Polish Economic Institute

The single market amids the storm

The struggle for competitiveness and cohesion in an era of growing protectionism

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Key numbers

4 times higher

the value of EU subsidies for the low-emission electricity generation, compared to the US

70% and 80%

differences in wholesale electricity and gas prices between the EU and the US in the first three quarters of 2023

77%

Germany and France's value share of notified State aid for enterprises in the EU between 03/2022 and 01/2023

188%

annual increase in Member States' spending on State aid for enterprises in 2020-2021, compared to the average in 2015-2019

55%

Germany's share of spending on R&D in EU notified State aid

EUR 75 billion

in new investments are to be generated by EUR 3 billion of new EU guarantees and allocated for the InvestEU programme as part of STEP

35%

greater is the GDP share of the industrial sectors covered by the REPowerEU package reducing the consumption of oil, gas and coal in CEE countries, compared to other EU countries

2.5 times greater

total potential energy production from renewable energy sources in Western Europe, compared to CEE

0 CEE

countries' projects for clean-tech manufacturing and industry electrification and hydrogen received funding as part of the third round of funds allocated from the Innovation Fund

12%

of funds from Horizon 2020 went to the 18 least subsidised EU countries

Key findings

- **The paradigm change regarding the model of globalisation is permanent and the lack of adjustment of the economic policies of countries around the world poses a threat to their competitive position**. Firstly, supply chains cannot be considered completely secure and free from disruptions. Secondly, this has primarily happened due to the actions of Russia and China, which has forced countries to reconsider their approach toward the free trade. While the free trade-related benefits have been significant in the past, we need to bear the costs of taking security aspects in trade and, more broadly, in economic policy, into account. Thirdly, in the face of new challenges, there is a rising acceptance for interference in free trade. Nearshoring, friendshoring, protectionism — regardless of its name, state intervention in the production process in strategic sectors has now become a mandatory part of Member States' and the EU's actions.

- **The European Commission has decided that it should take action to protect the European economy's global competitiveness. The key question is: to what extent does the EU still believe in maintaining the relative status quo in its policy towards China?** The situation is even more complex since the EC must simultaneously look for a solution to mitigate the rising pressure of subsidies for clean technologies in the US and counteract trade dependence on China in the same area. However, the belief that the EU needs a more assertive policy towards Beijing is slowly growing, resulting in the declarations on reducing dependence, the anti-subsidy investigation into electric cars, which has been launched, and the one regarding steel, which is being considered. Defining its readiness to work very closely with the US — strongly and clearly — will enable the EU to improve transatlantic relations. In Washington, there is a consensus concerning US policy towards China, not how it should pursue protectionist policy or policy towards Europe.

- **The proposals presented as part of the Green Deal Industrial Plan are meant to help the clean technology sector remain competitive and innovative, while encouraging the other industrial sectors to achieve a low-emission transition and continue to manufacture in the EU**. The presented actions follow in the footsteps of American solutions: support for semiconductor production, securing supply chains of critical raw materials, subsidies for locating new production plants in the EU, especially by easing the rules for granting State aid. At the same time, through RePowerEU, the European Commission is responding to local challenges linked to securing the supply of traditional energy resources such as oil and natural gas and enabling the low-emission transition. A key element of the proposal is the desire to simplify the rules for allocating money from EU funds in the indicated areas of spending.

- **However, the actions presented come with a risk: the lack of proposals for bold solutions at the EU level, especially the abandonment of the Sovereignty Fund project**. This is due to member states' divergent interests. The intended goal had been to balance the funding opportunities within the single market, so that the change in industrial policy would not go against the ongoing cohesion policy, which is meant to reduce development differences. The proposed STEP initiative — which has replaced the idea of a fund — not only does not solve the problem, but could even intensify it. Only some of the proposal relating to the Innovation Fund includes a proposal to allocate a specific pool of funds to countries with lower innovation and greater modernisation needs. The other parts do not take into account differences in development. At the same time, implementation would postpone the prospect of creating this type of fund.

- **There is a large geographical imbalance in the EU in the existing solutions, the financial capacity of which will be increased as part of STEP**. There is a visible concentration of funds transferred from the InvestEU, Horizon Europe and Innovation Fund programmes that excludes Central and Eastern Europe (CEE). Strengthening these mechanisms will not help reduce differences in this area, which was supposed to be the goal of the Sovereignty Fund. At the same time, redirecting part of the cohesion policy funds to support low-emission industries will result in funds being spent contrary to their intended purpose, which is to reduce differences in development.

- **A particularly significant mechanism disturbing the balance in the single market could be the above-mentioned relaxation of the rules on granting State aid**. They are already dominated by the strongest countries. France and Germany. The scale of State aid that they provide increasingly exceeds their economic importance or demographic potential. The further liberalisation of the rules on granting State aid to industry will enable an active role of the state for governments with enormous fiscal potential, such as France and Germany. This will come at the expense of CEE, but that also of Southern Europe. Unlike the Sovereignty Fund, the STEP solutions will not address this threat.

- **The actions taken could also disrupt competition within the single market**. Greater support for the strongest and most innovative companies could facilitate the monopolisation of markets, especially if rules restricting mergers and acquisitions in the EU were relaxed. The lack of competition in the internal market could limit innovation in the EU and reduce its competitiveness in external markets, rather than improve it.

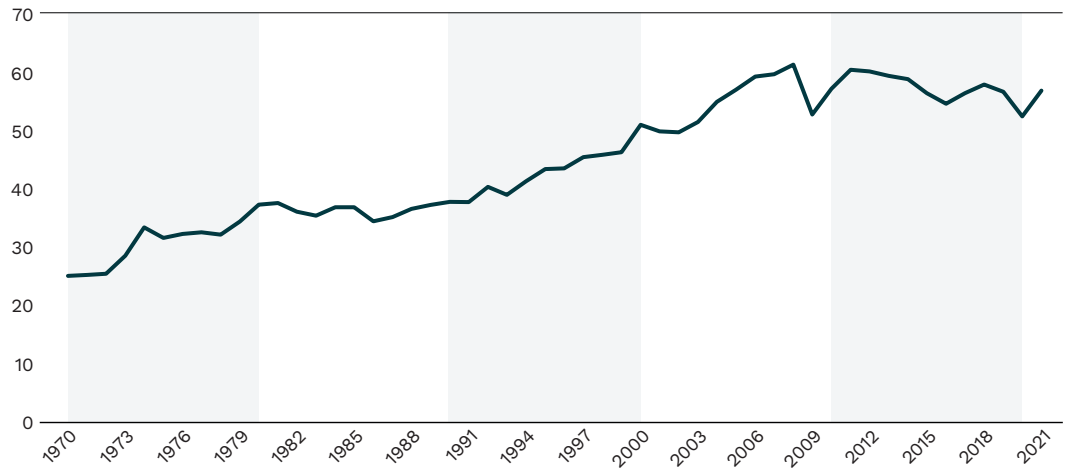
- **For this reason, the proposals should take actions aimed at balancing the available industrial policy mechanisms between countries into greater account**. It is worth considering a minimum level of financing for innovation and industrial projects in individual member states, intended to create equal potential for low-emission industries and green innovations in each member state. Additional funds would go to the best and most innovative ones. It is worth considering mechanisms by which State aid would not excessively distort the internal market, whether through the Sovereignty Fund or other means. Rejecting the idea of a Sovereignty Fund seems unfavourable for member states characterised by lower innovation and investment in green technologies.

- **Countries with low levels of innovation and green investments must also focus on increasing them**. The uneven use of mechanisms such as Horizon or the innovation fund not only points to these funds' structural problems, but also to these countries' low innovation potential. Changes in globalisation primarily concern strategic sectors; they are where export restrictions and additional State aid funds are concentrated. A comparison of the distribution of innovation (number of patents) in individual US states and EU member states points to a greater imbalance in this respect in the EU. This is partly the result of omissions. In countries such as Poland, there is a need for consistent innovation policy, striving to increase funds for education, especially in Science, Technology, Engineering, Mathematics (STEM), as well as support for industry, not because of operating costs (such as high energy prices), but to modernise it. This may be particularly important in the context of Ukraine's future integration with the EU market.

Changes in world trade

The global financial crisis had a strong impact on world trade. The greatest collapse in trade in goods as a proportion of GDP occurred at the time. The 9 pp drop was even greater than during the pandemic in 2020. World trade measured in this way did not recover after 2008, when it peaked at 62% of GDP.

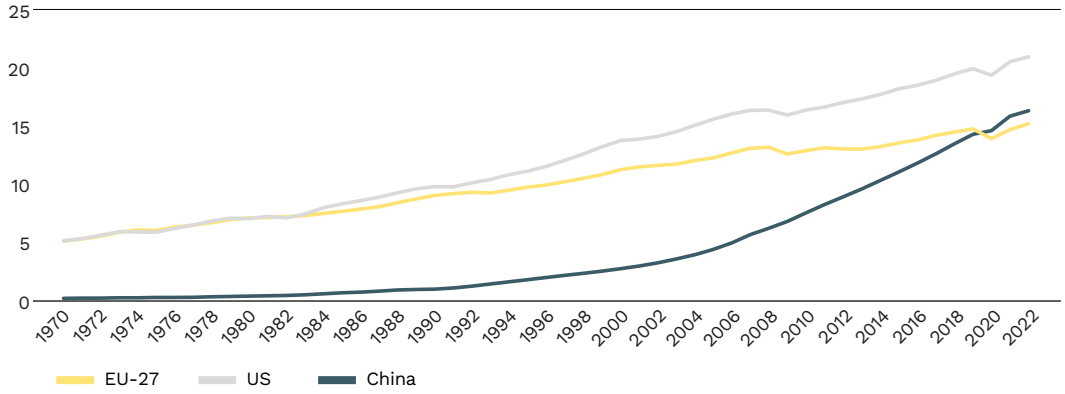
Chart 1. Share of trade in global GDP (%)



Source: prepared by PEI based on World Bank data.

As economist Richard Baldwin and others have argued, the decrease in global trade does not mean deglobalisation (Baldwin, 2022). The trends behind the decline in trade in goods as a percentage of GDP include the collapse related to the prices of raw materials and the mining sector, as well as the growth of the Chinese economy and domestic consumption, which have reduced the importance of international trade while increasing GDP.

Chart 2. Increase in China's GDP compared to the EU and US (in USD trillion from 2015)

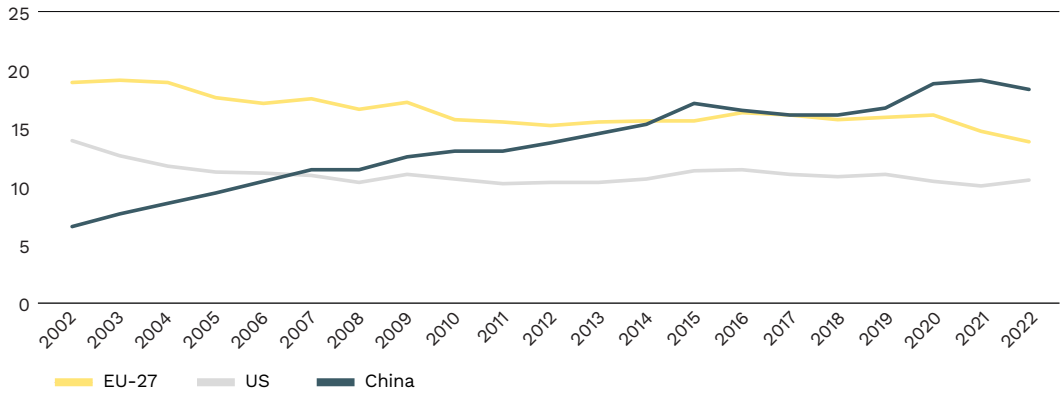


Source: prepared by PEI based on World Bank data.

These trends in no way contradicted the economic model of the time, based on just-in-time production and a network of supply chains at various stages of production. The model was not even questioned by the Trump administration, which changed its international trade rhetoric to anti-Chinese and started promoting a neo-mercantile approach, which deemed moving production to the US a valuable process in itself. From a global perspective, however, this approach remained isolated and did not cause widespread change at the time. It only occurred after the pandemic when other developed countries followed the US's lead. The US trade war with China, suspended by the first-phase agreement with China signed in 2020 by the Trump administration, has not resulted in a significant reduction of the US deficit in the long term. This may have been influenced by the pandemic and market adjustments during that period, as well as shifts in trade linked to the fact that not all trade with China was covered by customs duties.

