequently, energy-intensive sectors, such as cement, iron, and steel, faced significantly higher production costs, leading to reduced output and delays in new facility investments.

Figure iii: Trend in gas and LNG spot prices

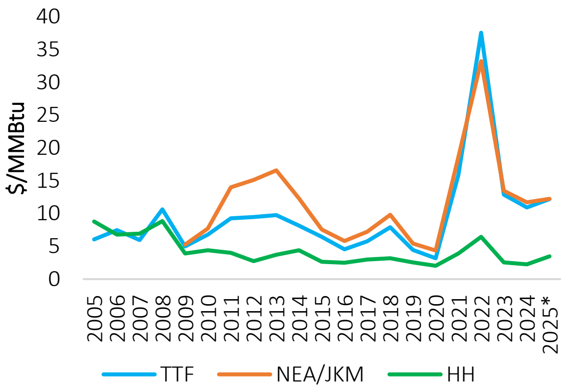
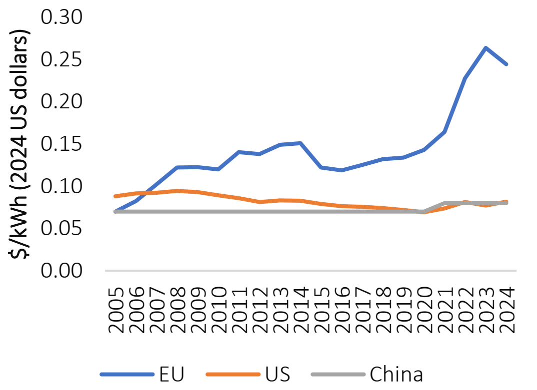


Figure iv: Trend in electricity prices in the industrial sector



Source: GECF Secretariat based on data from LSEG, US EIA, Eurostat
Note: Forecast for 2025 is based on actual prices for Q1-Q3 and futures prices for Q4 as of 1 October 2025

The significant decline in energy consumption, spurred by climate policies since the mid-2000s and further intensified by elevated energy prices following the 2022 energy crisis, has notably affected EU economy by constraining industrial output, eroding competitiveness, prompting production relocation abroad, and shifting investment toward facilities outside the EU. As a result, the EU's economic growth has lagged behind regions with rising energy consumption. Between 2005 and 2024, the EU's GDP grew at a compound annual rate of 1.5%, compared with the global average of 3.4% and growth rates of China (7.9%), India (6.4%), and the US (2.1%). Consequently, the EU's share of global GDP (purchasing power parity) declined from 20% to 14%. Notably, the EU was the world's largest economy in 2005, slightly ahead of the US and nearly twice the size of China's, but by the mid-2010s it had been overtaken by both and now ranks third globally, with India expected to challenge its position in the medium term.

These economic pressures, driven by long-standing energy and climate policies, have already undermined EU competitiveness; moreover, recently adopted regulations, which will start to be implemented in the short- to medium term, are expected to exacerbate the situation further.

The EU adopted Regulation (EU) 2024/1787 in 2024, commonly known as the Methane Emissions Regulation (MER), establishing the legal framework to address methane emissions across the entire energy supply chain, including both domestic operations and international imports. The regulation imposes substantial technical and legal obligations on energy companies operating within the EU, as well as on international suppliers seeking access to the regional energy market.

The phased-in technical requirements for oil and gas companies are organized into three main categories. First, the regulation mandates a robust, third-party-verified Measurement, Reporting, and Verification (MRV) system, aligned with the global OGMP 2.0 Level 5 framework. Operators must quantify methane emissions at source and site levels, and annual emissions reports must be independently verified to ensure accuracy and compliance. Second, the regulation requires a comprehensive Leak Detection and Repair (LDAR) program to proactively reduce unintentional methane emissions. Operators must submit detailed LDAR plans to national authorities and carry out frequent surveys using high-sensitivity detection devices. Third, the regulation imposes strict restrictions on venting and flaring. Routine venting and flaring are prohibited except in emergencies, malfunctions, or when strictly necessary for safety. Flaring equipment must achieve a destruction efficiency of at least 99%, and new production sites are required to deploy zero-emission technologies where technically feasible.

The implementation of the regulation follows a phased timeline that applies to both domestic and international producers, although international suppliers face additional market access conditions. By May 2025, importers and EU producers must report data on methane emissions and mitigation measures for all relevant oil and gas operations. From January 2027, new and renewed contracts must demonstrate that the exporting or domestic producer applies Measurement, Reporting, and Verification measures equivalent to EU standards. Failure to comply can result in denied market access for international suppliers. By August 2028, both domestic and imported hydrocarbons must include methane intensity reporting using an EU-defined methodology. From August 2030, all oil and gas, domestic and imported, must comply with maximum methane intensity limits set by the European Commission, ensuring a uniform standard across the EU energy supply chain.

