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Ready to compete: European pathways to overcome energy rivalry

Elcano Policy Paper

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June 2025

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Ready to compete: European pathways to overcome energy rivalry

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ISSN: 225-5293
Depósito Legal: M-8692-2013

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Executive summary

1. Europe prefers energy cooperation, but is ready to compete

This is the message that the EU should convey to any rivals disposed to using their energy capabilities as a strategy for international competition, essentially Russia, China and the US. Although all three may be viewed as the EU's energy rivals, the rivalries differ in their nature, intensity and responses. Identifying each type of rivalry and their energy dimension is the first step towards overcoming them by means of a strategy that sets out how and with what combination of instruments they can achieve their most important goals. Europe is equipped with major energy assets for competing: a large market, global companies, human capital, its own nuclear and renewable capabilities, leadership and public support for decarbonisation, as well as instruments for combatting energy coercion

2. Energy rivalry entails competing spatially and positionally with other energy models and for access to resources and markets

Spatial rivalries entail geographical disputes with a high risk of militarisation, while positional rivalries are tussles for regional and global influence and status. The two tend to intermingle, creating mixed and complex rivalries, where cooperation and conflict coexist. The competition for resources and markets is the most researched dimension of energy rivalry, but it arises on the basis of the rivals' respective energy models. Also meriting consideration are the rivalries that use energy capabilities as an instrument for attaining political ends, those that resort to hybrid threats to the energy sector and competition for the control of energy corridors. Many cases of energy rivalry encompass a variable combination of these factors, the respective weights of which need to be gauged.

3. Russia, China and the US enjoy a partial and differentiated energy hegemony

Russia and the US favour fossil-fuel domination whereas China seeks to control the decarbonised value chains. Russia is a structural, spatial and positional rival, which uses its fossil fuel resources to threaten European security. China is a positional rival on decarbonisation, with the risk of constant trade disputes, but also with opportunities for cooperation. The US is a key partner for European energy security owing to its exports of liquefied natural gas (LNG), but its strategy for energy dominance makes it an unreliable rival while favouring European leadership in decarbonisation.

4. To overcome the positional rivalry between energy models the EU needs to make a firm commitment to decarbonisation

The EU and the US share public support for decarbonisation, but in the US it is distorted by polarisation. The EU is unable to compete with either the Russian or the US models owing to its lack of hydrocarbons. With Russia, the rivalry between models is too intense and complex for trade to return to normal. As for the US, its energy costs will always be lower than Europe's, which makes it senseless to have a race to the bottom on environmental regulations or carbon-cutting targets. Compared with China, the EU proposes a differentiated route to decarbonisation based on strict sustainability, and social and governance standards. The best way to cut Europe's energy vulnerability is speeding up the transition by deploying renewables and the associated capabilities required (storage, networks and interconnectors, among others), although there is also scope for nuclear energy and carbon capture and storage.

5. The competition for markets and resources entails decoupling from Russia, de-risking with China and a cooperative rivalry with the US

Decoupling itself completely from Russian hydrocarbons, nuclear fuel and strategic minerals is a top priority for the EU. If member states are unable to come to a unanimous agreement on new sanctions, alternative mechanisms such as prohibitive tariffs can be levied. The EU's designation of China as a rival entails de-risking to prevent its domination of decarbonised industrial supply chains, taking internal steps to replace the most critical components with European production and diversifying supplies by means of new alliances that enable external substitution.

Maintaining a balanced risk profile involves blending offensive and defensive measures in sector-specific ways that enable competition to be managed. A new cooperative rivalry has emerged with the US, but the EU should wait until the policies of the new Trump Administration have bedded down before being pressured to offer concessions on LNG or any other aspect.

6. Energy is a key resource for maintaining militarised rivalries that requires a control strategy from the EU

Modern wars are waged with significant quantities of energy-intensive arm systems, both in their construction and in their operation. The main challenges are ensuring supplies, reducing consumption, supplying power to new electronic equipment, increasing operational autonomy and streamlining the supply chain. The EU has limited energy resources, suggesting the advisability of a control strategy that balances its operating capabilities with sustainability over the duration of their use. One form of control is to combine appropriate management of imported fossil fuels with home-produced decarbonised sources, electrification and efficiency. Public-private partnerships can help boost defence-related energy markets, such as decarbonised fuels and batteries, and benefit from joint European support schemes.

1. Introduction

We prefer to cooperate, but we are determined to compete. This is the message that we Europeans should internalise prior to conveying it to whoever set themselves up as our energy rivals. Revealing themselves as such are those powers that are willing to use their energy capabilities in their international competition strategies: Russia, China and the US. All three may be classed as energy rivals, but some more than others given the different rivalries involved. With Russia it entails territorial disputes, while wider positional rivalries predominate with China and the US; these involve questions of status, influence and hierarchy, and the establishment of dominant positions in the fossil-fuel market or playing a leading role in decarbonisation.

It is important to identify what type of rivalries the EU faces before proposing ways of overcoming them by means of competition, cooperation or blended strategies. Russia is a structural, spatial and positional rival, which uses its fossil fuel resources to threaten European security. China is a positional rival in decarbonisation, with the risk of constant trade disputes, but also with opportunities for cooperation and endorsement of the multilateral order. The US is a key partner for European energy security following the energy crisis caused by Russia, thanks to its growing exports of liquefied natural gas (LNG), but its President's energy dominance aspirations have made it another positional rival. It is also a rival in decarbonisation, whose new commitment to the fossil fuel model may benefit the EU's leadership. It also competes for access to energy resources while preserving its markets. Energy is also a key factor for maintaining militarised rivalries and developing European defence capabilities.

To identify some possible European pathways towards overcoming energy rivalry, this paper is structured as follows: section 2 sets out the concept of rivalry and its energy dimension; section 3 explores the nature and prospects of Europe's energy rivalry with Russia, China and the US; sections 4 and 5 focus on competition between energy models, and for access to resources and energy markets, respectively; and section 6 delves deeper into militarised rivalries and the energy options for addressing them. The conclusions provide a summary of the findings and foreign policy recommendations for the EU, proposing a race to the top rather than to the bottom as a means of overcoming energy rivalry, with a commitment to diversification, decarbonisation and the deployment of renewables and their associated technologies and infrastructure.

2. Energy and rivalry

Rivalry is often defined as an especially intense competition between relatively equal opposing powers feuding over some kind of regional or global primacy. Such rivalries play a fundamental role in international conflicts, since just a few dyadic disputes have caused most wars.[1] Energy is an important element in these rivalries, often by constituting an instrument or even an intermediate objective. Identifying the type of rivalry being presented by each competitor and their energy component is required to addressing them.

2.1. Types and levels of rivalry

In the academic literature on international relations the term 'rivalry' (or 'strategic rivalry') tends to be used as an alternative to others deemed to be less analytical, such as strategic competition or great power competition.[2] Between rivals, being prepared to compete is only the first step. The important thing is to set a strategy: how to compete, with what combination of instruments and what the most important objectives are, and what level of attainment will ensure success. Designing a strategy therefore requires first evaluating the nature of each rivalry being faced in order to align means and ends.

It is common to distinguish between four general types or levels of rivalry: a continuous and persistent degree of competition between rivals that seeks to maximise regional power or influence; rivalries between great powers vying for global leadership; militarised rivalries between aggressive states prepared to use force; and a hybrid type of competition in the grey area that, in the case of energy, ranges from coercion to attacks on infrastructure and disinformation campaigns.[3]

An additional distinction differentiates between spatial and positional rivalry. Spatial rivalries involve territorial disputes with a high risk of militarisation and armed races, and they usually conclude with the resolution of the original dispute. Positional rivalries by contrast vie for

1 1% of the possible dyads (pairs of rival countries) have caused ¾ of wars. See K. Rasler, W.R. Thompson & S. Ganguly (2013), *How Rivalries End,* University of Pennsylvania Press, Philadelphia.

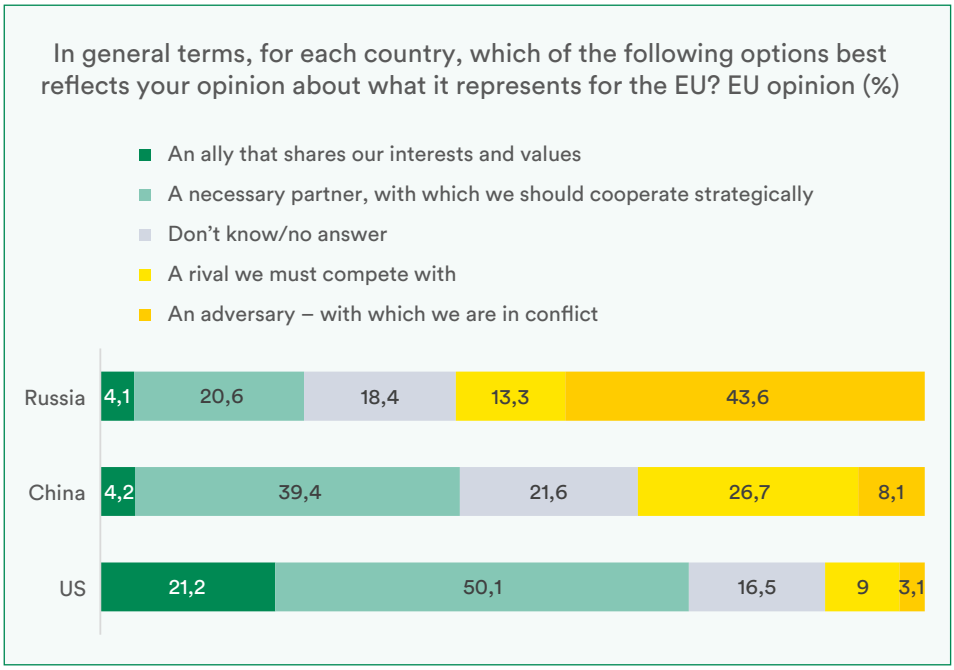
2 The academic literature on rivalry is extensive, but a comprehensive review lies outside the scope of this analysis. In this regard, see W.R. Thompson, K. Sakuwa & P.H. Suhas (2022), *Analyzing strategic rivalries in world politics. Evidence-Based Approaches to Peace and Conflict Studies*, Springer, Singapore.

3 M.J. Mazarr (2022), 'Understanding competition. Great power rivalry in a changing international order — Concepts and theories', RAND Expert Insights, 30/III/2022.

influence and for regional and global status, being characteristic of the great powers. Both types of rivalry often blend into each other, creating mixed rivalries. They also tend to be complex rivalries, with cooperation or neutrality in some sectors coexisting with conflict in others.