Global value chains turned out to be inflexible in the face of demand- and supply-side disruptions and mounting maritime transport challenges during the pandemic. This was especially visible in the automotive sector, which was based on a just-in-time production system and was not prepared for either component shortages in the first phase of the pandemic or delays in microprocessor deliveries at the end of 2020. The crisis caused by the pandemic showed just how low the degree of diversification of suppliers of many components to European factories was and how highly concentrated the production of certain products was.

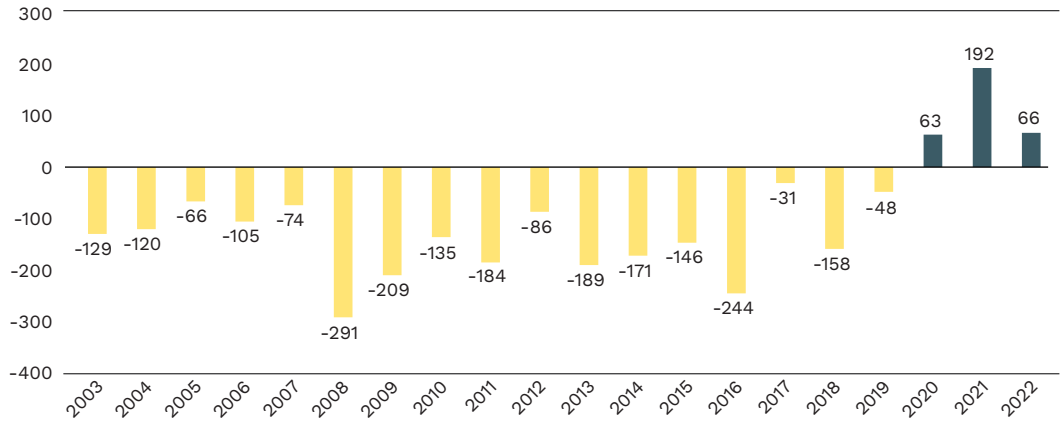
Chart 3. China, EU and US's share in world exports (%)



Source: prepared by PEI based on Eurostat data.

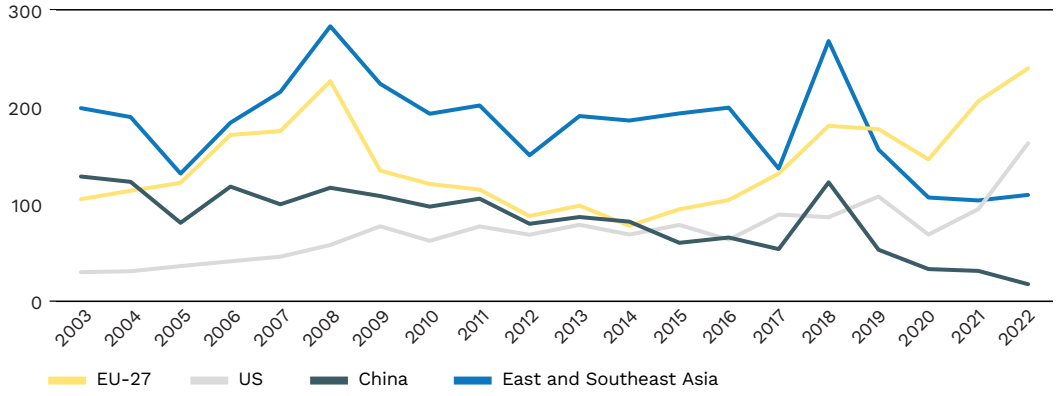
The pandemic had a two-fold impact on supply chains. Firstly, the sudden increase in demand for medical products, electronics and durable goods increased the importance of China and of other third countries that supplied these goods to the EU, including the supplies to Poland, in global exports. Secondly, it highlighted Western producers' dependence on Asian suppliers, especially Chinese ones, which triggered political calculations by governments and actions within enterprises to increase the supply chain's resilience, diversifying sources and bringing them closer to the place where the products are consumed. This is visible in the trends linked to greenfield investments, which should be visible in export data in the coming years.

Chart 4. Developed countries' surplus when attracting greenfield investments (USD billion)



Source: prepared by PEI based on: WIR (2023).

Chart 5. The decline of China and East Asia in the value of greenfield investments attracted and the revival of the EU and the US (USD billion)



Source: prepared by PEI based on: WIR (2023).

Another factor that forced the EU countries to secure the supply chain was the Russian invasion of Ukraine. Previously, the weaponisation of interdependence (Farrell, Newman, 2019) had been used in the context of US actions towards countries such as Iran, which sanctions had been imposed on, or China, which the Trump administration put pressure on by imposing tariffs and licensing restrictions on American technologies. Russia's invasion of Ukraine resulted not only in the imposition of sanctions on Russia, but also in the rising awareness regarding the risk of excessive economic dependence of the EU. In the past, Russia, an undemocratic state, blackmailed European countries by limiting access to hydrocarbons. Limiting the scope of similar EU dependenies became an acute challenge for the EU policymakers. This again resulted in the need for both individual companies and countries to address the potential instabilities in their procurement policies. In this respect, energy raw materials stand out, but so do others that the EC defines as critical, including rare earth metals, which China is the main supplier of. Moreover, its policy towards Taiwan creates the risk of destabilisation in the region in the medium and long term.

Global protectionist trends and the weaponisation of trade

However, the returning protectionism or neo-mercantilism (Steinberg, 2023) is slightly different from the measures used in the past. American actions can be divided into two periods: the Trump administration, dominated by internal conflict and conflict with allies, and the Biden administration, with bipartisan support for policy and support from some allies. The incentive to start a customs war with China was primarily economic rivalry, which had an impact on security issues, but in the administration, arguments relating to

economic rationality, which were supposed to justify the actions taken, were more important. When Joe Biden became president, there was already a consensus on the need to oppose China's economic growth, but the only reason for these actions was strategic thinking — hence the terms “nearshoring” and “friendshoring" (Ambroziak et al., 2022; 2023), which still emphasise the existence of global supply chains, not necessarily moving production to the US.

At the same time, customs duties, which were supposed to cover all trade, were replaced by more thoughtful actions, primarily within strategic sectors. These include military, digital technologies, pharmaceutical and low- and zero-emission technologies. They are to be supported in various ways, but within them there has been another phase of weaponization of interdependencies. In the first, traditional understanding of this process, the above-mentioned work by Farrell and Newman shows that networks of economic interdependence that had been created were turned into weapons against these connected states. This is primarily about the sanctions used, not only cutting off the supply of technology or importing products from a given country, but also limiting access to international mechanisms. For example, Iran was cut off from SWIFT transactions and China (ZTE and Huawei) from access to products that use American technologies. The second phase is when the US itself recognised the threats arising from international connections, which led to a shift in thinking in which trade issues began to viewed through the prism of security issues.

One example is the above-mentioned policy of restricting China's access to semiconductors and other key technologies in the integrated circuit production sector. The globalisation of industry makes these kinds of actions difficult and the US alone would not be able to limit the possibility of developing production capacity in China effectively. Key production plants are located in Taiwan, South Korea and Japan, while Dutch company ASML has become a key element in the supply chain of devices for advanced lithography using extreme ultraviolet; that is, equipment for the production of the most modern and smallest integrated circuits, up to 2-3 nm. Convincing the Dutch government to introduce a licensing requirement for the export of these devices is an important achievement of the US administration in its efforts to limit the development of the semiconductor sector in China (Haeck, Moens, 2023). Moreover, the US-Netherlands-Japan coalition managed to limit China's access to older deep ultraviolet technology (allowing chips up to 7 nm to be produced) from September 1, 2023 (Uznańska, 2023). However, China may already have achieved the ability to produce integrated circuits in these sizes, as reports by Bloomberg suggest (Savov, Debby, 2023).

The Inflation Reduction Act (IRA) adopted in the second half of 2022 stems from this way of thinking. It aims to support green sectors in the US economy, lower greenhouse gas emissions, and reduce dependence on China (McKinsey, 2022; Leggett, Ramseur, 2022; European Parliament, 2023).

The IRA's assumptions include:

- **subsidies in the form of tax breaks for the purchase of electric cars** worth USD 7500 per car in total – half of it awarded after meeting the requirements in the area of local content (the minimum national contribution to the total production value) the critical raw materials used in the production of the car, among other things, and the second half awarded when at least 40% of the electric car's battery comes from North America or countries that Washington has concluded a free trade agreement (FTA) with. The requirements on battery origin are set to rise to 80% by 2027. Moreover, car production in the US alone could receive USD 2 billion worth of support by 2030;
- **tax breaks for the production of low-emission technologies** such as wind turbines, batteries or critical raw materials, and **tax breaks for investments qualified under the programme that reduce emissions** by at least 20%. A total of USD 5.8 billion will go to reducing emissions in very energy-intensive sectors. Additionally, USD 250 million in grants will be allocated to support the production of heat pumps (only until September 2024);
- **subsidies for the production of electricity from clean sources**, small renewable energy installations, as well as various technological solutions that reduce emissions.

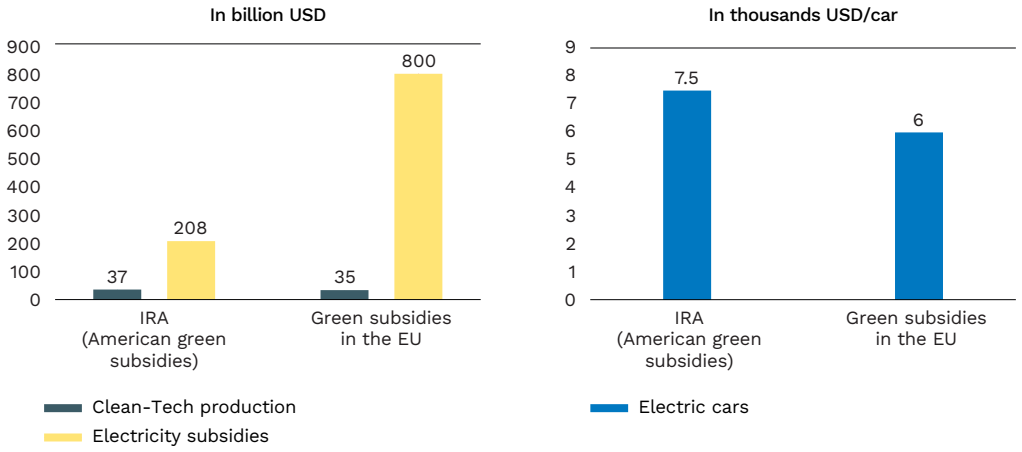
For the EU, which has no free trade agreement with the US, similar arrangements for national contribution requirements were discriminatory and contrary to the rules set out in WTO agreements. The US is trying to resolve issues of discrimination against its allies in negotiations with individual partners. The Department of the Treasury has made a preliminary reinterpretation of the regulations on what an FTA is, thanks to which the EU may be subject to them. In June 2022, the US established a Minerals Security Partnership (MSP). It has also concluded a Critical Minerals Agreement (CMA) with Japan, and is negotiating a similar agreement with the EU, which could give European suppliers access to American subsidies. Leasing regulations were also reinterpreted, which reduced the IRA's discriminatory nature (Bown, 2023).

Nevertheless, the IRA is a symbolic challenge to the economic alliance for the EU, because two consecutive US administrations adopted solutions unfavourable for trade with the EU (although the dynamics of the negotiations of IRA resulted from decisions by Congress, rather than the administration). Moreover, it is a different model for reducing emissions: instead of imposing costs, it primarily introduces large financial incentives to mitigate. In this way the competitiveness of the American market compared to the European one is increased, as producers willingly use the additional sources of financing available. From entrepreneurs' perspective, the only disadvantage of the US form of providing support is that it is only possible to obtain a refund after the investment has been completed and sales begin.

An attempt to add up the aid provided (Kleimann et al., 2023) in the EU and the US indicates that the **EU provides over three times the amount of subsidies for the production of low-emission technologies, especially**

the production of energy from renewable sources. What makes them different is the simplicity of the mechanism used in the US (tax relief over a ten-year period, compared to the complicated bureaucratic system in the EU and many different funds it is made up of, including from different countries), as well as the discrimination against foreign entities. The EU will not choose to take these kinds of actions, so the IRA poses a threat.

Chart 6. Comparison of the size of subsidies for low-emission technologies in the US and the EU



Source: prepared by PEI based on Bruegel estimates.

