

THE EFFECTS OF GEOECONOMIC TRENDS ON EUROPEAN UNION INDUSTRIAL COMPETITIVENESS

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Abstract: Globalization and the decades-long liberalization of goods and capital flows, together with the strongly imposed rights of foreign investors, have led to the relocation of production to countries with lower production costs. As a result, deindustrialization began in many developed industrial countries, which, together with the unequal distribution of resources, led to the redirection of industry to other countries. There was a change in the redistribution of competitiveness and the creation of new centers of technological power. It is evident that the USA and the EU have been losing competitiveness with China for years, primarily in the auto industry, but also in the areas of new green technology. Such changes were also reflected in the state of trade balances, and the new reality is illustrated by the record amount of the US trade deficit in 2024. While the new US administration is struggling to regain competitiveness by imposing high tariffs, the EU and China have reacted with countermeasures. However, in this struggle, the position of EU countries and China is not the same. The competitiveness of European industry is further threatened by high energy prices and import dependence on rare minerals from China, while China is self-sufficient in resources and the meantime has taken a leading position in certain green technologies. The aim of this work is to determine the key changes that affect the process of deindustrialization of the EU and to determine the competitiveness of the EU in the area of clean energy technologies.

Keywords: Geoeconomics, deindustrialization, competitiveness, the EU, China, the USA.

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INTRODUCTION**

As a result of globalization and the policy of liberalizing the flow of goods and capital, production has moved to countries with lower production costs. In the global race for technological supremacy (Filipović & Ignjatović, 2021), it is noticeable that there has been a redistribution of competitiveness in the industry sector and that large economies are looking for ways to improve their position.

The European Union (EU) has recognized the need to take key measures in order to improve the competitiveness of industry, which is a key sector of the economy and together with construction constitutes about 23% of the total gross domestic product (GDP). Although industry directly employs 35 million people, which represents a quarter of the total number of employees in the EU, there is a noticeable trend of decreasing participation of employees in industry, while the participation of employees in the service sector is increasing (De Haas & Höflmayr, 2019). Within the industry, the most important is the processing industry, which employs about 30 million people and realizes a quarter of the total created value of the economy (Eurostat, 2025a). After the recovery from the COVID-19 pandemic, industrial production in the EU again recorded a negative trend in the summer of 2022. In the period from August 2022 to September 2024, industrial production decreased by more than 6% (Eurostat, 2025b). Germany, as the continent's industrial powerhouse, is particularly affected, but slowdowns are also evident in France, Italy, and Spain.

Faced with the problem of deindustrialization (Di Berardino, Doganieri & Onesti, 2021; Herzeg, 2020), the EU has defined a plan for the further development of the industry (European Commission, 2025a), which in the period 2025-2030 will entail support of 750-800 billion euros, which corresponds to 4.4%-4.7% of the EU's GDP. The process of deindustrialization of European industry is caused by several reasons

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(Obst, 2023). One of the main ones is the rise in energy prices, which further led to inflation, and for the sake of reducing inflation, the monetary authorities increased the level of the reference interest rate, which had a negative impact on investments, the level of production and, ultimately, on demand. Structurally, Europe's industrial base is not as strong as it once was, facing intensifying global competition and a continued shift towards a service-driven economy. Although energy prices have declined since 2023, they are still significantly higher than in the United States of America (the US) and China, exacerbating cost pressures in manufacturing (Chiacchio et al., 2023). Without going into a deeper analysis of internal causes here, it is evident that the further trend of industrial production in the EU will be influenced by the geopolitical situation and the relations that the EU has with its most important trade partners.