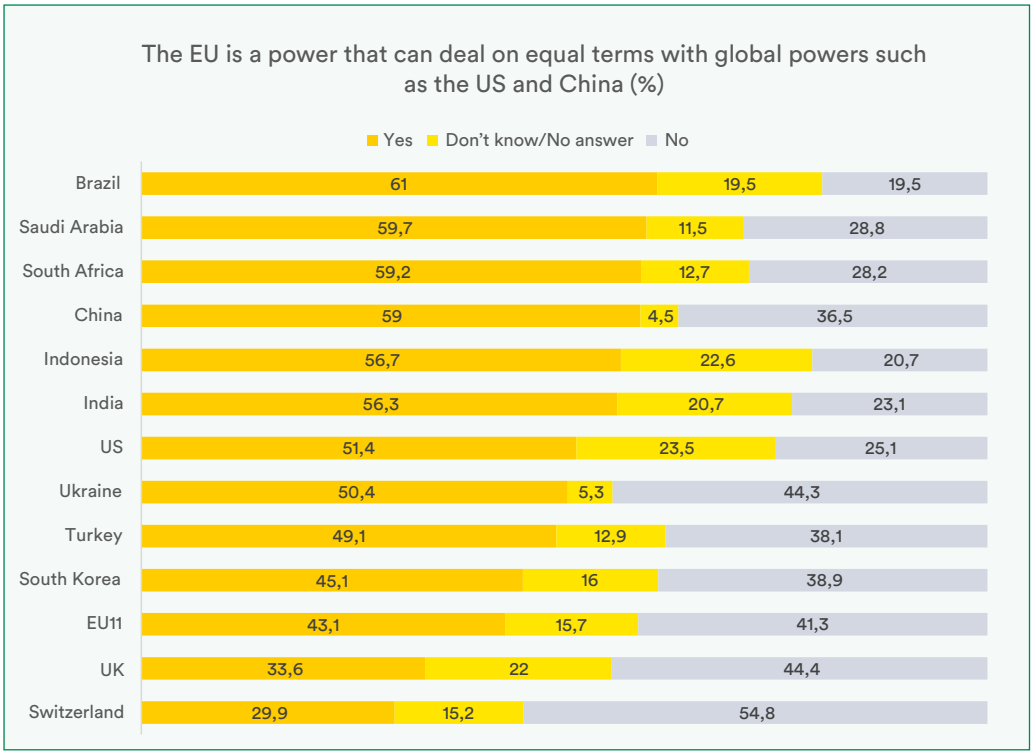
Ideological rivalry appears between adversaries with opposing political systems and values. Interventionist rivalry arises when a rival intervenes in the domestic political affairs of its neighbouring adversaries; for example, to exert influence on its political orientation, to control its government or even to support one of the factions in a civil war. Lastly, multiple rivalries affect many dimensions simultaneously, eventually leading to processes of militarisation and authoritarianism.[4] A particular brand, known as power transition rivalry, arises between a hegemonic/declining and an emerging power.[5]

Inset box 1. The EU's allies, partners, rivals and adversaries



4 Thompson *et al., op. cit.*

5 See in this regard the debate about the 'Thucydides trap' between Allison and his critics, who view his approach as deterministic and inappropriate to the complexity of Sino-US interdependence: G. Allison (2015), 'The Thucydides trap: are the US and China headed for war?', *The Atlantic*, 24/IX/2015. The opposing view is put by A. Waldron (2017), 'There is no Thucydides trap', *SupChina*, 12/VI/2017, and J.S. Nye (2017), 'The Kindleberger trap', Project Syndicate, 9/I/2017, who argue that the problem is not that China is too powerful but that it is too weak to provide the global public goods that are needed. For a game-theory based approach, see J.J. Ruiz (2025), 'Shattered hegemony: the rivalry between the US and China in the new era of the politics of force', ARI, Elcano Royal Institute, 7/IV/2025.



Souce: Garton Ash *et al.* (2025).

Although this classification does not exhaust all possibilities, it does help to characterise the main rivalries and identify their attributes. In any event, public opinion in Europe clearly identifies allies, partners, rivals and adversaries, as shown in inset box 1: Russia is an adversary with which we are in conflict, China a rival with which we need to compete and the US a necessary partner with which we should cooperate strategically, although few Europeans view it as an ally. Curiously, only 43% of its own citizens view the EU as a power that can deal on an equal footing with the US or China, lower than in those countries themselves.[6]

2.2. Energy rivalry

Rivalry has at least five facets involving energy competition: between energy models; regarding access to resources and energy related markets; in the use of energy capabilities as an instrument for obtaining political and, if applicable, military ends; preventing and countering hybrid threats to the energy sector; and controlling energy corridors. Many cases of energy rivalry encompass a variable combination of all or some of these, stressing the importance of trying to identify and gauge their relative weights. As in the case of other kinds of rivalry, energy rivalry incurs the risk that the number of disputes and affected subsectors proliferates, fuelling a spiral of hostility that is difficult to deescalate.

6 T. Garton Ash, I. Krastev & M. Leonard (2025), 'Alone in a Trumpian world: the EU and global public opinion after the US elections', ECFR Policy Brief, 15/I/2025.

With regard to competition between energy models, this is not an entirely ideological and values-based matter but also the outcome of a calculation to maximise the available energy capabilities and resources. For the EU, decarbonisation aligns values and interests in furthering its climate leadership and increasing its strategic autonomy given that it lacks hydrocarbon resources that it needs to import. Hence it espouses an open model of decarbonisation as expressed in agreements such as those reached with Chile and Mexico and the one that has been signed (but not yet ratified) with Mercosur.[7] Spain is an example of a country endowed with abundant renewable resources and an institutional and business ecosystem propitious to their development that aspires to turn decarbonisation into a competitive advantage.

Another vector for energy rivalry is competition for access to the various energy resources, related technologies and markets. The first consists of classic competition for resources, which may take place in third-party countries (with China in Africa and Latin America, and with Russia in the Sahel) or involve incentives for territorial conquests in bilateral conflicts (as in the case of the natural resources in the Ukrainian territories occupied by Russia). National policies can impose barriers on the export of critical minerals and extraction and processing technologies that make them harder to access, as China does with its rare earths.[8]

Resources can also be nationalised, cartelised or subjected to export quotas to maximise market leverage. Conversely, countries can limit access to their markets with protectionist measures such as tariffs, local content requirements or investment restrictions; and, as a last resort, by the imposition of sanctions. For example, China has levied tariffs on US oil and gas in response to the trade war unleashed by the US, while the EU has expressed its willingness to maintain and extend its energy sanctions imposed on Russia. Sections 4 and 5 below analyse the European options for overcoming the rivalry between energy models and for the related resources and markets.

The third facet of energy rivalry is also well known and consists of a rival deploying a so-called 'energy weapon' as a means of coercion to attain political objectives ('energy weaponisation'). From the rival's perspective, this requires preventing an energy power from having the ability to manoeuvre it into a situation of extreme vulnerability that limits its strategic autonomy or even its energy sovereignty. The European energy crisis triggered by Russia is the best example of the risks of maintaining so asymmetrical an energy reliance on such a rival[9].

7 G. Escribano (2025a), 'El acuerdo Mercosur-UE como modelo de descarbonización abierta', Commentary, Elcano Royal Institute, 7/I/2025.

8 G. Escribano, E. San Martín González & J. Paredes Gázquez (2025), España y *la geopolítica de las renovables*, Colegio Libre de Eméritos, Madrid.

9 M. Bergmann, C. McGeady, O. Svendsen, M. Zacarias & I. Urbasos (2024), 'Power plays. Europe's response to the energy crisis', Center for Strategic & International Studies, 3/IX/2024.

China has also taken strategic steps to limit exports of its strategic minerals, for example in the wake of the Senkaku Islands crisis with Japan or more recently in response to European and US tariffs. An especially relevant dimension in cases of spatial or territorial rivalry consists of the energy capacity of the participants to sustain various degrees of military effort. Given its specific nature, this dimension is analysed separately in section 6 dealing with energy and militarised rivalries.

Fourth, energy rivalry involves preventing and countering hybrid threats to the energy sector. These range from cyberattacks to covert acts of sabotage against energy infrastructure, propaganda and disinformation campaigns, intelligence gathering and interference in electoral processes in favour of climate change-denying parties opposed to the energy transition, among other activities. The impossibility of pinning a cyberattack, an act of sabotage or disinformation campaigns and electoral meddling on a rival makes counteracting them through reprisals more difficult. By extension, disinformation campaigns and support for populist political forces are most effective in democracies that are polarised on energy issues.

Lastly, hybrid threats are particularly important for countries that have critical international energy corridors, such as gas and oil pipelines, electricity interconnectors, oil and LNG terminals and strategic ports. Acts of sabotage perpetrated on some of these infrastructures have recently affected gas pipelines and electricity cables in Europe. Some of these corridors include key energy choke points such as Gibraltar, Hormuz, Bab-el-Mandeb, Malacca, the Turkish and Danish straits, Suez and Panama, among others. There is also competition over emerging corridors, such as the routes through the Arctic opened by climate change and the mineral corridors in the Democratic Republic of the Congo (DRC).

3. Europe's three energy rivals: Russia, China and, perhaps, the US?

The lack of analysis on the EU's energy rivalry with Russia, China and the US is symptomatic, and contrasts with the abundance of studies on the US's rivalry with China and Russia. The EU is simply not deemed to be a geopolitical rival at the level of these three great energy powers, since it is not perceived as either a geopolitical actor or an energy power. Both perceptions are very widespread despite being wrong, given that the EU has acted geopolitically by imposing severe (although perhaps insufficient) energy sanctions on Russia and trade reprisals against China's unfair trade practices in solar panels and electric vehicles. It has also opposed the idea of relaxing energy sanctions against Russia without a just peace being secured for Ukraine, thereby re-establishing an energy interdependence as one-sided as its predecessor.

The EU lacks Russia and the US's abundance of fossil fuel and mineral resources and China's decarbonised industrial and mineral capabilities. As shown in inset box 2, the three great energy powers easily surpass the EU in terms of primary energy supply. Nonetheless, the EU can boast other major energy assets: a large market, solid and advanced institutions, an extensive industrial and entrepreneurial base, human capital, financial capacity and its own alternative energy resources, such as nuclear and renewable energy. When the EU adopts energy and environmental rules and standards, sets decarbonisation targets, takes trade measures or imposes sanctions, its decisions affect its rivals.

The effects of these measures vary depending on the nature of each rivalry, since the three powers in question wield a partial and differentiated energy hegemony.[10] Russia and the US are seeking energy dominance based on their hydrocarbon reserves, while China controls much of the world's decarbonised value chains.[11] Their energy hegemony