While it is entirely within the EU's sovereign right to impose stringent MRV, LDAR, and venting and flaring requirements on domestic gas producers, the regulation's extraterritorial scope raises significant legal and policy concerns. By extending EU-specific obligations to foreign suppliers, it effectively extends EU authority beyond its borders, potentially infringing on the sovereignty of exporting countries. This approach also conflicts with WTO rules by conditioning market access on compliance with EU standards and creating potential legal disputes under international trade law. Moreover, the regulation appears inconsistent with the principles of the UNFCCC and the Paris Agreement, which emphasize common but differentiated responsibilities and the sovereign, nationally determined nature of mitigation efforts. These agreements explicitly recognize that each country's climate actions should reflect its unique circumstances, development priorities, and capabilities, ensuring that mitigation commitments are nationally appropriate and equitable. By imposing EU standards on external suppliers, the regulation undermines the ability of other states to define their own climate actions according to national circumstances and capabilities, contradicting the cooperative and capacity-building framework of the global climate regime and potentially weakening multilateral efforts to reduce methane emissions through partnership rather than unilateral measures.

In addition, the EU enacted Regulation (EU) 2023/956 in 2023, establishing the Carbon Border Adjustment Mechanism (CBAM) to price the carbon content of imports in selected sectors, with the primary aim of protecting domestic producers from carbon leakage. The mechanism creates additional compliance obligations for exporters targeting the EU market, including monitoring, reporting, and verification of carbon emissions.

Moreover, the Corporate Sustainability Due Diligence Directive (CSDDD), enacted by the EU in 2023, extends due diligence obligations to large EU companies and certain non-EU firms operating in the EU, including oil and gas producers. It requires companies to identify, prevent, mitigate, and report adverse human rights and environmental impacts throughout their value chains, covering activities such as hydrocarbons extraction, processing, and transport.

This new regulatory landscape is placing unprecedented compliance and cost pressures on the EU gas market. MER's stringent methane requirements compel domestic and international producers to invest heavily in abatement technologies and advanced emissions monitoring and reporting systems. CBAM and CSDDD add further obligations for EU importers by linking market access to carbon intensity and sustainability standards. Collectively, these measures could raise the cost of natural gas in the EU, leading to higher electricity and industrial energy prices, slowing regional economic growth and eroding the competitiveness of the EU economy.

At the same time, the world is entering a period of rapidly growing energy demand, particularly for electricity, driven by population growth, industrialization, the electrification of transport, and rising cooling needs. Countries aiming to lead the global economy are rapidly expanding AI data centers, which require a reliable, uninterrupted baseload power supply, a role that natural gas is particularly well-suited to fulfil. Meanwhile, wind and solar generation, which the EU relies on, face inherent limitations for rapid expansion due to intermittency, supply chain bottlenecks, and material constraints. This is illustrated by the fact that in 2024, wind output growth in the EU was the lowest of the past three years. Without expanding reliable baseload and dispatchable generation, primarily gas-fired output, the EU electricity market will remain highly volatile, with prices the highest in the OECD, constraining economic growth and widening the gap between the EU and major global economies, which are increasingly relying on natural gas. The EU is the only major economy to have reduced gas consumption over the past two decades: from 2005 to 2024, EU gas consumption fell from 419 bcm to 323 bcm, while the US rose from 595 bcm to 902 bcm, China from 47 bcm to 434 bcm, and India from 34 bcm to 70 bcm.

Moreover, new EU regulations are set to not only affect the EU itself but also reshape the global gas market by imposing strict requirements on international suppliers. Producers unable to meet these standards risk losing access to the EU market, forcing them to redirect supply to other regions. This could fragment global gas trade, creating a two-tier market between EU-compliant and non-compliant gas and altering supply routes, price signals, and competition patterns. The extraterritorial reach of the regulations adds significant uncertainty, complicating long-term gas trade agreements and influencing investment decisions for new production and liquefaction projects, with potential implications for the security of gas supply.

Most gas producing and exporting countries fully share the goal of mitigating the industry's carbon footprint, actively implementing measures to reduce methane emissions. Many of them reaffirmed this commitment by announcing updated Nationally Determined Contributions at the Climate Summit 2025, held on 24 September 2025 in New York. In this context, fostering cooperation and establishing an open dialogue between these countries and the EU could prove a more effective and inclusive approach to advancing global climate objectives.