In addition to the rise in energy prices, the EU industry is significantly affected by the current US protectionist policy. For the EU, the most important export market for final products is the US with a share of 20.4% in the total value of exports in 2024, followed by Great Britain with a share of 13.2% and China with a share of 8.3% (Eurostat, 2025c). On the other hand, the EU imports the most goods from China, whose participation in total EU imports is at the level of 20.1%, followed by the USA with 12.9%. In 2024, the EU achieved a surplus of 147 billion euros, which is 113 billion euros more than in 2023. In the past ten years, the EU has recorded a trade surplus every year, except for 2022, when high energy prices led to a significant deficit. In 2024, the EU had the highest annual growth rate of exports to the USA (5.6%) and Japan (4.5%), while the largest decline in exports was to China (-4.6%) and South Korea (-2.7%). In terms of imports, the EU had the biggest drop in imports from Norway (-13.0%) and Japan (-10.7%), and the biggest increase in imports was from India (+9.0%) and Brazil (+3.2%).

In addition to the direct impact of tariffs imposed by the US on the EU (McKibbin & Noland, 2025), astronomical US tariffs on China may lead to the diversion of Chinese goods from the US to the EU, which was already the case during the 2017-2019 US-China trade war (Evenett & Espejo, 2025; Stanojević & Zakić, 2023). The current protectionist trade policy led by the US will strongly affect not only EU exports, but also the industrial

and general economic performance of the countries that export the most to the US - Italy and Germany. The increase in tariffs on the export of European cars to the USA represents a significant risk, especially for these two countries, because the export of machinery and transport equipment accounts for over 7% of the total export of Germany and 9% of the total export of Italy. At the same time, the European industry faces another critical challenge – the transition to electric vehicles. Chinese manufacturers have established a significant lead in the production of electric vehicles, raising concerns about the competitiveness of European automakers. In addition, the EU is losing competitiveness in other branches of high technology that are associated with the green transition, of which the EU is the biggest advocate.

The aim of this research is to determine the key changes that affect the process of deindustrialization of the EU and to determine the competitiveness of the EU in the area of clean energy technologies. The remainder of this paper is organized as follows: Section 2 of this paper indicates the importance of the increase in energy prices for industry in the EU. Section 3 provides an overview of the decarbonisation process and key effects on the industry sector. Section 4 analyzes EU competitiveness in key clean energy technologies. At the end, concluding remarks are presented in Section 5.

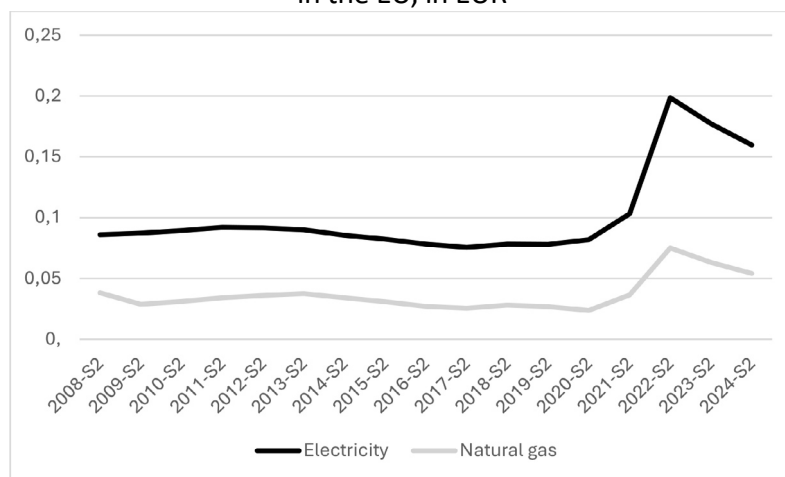
ENERGY PRICE RISE

The Russian-Ukrainian conflict caused an explosion of prices on the energy market. The shortage of Russian gas, the European oil embargo against Russia and the lack of infrastructure for short-term substitutes (eg. LNG terminals) have led to a complete explosion of prices in energy markets, with price growth reaching an all-time high in 2022. In addition, some landlocked European countries faced the problem of natural gas supply, which had consequences not only for industrial production but also for wider socio-economic sectors (Radovanović & Filipović, 2025).