At the same time, the US is not alone in its protectionist actions. Since 2015, China has been implementing the ten-year "Made in China 2025" plan, under which it wants the value of local content to reach 70% in the production of the latest technologies (mainly in electric cars, ICT technologies, electronics, aircraft and ship construction, as well as agriculture and biomedicine). To achieve this goal, **the Chinese government assigns smaller tasks, for which they provide direct subsidies amounting to at least USD 250 billion per year, or 1.8% of Chinese GDP** (DiPippo, Mazzocco, Kennedy, 2022). It also supports state-owned companies, forces foreign companies to transfer technology, or takes them over as part of mergers and acquisitions. This is meant to enable China to strengthen its strategic position in the supply chain of electronics or critical raw materials, among other things.

Other countries have also began to pursue active industrial policies. **Japan is preparing a plan to issue green bonds, with the intention of raising USD 150 billion this year for investments in various types of low-emission technologies (from renewable energy to nuclear technologies), electric cars, solutions increasing energy efficiency and a plan for the development of hydrogen and ammonia supply chains**.

The revival of active industrial policy is just one dimension of the changes in international trade. This interdependence weaponisation is escalating in further directions. The US administration is increasingly trying to limit China's access to modern technologies, introducing export restrictions and putting pressure on partners to join its efforts. At the same time, the administration wants to control both incoming and outgoing investments in strategic sectors (Dentons, 2023).[1]

These actions are changing the situation on international markets, creating the possibility of a subsidy race, and reducing the potential efficiency in the allocation of funds in the global economy. At the same time, they are a response to the Chinese subsidies that have been disrupting the situation on international markets for years. In this way, they alter the competitiveness of individual investment locations around the world.

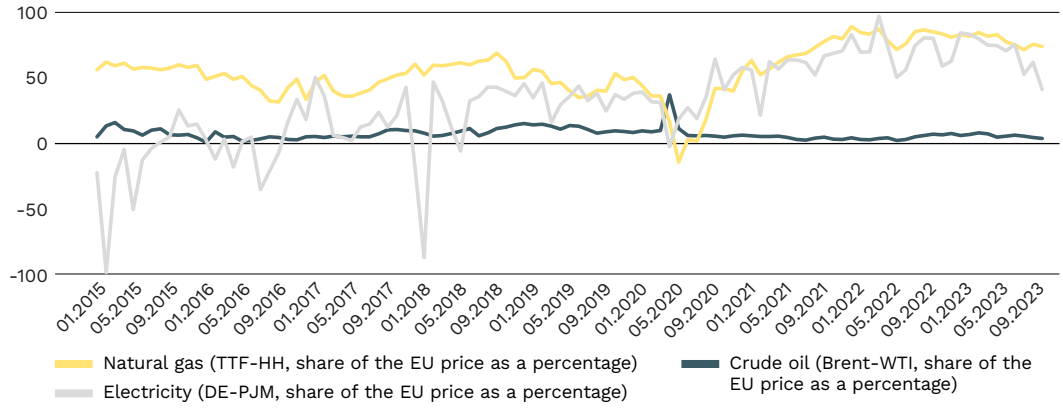
Energy prices - a challenge for the EU's competitiveness in global rivarly with the US and China

The United States' advantage over the European Union is low prices of gas, electricity and, to a lesser extent, oil (European Parliament, 2022). **In the US, wholesale gas prices in the first half of 2023 were on average 83% lower, electricity prices by over 77%, and oil prices by 6%**. Presently, the Russian invasion of Ukraine in 2022 strengthened energy cooperation between the US and the EU (www1). However, in the long term, high prices of oil, gas and electricity will make it more difficult to maintain the EU economy's competitiveness. In 2022, wholesale prices in the US were 5% lower in the case of crude oil, 83% in the case of natural gas, and 72% in the case of electricity compared to the EU.

The Russian invasion of Ukraine caused a significant increase in commodity prices in Europe and increased the difference in average gas prices between the US and the EU ninefold (from EUR 12/MWh in 2017-2021 to EUR 111/MWh in 2022). The difference in electricity prices twelvefold (from EUR 15/MWh in 2017-2021 to EUR 177/MWh in 2022). The EU's long-standing dependence on imports of Russian gas, oil and coal in the end became a serious burden on the development of the EU economy (Lipiński, Maj, Miniszewski, 2022). The European crisis had the lowest impact on the difference in oil prices due to the smaller role of infrastructure restrictions in global oil trade (an increase of 11% compared to 2017-2021). The difference in oil prices beween US and EU is expected to persist (European Commission, 2018). The difference in gas prices will probably slightly decrease with the development of infrastructure for LNG imports in the EU and rising LNG exports from the US, but the US's advantage will remain.

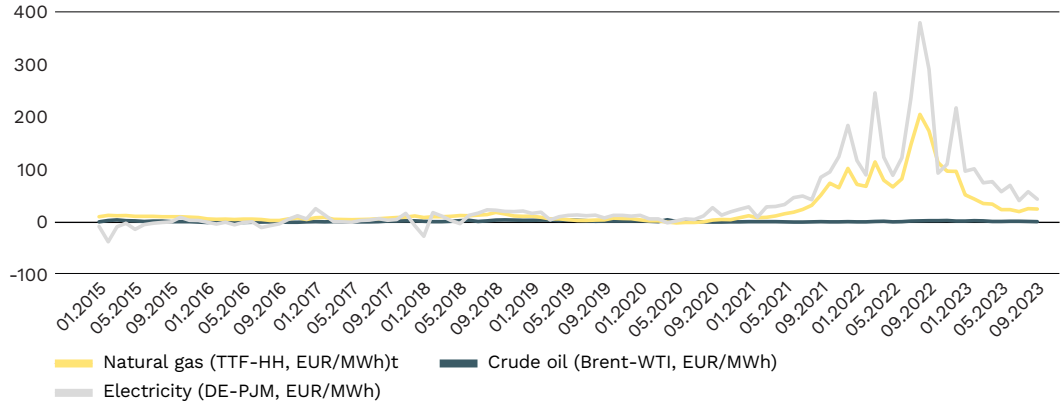
[1] DGA-ASG Analysis.

Chart 7. Relative difference in wholesale oil, gas and electricity prices (spread) between the US and the EU in 2015-2023 (%)



Note: a positive result means a higher price in the EU than in the USA, while a negative result means a lower price.
Source: prepared by PEI based on Energy Information Administration and investing.com data.

Chart 8. Difference in wholesale oil, gas and electricity prices (spread) between the US and the EU in 2015-2023 (EUR/MWh)

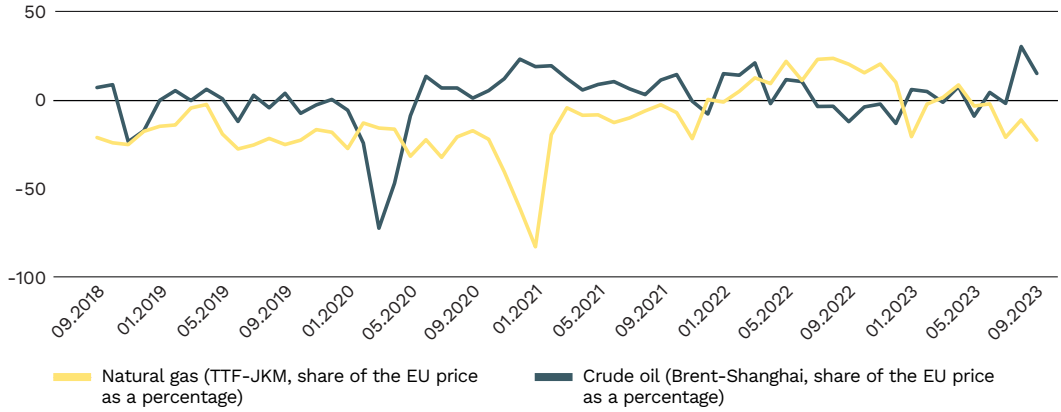


Source: prepared by PEI based on Energy Information Administration and investing.com data.

For this reason, achieving the stability on the natural gas market through the efficient expansion of import infrastructure and limiting the consumption of natural gas in the EU power sector will have a decisive impact on limiting the US's advantage when it comes to energy prices in the years to come (Lipiński, 2023).

China's advantage over the EU in terms of oil prices is over 40% lower than the advantage of the US (which is already low); however, when it comes to gas prices, it is as much as five times smaller. Forced to import fossil fuels like the EU, China does not have a significant competitive advantage over the EU in this area (Bleischwitz et al., 2022). **During the crisis year of 2022, wholesale oil prices in China were 3% lower than in Europe, and gas prices about 15% lower**. Although it cannot be ruled out that some of these raw materials are obtained by the PRC from Russia at prices below market prices (Yermakov, Meidan, 2022), its impact on Shanghai crude oil prices and the Japan Korea Marker (JKM) regional gas price benchmark remains limited so far. **Russia has high hopes for the development of economic exchange with China, selling gas and oil at low prices, but even optimistic declarations raise the issue of numerous infrastructural challenges (Babayev, Kortunov, Yujun, 2023). The potential deepening of cooperation between Russia and China will therefore not create an advantage for China over the EU comparable to that of the US**.

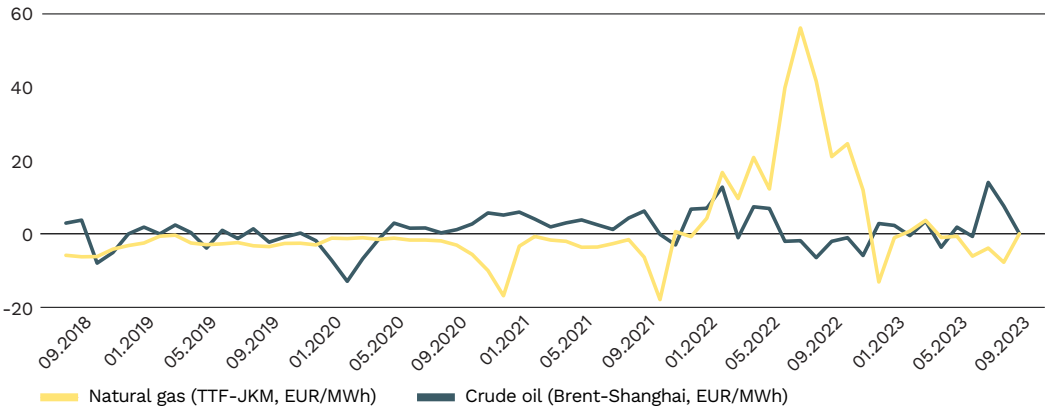
Chart 9. Estimated relative difference in wholesale oil and gas prices (spread) between the PRC and the EU in 2018-2023 (%)



Note: a positive result means a higher price in the EU than in the PRC, while a negative result means a lower price.
Source: prepared by PEI based on Shanghai International Energy Exchange and investing.com data.

Comparing wholesale electricity prices in the EU and the PRC remains a bigger challenge. The final decision to build an electricity market in China was not made until 2015 (International Energy Agency, 2023). The Chinese authorities plan to test launch a wholesale electricity market based on a coordinated formula in cooperation with local governments in 2025. Whole process of building the national wholesale electricity market is set to be completed in 2030 (www2). An additional challenge will remain the China's significant subsidies for the energy sector, which enable energy to be sold at lower prices (DiPippo, Mazzocco, Kennedy, 2022).

Chart 10. Difference in wholesale oil and gas prices (spread) between the PRC and the EU in 2015-2023 (in EUR/MWh)



Source: prepared by PEI based on Shanghai International Energy Exchange and investing.com data.

European efforts to protect competitiveness

In the context of growing competition between global economic powers, the EU cannot fail to take action to improve its competitiveness relative to the US and, above all, Asian markets. Factors distinguishing the EU from the US include Europe's greater dependence of economic growth on international trade. Another factor hampering the EU's development opportunities in the area of global economic competition is the lack of fiscal capacity at the EU level. The EC's proposals so far are primarily a response to the actions of the US, although they should not be key when building the EU's industrial policy.

The Green Deal Industrial Plan

The EU strategic document setting out the planned policy towards low-emission industry and maintaining the EU's competitiveness is the Communication published on 1 February 2023 entitled "The Green Deal Industrial Plan for the Net-Zero Age" (GDIP). This is a general document that outlines the strategic goals and directions of support for low-emission industry, but as a Communication it has no legal force. The GDPP is based on four pillars that translate (sometimes directly) into individual EC initiatives, which specify the general assumptions and are meant to implement them:

1) a predictable and simplified regulatory environment. Within it, the main legislative proposals will be the The Net-Zero Industry Act (NZIA) and the Critical Raw Materials Act (CRMA);
2) faster access to investment financing by using existing EU funds (REPowerEU, the InvestEU Programme, and the Innovation Fund), creating a new mechanism (the Strategic Technologies for Europe Platform, STEP), relaxing the rules on granting State aid (GBER, TCTF, ICPEI) and mobilising private investments;
3) improving skills, including by creating a Net-Zero Industry Academy (included in the NZIA);
4) trade openness and ensuring crisis-resilient supply chains through free trade agreements and initiatives such as the Global Gateway.