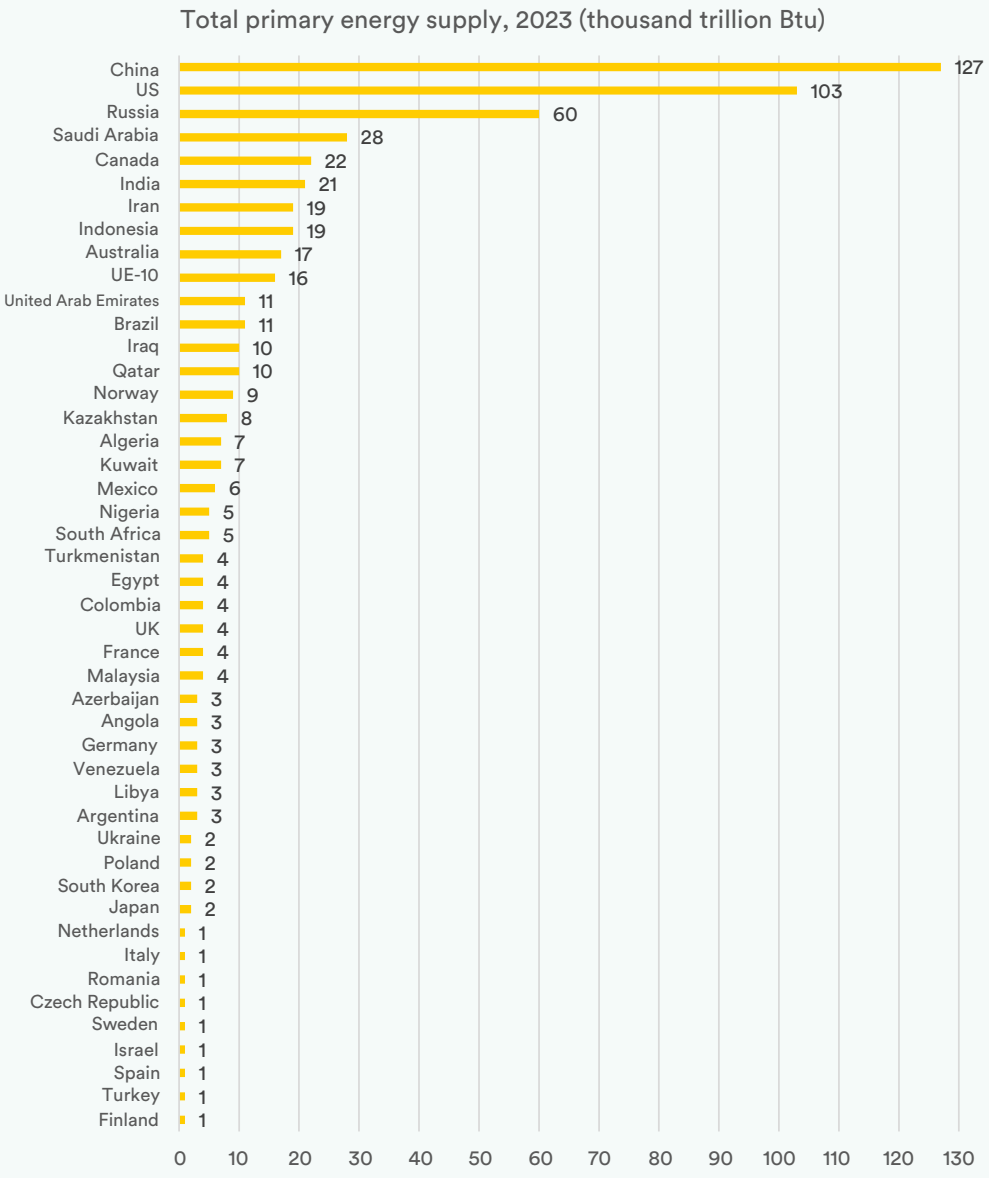
10 J. Colgan (2021), *Partial Hegemony: Oil Politics and International Order*, Oxford University Press.

11 China also has a coal and nuclear power energy base, as well as an advanced nuclear equipment and services industry; however, it is argued that China's energy dominance fundamentally plays out on the international stage by means of its control of the decarbonised industrial chains.

is partial in two ways: it is limited to different subsystems of the energy system (hydrocarbons and decarbonised technologies, respectively); and, within these, their capacity to wield market power is constrained by their rivals' diversification and substitution strategies. This section first explores Europe's energy rivalry with Russia and China, and then addresses in somewhat more detail, owing to its novelty, the rivalry that seems to be emerging with the US.

Inset box 2. Main producers of primary energy

China, the US and Russia are the largest energy powers by primary production, greatly exceeding the EU. Other mid-ranking European energy producers are Norway, Turkey and Ukraine. Algeria, Egypt, Israel and Libya form part of the EU neighbourhood and, like Azerbaijan and Kazakhstan, are its energy partners. Australia, Canada, Brazil, Mexico, South Africa and the Gulf states also have energy relationships with the EU



Source: US EIA. EU-10 combines the 10 largest member states included by the source.

3.1. Russia

Russia, as a great energy and military power, is undoubtedly Europe's main rival, not least when it comes to energy. Most Europeans view Russia as an adversary with which they are in conflict (almost 44%, see inset box 1). Russia is a structural, spatial and positional rival that has used its market power to inflict energy coercion on Europe, using energy revenues to threaten European security and presenting a constant risk of militarisation. It combines all the ingredients of a systemic rival for Europe: an aggressive power willing to use its fossil, military and hybrid resources structurally to maximise its regional power and influence and vie for global leadership. The rivalry between Russia and the EU is mixed, because it includes territorial and positional threats; and complex, given that it manifests itself in very different ways in different energy sectors: the EU prohibits and sanctions Russian oil and coal, but not yet its natural gas (only transhipments), nuclear fuel or critical minerals.

Russia is an ideological rival, an illiberal and revisionist power that seeks to stifle democratisation in its sphere of influence and threatens European democracies. It is also an interventionist rival that seeks to meddle in the political orientation of its neighbours and support its allies in their disputes. Although this type of interventionist rivalry is usually applied to the meddling that takes place between African countries, Russia has made decisive political and military interventions in Ukraine, Syria, the Caucasus and the Sahel. All these interventions have operated to a large extent to the detriment of their inhabitants, but also to the security of the EU. It supports Iran, Venezuela and the faction led by Haftar in Libya, and maintains special relationships with other major oil producers thanks to its OPEC+ membership.

Europe's energy rivalry with Russia spans the five aforementioned types of competition: between a decarbonised and institution-governed European energy model on the one hand and a rentier petro-state ruled by the Kremlin and its oligarchs on the other; competition over access to Ukrainian energy resources (for example, minerals, hydrocarbons, nuclear power) and the natural resources in other regions (eg, the Sahel); the implementation of energy measures on both sides to achieve political ends (energy weapon vs sanctions); growing hybrid energy competition in cybersecurity, disinformation campaigns, political meddling and sabotaging infrastructure; and, finally, Russia has a large network of oil and gas pipelines and various LNG export terminals, controlling shipping lanes in the Black Sea and the North Sea route via its Arctic straits, as well as maintaining a naval presence in the Baltic, the Atlantic and the Mediterranean.

Although Russia is not considered to be a global power, it does aspire to global leadership through its participation in initiatives such as BRICS and OPEC+. It is at all events a Euro-Asiatic power that competes with the EU

on multiple levels by relying on its energy resources. This accumulation of competition drivers suggests a multiple, persistent and militarised rivalry between Russia and Europe that renders any normalisation of bilateral energy relations unadvisable. The risks and costs of a second Russian gas crisis in Europe would be prohibitive,[12] and the same goes for continued European imports of Russian nuclear fuel and the metals and minerals needed for the transition.

3.2. China

China, by contrast, is a positional rival set on a course of decarbonisation partially shared by the EU. The European Commission classifies it as 'a partner for cooperation, an economic competitor and a systemic rival'. China is also considered as a revisionist power of the international order, although some authors argue instead that it promotes a 'contested multilateralism' to challenge the norms of the existing multilateral institutions either from within or by creating new ones.[13] China would lead this revisionist bloc, but there is also space for cooperation and a certain degree of interdependence.[14] In the energy domain, although this entails the risk of proliferation of constant trade disputes regarding access to the various stages of the value chain, from transition minerals to batteries and electric cars, it also offers opportunities for cooperation and support for the multilateral trade and climate order.

Despite the EU rejecting China's threats towards Taiwan, its support for Russia on Ukraine and its expansionism in the South China Sea, Sino-European rivalry does not include territorial disputes, risks of militarisation or an arms race. The most acute difference is Chinese support for Russia in its war against Ukraine: China has repeatedly denied Ukrainian accusations of supplying weapons to Russia, but in the wake of the Western sanctions it continues buying sizeable quantities of Russian oil and gas and has increased its bilateral trade. Ideological rivalry between a democratic and an authoritarian system is inevitable, although Chinese pragmatism tempers it. Meanwhile, China is a less interventionist rival than Russia. Obviously, it tries to exert influence on third-party countries and safeguard its interests, but the rivalry with Europe tends to be more indirect and nuanced.

Energy competition is one of the rivalry's most intense dimensions. There is competition between two different decarbonisation pathways in terms of speeds and energy policies, and between a predominantly private and liberalised European energy sector and one directly or indirectly

12 See I. Urbasos (2025), 'El fin de la guerra en Ucrania y el futuro de la relación energética Unión Europea-Rusia', ARI nr 46/2025, Elcano Royal Institute, 25/III/2025.

13 J.C. Morse & R.O. Keohane (2014), 'Contested multilateralism', The Review of international organizations, nr 9, p. 385-412.

14 M. Esteban & M. Otero (2024), 'A vueltas con la estrategia hacia China: reducir riesgos es la aproximación correcta', ARI, Elcano Royal Institute, 28/V/2024.

controlled by the Chinese state. There is also a perception in Europe of an increasingly hybrid rivalry with China. Chinese ships have occasionally succeeded in damaging European underwater infrastructures. China has been responsible for widespread economic intelligence-gathering in Europe and there are signs of growing cyber-competition, given that both China and Russia are major cyber-powers. However, the hybrid rivalry with China appears to less intense than the one Europe undergoes with Russia

Sino-European energy rivalry can occur in other countries or be due to action by a third country. China is actively competing to secure energy resources and mineral supplies abroad, and to construct and operate energy and transport infrastructure, from electricity networks to railways and ports. Such competition is especially vigorous in Africa, where Chinese firms have displaced their European counterparts in many countries, but also happens in the Mediterranean and Latin America. At the same time, Chinese and European countries cooperate in drilling oil and gas fields all over the world. The rivalry also emerges in China's role as the major purchaser of Russian oil subjected to European sanctions. China is, moreover, the largest buyer of Iranian crude and also buys Venezuelan oil, in both cases partly by relying on the so-called 'dark fleet', chartered to elude Western sanctions.

As far as the energy corridors are concerned, China has interests and a presence in its zone of influence, in the Malacca Straits and the Panama Canal. It has a naval base and a limited presence in the Red Sea (in Djibouti, near Bab-el-Mandeb), although it has not so far taken any significant part in international missions in the area. Indeed, during the Red Sea crisis, Chinese tankers were exempt from attacks launched by the Houthis, members of the 'axis of resistance' led by Iran, which in turn is China's partner and one of its major oil suppliers. China is a key actor in African energy corridors, such as Sudan's oil pipelines, the Uganda-Tanzania and Niger-Benin corridors, and the Mozambique-South Africa gas pipeline, among others. It is also active in rail corridors such as the Euro-Asiatic route between China and Europe running through Central Asia, part of the Belt and Road initiative; and in TAZARA, linking Dar es Salaam on the Indian Ocean and Zambia and the DRC, which competes with the Lobito corridor running to the Angolan Atlantic port of the same name, with funding from the US and the EU.

Ready to compete: European pathways to overcome energy rivalry

The most acute energy rivalry, however, is the competition that plays out in European access to transition minerals, where China broadly controls both mining and refining; and, in the other direction, access to the EU market for Chinese solar panels, wind turbines, batteries and electric vehicles. With its restrictions on the export of transition minerals and equipment for their extraction and processing, China has shown its willingness to use energy as a means of securing political (putting pressure on Japan regarding the sovereignty of the Senkaku Islands) and economic ends (putting pressure on the US and the EU in retaliation for tariffs on solar panels and electric cars).

This mineral competition (also conducted in third-party countries) is one of China's instruments for attaining its strategic objective of positioning itself as the industrial leader in decarbonisation. Unlike the Russian case, Europe's positional rivalry with China manifests itself in the decarbonised technology value chain, it has not been militarised and nor is it as interventionist. However, the EU needs to be prepared for tough and prolonged competition on the part of China, beset by trade tensions, threats to supplies and the instrumentalisation of its energy, mineral and industrial capabilities.