In the EU, energy accounts for between 5.7% and 8.4% of production costs in the chemical industry, man-made fibres, iron, steel and paper sectors. Although energy prices have been on a downward trend since

2023, electricity prices are at significantly higher levels compared to pre-pandemic and pre-energy crisis rates. Wholesale electricity prices in Europe in 2024 averaged 85 euros/MWh, which is significantly higher than 56 euros/MWh, which was the average price in the period 2008-2020 (Eurochambers, 2025). The same trend is observed in gas prices. A return to pre-crisis price levels seems unlikely in the near future, and the current context is more indicative of the need for structural changes in European industry (Figure 1). At the same time, the final price of electricity, in addition to production costs, is significantly affected by the amount of environmental taxation, which is the highest in the most developed EU industrial countries (Golušin et al., 2013), while in the US industry does not pay taxes and carbon dioxide costs.

Figure 1. Oil and natural gas prices for the industrial sector in the EU, in EUR



Source: Eurostat 2025d and Eurostat 2025e.

After the drop in 2023, preliminary data for 2024 shows that average electricity prices for energy-intensive industries in the EU have decreased by only 5% compared to the previous year and are still 65% higher than in 2019. Despite falling from record highs in 2022 and slightly lower compared to 2023, electricity prices for energy-intensive industries in the

EU in 2024 were, on average, twice as high as in the US and 50% higher than in China (IEA, 2025a). On average, electricity prices in the EU for energy-intensive industries were 160% higher in 2022 than in 2019, while average consumers saw an increase of 80% and prices for low-consumer businesses increased by 60%. In 2023, the situation changed, with small and medium-sized consumers continuing to face significant price increases. Differences became less noticeable in consumption levels in 2024 in most EU countries, with retail prices for industry averaging around 1.5 times higher than in 2019.

Due to high energy prices, energy-intensive industries are the most affected. In the EU between July 2021 and November 2022, industrial production in the chemical sector and the base metal production sector decreased by 12% and 8% respectively. In Germany, chemical production decreased by almost 20%, and in the paper industry by 13%. In Italy, the production of base metals fell by 18%, and in the Netherlands by 19%. Other industry sectors are also suffering as volatile and high energy prices generally negatively affect investment decisions. At the same time, European industry is under pressure as China strengthens its competitiveness, while the US administration pursues a tough tariff policy. Strained geopolitical relations further complicate the supply of scarce resources, which altogether require a new approach to European industrial policy.

IMPACT OF DECARBONIZATION POLICY

In addition to high energy prices, European industry is under the pressure of decarbonization and is faced with the constant tightening of regulations and environmental standards. And while the EU has introduced binding legislation to reduce greenhouse gas emissions by at least 55% by 2030 from 1990 levels, the US has set a non-binding target of 50-52% reductions from 2005 levels, and the Chinese president has stated that China will peak carbon emissions by 2030, followed by carbon neutrality by 2060 (not all greenhouse gases are taken into account). In 2024, the EU recorded a 12% reduction in emissions from electricity production, while the US achieved a more modest decrease of 0.3% and China had an

increase in emissions of 1.3% (IEA, 2025b). The different approach to decarbonisation has imposed huge short-term investment needs for EU companies that US and Chinese companies do not face. It is estimated that in the next 15 years, decarbonization will cost 500 billion euros for European energy-intensive industries (chemical industry, metal production, non-metal and mineral production, pulp and paper industry), while the costs for European shipping and aviation will amount to about 100 billion euros every year from 2031 to 2050 (European Commission, 2025a).

To decarbonize, in 2005, the EU established the European Trading System (ETS) as the first international market for carbon emission permits. Due to the tightening of regulations and the energy crisis, the price of emission permits reached a historical peak in March 2023 (105.73 euros), and is currently around 68 euros per ton of carbon dioxide. With the adoption of the package of laws in 2021, the ETS market entered the fourth phase of reforms (2021-2030) and includes companies engaged in industrial production, electricity and thermal energy production, the aviation sector and maritime transport (from 2024), which together emit 40% of the total greenhouse gas emissions in the EU. Although at the beginning of the market development, energy-intensive sectors were entitled to a certain part of free permits, free permits are gradually being abolished.

