

Reinforcing the European defence industry

SUMMARY

Russia's war on Ukraine has laid bare the challenges that the European defence industry faces as it tries to meet increased demand and ramp up production in the wake of a fundamentally changed security environment in Europe. The European defence industry comprises a number of large multinational companies, mid-caps and over 2 000 small and medium-sized enterprises. It faces a multitude of challenges, such as decades of under-investment, fragmentation, lack of supply of critical raw materials and semiconductors, and a lack of manufacturing capability.

The EU and its Member States have taken several steps to reinforce the European defence industry, especially since the start of Russia's war on Ukraine: Member States have significantly boosted their defence budgets, the combined total of which is set to reach €290 billion a year in 2025; the European Defence Fund is investing in research and capability development projects and has achieved very positive results so far; and Permanent Structured Cooperation is providing the legal framework and binding commitments for important progress in collaborative defence. The EU has also broken taboos by proposing a joint defence procurement instrument (European Defence Industry Reinforcement through Common Procurement Act) and an initiative to ramp up ammunition production (Act in Support of Ammunition Production), as part of a three-track proposal to support Ukraine's needs for ammunition (deliver ammunition from existing stocks, jointly procure from industry, and support the ramping up of production).

Additionally, the European Peace Facility, most known for being used to supply Ukraine with lethal weapons, can be used to procure defence materiel from the European defence industry, further boosting its capacity. The European Chips Act and Critical Raw Materials Act will also be leveraged to benefit the European defence industry to ensure that it has all the necessary supplies to tackle the substantially increased demand for its products. These signals have led the industry to take the first steps to ramp up its production capacity.



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Structure of the European defence industry

Table 1: Top EU defence companies by revenue

Company	Country	Revenue*	Global ranking
Leonardo	Italy	13 878	#12
Airbus	European	10 854	#15
Thales	France	10 212	#16
Dassault	France	6 151	#20
Safran	France	4 981	#26
Naval Group	France	4 850	#28
Rheinmetall	Germany	4 789	#29
Saab	Sweden	4 107	#35

Source: [ASD Europe](#), 2022.

* Revenue from defence in US\$ million (2021).

The European defence industry comprises a number of large multinational companies, mid-caps and over [2 000](#) small and medium-sized enterprises (SMEs). The European Defence Agency (EDA) [estimates](#) its turnover at €84 billion in 2021; direct employment in the industry is [estimated](#) at 196 000 highly skilled jobs and over 315 000 jobs indirectly.

The European Defence Technological and Industrial Base (EDTIB) is [dominated](#) by companies in France, Germany, Italy, Spain and Sweden. The largest company in the EU by defence revenue in 2021 was Italy's Leonardo, then European multinational Airbus (if only defence revenue is counted), followed by French companies Thales, Dassault and Safran.

Only [17](#) of the top 100 defence companies are headquartered in the EU. By way of comparison, 46 of the top 100 defence companies are US-based and the top five of the Global 100, which are all US-based, had a combined revenue of US\$203.5 billion (€193 billion) in 2021, more than double the revenue of the entire EU defence industry. The most profitable US defence company, Lockheed Martin, which has topped the list for the last 23 years, recorded US\$64.5 billion (€60.7 billion) in revenue in 2021, which amounts to almost three-quarters of the revenue of the whole EU-based defence industry. Seven Chinese firms are in the top 100 list, with a combined revenue of US\$117 billion (€111 billion), while Russia only had one on the list (Tactical Missiles Corp), but this is [mostly](#) because other Russian companies refused to provide data.