3.3. The US, perhaps?

The US is a key partner in European energy security. Its LNG exports have helped to overcome the energy crisis unleashed by Russia and these will need to continue increasing to face the termination of Russian gas imports, envisaged for 2027.[15] But President Trump aspirations to fossil fuel dominance, aggressive tariffs, climate revisionism and aversion to renewables has turned the US into a positional rival to the EU, and this is no doubt the prelude to continued trade and political disputes. The expansionist proposals regarding Greenland and possible US concessions to Russia on Ukraine also have implications for European security.

Half of the Europeans surveyed regard the US as a necessary partner with whom we need to cooperate strategically, but only 21% perceive it as an ally, whereas just 9% see it as a rival and barely 3% as an adversary (see inset box 1). It is the great power with which Europeans perceive the least rivalry, but it is likely that the perception will increase during the second Trump Administration. One of the great European uncertainties is whether the rivalry with the US will be circumstantial and limited to the current president or whether his strategy of energy dominance will become ingrained.

It was foreseeable that the US-EU rivalry would increase under the second Trump presidency,[16] but not to the extent that it would usher in spatial rivalries with a NATO ally. The threats to take possession of Greenland's natural resources have a direct impact on the EU and come on top of those directed at Canada, Mexico, Panama and Gaza, all of them with potential indirect repercussions for Europe. The EU consequently faces a hybrid rivalry with the US, although the positional component still predominates for now. Given the intensity and diversity of the transatlantic interdependence, the rivalry is extremely complex, including many areas where cooperation and conflict coexist.

15 Steinberg, F., & I. Urbasos (2024), 'La respuesta transatlántica a la crisis energética europea', ARI, nr 98/2024, Elcano Royal Institute, 18/VII/20245.

16 Briones, A., G. Escribano, L. Lázaro-Touza & I. Urbasos (2024), 'Trump II: dominio energético y subordinación del clima', ARI, Elcano Royal Institute, 27/XI/2024.

The US may perhaps be the most interventionist power in recent history, with the capacity and willingness to influence third-party countries by various means as a form of strategically competing with its rivals. Although Trump has promised an international withdrawal, it should be remembered that it was he who in 2020 ordered the killing of the Revolutionary Guard general, Qasem Soleimani, responsible for organising the Iranian axis of resistance in the Middle East. Trump also pushed for the Abraham Accords between Arab states and Israel and recognised Moroccan sovereignty over the Western Sahara. His second term has started with an erratic and apparently pro-Russian mediation in Ukraine, threats to attack Iran if it fails to reach a nuclear deal, bombardment of the Houthis, support to Israeli military interventions in Gaza, Lebanon and Iran, restoration of sanctions on Venezuela and renewal of his commitment to the Moroccan solution for the Sahara.

Until the second Trump presidency, energy had been a major field of transatlantic cooperative competition. The US vied positionally with the EU and China for climate and decarbonisation leadership, where it continues being a great power in terms of its technological, renewable and nuclear capabilities. The renewable impetus now seems to have been lost, so that as far as Europe is concerned the transatlantic competition will focus on defusing the fossil fuel dominance that Trump hopes to secure.[17] By contrast, the competition is heightened with an energy model based on his major fossil fuel reserves that prioritise low costs over environmental sustainability and dominance over cooperation. Meanwhile, the embrace of protectionism, the aversion to renewables subsidies contained in the Inflation Reduction Act and the expansion of oil and gas pipelines at the expense of electricity grids affect US energy transition expectations. A package of tax cuts that passed in May included a tightening of the conditions and deadlines for obtaining tax credits for solar, wind and storage projects. This withdrawal from the race for renewables is bad news for global decarbonisation but may provide more scope for European (and Chinese) leadership.

The new Trump Administration has made competition for energy dominance one of the core elements of its Make America Great Again strategy: specifically, in the words of the executive order setting up the National Energy Dominance Council, 'make America energy dominant'. This entails maximising access to the EU's energy markets and vying with it to ensure the supply of raw materials in third-party countries. To improve access to European markets, President Trump has called for the transatlantic trade gap to be closed with more US LNG exports and rejected EU measures such as the Carbon Border Adjustment Mechanism (CBAM) and the penalisation of methane emissions in gas imports. He has also cancelled the Biden Administration's moratorium on new LNG exports, demanding the signing of long-term gas contracts to finance the construction of new terminals.

17 G. Escribano (2025b), 'Europa contra el dominio energético', Commentary, Elcano Royal Institute, 5/III/2025.

Trump has shown an extractivist attitude to other raw materials, US and otherwise, as in the case of Greenland and the shameful mineral agreement struck with Ukraine, proposed initially by Zelensky but altered by the Trump team to include abusive conditions. The US Administration has also expressed interest in a mineral agreement proposed by the DRC involving 'investments for minerals', to compete with the Chinese 'infrastructure for minerals' deal and its dominance of Congo's cobalt, lithium and uranium reserves. A recent executive order would also enable deep-sea mining, using US permits to sidestep the International Seabed Authority set up by the United Nations Convention on the Law of the Sea (which the US has not ratified).

The effectiveness of using oil and LNG exports as an energy weapon is by no means clear. The transatlantic bilateral gas trade is conducted between private businesses in a flexible and transparent market where the influence of governments is highly limited. US oil and gas companies are among the largest contributors to the Republican Party and hope to enjoy an advantageous position in European markets without being prejudiced by political distortions. However, Europe is affected by measures such as the restoration of sanctions on the Venezuelan energy sector and the imposition of 'secondary' tariffs on imports of Venezuelan oil. The goal is both to reduce Venezuelan exports to the rest of the world and encourage their redirection towards the US market. The tightening of sanctions on Iran also pushes up oil prices and, while Europe does not import Iranian oil or gas, it increases the geopolitical tensions in the Middle East.[18]

Lastly, the global scope of its navy means that the US plays the role of ensuring freedom of navigation of the seas. Although its control over the major maritime energy corridors is partial and it is unable to prevent disruptions such as that to the Red Sea, it does have the dissuasive capability to prevent the permanent closure of other choke points, as it has shown in Hormuz and the Persian Gulf. The transatlantic energy rivalry should not lead to reduced US commitment to the security of certain energy corridors vital to Europe, because many involve shared interests. The US also takes part in vying for mineral corridors, the Lobito corridor being a case in point, where it cooperates with the EU in competition with China.

18 The original Spanish version was written before the June 2025 Israeli attacks on Iran and the subsequent Iranian response.

4. The rivalry between energy models

The rivalry between energy models is essentially positional, in the sense of favouring models that benefit the interests of the great powers and further their values. Positional rivalry has ideological connotations, which in liberal democracies is based on public acceptance of the energy model being proposed, whereas in illiberal regimes it tends to reflect the interests of a state controlled by more or less extractive elites. Therefore, unlike the Chinese and Russian models, the US and European energy models need to be democratically endorsed by their voters and, in principle, reflect their energy policy preferences.

In general, most citizens in the EU's member states and in the US express broad support for their respective climate and decarbonisation policies, but it is more nuanced in the US and is distorted by considerable political polarisation on energy issues. Inset box 3 shows the main results of some recent surveys in the EU, Spain and the US. Although approval for renewables is relatively high, extractive activities, carbon capture and nuclear energy are more acceptable in the US. The pronounced polarisation between Republicans and Democrats suggests considerable volatility in US energy policies, which would entail a cyclical positional rivalry for the EU; in the event of Republican majorities enduring, such rivalry would become persistent.

The ideological and positional rivalry is at its greatest with Russia, since here is a revisionist adversary of the liberal and climate order whose energy model is based on its fossil and mineral resources and its nuclear capabilities, including their processing. The Russian energy sector is made up of a latticework of state enterprises and oligarchs controlled by the Kremlin. The Russian elites view the energy transition as a Western-sponsored hegemonic project that threatens the sovereignty of their country, and the Russian Ministry of Foreign Affairs accused the International Panel on Climate Change of forcing a climate consensus against the interests of Russia.[19] The invasion of Ukraine has increased the pressure on environmental organisations, many of them included on the list of 'foreign agents', and Greenpeace and the World Wildlife Fund have had to shut down their operations in the country.[20] It is suspected that

19 O. Dobridova (2021), 'Russian climate scientists upset by ministry's call for "alternative" research', *Science Insider*, Science, doi: 10.1126/science.abj9306.

20 D. Javeline, R. Orttung, G. Robertson et al. (2024), 'Russia in a changing climate', *Wiley Interdisciplinary Reviews: Climate Change*, vol. 15, nr 2, e872.

Russia is running disinformation campaigns on the energy transition and meddling in electoral processes in favour of political forces that oppose the energy transition.

Inset box 3. Citizens' energy policy preferences in the EU and the US

European surveys show solid support for energy cost containment policies (a priority for 40% of the sample, 13 percentage points higher than in 2019), development of innovative energy technologies (33%, 9 points higher), reduction of energy consumption (30%), European coordination (27%), construction of infrastructure (including interconnectors, 27%) and climate neutrality (25%). In the EU most interviewees agree that climate neutrality will create new jobs and attract investment in clean energy (79%), reduce dependence on energy imports (76%) and help to cut household and business energy bills (69%). The Eurobarometers on climate policy offer similar evidence.

The surveys conducted in Spain show similar results, also reflecting increasing concern about the cost and security of energy supplies, although the fight against climate change and support for renewable energies continue to be classified as high priority. Specifically, climate change is viewed as the second greatest threat after armed conflicts and a very serious problem by the great majority of respondents. Although climate change denial increased in 2024 compared to the survey conducted in 2019, especially among those who report being more to the right of the ideological spectrum, it continues being voiced by a very small minority. Support for electricity being generated from renewable sources is widespread, with 85% of the interviewees stating that the electricity produced in Spain should come from renewable sources, although support for extending the life of nuclear power stations and those wanting to continue using internal combustion engine vehicles have doubled. Support for the extraction of energy and mineral resources in Spain is limited however (22% of interviewees).

In the US too there is support for climate policies and decarbonisation, but it is more nuanced and subject to considerable political polarisation. Approval for renewables is high, but also support for other decarbonised options, such as carbon capture and nuclear energy. For example, a third of US citizens believe that climate policies will benefit the economy, another third that they will damage it and the final third that it will not have any effect. Up to 64% say that climate change is already affecting their community, 75% believe it to be anthropogenic, 69% that large corporations are not doing enough to combat it and 60% that the same applies to their political representatives. Another recent poll shows a mixed or negative assessment of the initial decisions made by the second Trump Administration on foreign policy. Leaving the Paris Agreement is rejected by 46% of the interviewees and supported by 32% (approval among Republicans rises to 60%), 43% believes it excessively favours Russia (16% among Republicans and 72% among Democrats) and 54% oppose taking control of Greenland (only 28% among Republicans).

Source: Eurobarometer (2024), Lázaro Touza et al. (2019 and 2024), Kennedy & Tyson (2024) and Silver *et al.* (2025).

The EU cannot compete with either Russia or the US on oil and gas. With Russia, a return to the asymmetrical energy interdependence that triggered the recent energy crisis would be disastrous for the EU: the intensity of the bilateral energy rivalry is too great and complex to imagine Europe once again incurring such risks.[21] With the US, even if the EU were to relax its environmental regulations and loosen its climate goals, hydrocarbons will always remain cheaper in the US. A race to the bottom on environmental regulations or decarbonisation targets is not viable for the EU. Europe simply does not possess enough hydrocarbons and needs to import them, which reduces its strategic autonomy vis-à-vis its fossil rivals. As an order of magnitude, Spanish imports of energy products (basically oil and gas and their derivatives) reached €90 billion in 2022, in the middle of the energy crisis, representing 6.5% of GDP.