The last reform of the ETS in this phase was in 2023, when the Carbon Border Adjustment Mechanism (CBAM) was adopted, which entails the introduction of a carbon tax for the import of certain products (aluminum, iron, steel, artificial fertilizers, electricity, and hydrogen) from third countries. From 2027, the new ETS2 system should be operational, which would include carbon dioxide emissions from fuel combustion in buildings, road traffic, and sectors that were not covered by the ETS until now. Emissions monitoring and reporting will begin in 2025, and during the first three years of ETS2 operation, if the price of permits exceeds 45 euros (in 2020 prices, i.e. adjusted for inflation), additional permits may be released from the ETS2 market stability reserve to address excessive price increases. If gas or oil prices are extremely high in 2026, the start of the ETS2 system could be delayed to 2028 to ensure its smooth implementation.

Setting ambitious decarbonisation targets has led to a demand for energy production technologies with low marginal production costs, such

as renewable energy sources and nuclear power. The share of renewable energy sources in total final energy consumption in 2023 in the EU was around 22%, compared to 14% in China and 9% in the US (IEA, 2024b). The EU aims to reach 42.5% of energy consumption from renewable sources by 2030, which will require almost tripling the installed capacity for solar energy production and doubling the capacity for energy production from wind generators. Additionally, the EU is banning the use of internal combustion engines from 2035, implying an increase in demand for electric cars.

The automotive sector is perhaps the best example of how the EU has not harmonized its decarbonisation policy with its industrial policy. The automotive industry is one of the key sectors of European industry, both in terms of employment (6.1% of total employment in the EU) and production (8% of the added value of production in the EU). Germany, France and Italy have a share of 45% in the total production of cars in the EU and 72% in the total added value of the sector. And yet, in all three countries, there is a noticeable trend of deindustrialization. However, at the same time, production in Czechia, Poland and Hungary did not change, and the reason for this may be the fact that several companies outside the EU started production in those countries. Thus, the Indian company Tata built a new factory in Slovakia and began to produce two Land Rover models. Likewise, Ford, Toyota and Hyundai-Kia increased their car production by 20%-70% and in 2023, they produced two more models than in 2018.

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The number of cars produced in the three leading countries (Germany, France and Italy) started to decrease already in 2019. The lowest point was reached in 2021, when the number of cars leaving production facilities was 35% (Italy) to 52% (France) less than in 2018. When demand revived, automakers were unable to procure enough materials and other equipment (eg, semiconductors), limiting their production in 2022 and beyond.

According to the analysis of Garrone, Marotta & Reuter (2025), the total sales of German brands (based on their production worldwide, not just in Germany) in 2023 was 13% lower than the level of 2018, sales of Italian brands decreased by 18.4%, while sales of French brands were almost halved (-41.9%). Over the previous six years, the market share of French brands decreased by 37% (from 5.5% to 3.5%), Italian brands had a decline of 11% (from 1.6% to 1.4%). The market share of German brands is slightly more stable when comparing 2023 to 2018, but 2020 is proving to be a turning point, as German brands began to follow French and Italian brands, with a drop in market share of 12% (from 17% to 14.9%). Interestingly, the loss does not refer to the general trend in the markets, but is mainly related to China, the most important destination for sales of German brands. As of 2020, the share of German brands in that market dropped by almost a fifth (from 25.1% to 20.7%).

A key strategic challenge for European car manufacturers is the transition to electric vehicles, which has been accelerated by strict EU environmental regulations. Traditional European manufacturers, such as Volkswagen, Renault and Stellantis, face the huge investments needs to develop battery technology, while at the same time losing their advantage over Chinese companies (Geely, Xiaomi, Chery, Nio, BAIC, SAIC, BYD, etc.) that offer cheaper and more technologically advanced models. As the electrification of the global vehicle market progresses, German, French and Italian manufacturers are facing a decline in market share, particularly in the electric vehicle sector.

German brands have a significantly lower market share in the electric car market compared to the market for vehicles with traditional engines,

and the accelerated electrification in China further worsens their global share. In 2023, the market share of German brands in China's electric car market was less than a quarter of their share in the market for vehicles with traditional engines.