At the same time, Brussels mentions actions to protect the EU against unfair competition from other entities. These actions include work carried out as part of the EU-US Task Force on the Inflation Reduction Act, as well as announcements regarding the use of the full potential of trade defence

instruments and the single market, the Regulation on Foreign Subsidies, or the EU framework for screening of foreign direct investment.

The EC also mentions the risk of the proposed actions in the form of possible fragmentation of the single market resulting, among other things, from varying levels of investment by the EU and its rivals in critical sectors, which the Green Deal Industrial Plan is intended to respond to (European Commission, 2023a). As the Communication puts it: "while in 2020, 0.57% of EU GDP was allocated to support renewable energy sources, one country allocated almost 1% of its GDP and ten others spent less than half the EU average". This fragmentation is particularly dangerous for the Polish economy, the growth of which depends on fair competition on the EU market. At the same time, Poland does not have enough resources to compete against wealthier EU countries in the subsidy race. The rules on competition constituted a kind of development barrier for Poland at the beginning of its economic integration with the EU, but nevertheless it seems to be an interesting prospect, because Poland has started to benefit from these rules' influence.

The development of topic-specific trade agreements, such as the Critical Raw Materials Club, the Clean Tech/Net-Zero Industrial Partnerships, and the International Procurement Instrument, which promotes mutual access to public procurement, is also announced in the GDIP. Other initiatives include export credit instruments.

State aid

One element of the solutions linked to supporting low-emission industry in the EU is the relaxation of the rules on the granting of State aid by member states. In principle, regardless of the form in which it is provided, if it affects trade between EU member states, it is prohibited under Art. 107(1) TFEU. Due to the specific functioning of the EU single market, the control of national State aid is particularly important due to the easy transfer of its effects to the entire EU territory. The beneficiary gains an advantage over both domestic entities and entities from other countries that do not have access to traditional measures to protect domestic production, such as import duties. Countries with large fiscal capabilities can use the instrument, limiting the development capacity of poorer member states. However, there are exceptions to this prohibition. The most important entity responsible for the verification and approval of State aid is the European Commission.

Subsidies may constitute an incentive to develop more environmentally-friendly technological solutions or to protect employment in a selected professional group. State aid is particularly important for public goods that benefit society as a whole. However, due to its non-market nature, it may pose a threat to competition in the internal market. After receiving State aid, less efficient entities may find themselves in a better situation than their rivals. Each time State aid is granted, it must therefore be analysed in terms of its impact on market equilibrium.

Due to extraordinary events — first the start of the pandemic in 2020 and then the Russian invasion of Ukraine in 2022 — the EC temporarily relaxed the rules for granting State aid. In response to the latter event, a Temporary Crisis Framework (TCF) was adopted on 23 March 2022 to facilitate the provision of State aid in connection with the economic shock caused by the Russian invasion. Originally, the provisions of the TCF were meant to be in force until 31 December 2022, but due to the ongoing armed conflict, this framework was amended on 20 July 2022 and on 28 October 2022. The period of its application was extended and adapted to the realities of the time, primarily in the energy sector. On 9 March 2023, the TCF was replaced by the Temporary Crisis and Transition Framework (TCTF), which again extended the timeframe, this time setting an end date of 31 December 2023 for measures to counter the effects of the Russian invasion. The temporary solution, which was initially supposed to be valid for 9 months, will therefore remain in force for at least 21 months. This is justified by the indefinite timeframe of the ongoing conflict, as its continuation extends the duration of the measure directly related to it. Media reports indicate that the TCTF's validity will not be extended again (Vela, 2023), but exemptions for investments in renewable energy sources and technologies key to achieving climate neutrality will last even longer, until 31 December 2025 (European Commission, 2023b).

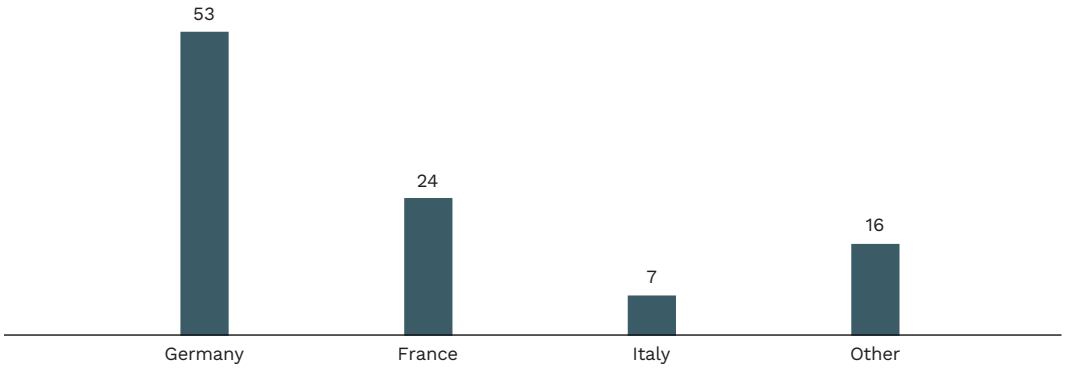
The situation with regard to the second element of the TCTF (sections 2.5 and 2.6) is completely different. Here, the rules on granting State aid for the implementation of renewable energy projects and the implementation of industrial decarbonisation measures have been relaxed. There is no strict connection between the measures adopted and any specific event. Although it is not mentioned directly in the TCTF, the letter from Executive Vice-President of the European Commission Margrethe Vestager to the finance ministers of the EU member states on 13 January 2023 from cites global challenges to justify this initiative. It is directly about high energy prices, the need to retrain employees, and the American IRA. The latter is linked to the fear that European companies will transfer their activities to the US in the absence of EU action. Loosening the regulations on granting public national aid is becoming a tool for conducting industrial policy, not just a way to respond to crises. Similar measures to temporarily relax the rules on granting aid were previously used in response to the financial crisis in 2008 and the COVID-19 pandemic.

The mere possibility of the state granting State aid is not tantamount to granting it. The resources of individual countries are a constraint. Data shared in the letter of 13 January 2023 points to a big disproportion among member states in the value of notified[2] State aid.

As Chart 11 shows, of the EUR 672 billion in State aid accepted on the basis of the TCF and other related treaty measures, 77% came from just two countries: Germany and France. These are the countries that had allocated the highest amount (in absolute terms) to this purpose in previous years.

[2] As part of the process of being granted state aid, member states notify the European Commission of this fact, which must accept it before transferring it to the beneficiaries.

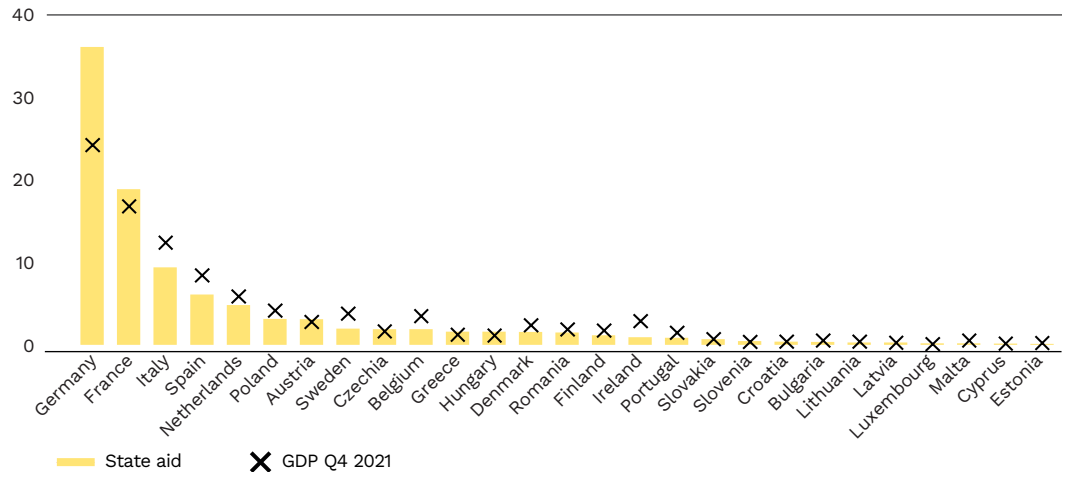
Chart 11. Member states' percentage share in the value of notified State aid in 03/2022–01/2023



Source: prepared by PEI based on Margrethe Vestager's letter of 13 January 2023.

On the top of that, between the time the TCF was in force and the publication of the letter, the gap between individual countries increased dramatically. In 2021, the total value of State aid actually granted by France and Germany was 55% of the EU total, amounting to EUR 335 billion at that time. **Germany and France's share in the value of State aid granted in the EU rose from 55% to 77% in 2022-2023**. The two countries accounted for 41.13% of EU GDP over this period.

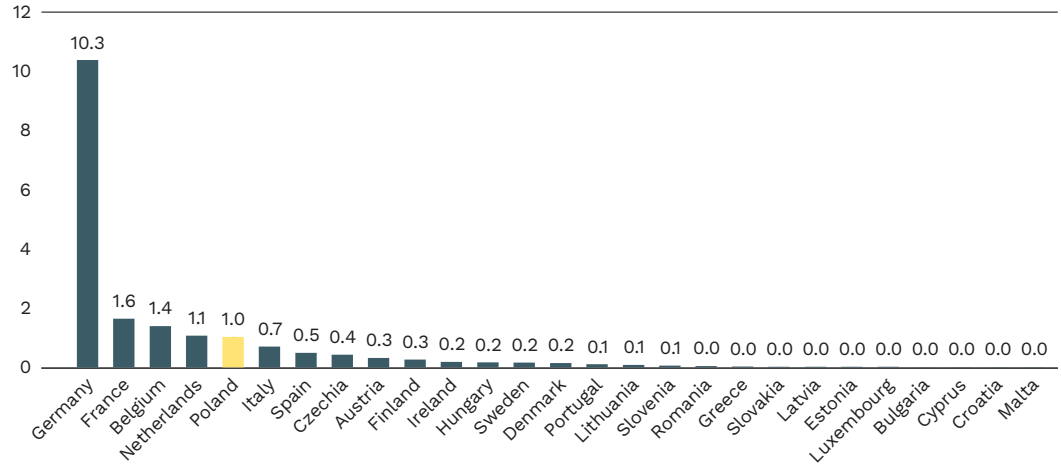
Chart 12. Share of Meber States' State aid expenditures and share of EU GDP in 2021, by country (%)



Source: prepared by PEI based on Eurostat data.

The Research, Development and Innovation (R&D&I) sector is important from the point of view of the competitiveness of the economy, especially from the perspective of the European economy's orientation towards highly developed industry. In this area, the serious inequalities in the level of spending between individual EU countries can be observed. It ranges from 0.29% (Germany) to 0.01% of GDP (Bulgaria, Malta and Croatia), taking into account the size of the individual economies. However, in absolute terms, Germany spent EUR 10.3 billion on R&D&I in 2021, 55% of EU-27 spending. In absolute terms, Germany has spent the most in this area since 2000, with the exception of 2012, 2014, 2018 and 2020, when France came first. Particular attention should be paid to the changes in spending around the end of 2020 and the start of 2021. During this period, German spending increased by 442%.

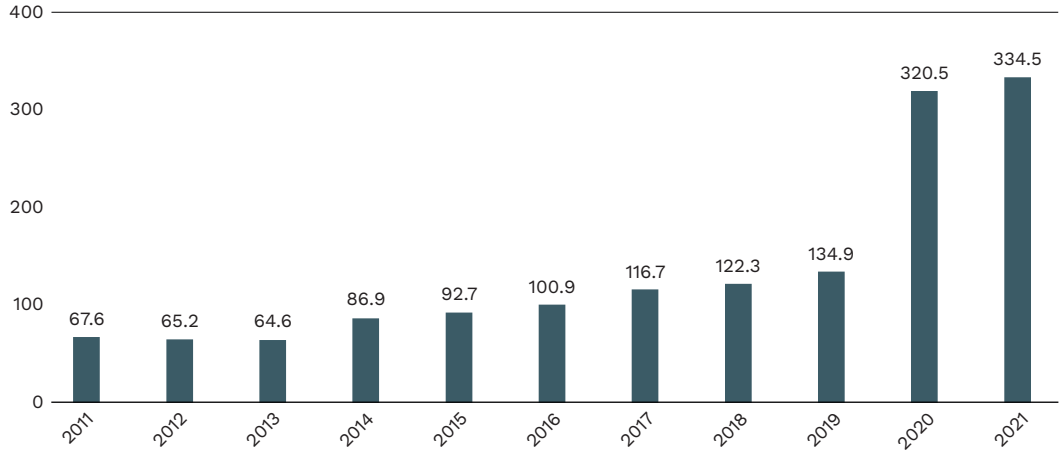
Chart 13. Spending on State aid in the area of R&D&I in EU member states in 2021 (EUR million)



Source: prepared by PEI based on State Aid Scoreboard data (2022).