The best way of reducing the vulnerability that derives from such dependency is to accelerate the energy transition to replace imported fossil fuels as far as possible with local renewable energies.[22] According to the State of the Energy Union Report 2023, the EU's record increase in renewable generation in 2022 avoided almost €10 billion in additional imports of natural gas. The deployment of renewables and their associated capabilities (storage, networks and interconnectors) constitutes the most efficient path of energy competition for the EU.[23] There is also scope for nuclear energy and carbon capture, especially in countries with a shortage of renewable resources.

21 Urbasos (2025), *op. cit.*

22 G. Escribano & L. Lázaro-Touza (2024), 'La diplomacia energética y climática de la nueva Comisión Europea', Policy Paper, Elcano Royal Institute, 11/VI/2024.

23 M. Gil Tertre (2024), 'La transición energética como motor de la competitividad: desafíos de la política energética europea en el próximo ciclo 2024-2029', ARI, Elcano Royal Institute, 2/VII/2024.

The EU is also competing with other decarbonisation models. It has already been noted that the US route to decarbonisation sets more store by nuclear energy and carbon capture than its EU counterpart, but both compete in renewable and decarbonised technologies. Although the dynamic of the US renewable and decarbonised market is essentially economic and propelled by cost advantages, the new Trump Administration's aversion to renewables, incentives removal and trade tensions could cause their development to stall. This apparent refusal to compete in the renewable ecosystem offers the EU the chance to overtake the US in the race to lead the strategic sectors of the energy transition.

The rivalry with China arises within the same sectors. The European energy model is much less intensive in carbon, oil and gas than its Chinese counterpart, but the competition to lead decarbonised technologies is acute. Although to a lesser extent than the US, China enjoys lower energy prices than Europe, which constitutes a decisive comparative advantage in renewable and decarbonised equipment, manufacturing of which tends to be energy-intensive. China has secured a clear lead in solar panels, wind turbines, batteries and electric vehicles, resorting to practices that the EU rightly deems to be unfair. Nonetheless, the advantage in environmental regulations has been reduced in recent years in light of the previous excesses, whose pollution cost has forced the country to bolster its standards: for example, in mining, where production has also started to be offshored to third countries.

The EU can strengthen its energy model by improving it in various ways: applying an incentivising common industrial policy, combining national markets into a large single market and an Energy Union worthy of the name, as the Draghi Report proposes,[24] financing energy infrastructure and research and development in immature technologies, streamlining bureaucratic processes and fostering public acceptance of decarbonisation policies. From the European foreign policy perspective, the best option for the EU is to adopt a competitive and open decarbonisation model.[25] For instance, the foreign dimension of the Green European Deal in Latin America encompasses different types of leadership in decarbonisation: ideological, directional, diplomatic in the forging of alliances, and structural leadership for coercion (CBAM) or cooperation (Global Gateway).[26]

24 G. Escribano & I. Urbasos (2025), 'El sector energético en el Informe Draghi', Commentary, Elcano Royal Institute, 4/II/2025.

25 Escribano & Lázaro-Touza (2024), *op. cit.*

26 A. Averchenkova, L. Lázaro-Touza & G. Escribano (2025), 'Beyond leading by example. Enhanced EU-LAC climate cooperation: the case of Brazil, Chile and Mexico', *International Environmental Agreements: Politics, Law and Economics*, forthcoming.

5. The competition for resources and energy markets

The competition for access to energy resources and markets, involving rival powers or third countries, is perhaps the best-known aspect of energy rivalry. The conditions in which this energy competition arises depend, however, on the various energy models described in the preceding section. For example, US and European firms need to respect stricter environmental, social and governance standards than their Chinese and Russian rivals, both domestically and in their projects abroad. This may reduce their economic competitiveness, but also enhance their attractiveness for third countries over the long term and provide scope for European companies to offer a more sustainable and socially rewarding model.

The US and European energy markets are practically liberalised and are much more transparent and open to foreign investment than their Chinese and Russian counterparts, while state influence is limited. However, recent years have seen a proliferation in all of them of restrictions on access to natural resources, energy products and decarbonised technologies through the imposition of sanctions, export controls, tariffs, local content requirements, restrictions on foreign investment, subsidies and many other instruments. This proliferation of measures has sown concern about the security of supply for everything from fossil fuels to critical minerals and decarbonised technologies.

When these restrictions have geopolitical motivations and seek to instrumentalise energy resources or markets to coerce rivals, the expression 'energy weapon' is used. Responding to this threat requires being equipped with measures that prevent the abuse of market power in geo-economic competition and its instrumentalisation as a geopolitical weapon. Such market power may arise from endowments of natural resources (oil, gas and critical transition minerals), from control of supply chains and from industrial and/or technological dominance.

It is common to distinguish between three types of response to attempts to wield energy market power and to prevent it from being politically instrumentalised: decoupling, de-risking and cooperative rivalry. Unlike

decoupling, a resounding concept (although its application may not be so resounding), de-risking has scope for nuances and gradations, although it may not be possible to determine precisely where de-risking ends and decoupling begins. Nor is it easy to specify where de-risking ends and cooperative rivalry begins. The most likely situation in complex rivalries is that they coexist at different intensities in distinct sectors and geographies.

There is no strict academic definition of de-risking, but a political one. The term was introduced by Ursula von der Leyen in 2023 as an alternative approach to the decoupling from China applied by the US and the EU itself had started to adopt with Russia. The US concept of decoupling entails a sharp reduction in economic dependence on China, at the same time as imposing trade barriers and sanctions to prevent it from becoming a competitor in strategic sectors. De-risking, on the other hand, contemplates more balanced diplomatic and economic relations: it recognises the vulnerability that dependence on China creates in crucial sectors for national security, but also that a certain degree of constructive interdependence with China is inevitable.[27] Although there may have been US decoupling from China in such sectors as solar panels and car manufacturing, in practice and overall, it seems to be just a more aggressive de-risking strategy than the European one.

In its European Economic Security Strategy, the Commission defines de-risking as the 'ability to make ourselves more resilient and reduce the risks arising from economic linkages that in past decades we viewed as benign', emphasising the need to 'diversify [...] economic ties to reduce harmful dependencies and increase local production'. [28] Cooperative rivalry, the classification Nye gave to Sino-US relations some years ago, seeks to avoid open conflict and any harm to respective global interests. Its goal is to manage strategic competition, paying heed to the vectors of both rivalry and cooperation, a strategy with conflicting objectives that bears no comparison to the containment of the Cold War.[29]

Hay un consenso relativamente amplio acerca de que las mejores opciones de la UE pasan por desacoplarse energéticamente de Rusia, mitigar el riesgo con China de manera constructiva pero no ingenua y mantener una rivalidad cooperativa con Estados Unidos en lo posible y dentro de lo razonable.

27 J. Zhou, F. Su & J. Yuan (2024), 'De-risking: the EU's and Japan's approaches to managing economic relations with China', SIPRI Research Policy Paper, February.

28 European Commission & High Representative (2023), 'European economic security strategy (JOIN(2023) 20 final)'.

29 J.S. Nye (2018), 'The cooperative rivalry of US–China relations', Project Syndicate, 6/XI/2018.

5.1. Energy decoupling with Russia

The process of Europe's energy decoupling from Russia is proving to be gradual and partial. Eurostat data show that, in the first quarter of 2022, when the Ukraine war started, Russia accounted for 26% of the EU's total imports of oil and half of coal imports by value. When EU sanctions banned the import of Russian oil and coal, both collapsed and by 2024 the decoupling was complete. Another question is to what extent Russian crude may still be being processed and transhipped by other actors to ensure a percentage is redirected to European markets. As far as natural gas is concerned, Russia supplied almost 40% of EU imports by pipeline and 18% of LNG imports in the first quarter of 2022. By 2024 EU pipeline imports from Russia had fallen to 17%, although the closure of the route through Ukraine has cut them by half and imports now only come via TurkStream, while LNG imports remain at 17.5%.

Decoupling has also manifested itself in electricity. In February 2025 Estonia, Latvia and Lithuania cut themselves off from the electricity systems of Russia and Belarus to integrate themselves into that of the EU by joining and synchronising with the continental network through Poland. Ukraine, which prior to the 2022 invasion exported electricity to the EU, disconnected its electricity grid from the Russian and Belarusian system shortly after the war began and is now synchronised with the EU. As in the case of natural gas, thanks to the reversal of the gas pipelines, it is the EU that now supplies electricity to Ukraine. In conditions of peace, however, Ukraine's nuclear infrastructure could once again supply electricity to the EU, and there are other opportunities for energy cooperation.[30]

Decoupling entirely from Russian hydrocarbons by ending gas imports in 2027 should continue being the EU's top priority.[31] For some time the Commission has been debating the possibility of prohibiting European firms from signing new contracts to purchase Russian fossil fuels and investigating legal options that would enable them to cancel their prevailing contracts for supplies of gas. Progress towards fossil fuel decoupling should be accompanied by the maintenance of remaining sanctions on the Russian hydrocarbons sector, ranging from European investments to the supply of equipment and services for projects.

However, sanctions require the unanimous approval of the member states. The ban on Russian LNG imports did not attract sufficient support to be included in the EU's latest sanctions package against Russia, and consequently an alternative approach has been suggested involving

30 S. Kardaś (2024), 'Energising eastern Europe: how the EU can enhance energy sovereignty through cooperation with Ukraine and Moldova', ECFR Policy Brief, 11/III/2024.

31 Urbasos (2025), *op. cit.*

imposing final tariffs on Russian gas, the revenue from which could be dedicated to energy and renewable infrastructure in the most affected countries.[32] Some analysts argue that such measures would not resolve the EU's dependence on Russian supply.[33]

A similar approach could be applied to nuclear fuel and strategic minerals. In 2023, 23% of the uranium imported by the EU came from Russia, compared with 20% in 2021, due in part to stockpiling by operators, who feared the imposition of sanctions. Nineteen Soviet-designed nuclear power plants in Bulgaria, Finland, Hungary, Slovakia and the Czech Republic depend upon it. Europe's second greatest nuclear vulnerability probably involves processing, although the considerable overcapacity in France reduces the risks.[34]

The EU has taken steps to strengthen its nuclear strategic autonomy. In 2014 the Commission suggested that any reactor design constructed in the EU by non-EU companies ought to have more than one source of fuel. The European Energy Security Strategy released in the same year insisted on the diversification of the nuclear fuel supply chain and in the following year Euratom commissioned Westinghouse and eight European partners to produce fuel for the Russian-designed reactors in the EU.[35] The Commission has announced its intention of including nuclear products, hitherto left outside the scope of sanctions, in the calendar for eliminating Russian fossil fuels.

The EU's strategic autonomy vis-à-vis Russia also involves strategic minerals. Among these, most attention has focused on the so-called transition minerals needed for decarbonisation, such as lithium, cobalt and the rare earths, but Russia is also a major exporter of aluminium (recently sanctioned by the EU) and other metals. For example, according to Eurostat, Russia was the third largest supplier of rare earths to the EU in 2023, with a 22% share. Just as in the case of natural gas and nuclear fuel imports, the shortage of short-term alternatives limits the EU's strategic autonomy. Extending the decoupling in hydrocarbons to the Russian nuclear and mining sector and searching for alternative supplies should be the priority of the EU.[36] Competition with Russia for uranium and other strategic mineral resources in the Sahel is another of the EU's recent concerns.