Challenges

Under-investment

The 21 (now 22, including Finland, and soon 23, with Sweden) EU Member States that are also NATO members have long been [guided](#) by NATO's norm of spending 2 % of gross domestic product (GDP) on defence, which was formalised at the Wales Summit in 2014. Member States participating in Permanent Structured Cooperation (PESCO) – all Member States except Malta – have also [committed](#) to 'regularly increase defence budgets in real terms' under their PESCO commitments. Despite this, defence budgets have [faced](#) severe under-investment in the majority of Member States over the last decade. At the same time, strategic competitors such as Russia and China have [increased](#) their defence budgets by almost 300 % and close to 600 % respectively over the last decade, compared to a collective increase among EU Member States of approximately 20 % in the same period. The European Commission [finds](#) that, if all Member States had spent 2 % of their GDP on defence from 2006 until 2020, this would have resulted in an additional €1.1 trillion for defence.

What is particularly detrimental to the European defence industry is that a very significant part of the already comparatively weak EU defence budgets in recent decades was not invested in the EDTIB, even in cases where an EU product would have been available. There are some defence products where no domestic alternatives are [available](#), and it is [estimated](#) that over 60 % of European defence procurement budgets was spent on military imports from third countries. This creates additional third-country dependencies.

In terms of spending on research and technology (R&T), in 2021 Member States allocated €3.6 billion to defence R&T [expenditure](#), which is a new record level of spending; however, it is still below the 2 % benchmark agreed in the EDA framework and set as a more binding commitment within PESCO, for which an additional €725 million would be needed. Nevertheless, compared to 2020 it is a significant improvement, as spending increased by 41 %.

Fragmentation

The European defence industry suffers from fragmented demand and fragmented supply. In terms of demand, the 2022 Coordinated Annual Review on Defence (CARD) report observes that only 18 % of investment in defence programmes is collaborative. Collaborative defence procurement also [stands](#) at only 18% of total defence procurement. The 2022 CARD report notes that 'cooperation remains the exception rather than the norm', highlighting that a collaborative approach is mainly used when it coincides with national plans, would benefit national defence industries, or consolidates a strategic partnership.

Defence companies are mostly [structured](#) along national borders and demand comes mainly from national governments for their national industries, which profit from close relationships with their respective governments. This has led to a high number of national defence companies, operating in small markets, which produce products in amounts that are wholly inadequate for the current geopolitical environment. This is [exacerbated](#) by the fact that 'defence planning remains stuck at the national rather than at the European, or even Atlantic, level,' as acknowledged in the [Strategic Compass](#), which notes that EU defence initiatives must become integrated in national defence planning for them to be effective. According to Daniel [Fiott](#), 'this is an explicit admission that EU Member States are still largely responsible for the fragmentation of the EDTIB and that national defence planning may not yet be responsive to EU-wide capability and technological needs'. While he sees some room for improvement as the EU shifts from a strategic context of conducting primarily crisis management operations towards the defence of Europe, he concurs with an analysis by the [Clingendael](#) think tank that 'there is no golden recipe for moving from national to multinational planning and programming'. The experts point out that there is a real coordination problem in European defence planning, leading to further fragmentation, while the CARD report underlines that the main hindrances to enhanced cooperation are budget availability, complexity of legislation, pressing timelines and the availability of experts.

The lack of collaborative defence investment has staggering financial consequences – a 2023 EPRS [study](#) estimated that more cooperation could save between €24.5 billion and €75.5 billion a year. It also limits the EU's ability to act: the EDA finds that fragmentation has negative [consequences](#) for Member States' ability to conduct joint operations, an explicit aim of the Strategic Compass and of the CSDP. On the supply side, the industry is [structured](#) along national borders and there is perennial fragmentation in the EDTIB, especially [outside](#) the aeronautics and missile sector. According to the Commission, this 'greatly reduces its ability to improve its competitiveness through pooling of R&D and economies of scale in production'. The same is true for supply [chain](#) resilience, given that more than 2 500 SMEs play an essential role in the complex defence supply chains in Europe. These supply chains also function largely on a [national basis](#), with limited cross-border cooperation.