The average value of the State aid granted jointly by all the EU member states every year in 2020-2021 was EUR 327.5 billion, almost three times higher than the average annual value of State aid in 2015-2019, which amounted to just EUR 113.5 billion. This has been a persistent trend in recent years and is expected to continue.

Chart 14. Increase in State aid expenditures in the EU in 2011-2021 (EUR billions)



Source: prepared by PEI based on Eurostat data.

The General Block Exemption Regulation (GBER)

Procedural simplifications are a way to make it easier for companies to obtain State aid from member states. The granting of State aid involves proceedings in which the European Commission is involved to determine whether the admissibility conditions are met. This is a form of prospective, ex ante control. However, this involves extending the period between the decision to grant State aid and its actual implementation, which makes it difficult for states to rapidly respond and develop areas in which development is key due to the challenges that may arise in the future. For these reasons, some categories of State aid have been exempted from the notification procedure. These kinds of facilitations have been introduced for SMEs, environmental protection, and R&D, among other things. The issue is regulated in Commission Regulation No. 651/2014 of 17 June 2014, the General Block Exemption Regulation (GBER). As with the TCF and TCTF, the GBER has a limited validity period, but it has already been extended several times. The latest changes in this regard, from 9 March 2023, extended the application of the provisions until 31 December 2026. The amendment includes increasing the upper limits for large investment projects below which companies can benefit from the simplified rules set out in the GBER (from EUR 50 million to EUR 55 million). The liberalisation of the rules for categorising a given State aid measure as falling within the scope of the GBER, which has been increasing gradually since 2008, can be seen in the data. In 2021, 65% of cases of granting State aid was based on the GBER. In 2014, it was 41%. At the same time, in 2021, 93% of new non-COVID State aid schemes were granted on this basis (European Commission, 2023c).

The European Chip Act

Due to the growing global competition on the semiconductor market and problems in supply chains, on 25 July 2023, the Council of the EU adopted the final shape of the chip Regulation, which aims to build European capabilities for their production and support the research sector that is developing this technological solution. The chip regulation's goal is for the European market to account for 20% of the global semiconductor market by 2030 in terms of value (currently, it accounts for an estimated 10%).

The main element of the regulation is the establishment of the Chips for Europe Initiative, which is will receive EUR 3.3 billion in financial support from the EU budget through the Horizon Europe and Digital Europe programmes. These funds are set to be spent on:

- building advanced large-scale design capabilities for integrated semiconductor technologies,
- strengthening existing and developing new advanced pilot lines,
- building advanced technological capabilities and engineering capabilities,
- creating a network of competence centres,
- taking action to facilitate access to financing for companies.

Due to limited fiscal possibilities, the EU legislator emphasises the need to obtain private capital to increase European production capabilities. The EUR 3.3 billion mentioned are funds already included in other programmes, not new funds acquired for the EU's own resources. The estimated total value of investments in the semiconductor area following the adoption of the regulation is expected to amount to EUR 43 billion. Even if the target above is achieved, this amount will be lower than the planned expenditures in the US, which — in the form of tax breaks and direct subsidies — will reach USD 53 billion as part of the CHIPS and Science Act. This could further widen the technology gap in this sector between the US and the EU.

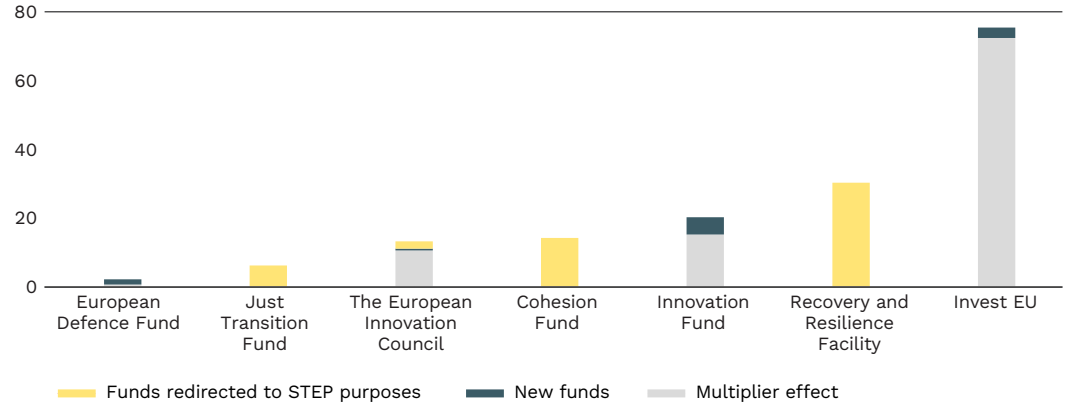
STEP

On 22 June 2023, the European Commission announced the new Strategic Technologies for Europe Platform (STEP) initiative, which is intended to strengthen the competitiveness and resilience of the European economy by accelerating the green and digital transition. The initiative does not involve the creation of a new EU fund; rather, it introduces several changes in the use of funds already available. This initiative was presented instead of the previously announced Sovereignty Fund, which was meant to be a source of financing for projects aimed at green and digital transition at the EU level

(www3). Creating a new fund with new financial resources would be a long-term process and involve the problematic process of negotiating budgetary resources for its financing (from additional membership payments or the issuance of new debt, like NextGenerationEU).

According to EC estimates, the STEP initiative has the potential to mobilise a total of investments worth EUR 160 billion in projects in digital and deep technologies, clean technologies and biotechnology. This is meant to be the result of, on the one hand, existing incentives for entrepreneurs as part of the cohesion policies and the Recovery and Resilience Facility, and on the other hand, an additional EUR 10 billion allocated to InvestEU, Horizon Europe, the Innovation Fund and the European Defence Fund. The new funds are intended to multiply the level of investment. For example, the funds allocated as part of STEP for InvestEU guarantees — EUR 3 billion — translate into EUR 75 billion in investments due to the estimated multiplier of ten (the value of financial leverage) and 40% guarantee rate in this programme (resulting in a further multiplication of 2.5). The data on the amount of investment funds mobilised through individual financing instruments is based on historical data. In the case of the European Fund for Strategic Investments (EFSI), InvestEU's predecessor, the assumed multiplier of 15 was achieved, with an average value of 15.74 (European Central Bank, 2021).

Chart 15. Estimated value of new investments made for STEP purposes, by source of financing (EUR billion)



Source: prepared by PEI based on EC data.

The aim of STEP is not only to increase the capacity to finance initiatives, but also to make better use of existing support programmes. In this context, a sovereignty portal was created. Ultimately, it is meant to function as a one-stop-shop for enterprises seeking financing. This is meant to increase the visibility of existing forms of investment financing. In addition, a mechanism for awarding a "sovereignty seal" is set to be introduced, which points to

the high quality of the awarded project and the fulfilment of the STEP goals. The beneficiaries will be projects that did not receive financing from other support tools due to budget constraints. This is meant to be another incentive for investors, to convince them to finance the initiatives promoted and thereby allocate private funds for purposes similar to those of the Commission. Having a 'Soverignity seal' will also mean a simplified procedure for obtaining financing from EU funds.

The Net-Zero Industry Act

The proposed Regulation related to the Net-Zero Industry Act (NZIA) aims to improve the regulatory environment and create predictable and long-term signals encouraging investment in zero-emission technologies by: 1) facilitating the financing of investments in zero-emission technologies, 2) reducing CO_2 emissions, 3) facilitating access to markets, 4) improving skills to create high-quality jobs related to carbon neutral technologies, 5) supporting innovation 6) governance and 7) monitoring by the Commission of the implementation of CO_2 reduction and climate neutrality targets.

Importantly, the document highlights the strategic zero-emission technologies critical to achieving the EU's climate and energy targets by 2030. To fulfil the new goal, EU would have to produce enough zero-emission technologies to cover 40% of the local demand for suchinstallations. The strategic zero-emission technologies are:

a) solar photovoltaic and solar thermal technologies,

b) onshore wind and toffshore renewables technologies,

c) batteries and energy storage technologies,

d) heat pumps and geothermal energy technologies,

e) electrolysers and fuel cells,

f) sustainable biogas/biomethane technologies,

g) carbon capture and storage (CCS) technologies,

h) grid technologies.

In addition to providing financing through funds such as InvestEU, the Commission, within NZIA, promotes solutions to facilitate technology development. Brussels treats public procurement as an important tool for creating a favourable market environment and encouraging the scaling up of production. This will create stable demand for zero-emission technologies in the EU. However, public procurement, as well as direct aid from member states to businesses, could lead to imbalances in the single market and its fragmentation. This is linked to the countries' unequal potential, not only in terms of budget or production potential, but also the state's ability to use public procurement to promote its own enterprises while maintaining competition rules.

The so-called regulatory sandboxes are designed to facilitate innovation by allowing consumers to test zero-emission technologies under the supervision

of regulators for a limited time. This mode will guarantee specific strategic technologies quick access to financing or markets. Member states will be responsible for determining them.

The Net-Zero Europe Platform will be a tool to support the management of the process of developing and adopting emission-neutral technologies. It will consist of representatives appointed by each member state. The platform's members will advise the European Commission and member states on the implementation of emission-neutral industry and technology development strategies.

Another dimension raised in the NZIA was the need for employees to improve the skills that will be needed to develop technology and the economic transformation, thereby contributing to the achievement of climate neutrality goals.

The Critical Raw Materials Act

The aim of the Critical Raw Materials Act (CRMA) is to improve the functioning of the internal market by ensuring safe and sustainable supplies of critical raw materials key to achieving strategic goals in the area of the EU's digital and green transition (www4). This act is based on a triple political and economic diagnosis. Firstly, an economic transition based on emission-neutral industry and digital technologies, among other things, will require the unprecedented use of rare earth metals and other critical raw materials — for more on the EU's dependence on critical raw materials, see Ambroziak et al. (2022), and for more on the potential to import them from Africa, see Kopiński (2023). Secondly, the EU is dependent on imports of these raw materials from third countries, which creates potential risks. Thirdly, other countries (China, the US, Japan, Canada and South Korea) with ambitions relating to the zero-emission and digital economy are also competing for access to these raw materials. For this reason, in the CRMA, the EC outlines ways to reduce dependence on supplies on critical raw materials.

One of the pillars of CRMA is the development of the value chain of critical raw materials in the EU. The CRMA includes a list of strategic raw materials and set targets for production, processing and recycling. **By 2030, the critical raw material production capacity in the EU should reach at least of 10% of the EU's annual consumption for extraction, (where the country's potential allows for it), at least 40% of the EU's annual consumption for processing, and at least 15% of the EU's annual consumption for recycling**. The CRMA aims to support sustainable sources and promote circularity in the economy. It also draws attention to international cooperation.

The CRMA also pushes for the diversification of supply sources from third countries. By 2030, not more than 65% of the Union's annual consumption of each strategic raw material at any relevant stage of processing shall come from a single third country

At the same time, the EU wants to establish a Critical Raw Materials Club, which will bring together countries that use and produce critical raw

materials. The need to strengthen sustainable development, care for the environment and enable producing countries to move up in value chains are mentioned. Bilateral agreements are also set to be developed, which will strengthen the diversification of supplies and therefore the EU economy's resilience. Examples of these kinds of agreements are the agreements with Canada (CETA), Ukraine, Kazakhstan and Namibia. Moreover, the role of the Global Gateway strategy — that is, European infrastructure investments in Latin America, Africa and Asia — was emphasised.