French and Italian manufacturers are also experiencing a decline in the electric car market segment, but with the added problem of not being able to maintain competitiveness even in the market for vehicles with traditional engines. French brands have half the share of the domestic electric car market compared to the fossil fuel engine market, while Italian brands are seeing a third drop in global sales of electric cars compared to traditional vehicles.

In addition to the lack of competition in the production of electric cars, European manufacturers are facing the introduction of new tariffs, which means that their prices are rising in the US market. Stellantis has large production facilities in the US (in Tulsa, Oklahoma), so that problem could be overcome by expanding production in the US for the local market, but this trend also means less production in the EU.

The EU not only lags behind China in establishing a supply chain in the production of electric vehicles, but also has higher production costs. Together, this resulted in the market share of European car manufacturers in the European electric vehicle market decreasing from 80% in 2015 to 60% in 2023, while the share of Chinese electric car manufacturers in Europe increased from 5% to almost 15% (European Commission, 2025b).

LOSS OF COMPETITIVENESS IN GREEN TECHNOLOGIES

In the latest report of the International Energy Agency (IEA, 2024a), it was estimated that the total market value of six key clean energy technologies (solar photovoltaic systems, wind generators, electric vehicles, batteries, hydrogen and heat pumps) is over USD 700 billion, which is approximately equal to half the value of the total produced natural gas in 2023. Compared to 2015, the market value of these technologies has increased more than four times, and it is estimated that by 2035 this market will be worth more than USD 2,000 billion, which is close to the value of the world crude oil market.

In 2023, the total investment in the production of clean technologies achieved a growth of 50% and was worth USD 235 billion, which is almost 10% of the growth of the total investment in the world economy. Four-fifths of investments in the production of clean technologies in 2023 were directed to the production of solar photovoltaic systems and batteries, and electric vehicle plants accounted for an additional 15%.

Trade in clean technologies amounted to USD 200 billion in 2023 and is estimated to reach USD 575 billion in 2035, which is 50% more than the current value of global natural gas trade. The largest share is the trade in electric cars (followed by solar panels), which has doubled since 2020 and reached a fifth of the value of trade in all cars in 2023. The value of China's cleantech exports is estimated to exceed USD 340 billion in 2035, roughly equal to the projected oil export earnings of Saudi Arabia and the United Arab Emirates combined in 2024.

Although in some of these technologies, the EU was the initiator and leader, over time it lost its leadership position. In the production of wind generators, the EU producers are under increasing pressure from Chinese companies that offer increasingly competitive products at lower prices. Complicating matters for European manufacturers is the fact that this industry relies heavily on complex supply chains, which can be subject to disruption, trade tensions and shortages of critical raw materials. In the production of wind generators, there is a significant participation of copper and steel, as well as rare materials whose production is concentrated in only a few countries, which indicates the need for diversification in supply if one wants to support the growth of this branch of industry.

In 2024, the EU was second, after China, in installed capacities of solar photovoltaic systems. Although the EU still has a strong role in research and innovation, it is highly dependent on imports of solar systems from China, where more than 90% of global manufacturing facilities are located (the EU, the US and India each have a market share of around 1%). It is estimated that the production costs of a photovoltaic module are more than 40% higher in the EU than in China (IEA, 2024b), and the reason for this is not only higher labor, energy and investment costs, but also that China has economies of scale and vertically integrated production.

For EU battery manufacturers, the aggravating circumstance is the heavy reliance on importing components from China (cathodes and anodes) and high production costs, which are 70% to 130% higher per unit of production capacity than in China. The situation is similar in the production of heat pumps and electrolyzers because EU producers have a problem in the supply chain and a high dependence on critical raw materials and components. In addition, production costs are significantly affected by the price of electricity in the EU, which is higher compared to the competition, and the demand for hydrogen, which is still not fully developed in the EU.