32 U. Keliauskaitė, S. Tagliapietra & G. Zachmann (2025), 'Europe urgently needs a common strategy on Russian gas', Bruegel Analysis, 2/IV/2025.

33 Bergmann *et al.* (2024), *op. cit.*

34 G. Escribano (2024), 'Uranio: la otra cadena crítica de valor', ARI nr 16/2023, Elcano Royal Institute, 14/III/2023.

35 *Ibid.*

36 On the role of mining regions such as Latin America as a source for diversifying away from Russian supplies, see O. Guinea & V. Sharma (2023), 'European economic security and access to critical raw materials: trade, diversification, and the role of Mercosur', ECIPE Policy Brief nr 09/2023.

5.2. De-risking with China

Competition for access to energy markets and resources also characterises Sino-European rivalry, specifically regarding European access to the transition minerals controlled by China and Chinese competition in European markets. The EU's classification of China as an economic competitor and systemic rival is accompanied by the doctrine of de-risking. The energy risk the EU wants to reduce is Chinese dominance of the entire value chain encompassing the technologies needed for decarbonisation, from the raw materials deemed to be critical by the EU to renewable technologies, batteries and electric cars, among other applications.

Competing with a rival that relies on its lower energy costs and an aggressive mineral, industrial and trade policy requires compensatory measures. Within the de-risking strategy it is possible to distinguish between internal and external measures.[37] The internal ones consist of reducing a dominant supplier's market share using substitution, with an increase in domestic production or thanks to a greater efficiency. The external measures consist of diversifying supply to reduce the dominant supplier's market share by means of external replacement and the creation of new alliances with other suppliers and consumers. The EU needs to co-exist with China, with which cooperation is necessary in the face of global problems such as climate change, but not at any price. It would therefore be necessary to enhance de-risking: internally, with the full application of existing defensive instruments and the creation of new ones; externally, by forming new alliances beyond the US.[38]

As for critical raw materials, internally the 2023 Critical Raw Materials Act (CRMA) sets European targets for 2030 in terms mining and extraction, processing and recycling, limiting the share that any single supplier can attain.[39] In foreign policy, the EU's mineral diplomacy focuses on various bilateral alliances with mineral producers, the incorporation of mineral access into free trade agreements, the promotion of a Critical Raw Materials Club and its inclusion in the Minerals Security Partnership, made up of 15 members including the US and other major producers and consumers.[40]

37 T. Jerzyniak (2024), 'The EU de-risking of energy dependencies: towards a new clean energy geopolitical order?', *Politics and Governance*, nr 12.

38 A. García-Herrero & A. Vasselier (2024), 'Updating the EU strategy on China: co-existence while derisking through partnerships', Bruegel Policy Brief, 31/X/2024. Note that the four different postures cited in the respective last notes come from the same think tank.

39 Specifically, it sets out four quantitative targets for 2030: annually sourcing 10% of strategic raw materials from national mining and extraction activities, 40% from national processing and 15% from recycling (subsequently raised to 25%), without any third-party country supplying more than 65% of the EU's consumption of any strategic raw material. Moreover, it establishes a European Council of Critical Raw Materials and institutionalises the international strategic associations. For more details and implications for Spain, see E. Feás & J. Arnal (2024), 'Materias primas fundamentales en la Unión Europea: 10 recomendaciones para mejorar la contribución de la industria española', ARI, Elcano Royal Institute, 11/IV/2024.

40 Escribano et al. (2025), op. cit., chap. 5. Guinea & Sharma (2023), *op. cit.*

There is substantial consensus that access to Chinese mineral markets ought to be preserved and steps taken to manage the contradictions that this entails; and that the EU does not sufficiently recognise the importance of investing outside China and the OECD to diversify alliances and promote mining, in sharp contrast to the major Chinese investors in producer countries who have strengthened their mineral dominance. The response to this dominance ought to be to increase trade and investment in the most competitive producers in the various phases of the value chain, ensuring that their local development under high environmental and social standards becomes an element of differentiation, but not of exclusion. The strategy of 'friend-shoring' would not suffice to ensure sufficient resources and it is necessary to create new alliances with producers that are unstable or remote from European values.[41]

Chinese dominance of the EU's decarbonised technology markets, such as solar panels and batteries, is another major field of Sino-European competition. In 2023, 98% of solar panels and 87% of batteries came from China. The Draghi Report recommends ensuring a minimum quota of EU autonomy in the manufacture of clean technologies, safeguarding their resilience in the face of possible disturbances to the supply chain and focusing on segments of high added value. In practice, this means buying from China whenever it is cost-effective, but also protecting Europe's decarbonised industrial sectors, raising the challenge of identifying which sectors are essential to the EU's economic security. So far, the Commission has been cautious, imposing tariffs of 17%-35% on Chinese electric vehicles, in addition to the existing 10% levy, which may be insufficient to protect European manufacturers.[42]

There is a division of opinion among analysts about the advisability of these tariffs. Some see them as an error that will harm rather than help EU citizens and will be counterproductive for its car-making industry.[43] Others, however, defend them as an appropriate response: carefully calibrated compensatory tariffs that do not seek to cancel out China's competitive advantages so much as counter the subsidies it offers.[44] The problem is in which sectors and to what extent the measures should be applied to offset the risk. The EU will have to resign itself to depending on China for solar panels, although it can impose tariffs and award subsidies as the sector is requesting; other measures may work better, however, such as maintaining strategic stocks and steering industrial policy towards innovation in production and recycling.[45]

41 D. Marks & J. Henderson (2024), 'Navigating clean energy industries and rivalry in decarbonisation', RUSI Occasional Papers, 12/XII/2024. This study analyses 50 critical clean energy products in all phases of the supply chain for batteries, electric vehicles, solar panels, wind turbines and another 65 related products.

42 M. Bergmann, J. Majkut & F. Steinberg (2025), 'Undercharged: energy, climate, and the evolving transatlantic relationship', CSIS Report, 28/III/2025.

43 U. Dadush (2024). 'The European Commission's duties on Chinese electric vehicles are a mistake', Bruegel First Glance, 8/X/2024.

44 I. García Bercero (2024), 'EU duties on Chinese electric cars are a rule-respecting response to subsidies', Bruegel First Glance, 10/X/2024. B. McWilliams, S. Tagliapietra & C. Trasi (2024), 'Smarter European Union industrial policy for solar panels', Bruegel Policy Brief, 8/II/2024.

45 B. McWilliams, S. Tagliapietra & C. Trasi (2024), 'Smarter European Union industrial policy for solar panels', Bruegel Policy Brief, 8/II/2024.

By contrast, electric vehicles and batteries constitute a critical sector for the EU, not only for its energy transition but also from an economic and from a security and defence perspective.[46] A 'de-risking by embracing' strategy has been proposed for batteries. Europe should not try to nurture national champions and exclude Chinese firms from sectors where they dominate both in terms of costs and innovation, as is the case with batteries. It should instead create strategic alliances with Chinese companies to tap into their know-how in exchange for regulated access to the EU market while diversifying towards other partners.[47]

5.3. The US: cooperative rivalry with an unreliable ally

Transatlantic cooperation is key to global energy and climate governance. Despite the existence of positional and trade frictions, competition has almost always followed a relatively cooperative course. Cooperation has prevailed over competition when it has come to accessing strategic resources in third markets, as against Russia and China. However, the second Trump Administration's strategy of energy dominance has turned the US into a hard to trust partner. Given the breakdown in trust, its partners should resist the temptation of succumbing to pressure to engage in negotiations until the political scene in Washington settles down.[48]

Transatlantic cooperation is key to the security of Europe's gas supplies and its importance will increase in the short term. The US's LNG exports towards Europe continue growing and, according to figures from Kpler, reached a new all-time high in March 2025. Access to US gas constitutes a European concern, but it is also used as an instrument to mitigate the trade war, with the EU offering to buy more LNG in exchange for lower tariffs.[49] Gas imports accounted for between 5.4% and 8% of the trade deficit on US goods with the EU in 2024, according to the criteria for imported gas prices that are used.[50] There is neither enough demand for gas in the EU nor the production and export capacity in the US to make up for the deficit on goods. By contrast, European imports of US LNG in

46 The document focuses on energy technologies and therefore does not address the Sino-European rivalry surrounding electric vehicles. In this respect, see E. Feás, A. Minondo, M. Otero & F. Steinberg (2024), 'Economía y geopolítica del coche eléctrico: una perspectiva europea', ARI, Elcano Royal Institute, 10/IV/2024.

47 S. Tagliapietra & C. Trasi (2024), 'Northvolt's struggles: a cautionary tale for the EU Clean Industrial Deal', Bruegel Analysis, 11/XII/2024; and T. Lombardo, L. Paoli, A. Fernández Pales & T. Gül (2025), 'The battery industry has entered a new phase', IEA Commentary, 5/III/2025.

48 See the Canadian experts' recommendations to their government: The Expert Group on Canada-US Relations (2025), '2025 broken trust: managing an unreliable ally', Policy, 1/IV/2025.

49 P.P. Raimondi (2025), 'LNG and the uncharted future of US-EU energy relations', IAI Commentaries, 9/IV/2025.

50 A.-S. Corbeau (2025), 'Bridging the US-EU trade gap with US LNG is more complex than it sounds', Blog Post, Center on Global Energy Policy, 20/II/2025.

2024 represented 37.4% of the trade deficit of US goods and services with the EU, a highly significant share marked by an upward trend.[51]

From the perspective of European strategic autonomy, continuing to source 20%-25% of gas supplies from the US seems reasonable, even if it accounts for more than half of the EU's LNG supplies, but increasing it much beyond this and over the long term may be problematic. This is due to various reasons: the market dynamics, because it is expected that in coming years new capacities will be added and the LNG market will be diversified and become less rigid; climate policy, given that European demand for gas is set to fall in line with electrification and the penetration of renewables; and security and diversification of supplies, due to the impossibility of replacing the existing long-term contracts with Algeria, Azerbaijan and Norway, which account for the bulk of European gas imports and enjoy the flexibility and cost advantages of pipelines. Nor can the option offered by other LNG suppliers be ruled out.[52]

Having lifted the moratorium on new LNG exports facilities imposed by the Biden Administration, Trump accompanied his calls for more imports with a commitment to guarantee supplies of LNG to Europe, but it is unclear what kind of additional supply guarantee he is able to offer. The transatlantic LNG trade is undertaken by private companies in a flexible and transparent market, where government influence is extremely limited. US companies, which number among the largest donors to the Republican Party, hope to enjoy an advantageous position in European markets and have spent years insisting that long-term contracts be signed. Some of the current US Administration's measures run counter to these preferences, such as the tariffs on steel and aluminium, and the requirement that a percentage of LNG exports be transported by US-built tankers.[53]

Just as during the first Trump presidency, the European Commission has tried to leverage its LNG imports from the US. Ursula von der Leyen was quick to point out European willingness to buy additional quantities. The Commission has recently suggested the possibility of European companies financing LNG investments in third-party countries, including the US, a model that Japan successfully applies to long-term contracts. Certain voices in Europe have proposed striking a free-trade gas deal with the US to ensure supplies of gas to Europe and to prevent LNG turning into an instrument of the trade war. The trustworthiness of the current US administration when it comes to offering such additional guarantees appears limited.