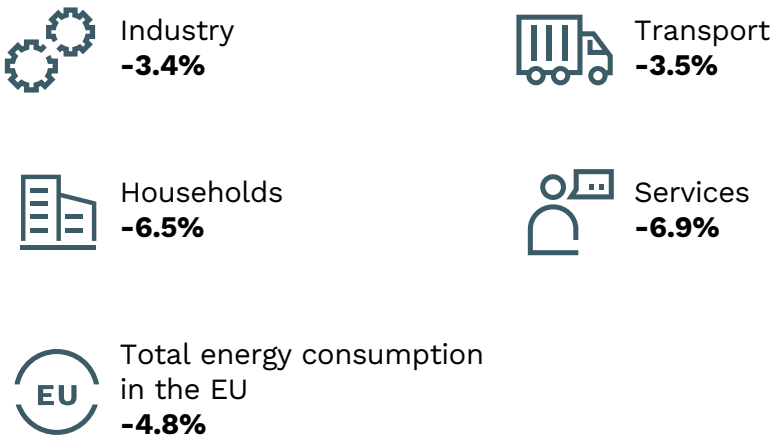
In addition to the positive actions proposed, the CMRA mentions the need to intensify efforts to protect the single market, including by using existing Trade Defence Instruments, monitoring FDI and creating a database of export restrictions within the OECD.

Private investments would play a key role in financing the CRMA and would be directed through policies and State aid, among other things.

REPowerEU

The aim of the REPowerEU package was to ensure the security of gas supplies in the EU after the Russian invasion of Ukraine while maintaining the energy transition assumptions set out in the Fit for 55 package. The package introduces adjustments in the consumption of gas, oil and coal (European Commission, 2022a). **The correction of the expected reduction in gas consumption compared to the Fit for 55 assumptions was largest in the services sector (-6.9%) and among households (-6.5%)**.

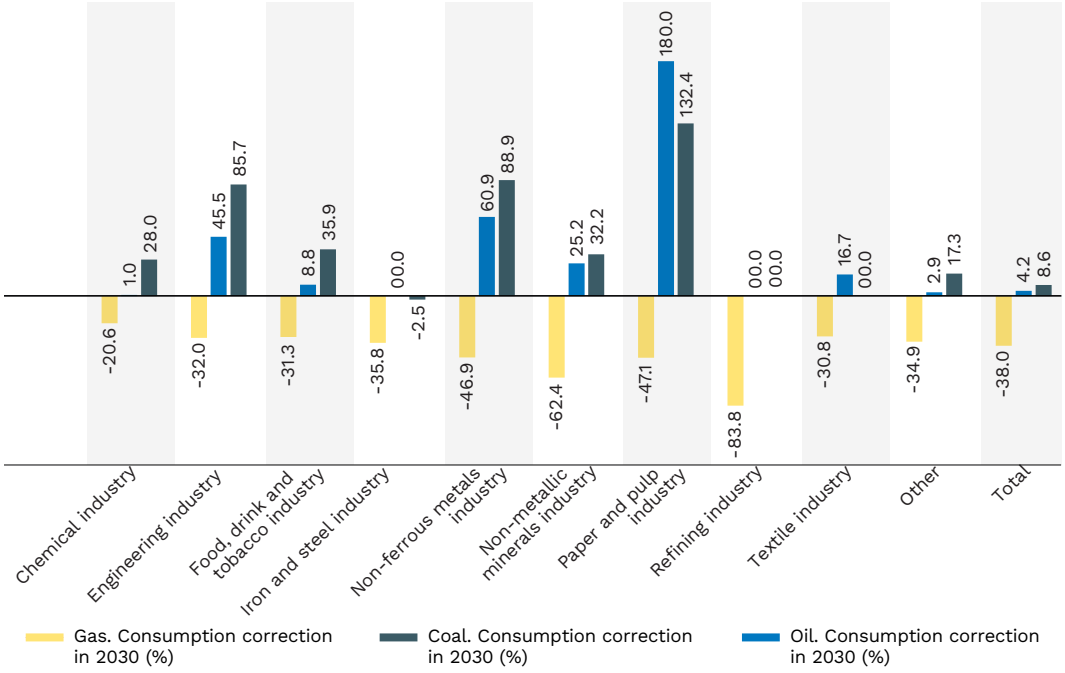
Infographic 1. Total correction of EU energy consumption until 2030 in REPowerEU, compared to the Fit for 55 assumptions (%)



Source: prepared by PEI based on REPowerEU plan.

The industries most affected by the need to correct the assumptions on gas consumption were the refining, non-metallic, non-ferrous metals and paper industries, in which the reduction in assumed gas consumption exceeded 45%. In the paper, non-metallic, non-ferrous metals, food and engineering industries, gas is set to be replaced by a temporary increase in coal and oil consumption. The steel products and refining industries, where the possibilities of replacing natural gas with the above-mentioned raw materials are limited, may find themselves in the most difficult situation.

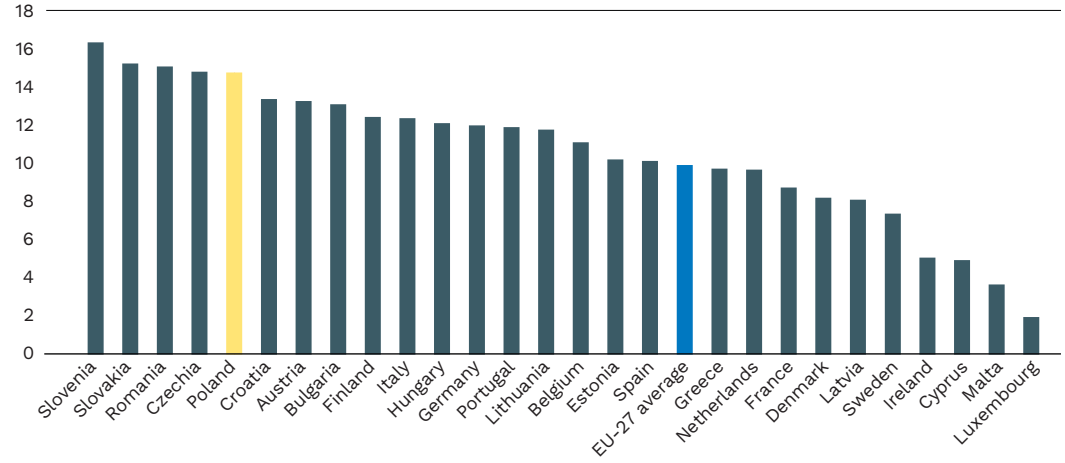
Chart 16. The size of the correction of gas, oil and coal consumption in individual sectors of the EU-27 industry included in the REPowerEU plan, compared to the Fit for 55 assumptions (%)



Source: prepared by PEI based on REPowerEU plan.

The industries affected by the need to reduce the consumption of gas, oil and coal identified in the REPowerEU plan constitute a crucial part of the economy of Slovenia (15.3% of GDP in 2015-2020), Slovakia (14.3%), Romania (14.1%), the Czech Republic (13.9%) and Poland (13.8%). Across the EU, the industries subject to the reductions are responsible for 9.3% of GDP. In the countries of Central and Eastern Europe, the average share in GDP of the industries being forced to reduce the consumption of fossil fuels is 35% higher and amounts to 12.6%.

Chart 17. Average 2015-2020 member states' GDP share of the industry required by REPowerEU package to correct the assumptions regarding gas consumption in 2030 (%)



Source: prepared by PEI based on: SWD(2022) 230 final, COM(2022) 230 final with attachments and Eurostat data.

The European Commission has also proposed a number of actions in the area of the diversification of supplies, recommending the replacement of gas with renewable energy sources, and improving energy efficiency. **The total estimated cost of the actions set out in the REPowerEU package is EUR 301 billion. The main areas of spending as part of the package will be: energy savings (EUR 97 billion), investments in renewable energy (EUR 86 billion), the diversification of supplies (EUR 64 billion) and construction of new transmission and storage infrastructure** (European Commission 2022). The sources of financing for these actions will include funds from the Cohesion Fund and the European Regional Development Fund.

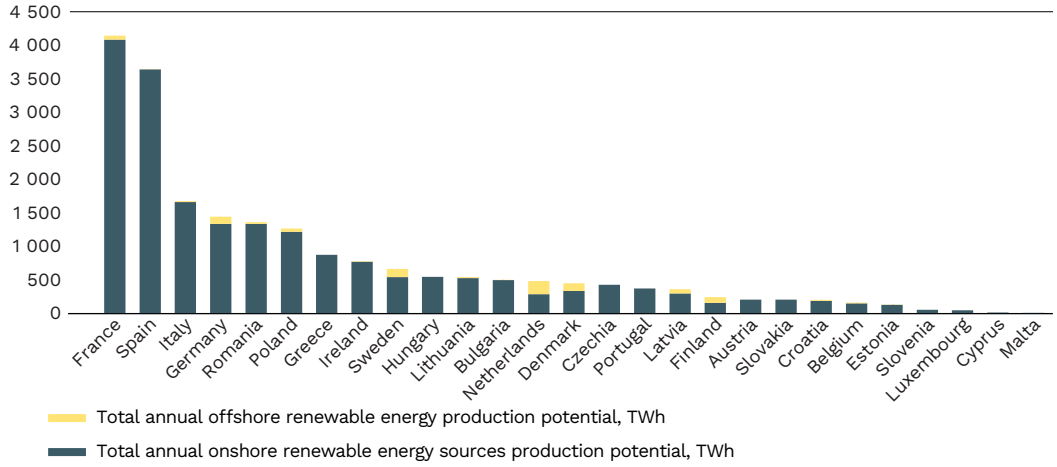
The current method of allocation of REPowerEU funds could increase differences in infrastructure and development between EU countries and, consequently, reduce the economic and social cohesion in the EU. Funds linked to solving infrastructure constraints will go to the countries experiencing these constraints. Based on ACER's analysis (www5), it is possible to locate the areas of major investment needed in Central and South-Eastern Europe. Funds link to the expansion of renewable energy sources may go to areas with the greatest potential for renewable energy production resulting from climatic conditions. At the same time, the **package lacks proposals in the field of regional policy and maintaining the EU's socio-economic cohesion**.

Map 1. Main infrastructure constraints with a significant impact on the functioning of the gas market in the EU

Source: prepared by PEI based on ACER (2023).

France, Spain and Italy account for 46% of the potential for energy production from renewable energy sources (RES) in the EU, which may offer them an advantage in terms of access to funds from green investments and the development of green industry. Western European countries account for approximately 62% of renewable energy production potential. **The CEE countries' potential is 2.5 times lower than that of the Western European countries and accounts for 25% renewable energy potential in the EU**. Estimates by the Joint Research Centre of the European Commission on individual member states' potential in the area of renewable energy point to significant differences between member states in terms of the possibility to install RES (www6). **In Ireland and the Netherlands, due to very good conditions for onshore and offshore wind energy, the annual RES production potential exceeds 10 GWh/km². It is 7 GWh/km² in France and Spain, and approximately 5.5 GWh/km² in Poland and Germany, similar to the EU average (5 GWh/km²)**. Sweden has the lowest annual potential in the area of renewable energy production in the EU (2 GWh/km²) due to poor conditions for the development of photovoltaics.

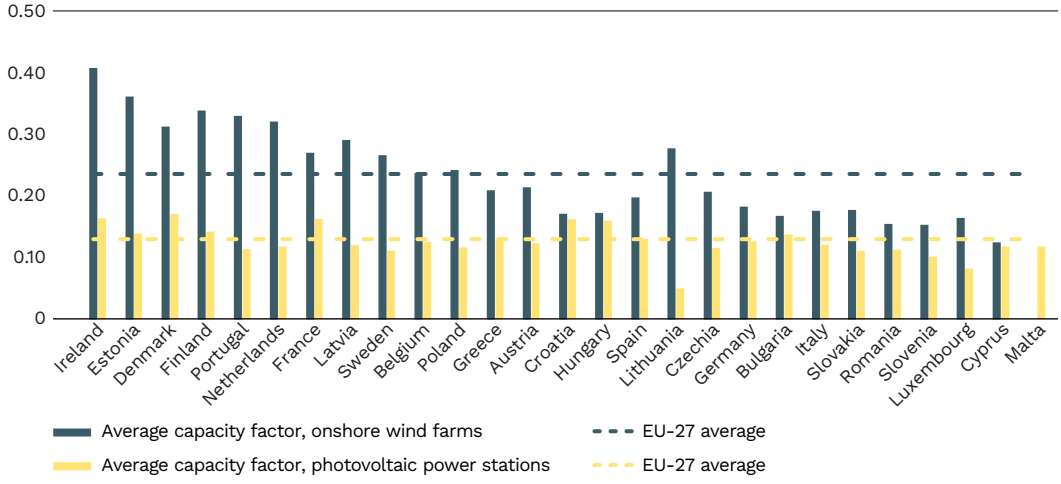
Chart 18. Total renewable energy potential in member states (TWh/year)



Source: prepared by PEI based on JRC data used in COM(2022) 230 final.