The EU is highly dependent on imports of rare raw materials and the supply is highly concentrated in only a few countries. For example, the EU is completely (100%) supplied with heavy rare earth elements from China, 99% of boron is imported from Turkey, 71% of platinum and an even higher percentage of platinum group metals are imported from South Africa. In order to enable a reliable supply, the European Commission created a list of critical raw materials for the EU in 2011 (CRM), which is reviewed and updated every three years. The first list contained 14 crm, and the last fifth, which was published in 2023, identified 34 CRMs, 17 of which were classified as strategic raw materials.

In order to diversify the supply, the EU adopted the Critical Raw Materials Act (2023), which, together with the Net-Zero Industry Act, 2024, should create a favorable regulatory environment for improving the competitiveness of European industry. The Critical Raw Materials Act entered into force in May 2024 and aims to ensure that extraction, processing and recycling of strategic raw materials in the EU reach 10%, 40% and 25% of annual EU consumption by 2030, respectively.

In order to reduce its dependence on the import of critical raw materials, especially from China, the EU has defined projects related to certain raw materials that are of strategic importance to the EU. On March 25, 2025, the European Commission adopted the first list of „strategic projects” on the territory of the EU for which simplified provisions for permits will be applied, easier access to financing will be provided and institutional support will be provided for connecting with relevant customers (European Commission, 2025c). So far, 47 projects have been selected in 13 EU

member states that relate to 14 CRMs and include different segments of the value chain from mining to processing and their recycling.

No company can apply for a project to obtain the status of „strategic” without first obtaining approval from the state in which the project would be implemented. Likewise, in the event that a project is declared strategic by the European Commission, the authorized bodies in the countries where the project would be implemented are not required to issue permits to contractors. The call for strategic projects is always open, but applications received will be evaluated four times each year.

Likewise, on June 4, 2025, the European Commission adopted the first list of strategic projects located in non-European countries, and among those 13 projects was the Jadar lithium mining project in Serbia. Global lithium production is currently dominated by Australia, Chile and China, and the largest European reserves are located in Germany and the Czech Republic, while Serbia is in third place. The EU imports 60% of processed lithium from China. In addition to lithium, the EU has given strategic importance to 4 projects for graphite mining (in Ukraine, Norway and Kazakhstan), 3 projects for nickel (in New Caledonia, Canada and Brazil), 2 projects for rare earth elements (Malawi and South Africa) and one project each for tungsten (Great Britain), cobalt (Zambia) and copper (Norway). In addition, the European Commission intends to form a joint CRM purchasing platform this year, where it would use previous experience in purchasing natural gas.

U increases funding and investment in CRM projects. In July 2024, the European Commission and the European Bank for Reconstruction and Development (EBRD) launched a joint mechanism to provide capital investments for research activities, with the aim of mobilizing around 100 million euros of investments. In March 2025, the European Investment Bank (EIB) adopted a new initiative for CRM that plans to invest 2 billion euros in these projects. In March 2025, the European Commission published an Action Plan for the automotive industry, which has a share of 7% in the gross domestic product of the EU and employs 13.8 million people (directly and indirectly). Within this plan, a special part refers to electric cars, which have a share of 15% in the EU market, and batteries, which on average make up 30-40% of the value of an electric car. The EU's

aim is to increase the share of electric cars by supporting the demand of corporate fleets which account for 60% of registered cars in the EU. In addition, it is planned to support companies that produce batteries in the total value of 1.8 billion euros, as well as the introduction of requirements related to the origin of batteries and components of electric vehicles. Also, as part of this package, it was announced the creation of a mechanism that will facilitate access to raw materials for batteries for car manufacturers based on the pooling of their investments.

Some EU countries are already allocating funds for CRM projects, including the establishment of national investment funds. In 2023, France established a public-private investment fund for CRM, which includes EUR 500 million from the French government and seeks to raise an additional EUR 1.5 billion from private investors. In Germany, a EUR 1 billion CRM fund has been created, managed by the German state development bank. The Italian government announced the creation of a fund with the support of one billion euros of public funds, and in the Netherlands the establishment of a public-private investment fund to ensure access to CRM was announced in March 2025. In the UK, a 15 million pound CRM Supply Chain Innovation Support Program has been launched, and the National Trust has invested 24 million pounds in a domestic lithium project. In addition, an 850 million pound Automotive Transformation Fund has been set up to support the development of the domestic CRM supply chain.