51 In 2024 the trade deficit on US goods with the EU was €236 billion, whereas the deficit on goods and services was around €50 billion. At European import prices, US exports of LNG to the EU reached €18.7 billion. The sharp increase in European

52 G. Escribano (2025b), 'Europa contra el dominio energético', Commentary, Elcano Royal Institute, 5/III/2025. Regarding Algeria, see G. Escribano (2025c), 'Otra ronda de gas argelino para Europa', ARI, Elcano Royal Institute, 12/III/2025.

53 Specifically, that from 2028 1% of LNG exports from the US be exported in tankers built and operated in the country, and 15% by 2047.

Moreover, it is likely that none of this UE moves will be enough to appease President Trump, who may demand increases in European LNG imports that are disproportionate and incompatible with the slightest diversification of EU gas supplies. He could also table unforeseeable collateral demands, such as the discriminatory (not applicable to other players) removal of European environmental measures, the signing of long-term contracts with linked investments in US LNG infrastructure, using US ships for exporting LNG to the EU or a share of Greenland's or Ukraine's mineral resources. The EU should be prepared to confront the risk of the US achieving a dominant position in its gas market and avoid making prior concessions. European flexibility around LNG (relaxing methane import regulations, opening up to the financing of LNG infrastructure and long-term contracts) has not prevented the first tariffs. Maintaining a balanced approach between cooperation and competition and diversifying gas supplies based on viable criteria seems to be the only possible short-term course for the EU.[54]

As far as transatlantic cooperation on decarbonisation is concerned, and despite the difficulties stemming from divergent models, preventive and active pathways have been suggested to preserve it and maintain a minimal coherence in relation to China. The preventive measures address the tariff-based frictions (especially involving steel and aluminium), the implementation of CBAM and clarification of European environmental regulations. The proactive agenda involves coordination on harmonising decarbonisation standards, simplifying transatlantic national content requirements, aligning trade and industrial policy towards China and establishing a transatlantic dialogue on energy security and decarbonisation.[55] This cooperative approach needs to be complemented by firm responses to threats, relying on the EU's anti-coercion and economic security instruments, which in the long run could stabilise transatlantic ties, showing that intimidation is counterproductive to US interests.[56]

In parallel, the US and the EU cultivate fruitful transatlantic cooperation involving access to mineral resources. An example is the Minerals Security Partnership aimed at catalysing public and private investment in sustainable supply chains for critical minerals, cooperating with producers to facilitate financial and diplomatic aid for strategic projects throughout the entire value chain. To differentiate itself from China, it also encourages adhesion to high environmental, social and governance standards.[57] However, President Trump's attitude towards the mineral resources of Greenland, Ukraine and the DRC indicates growing competition for minerals in third countries that goes beyond business competition in the markets.

54 A. Łoskot-Strachota, U. Keliauskaitė & G. Zachmann (2024), 'Future European Union gas imports: balancing different objectives', Bruegel Analysis, 3/VII/2024.

55 Bergmann *et al., op. cit.*

56 T. Gehrke (2025), 'Brussels hold'em: European cards against Trumpian coercion', ECFR Policy Brief, 20/III/2025.

57 V. Vivoda (2023), 'Friend-shoring and critical minerals: exploring the role of the minerals security partnership', Energy Research & Social Science, nr 100, 103085; and Escribano et al. (2025), chap. 5, *op. cit.*

Lastly, diversification applies not only to hydrocarbons but also to the alliances throughout the decarbonised industrial value chain. Some of the US's geopolitical partners seems to perceive a withdrawal from the decarbonised technology race that could favour the EU.[58] The extractive stance shown by the Trump Administration in its initial months could offer more scope for differentiated European approaches based on sustainability and the creation of local added value. US tariff barriers threaten to fragment decarbonised supply chains even further and erode their competitiveness, but they offer opportunities for the EU in third markets.

58 R. Berahab (2025), 'Turning back the clock: industrial, economic, and diplomatic fallout from the US climate policy reversal', PCNS Policy Brief, 16/IV/2025.

6. Militarised rivalries and energy options

Militarised rivalries entail the necessity of having energy resources that can be deployed in case of need. Although energy is a critical element for military capabilities, the literature on energy and military rivalry is relatively scarce. Most analyses address the role of energy in wars and conflicts, and can be summed up in the well-known pronouncement of General Petraeus during the invasion of Iraq: 'energy is the lifeblood of our warfighting capabilities'. In modern warfare, objectives related to energy resources have generally been determined by the overall strategic objectives rather than the other way round: although they may constitute intermediate objectives, they are not normally the ultimate objective of a conflict or rivalry, tending rather to be instrumental.[59]

6.1. Energy in militarised rivalries

Modern wars are waged with large amounts of energy-intensive arm equipment, both in terms of their production and their operation. The materials used in the production of military equipment require considerable energy consumption. The equipment is designed for the highest level of performance, meaning that they consume large amounts of energy, especially fuel. Such energy-intensive armaments are used in ever larger configurations that require increasing amounts of energy,[60] as shown in inset box 4. As well as the fuel needed for operations, demands for military energy include fuel and electricity to operate facilities and installations.

According to the European Defence Agency (EDA), the energy consumption of its 22 member states' armed forces is used above all in transport (52% of the total, nearly all in the form of fossil fuels, of which 63% is aviation fuel) and the rest in heating and lighting facilities.[61] It is not easy to obtain reliable statistics about military energy use, but an approximation can be derived by estimating their greenhouse gas (GHG)

59 For an interesting introduction, see V. Smil (2004), 'War and energy', in Cleveland (ed.), *Encyclopaedia of Energy,* vol. 6, Elsevier, Amsterdam, p. 363-371.

60 Ibid.

61 European Defence Agency-EDA (2019), 'Defence Energy Data 2016 & 2017', EDA, June.

emissions. It has been estimated that emissions from military activities account for 6% of the total.[62] The figures shown in inset box 4 give an idea of the order of magnitude of the energy consumption (and the cost in emissions) that militarised rivalries entail.

Inset box 4. Energy intensity and emissions in military equipment and operations

Producing special steels for heavily armoured vehicles normally requires some 40-50 MJ/kg and the use of depleted uranium in projectiles and reinforced armour consumes considerably more energy. The production of aluminium, composite fibres and titanium, the main aeronautical materials, generally consumes between 100 and 450 MJ/kg. Military equipment consumes considerable amounts of energy. An Abrams tank weighs some 60 tonnes and needs, depending on the mission, 400-800 litres of fuel every 100 km. A B-2 bomber has a range of 6,000 nautical miles and consumes some 1,600 litres every 100 miles. The fuel consumed by fighter aircraft is so high that a prolonged mission requires inflight refuelling: an F-35 has a range of 1,200 nautical miles and consumes 9 litres per mile, meaning that a full-range mission without refuelling would require 10,800 litres of fuel.

The scale of mechanised operations has also increased. In World War II, the US consumed a gallon of fuel per soldier per day, in the 1990-91 Gulf War around four, and in the 2006 operations in Iraq and Afghanistan around 15-20 gallons per day. The most intensive tank assault in World War I involved just 600 units. In World War II the German invasion of France used 2,500 tanks and more than 6,000 aircraft. The German invasion of Russia employed 3,600 tanks and more than 2,700 aircraft. In the Soviet Union's final assault on Berlin, almost 8,000 tanks and 11,000 aircraft took part. During the Gulf War of 1991, some 1,300 US fighter jets carried out more than 116,000 sorties. The US deployed around 2,300 tanks during operation Desert Storm. In the invasion of Ukraine, according to the US, by April 2025 the Russian forces had lost around 3,000 tanks out of the 13,000 available before the war, as well as some 9,000 armoured vehicles. The open-source project Oryx raised Russian losses to 3,847 tanks and more than 10,000 military vehicles on 1 April 2025.

62

In 2017 the GHG emissions from the US Department of Defense (installations and operations) exceeded those of the whole of Portugal; between 2010 and 2018 they reached an annual average of 66 $mtCO_2e$ (millions of tonnes of CO_2 equivalent). The estimated direct military GHG emissions for Europe are also considerable and are thought to be far higher than the reported figures. Some estimates suggest that in 2019 they may have reached 24.8 $mtCO_2e$.[63] By contrast, France reports just 2.1 $mtCO^2e$ of stationary emissions, but not those related to transport; Germany just 1 $mtCO_2e$ of both; and Italy 0.3 $mtCO_2e$, but only reporting transport emissions, like Spain with its 0.4 $mtCO_2e$ reported emissions. By way of comparison, it is estimated that the GHG emissions stemming from the use of fuel during the first 18 months of the war in Ukraine reached 28.7 $mtCO_2e$.

Source: Bun et al. (2024), Crawford (2019), Hayward (1995 and 2000), Samaras et al. (2019), Smil (2004) and Oryx.

The addition of high-energy consuming equipment to improve military operating capabilities causes greater consumption and consequently greater dependency on imported fuels. To reduce the consumption without harming the operating capabilities, NATO's strategic concept approved at the Madrid summit in 2022 includes 'improving energy efficiency, investing in the transition to clean energy sources and leveraging green technologies'. The logistical challenges related to fuel and the vulnerability of fuel supply lines became obvious in the Iraq and Afghanistan operations: one study reported a fatality for every 39 fuel convoys in Iraq; the rate of fatalities in Afghanistan was even greater, with one for every 24 convoys.[64]

The main challenges are ensuring the security of supplies, reducing energy consumption, powering new electronic equipment, increasing operating autonomy and streamlining the supply chain.[65] Thanks to technological innovations, defence systems are being electrified and some military equipment will be unmanned, affecting the combination of energy sources required and their routes of supply. Notable among the existing decarbonised energy technologies with military applications are fixed and mobile solar panels, hybrid generating systems, energy storage for fixed facilities, portable batteries, networks and systems of smart management, non-manned vehicles (drones), biogas, collectors of biomechanical energy, electric hybrid combat vehicles, mobile nuclear plants and fuel cells.[66]

63 Estimates drawn from Conflict and Environment Observatory and Scientists for Global Responsibility (2021), 'Under the radar. The carbon footprint of Europe's military sectors, a scoping study', commissioned by the Left group in the European Parliament. There are higher recent estimates for Spain: P. Ortega Grasa (2024), 'Spain's military carbon footprint', Centre Delàs, Report 69.

64 Army Environmental Policy Institute (2009), 'Sustain the Mission Project: casualty factors for fuel and water resupply convoys'.

65 C. Samaras, W.J. Nuttall & M. Bazilian (2019), 'Energy and the military: convergence of security, economic, and environmental decision-making', Energy Strategy Reviews, nr 26, 100409.

66 The NATO ENSEC COE has published numerous analyses on this matter; see, for example: A. Gogoreliani, F. Indeo & T. Puluzashvili (2021), 'Energy efficiency and renewable energy solutions in NATO and PfP countries' military operations', Final Report, NATO Energy Security Centre of Excellence – NATO ENSEC COE, July.