In addition to location options, a factor that further differentiates EU countries are the climate conditions that enable RES to operate efficiently. Wind turbines in Ireland, Estonia and Denmark would have the potential to produce more than twice as much electricity for each MW of installed capacity than in Romania, Slovenia, Luxembourg or Cyprus, according to the JRC. The results for Poland — 0.24 for wind farms and 0.13 for photovoltaics — are close to the EU average.

Chart 19. Value of the RES capacity factor in EU countries



Note: average values of the capacity factors for the EU-27 countries are marked with dashed lines (dark green — wind farms, yellow — photovoltaic power plants).

Source: prepared by PEI based on JRC data used in COM(2022) 230 final.

Existing regional differences in renewable energy potential and strategic priorities in the energy sector could be further intensified by massive support for companies as part of State aid by the largest EU countries. Further extensions of the validity period legitimised as crisis-only solutions, will further facilitate for states to subsidise RES fund, are planned as communicated in the European Wind Power Action Plan (European Commission, 2023d). The EUR 700 million increase in the financing of wind projects as part of the Innovation Fund in 2023-2030 foreseen in the Plan will not be able to offset the structural impact of over EUR 24 billion worth of State aid for the development of wind energy, which EU countries notified in January-October 2023 alone.[3]

New support policies, including those intended to respond to crises that affect EU countries — in this case, in industrial policy, energy security, and the energy transition — should take into account the experience of unequal distribution of funds under centrally managed programmes in the EU. In particular, a major threat are the systems for subsidising energy prices — that is, the introduction of regulated tariffs and support systems for energy-intensive enterprises — being considered by various countries, such as France or Germany, which could lead to significant disproportions in energy prices for industry, including energy-intensive industries (Vela, 2023). Countries that have a low level of absorption of EU funds in these areas should point out the damage that the potential disintegration of the common market could do to the entire EU. Poland has particular reasons to defend the integrity of the EU common market. This is a key element that will determine if i will be able to maintain its economic growth, which is why the multi-directional and consistent articulation of demands in this area within the EU is important. A potential platform for activities may be informal meetings similar to the Group of Friends of the Common Market that brings together 16 EU countries, which was established on the initiative of Finland and Poland in 2019.

Summary of the proposals

It will only be possible to fully assess the effectiveness of the proposals presented once the negotiation regarding their final shape are concluded by the member states and the European Parliament. Especially taking into account that even this shape of STEP encounters obstacles. It is certain that, with these proposals, the EC has responded to ongoing challenges: the need to support low-emission industries, diversify supply chains for energy and critical raw materials, especially zero-emission technologies, or support an independent source of microchips, the backbone of new technologies. Little room is left for unknown solutions. The GDIP and related regulations aim to support the transition to a climate-neutral EU in 2050. The role of the member states — and of the EU as a whole — in achieving such an ambitious target must be significant to ensure the long-term financing of the transition and cover the potentially higher operating costs of innovative low-emission technology companies in the EU, compared to elsewhere. These result from

[3] Calculated by PEI based on European Commission publications on State aid.

a variety of reasons; for instance, the EU's competitiveness was reduced significantly by Russia's invasion of Ukraine.

A number of Brussels' proposals point to its regulatory tendencies: the creation of various types of regulations and the bureaucratic frameworks for the operation of enterprises in the single market. In contrast, the Chinese model takes into account economic management to a much greater extent, while the American model is meant to provide direct assistance to companies operating in the liberalised market. This results from the EC's competences: unlike the US or China, it does not have a huge budget at its disposal, and it does not have as much control over the economy as the Party in China. This could make the solutions adopted slightly less effective and, above all, make them more complicated for business.

The IRA's effectiveness is demonstrated by the increase in investment in the US. Since August 2022, when the IRA came into force, battery production capacity in the US has increased by 67%; in the EU, it has increased by just 26%. Many large companies have benefited from the IRA's promises, but an interesting dimension is how these solutions are less favourable for smaller and less financially secure companies, as shown by the example of Taiwanese ProLogium, which will locate its research and production centre in France (www7). The project benefited from the looser State aid rules in the EU. Another positive example is Taiwan TSMC's investment in a microchip factory in Germany. This venture involves a contribution of EUR 3.5 billion (www8), while TSMC has decided to triple its investment in its Arizona plant to USD 40 billion in total. The EU has entered the race, but its offer may not be competitive enough to be the only area of investment.

Impact of the proposed instruments on the single market

The plans above and the European Commission legislative actions create two challenges. Firstly, there is a tension between free trade (the old order) and protectionism within strategic sectors (the new order). Secondly, these plans pose a challenge for the single market, especially in the form of a potential increase in the geographical imbalances between countries, but also within countries themselves. Aware of these challenges, the Commission announced the creation of a Sovereignty Fund, but ultimately proposed the STEP initiative — which operates based on completely separate principles — in its place.

Protectionism or free trade?

Brussels was taken by surprise when Washington adopted the IRA containing discriminatory local content requirements, which are illegal under World Trade Organisation (WTO) regulations. In the EU, there is a lack of consent to breaking the rules of free trade. Its importance is therefore clearly emphasised in GDIP, NZIA and CRMA and the need for EU action is justified in response to third countries' protectionism. These documents stress the importance of the WTO (and, at the same time, the need to reform it) and the will to continue operating within the framework of bilateral and universal trade agreements or, more broadly, economic agreements. At the same time, they also point to the need to use instruments that will protect the EU economy against the negative consequences of third countries' actions.

This nuanced position shows that the EU does not support any one approach unequivocally. Its economy, more dependent on international trade than that of the US, cannot afford to be completely cut off from the international connections that it has created. At the same time, the risk of the EU losing competitiveness as a result of a number of factors — from other countries' protectionism to access to raw materials — is high. This is the reason for the Commission's comment on the NZIA: "In a business-as-usual option, the resilience of the EU's future energy system would be weakened by not being able to considerably de-risk its net-zero industry supply chains and not sufficiently securing access to key technologies key to decarbonise and power our economies". Despite this, the Commission's proposals seem to differ in

terms of assertiveness from the actions of other countries that protect their interests, seek to limit climate change to a much lesser extent (such as Japan refusing hard declarations in the G7 forum on phasing out coal), or try to limit access to their own market (like the US) much more strongly. Researchers are observing changes in the EU and, above all, in the Commission's actions, but there is still visible restraint when it comes to toughening policy towards China (Matthijs, Meunier, 2023).

Deglobalisation, understood as breaking trade links and bringing production home, is an unrealistic scenario. It is impossible to undo such an extensive network of global connections, which was created to achieve production efficiency and maximise company profits. Partial deglobalisation, understood as the return of certain barriers to global trade, is happening. This is a costly process because it means sacrificing the efficiencies achieved within current supply chains. The most expensive thing will be bringing home production. The diversification scenario — the organisation of the supply chain within allied countries or countries close to the sales market — will also be expensive, but to a varying extent. It seems, as in the case of the sanctions imposed on Russia, that this scenario will be necessary for the security and strategic interests of Europe and the US. The current, active actions taken primarily by the US have triggered a response from, for example, China, which in August 2023 limited access to gallium and germanium, essential raw materials for the production of microchips. This creates a protectionist race that will negatively affect both the global economy and the economies of the countries involved. However, thinking in terms of pure economic calculations may be a mistake here. Business-as-usual is no longer possible, primarily because authoritarian states, such as Russia and China, are using the room for manoeuvre to pursue their own interests. Dependencies have also been permanently "weaponised", both on the side of the US and the EU (towards Iran, and now Russia, and under Donald Trump even towards its allies), as well as on the side of China and Russia, which are blackmailing others by threatening to deny or limit access to their own market and raw materials, or abandon previously-agreed-on multi-billion investments. The dangers associated with dependencies have been presented in the European security strategy and EU strategic foresight. Both these documents include a policy of de-risking, the process of reducing dependence — on raw materials, products or technologies — due to the potential threats to EU security. Free trade in its current form seems impossible to maintain, although this will involve huge costs and sacrifices. The key question that should be asked regularly is to what extent it is necessary to bring production closer to sales markets (and possibly to allied countries), and to what extent it is enough to maintain a diversified supply chain, and how this differs within individual sectors. Ursula von der Leyen has emphasised the need to maintain cooperation and communication channels with China; not to strive for decoupling, but rather to implement de-risking, understood as reducing resource dependence in key sectors of the European economy, taking into account China's new, more assertive approach in international politics, in the EU's strategies. Brussels is set to invest in making the economy more innovative and resilient, limit technology leakage, control Chinese investments in the EU to a greater extent, and seek to liberalise trade with partners such as New Zealand, Australia and India (www9).

The European Commission's working document on NZIA published on 19 June 2023 clearly highlights the prospect of global international competition in the production of carbon-neutral technologies. Its conclusion is clear: lack of action will only reduce the EU's global competitiveness, increase the risk of failure to meet the goals set out in the European Green Deal, and make the EU's future energy system less resilient.

At the same time, to reduce trade disputes with the US, the EU and its member states must clearly support limiting the rise of China. This is not only about restrictions on access to technology or screening investments, but also about combining trade and security policy in an even stronger way to make export restrictions work and increasing the economic intelligence cooperation to prevent tech leaks to China (Gehrke, 2023). This seems to be happening, as confirmed by the security strategies of the EU and Germany, which call China a systemic rival and, for example, the anti-subsidy proceedings initiated in the electric car sector.

Geographical equilibrium

Since action seems necessary, the next issue is whether the currently proposed solutions are optimal and what threats they pose. The potential fragmentation of the single market and the resulting disruption of the geographical equilibrium between countries (and potentially within countries) is this kind of risk for the EU. Unless these tools are adequately supplemented with additional funds at the EU level, allowing greater flexibility in member states' rules on State aid and emphasising the role of public procurement in the development of zero-emission technologies will result in competition between member states, which may lead to harmful bidding among member states granting companies ever higher subsidies. This kind of race favours the largest EU economies.

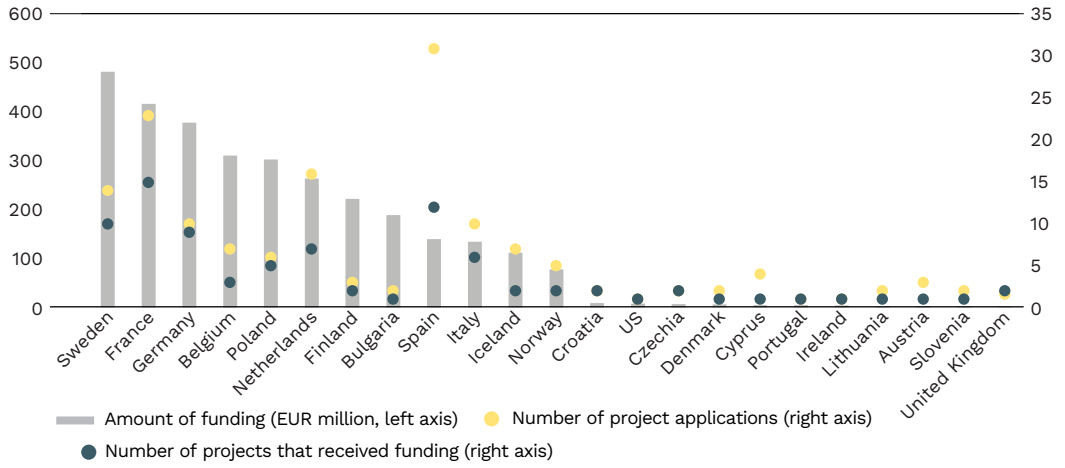
The proposed acts and strategies' key problem is the tension between maintaining the EU's global economic position and competitiveness and maintaining the single market. On the one hand, protectionist actions by third countries demand an EU response in de-resking; it should even reverse this trend and increase other countries' dependencies on the EU and create EU's technological advantage (Gehrke, Ringhof, 2023). On the other hand, the lack of EU fiscal capacity and the small EU budget mean that the main tools that will be used are the individual member states' responsibility. The EU does not have the ability to grant tax breaks; the simplest and more transparent industrial subsidy mechanism. This tension was meant to be partially resolved by the Sovereignty Fund, but the proposed Strategic Technologies for Europe Platform (STEP) seems to add to the problem, rather than solve it. Money from cohesion funds used for STEP purposes may increase the geographical imbalance within countries and favour the concentration of investments in costly zero-emission technologies or critical raw materials in regions that

are already benefiting from the economic situation and the concentration of investments. The relaxed rules for granting State aid were meant to increase the flexibility of guaranteeing it, and the new European fund had the potential to provide funds for granting it, especially in less wealthy countries. The European Sovereignty Fund has not been established — not because it is not necessarily, but primarily due to the growing opposition, mainly from the northern EU countries, to the EU budget contributions and often fundamental doubts about the financing of the EU through bonds and debt, even if the costs of this debt are often significantly lower than the cost of debt in many member states. The creation of STEP may be a temporary solution, but its implementation will postpone the potential creation of a new fund.