CONCLUSION

Europe's industrial competitiveness is under pressure due to high energy costs, decarbonisation policy supported by demanding environmental standards that additionally impose costs to industry, as well as growing competition from the US and Asia. As a result, there is a relocation of production activities, especially energy-intensive industries, to regions with lower energy prices. While in some European countries policymakers are eager to reduce carbon emissions and achieve climate policy goals, in most European countries policymakers worry that decarbonization could not only lead to the relocation of emissions to regions outside Europe, but also lead to deindustrialization.

Despite the fact that the EU played a central role in the development of clean technologies, today the leadership role is taken by China, primarily thanks to lower production costs, in which energy costs play a significant role. China not only has lower production costs, which are based, among other things, on economies of scale, but its competitiveness is also based on the fact that it has rare minerals that allow it to organize highly integrated production.

The EU is aware of the loss of competitiveness and is trying to find a way out of the vicious circle in which it fell thanks to this because it did not adapt its industrial development to the new geopolitical circumstances in which its position is further complicated by the strained political relations with Russia, as well as the trade policy with the US and China. The EU has adopted a new direction in improving the competitiveness of the industry, which relies to the greatest extent on innovations and investments in sectors that contribute to decarbonization. In addition, the EU has adopted a regulation that aims to encourage diversification in the supply of CRMs, which until now were mostly imported from China. A mechanism for supporting investments in sectors that the EU has identified as having strategic importance and which will provide it with much-needed resources has been launched.

Although the EU is not giving up on the decarbonization of its entire economy, it is evident that it is a complex and long-term process, while energy crises require quick solutions that are followed by high energy prices. Therefore, security and reliability in the supply of energy at reasonable energy prices and the lack of key resources for the production of modern technologies remain the key reasons for the loss of European competitiveness.

REFERENCES

- Chiacchio, F., De Santis, R. Gunnella, V. & Lebastard, L. (2023). How have higher energy prices affected industrial production and imports? Economic Bulletin Boxes, European Central Bank, vol. 1.
- De Haas, R., & Höflmayr, M. (2019). Deindustrialization, job polarization and ageing in emerging Europe. In *How to Finance Cohesion in Europe?* (pp. 123-134). Edward Elgar Publishing.

- Di Berardino, C., Doganieri, I. & Onesti, G. (2021). Deindustrialization in the EU between Transformation and Decline. *Eastern European Economics*, 59(3), 225-249. <https://doi.org/10.1080/00128775.2020.1870407>
- Eurochambers. (2025). Electricity prices and employment, retrieved from <https://www.eurochambres.eu/wp-content/uploads/2025/06/Electricity-Prices-and-Employment-A-Comparative-Analysis-of-EU-Countries-3.pdf>. Accessed 17 June 2025.
- European Commission. (2025a). The future of European competitiveness Part A | A competitiveness strategy for Europe, retrieved from https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en#paragraph_47059 Accessed 10 June 2025.
- European Commission. (2025b). A Competitiveness Compass for the EU, retrieved from https://commission.europa.eu/document/download/10017eb1-4722-4333-add2-e0ed18105a34_en Accessed 10 June 2025.
- European Commission. (2025c). COMMISSION DECISION of 25.3.2025 recognising certain critical raw material projects as Strategic Projects under Regulation (EU) 2024/1252 of the European Parliament and of the Council, retrieved from <https://webgate.ec.europa.eu/circabc-ewpp/d/d/workspace/SpacesStore/1958718b-21e9-40f4-9c9f-42a58dc4c5a3/download> Accessed 11 June 2025.
- Eurostat. (2025a). Industrial production down by 1.1% in the euro area and by 0.8% in the EU, retrieved from <https://ec.europa.eu/eurostat/web/products-euro-indicators/w/4-13022025-ap> Accessed 19 June 2025.
- Eurostat. (2025b). Industrial production (volume) index overview, retrieved from [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Industrial_production_\(volume\)_index_overview](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Industrial_production_(volume)_index_overview) Accessed 19 June 2025.
- Eurostat. (2025c). International trade in goods, retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_trade_in_goods Accessed 19 June 2025.
- Eurostat. (2025d). Electricity prices for non-household consumers, retrieved from <https://ec.europa.eu/eurostat/databrowser/view/>