The main challenge continues to be fuel. Renewables can replace it in electricity generation to operate equipment and provide power to facilities, but moving armoured vehicles, warships and aircraft using decarbonised sources is not so straightforward: hybrid vehicles have operating advantages, but they continue being intensive in fuel consumption, while hydrogen and synthetic fuels continue to be prohibitive due to their high costs and the need to change the supply chain. Decarbonised technologies can help to reduce the consumption of fossil fuels, but the most efficient response in the short term is to save fuels in other sectors and preserve them for the armed forces, truly the last sector to undergo decarbonisation.

Over the longer term, hydrogen and synthetic fuels offer scope for convergence between civilian and military applications. For example, although military aviation is a relatively small consumer of fuel in the European aviation sector, it constitutes a major part of military consumption and would wield significant aggregated market power for supporting a viable industry of sustainable aviation fuels and over the longer term for synthetic fuels. There is a similar situation with batteries for military purposes, where a policy of joint procurement could sustain the EU battery industry. The vulnerability of the new supply chains was demonstrated when China banned the sale of batteries to Skydio, the largest manufacturer of drones in the US and the main supplier of drones to Ukraine, which had to ration batteries for its customers.[67]

An additional question involves the security of mineral supplies to the defence sector, more vulnerable than its civil counterpart since military applications require higher degrees of purity and therefore face more bottlenecks and replacement issues. Self-sufficiency in the procurement of military components is a growing concern and the US already requires its Department of Defence to establish a strategy to ensure that its critical mineral supply chains do not depend on adversarial states by 2035.[68] The enlargement of European defence capabilities to address militarised rivalry with Russia requires an energy base that ensures they have a minimal strategic autonomy.

67 T. Gehrke (2024), 'Recharge or regret: why the EU must act decisively to secure Europe's struggling battery industry', ECFR Commentary, 12/XI/2024.

68 J. Zhou & A. Månberger (2024), 'Critical minerals and great power competition. An overview', SIPRI, October.

6.2. Energy minimalism, control and gambling

Maintaining the armed forces' energy consumption in peacetime and preparing the additional capabilities needed to tackle prolonged militarised rivalries is a complex challenge, especially for actors with limited or less abundant energy resources than their rivals. An actor with limited energy resources wanting to engage in this kind of rivalry, which may eventually require the use of military capabilities, faces an energy dilemma of mobilising its resources fully or using them sustainably over time. Three options may be considered when confronting this dilemma: minimalism, control and gambling on maximalism.[69]

The first of these minimises the use of energy resources, essentially fuels, reducing capability but also logistical needs and prioritising the sustainability of the effort. It is the typical option chosen by rivals that are poorly endowed in energy, and particularly by guerilla and insurgent groups, such as the Viet Cong and the Taliban. The gamble involves taking the opposite path: maximising the short-term use of energy resources at the cost of risking the sustainability of the effort over the longer term, trusting in a rapid victory and/or capturing the rival's energy resources.

The maximalist option tends to be chosen by military powers determined to take a large risk in exchange for the prospect of obtaining large rewards, which may or may not materialise. For example, the invasion of France by Nazi Germany in World War II was a successful gamble. The campaign consumed 12 million barrels of oil, 70% of the fuel accumulated by Germany, at the fastest rate in military history up until that time. However, its brevity meant that the total consumption of fuel was manageable. Moreover, the seizures of oil reserves from Denmark, Norway, the Netherlands and above all France itself, soon exceeded the fuel consumed.[70]

By contrast, Operation Barbarossa –the invasion of Russia– was a failed gamble. Germany allocated sufficient oil reserves to supply its large mechanised divisions for only four months. Once this period elapsed, there were no viable options either for overcoming the shortage of fuel or for capturing fresh deposits. The operation is often described as an attempt to gain access to Soviet oil resources, and indeed Germany captured the Maikop oilfields in November 1942, but lacked the

69 I. Kim (2023), 'Oiling the war machine? The fuel dilemma and warfighting capability', *International Studies Quarterly*, nr 67, sqad096. Although the dilemma refers to oil, the concepts used can easily be extended to other energy and mineral resources: for example, e-fuels, hydrogen and critical minerals.

70 *Ibid*; see also J. Hayward (1995), 'Hitler's quest for oil: the impact of economic considerations on military strategy, 1941-42', *Journal of Strategic Studies*, vol. 18, nr 4, p. 94-135.

equipment needed to exploit them.[71] The fast reduction in its fuel stocks and the supply chain's vulnerability became insuperable obstacles for Germany when the Russian campaign turned into a war of attrition.[72]

It is important to differentiate this option from the situation facing an energy hegemon (total or partial) in operations such as Desert Storm, carried out by the US in Iraq in 1991, and elsewhere subsequently, which do not incur any dilemma at all about the sustainability of the long-term use of fuel, whether due to its own resources or because of its access in that case to the resources of its Arab allies in the Gulf. Even so, overcoming the logistical complications related to short-term fuel replenishment in such massive operations is critical to their success.

Russia's difficulties to supply fuel to its armoured divisions at the start of the invasion of Ukraine constitute another failed gamble, to the extent that the Kremlin thought that the invasion would take a matter of days, not years. However, as an oil-rich power, the Russian war effort's problems of energy sustainability lie not in a shortage of resources but in the logistical problems and the Ukrainian attacks on its supply lines, including refineries on Russian soil. Analysts believe that the restrictions that jeopardise the sustainability of the Russian campaign involve above all material restrictions caused by the widespread destruction of military equipment, economic and military personnel limitations, but not energy constraints.[73]

Lastly, by choosing the control option, actors try to balance their fighting capabilities with the sustainable use of their resources. Until recently it was essentially fuel that was being controlled, but the increasing electrification of equipment demands a growing availability of electricity and batteries. This enables them to operate their mechanised forces without putting them at excessive risk, such that the sustainability of the energy supply and its logistics chain are not overstretched. The war between Iran and Iraq and the response of the Ukrainian army in its war against Russia constitute examples of this option, based on the premise that the consumption of energy resources does not exceed the replenishment rate, threaten the supply chain or endanger the sustainability of the war effort.

Ready to compete: European pathways to overcome energy rivalry

The optimal balance between combat capability and the sustainable use of energy resources will depend on the strategic circumstances of each actor, including the volume of supplies available, the extent and nature of the logistics chain, the current and projected demand for fuel and other resources, and the expected duration of the operations. Various strategic decisions can be taken to restrict the use of fuel in wartime, such as

71 J. Hayward (2000), 'Too little, too late: an analysis of Hitler's failure in August 1942 to damage Soviet oil production', *Journal of Military History*, nr 64, p. 769-794.

72 R. Goralski & R.W. Freeburg (1987), *Oil & War: How the Deadly Struggle for Fuel in WWII Meant Victory or Defeat*, Morrow, New York.

73 See, for example, C. Harward (2025), 'Russia's weakness offers leverage', Institute of War, 10/II/2025.

controlling the number and the area of its theatres of operations, the size of forces, the speed of their movements, the balance between its fuel-propelled assets and its non-mechanised and electrified equipment, or simply the amount of its energy supply.[74]

Another means of control is to combine proper management of imported fossil fuels with home-produced renewable sources of energy, electrification of equipment, efficiency gains and less intensive uses of scarce energy resources. It is a slow and gradual process but one that is open to public-private cooperation, where the energy markets related to defence (decarbonised fuels and batteries, for example) could benefit from European support schemes. Control of the energy resources available in third countries could also be exerted by means of alliances seeking energy alignment, including agreements that range from the granting of security guarantees to offering a degree of strategic favour.[75]

74 Kim (2023), *op. cit.*

75 I. Kim (2019), 'A crude bargain: great powers, oil states, and petro-alignment', *Security Studies*, vol. 28, nr 5, p. 833-869

Conclusions

The conclusions can be arranged into three groups of recommendations concerning competition between energy models, competition for resources and markets and how to prepare for a militarised rivalry when it comes to energy.

Regarding competition between energy models, the EU is unable to compete with either Russia or the US in oil or gas. The European decarbonised model competes with its US and Chinese counterparts, although the Trump administration's energy policy means the competitors to lead decarbonisation have been reduced to China. Both internally and in its external alliances, the EU should commit to a differentiated decarbonisation pathway with regard to China, highlighting EU's higher environmental, social and governance standards. The EU can improve its energy model by applying an incentivising common industrial policy, combining national markets into an Energy Union worthy of that name as the Draghi Report recommends, financing infrastructure and research and development in immature technologies, streamlining bureaucratic processes and fostering the public acceptance of decarbonisation policies. From the perspective of foreign energy policy, the best option for the EU is to commit to a competitive and open decarbonisation model based on alliances founded on trade agreements.

Regarding competition for access to resources and markets, the EU should resist any type of fossil fuel, mineral or energy industry domination and compete on the basis of its renewable and decarbonised resources. The experience with Russia shows that allegedly cheap energy imports can turn out to be extremely expensive, and this applies no less to energy security: supposedly cheap Russian gas cost Germany three years of technical recession, hundreds of billions of euros in state aid to offset it and a geopolitical collision with an arm race. The structural, spatial and positional rivalry with Russia hinders the normalisation of energy relations and requires accelerating energy decoupling with fresh sanctions on gas, nuclear fuel and strategic minerals.

Offsetting the risks that China poses to the development of the European decarbonised model requires a more sophisticated strategy. To tackle unfair practices, the EU should continue to apply trade measures aligned with multilateral trade norms and an industrial policy that incentivises decarbonised technologies. It is also important to maintain channels of cooperation, however, because by contrast to the situation with Russia there is consensus about decoupling not being viable with China either

in the short or medium term. Internal and external substitution takes time and has sectorial limits, something that necessitates a differentiated approach by sectors and value chain phases.

Regarding how to manage cooperative rivalry with the US, the oxymoron obliges simultaneous competition and cooperation in different fields of endeavour. In the face of President Trump's strategy of energy dominance, the EU should avoid making hasty concessions in grandiloquent agreements that it may later come to regret. Europe needs US LNG, but how much? It seems sensible to maintain the diversification of supply and not succumb to unreasonable demands, whether increasing European energy imports or eliminating the bilateral trade deficit with the US (which is materially impossible), replacing reliable suppliers such as Algeria, Azerbaijan, Norway and Qatar, removing European environmental regulations or demanding that it is shipped in US' ships. Together with accelerated decarbonisation, the new rivalry with the US makes it advisable to maintain a less asymmetrical and more diversified energy interdependence pattern. This pattern leaves scope for cooperation on hydrocarbons but also on transition minerals and the defence of an energy model based on transparency and markets.

Lastly, the European approach to confronting a militarised rivalry with an energy power should comprise a strategy of control that balances its operating capabilities with the sustainability of its available energy resources and its logistical capacities over time. For the EU this means supplementing the management of scarce imported fossil fuels with home-produced renewable sources, the electrification of systems and greater energy efficiency. The new European needs in the area of defence can lend impetus to public-private cooperation in related energy markets, such as decarbonised fuels and batteries, with European support schemes meriting serious consideration.

In short, the document recommends a European foreign energy policy based on a race to the top, not to the bottom, to overcome energy rivalry, and furthering its commitment to diversification and decarbonisation. Diversification entails arranging institutional alliances with new suppliers and energy partners, trying to maintain areas of agreement with rivals such as China and the US wherever possible. Decarbonisation implies deepening and accelerating the deployment of EU's renewable and decarbonised energies and their associated technologies and infrastructure.

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Recommended citation

Escribano, G. (2025), “Ready to compete: European pathways to overcome energy rivalry”, *Elcano Policy Paper*, Elcano Royal Institute.

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