The Commission seems to be aware of the potential threats. The risk of fragmentation of the single market is linked to the varying levels of investment in sectors critical to the climate neutrality strategy. **"While in 2020, 0.57% of EU GDP was allocated to support renewable energy sources, one country allocated almost 1% of its GDP and ten others spent less than half the EU average"** (European Commission, 2023a). Programmes such as Horizon or the Innovation Fund already seem to favour those with the appropriate economic potential and level of human capital. rather than equalising the economic potential between the CEE countries and other EU-27 members. Of the 88 projects worth over EUR 3.0 billion that received funding from the Innovation Fund in 2021-2023, only 13 projects with a total value of EUR 517.3 million were implemented with the CEE countries' participation. **17% of the funds from the Innovation Fund were allocated to projects implemented in CEE**.

In the third round in 2023, CEE fared the worst in the allocation of funds to large-scale low-emission projects as part of the Innovation Fund. Just two out of 41 projects came from CEE: one from Croatia and the other from the Czech Republic.

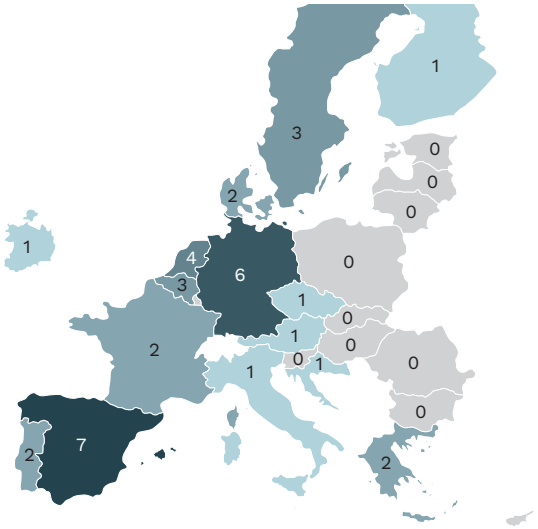
Chart 20. Number and value of projects financed within the Innovation Fund in 2021-2023



Source: prepared by PEI based on EC data (www10).

The value of grants was also much higher than in the two previous rounds: EUR 3.6 billion, compared to EUR 1.0 billion and EUR 1.8 billion in 2021 and 2022. Moreover, it is worth emphasising that not a single euro for low-emission manufacturing (out of a total of EUR 2 billion) went to the CEE countries.

Map 2. Number of large-scale projects that received financing in the third round of the allocation of funds from the Innovation Fund in 2023

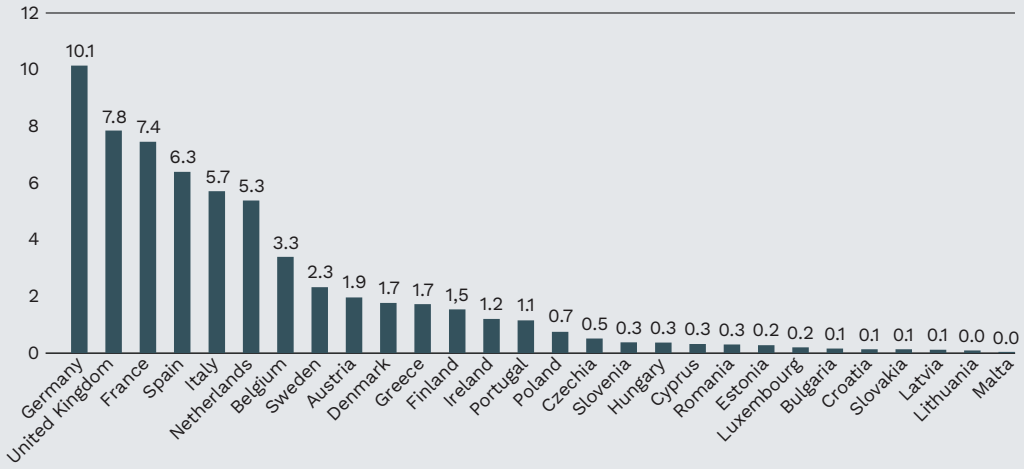


Source: prepared by PEI based on European Commission data (www11).

Another aspect that could contribute to geographical imbalance is the potential brain drain, the exodus of human capital from less developed regions. The need for the new skills necessary for the economic transition and the competition for talent mentioned in the documents above could lead to a situation in which the most developed countries with the greatest technological potential attract the best-educated specialists from other member states, further weakening the foundations for the redistribution of economic potential.

With a budget of almost EUR 80 billion (www12), Horizon 2020 was the largest programme in EU history focused on financing research and innovation. The programme's aim was to strengthen the EU's innovation capacity and thereby maintain its leading role in the global economy. The data in Charts 21 and 22 presents EU funds' contribution to the projects implemented by individual countries. The differences in the amount received from the fund are very big. **The Horizon 2020 funds received by the four most supported countries (Germany, Britain, France and Spain) were greater than those received by the next 24 countries combined. Moreover, the funds received by the 18 least supported countries (EUR 9.4 billion) accounted for approximately 12% of total financing, less than the funds allocated to Germany (EUR 10.1 billion)**. These differences not only have a structural dimension, but also result from differences in the application process in specific countries.

Chart 21. Horizon 2020 (for 2014-2020) – EU's financial contribution to a given country's projects (EUR billion)

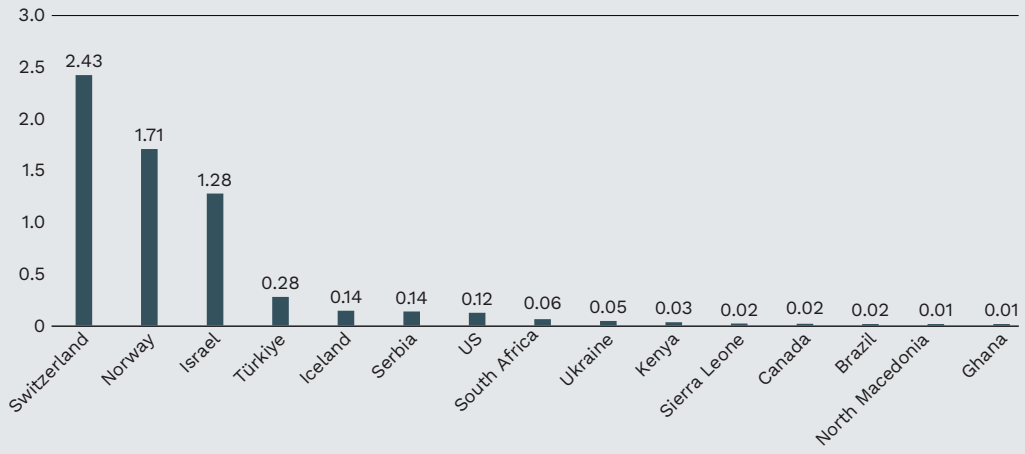


Source: prepared by PEI based on EC data (European Commission, 2022b).

One of the indicators that shows to extent to which countries apply for funding as part of the Horizon 2020 programme is the number of applications divided by the number of academics and engineers in a given country. In the data on the first 4.5 years of the programme, Cyprus, Slovenia and Greece were among the leaders (European Commission, 2022b). Poland was among the countries that did more poorly; it submitted three times fewer applications than the EU average. This shows that the problems lie not only with Brussels, but also with member states, which do not always take the appropriate steps to facilitate the absorption of EU funds. More than 50% of the applications submitted came from five countries: Britain, Italy, Germany, Spain and France.

Moreover, as the Horizon programme is also open to non-EU countries. Switzerland (EUR 2.4 billion), Norway (EUR 1.7 billion) and Israel (EUR 1.3 billion) received more EU funds than some member states (for comparison, Poland received EUR 744 million).

Chart 22. Horizon 2020 (for 2014-2020) – EU's financial contribution to projects implemented by institutions from non-EU countries (EUR billion)



Source: prepared by PEI based on EC data (European Commission, 2022b).

The cost for consumers

The proposed solutions will also be inextricably linked to the costs incurred by consumers and taxpayers. Like the support during and after the COVID-19 pandemic, funding for industry will have a pro-inflationary impact. However, this is a relatively small threat in view of the costs of undermining competition rules in the single market. Protection against monopolisation and domination in the single market has effectively reduced prices and ensured a high quality of services in the internal market. The violation of these principles and a more active role for Brussels and individual member states' capitals will limit the benefits of a competitive EU internal market.

Solutions that might protect the single market's cohesion

To ensure cohesion and competitiveness within the single market while protecting the EU's global competitiveness, it is necessary to ensure a geographical balance in the proposed mechanisms. Innovation cannot be achieved by regulation alone, but it is possible to try to guarantee and stimulate innovation potential in each EU region. The US microchip sector (Miller, 2023) is a great example of how an innovator can stop being innovative and competitive due to satisfaction with success that has already been achieved. Then the highest quality might not even be guaranteed. This risk also extends to companies subsidised by the state — the public funds spent might be allocated inefficiently to the company, which will no longer be able to regain its market position. At the same time, the examples of Taiwan, South Korea and China show that countries can build their own semiconductor industry as a result of huge subsidies. A similar phenomenon of a market hegemon that failed to keep up with changing trends occurred in the German automotive industry. In this case, the entire sector became too dependent on diesel technology and was overtaken by rivals in the field of electromobility. For these reasons, it is important to draw on the EU's strength in diversity and ensure equal opportunities when it comes to obtaining financing for innovative industries.

Increasing the European Commission's budgetary capacity would be the most desirable solution from the perspective of maintaining the single market's cohesion, which is disrupted by the easing of the regulations on State aid. The EC should have tools to support and maintain the competitiveness of European companies at the EU-wide level at its disposal. The Sovereignty Fund discussed recently, could become a potential answer to some of those issues. To implement these kinds of proposals, an ambitious approach to the EU budget is necessary. Rather than being limited, it should be increased and focused on activities that aim to ensure the development of the internal market and EU companies' innovativeness. However, the EU budget is not growing. It remains at around 1% of EU GDP and is even falling slightly. Some experts also point to the need to change the financing methods and goals (Diaz, 2021). A controversial issue will remain ensuring sufficient EU budgetary capacity. There are three ways to achieve this goal: 1) increasing member states national contributions 2) issuing common debt, as in the case of the NextGenerationEU programme, 3) creating European taxes or transferring some of member states' tax revenues. The condition for introducing these kinds of

changes is the successful financing of projects within the framework of the budgets currently being agreed on and the much greater availability of central EU financing for Central European countries. In addition to funds, other forms of support that increase the region's innovative potential will be important.

The creation of a Sovereignty Fund would transfer the ability to provide support from the country level to the EU level. The EC could then ensure that all companies have equal access to these funds. After NextGenerationEU, the resistance from some member states is too great to allocate further funds or allow debt to be incurred for joint initiatives. However, this discussion could be revisited in the coming years. Maintaining the integrity of the common market is a serious argument in favour of the redistribution mechanism being discussed, especially for countries such as Poland.

Among the potential changes in the planned financing mechanisms, the creation of a guaranteed minimum amount of funding for individual member states seems worth considering. The idea is to create equal access to innovative industry throughout the EU using these kinds of measures. Maintaining this potential could provide an opportunity for positive competition within the EU, maintain innovation potential, and protect cultural diversity. Innovation is not limited to a single language or culture, so each country should have a network of institutions that ensure access to assistance, engineers and financial resources.

The most innovative EU undertakings, regardless of their country of origin, should be able to obtain additional support to avoid the phenomenon of "levelling down", which discourages member states from adopting solutions that foster innovation to a greater extent. For example, funds in the innovation fund or Horizon could be divided into a part ensuring innovative potential and another part for the most innovative undertakings.

Simplifying access to EU funds should be particularly important. STEP might be a small step in this direction, but within individual funds, the bureaucracy should be simplified, because its complexity sometimes discourages businesses from applying for funds. It also limits access to them to large enterprises that are able to innovate and produce while operating a system of application and subsidy procedures.

At the same time, the regulations on mergers and acquisitions should not be relaxed. Creating champions involves the risk that companies will not be forced to compete on the European market, resulting in a risk of monopolistic activities. The lack of internal mobilisation is a threat, but so is rent-seeking; that is, lobbying and creating regulations that artificially protect the European market against new players, which are sometimes more innovative or offer higher-quality products.

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