- nrg_pc_205__custom_17261530/default/table?lang=en Accessed 19 June 2025.
- Eurostat. (2025e). Natural gas prices for non-household consumers, retrieved from https://ec.europa.eu/eurostat/databrowser/view/nrg_pc_202/default/table?lang=en&category=nrg.nrg_price.nrg_pc Accessed 19 June 2025.
- Evenett, S. & Espejo, F. M. (2025). 'Redirecting Chinese Exports from the USA: Evidence on Trade Deflection from the First U.S.-China Trade War', *Zeitgeist Series Briefing* 62, Global Trade Alert, retrieved from <https://globaltradealert.org/reports/Redirecting-Chinese-Exports-from-the-USA> Accessed 12 June 2025.
- Filipović, S. & Ignjatović, J. (2021). International relations through the prism of the new technological division of power, *Međunarodni problemi* 73(4), 637-666. <https://doi.org/10.2298/MEDJP2104637F>
- Garrone, M., Marotta, G. & Reuter, A. (2025). Signs of de-industrialisation? A deep dive into the European car industry. European Commission, Brussel. <https://doi.org/10.2873/4335714>
- Golušin, M., Munitlak Ivanović, O., Filipović, S., Andrejević, A. & Djuran, J. (2013). Environmental taxation in the EU - analysis, challenges and the future, *Journal of Renewable and Sustainable Energy* 5(4). <https://doi.org/10.1063/1.4817963>
- Herceg, T. (2020). Deindustrialization and its effect on dampening the future crisis—a case of European Union, *Poslovna izvrsnost*, 14(2), 0-0.
- IEA. (2024a). Advancing Clean Technology Manufacturing, retrieved from <https://www.iea.org/reports/advancing-clean-technology-manufacturing> Accessed 15 June 2025.
- IEA. (2024b). Renewables 2023 - Analysis and forecast to 2028, retrieved from <https://www.iea.org/reports/renewables-2023> Accessed 15 May 2025.
- IEA. (2025a). Electricity 2025, retrieved from <https://iea.blob.core.windows.net/assets/0f028d5f-26b1-47ca-ad2a-5ca3103d070a/Electricity2025.pdf> Accessed 22 June 2025.

- IEA. (2025b). Global Energy Review, retrieved from <https://iea.blob.core.windows.net/assets/5b169aa1-bc88-4c96-b828-aaa50406ba80/GlobalEnergyReview2025.pdf> Accessed 15 June 2025.
- McKibbin, W. J., Noland, M. (2025, March 24). Modeling a US-EU trade war: Tariffs won't improve US global trade balance. *Realtime Economics*, Peterson Institute for International Economics, retrieved from <https://www.piie.com/blogs/realtime-economics/2025/modeling-us-eu-trade-war-tariffs-wont-improve-us-global-trade-balance> Accessed 12 June 2025.
- Radovanović, M. Filipović, S., Šimić, G. (2025). When energy resources, transit routes, critical minerals and the interests of great powers meet in the Western Balkans: do citizens have a voice? *Energy Research & Social Science*, 126, 104153. <https://doi.org/10.1016/j.erss.2025.104153>
- Stanojević, N. & Zakić, K. (2023). China and deglobalization of the world economy, *National Accounting Review* 5 (1), 67-85. <https://doi.org/10.3934/NAR.2023005>
- Obst, T. (2023). Europe on the brink of recession? Economic challenges and dangers of deindustrialization, *Economic Policy in an Unstable Environment*, 13.