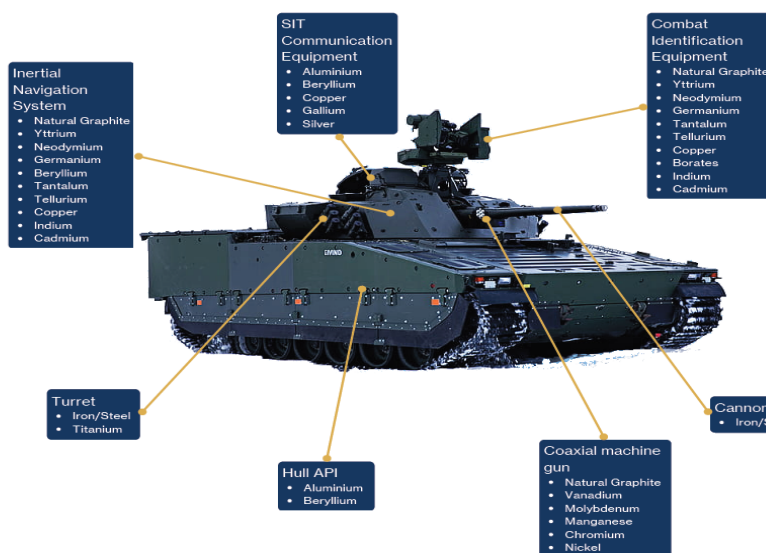
This fragmentation also leads to costly duplication. European [armies](#) use nearly six times as many systems in total compared to the US; for example, 17 different types of main battle tank are [built](#), procured and operated in Europe, while the US only manufactures one – the M1 Abrams. The US has only one main battle tank producer, while Europe had six in 2016; this complicates logistics and transnational cooperation on maintenance, as well as [interoperability](#). A case in point is that, for the most costly European defence project – the development of a sixth generation fighter jet, [estimated](#) at over €100 billion – rather than cooperating on just one programme, there are two programmes in development in parallel: one is the so-called [Future Combat Air System](#) (FCAS) involving Germany, France and Spain. Rather than participating in this programme, Italy [launched](#) a separate fighter jet development programme with the United Kingdom – confusingly also referred to as FCAS – which

Japan later joined to form the so-called [Global Combat Air Programme](#). This is exacerbated by the fact that, in major multinational capability development programmes, there is often intense [infighting](#) over who leads major parts of the programme and over intellectual property rights.

Critical raw materials and semiconductors

The European defence industry is dependent on a large range of critical raw materials and rare earths, as they are required in the production of defence products. An issue of concern for the

Figure 1 – Use of materials in defence products



Source: [The Hague Centre for Strategic Studies](#).

industry is that many of the raw materials and rare earths are imported from [third countries](#), some of which are considered [systemic rivals](#), such as China. An example of this is the supply of aluminium and natural graphite. These are two of the [most used materials](#) in the defence industry and can be found in military aircraft, helicopters, aircraft and helicopter carriers, amphibious assault ships, corvettes, offshore patrol vessels, submarines, frigates, tanks, infantry fighter vehicles, artillery, and missiles.

Europe is highly dependent on China for its supply of both materials, given that it [produces](#) most of the world's aluminium

(49 %) and natural graphite (69 %) (the EU defines their supply as being of 'moderate criticality', but they are [defined](#) as 'very high risk materials' in terms of the risk of suffering geopolitical and supply chain disruption by the Hague Institute for Strategic Studies). For metals, the EU's [dependency](#) on imports from third countries is somewhere between 75 % and 100 %, with 19 of the raw materials that the EU defines as critical being mostly Chinese imports.

A steady supply of rare earths is vital for the EDTIB and, problematically, [98 %](#) of the EU's rare earth elements come from China. Rare earths are [essential](#) in, among other things, the production of night vision devices, precision guided weapons systems, navigation systems and drones. In 2020, China directly [threatened](#) to cut off rare earth supplies from three US defence contractors which supplied weapons to Taiwan. While the threat did not materialise, it shows that China could potentially cut off supplies from European companies that sell to China's strategic competitors – for example, Dassault's sale of fighter jets to Indonesia and India could pose a problem. On a more positive note, in January 2023 a Swedish state-owned mining company announced the discovery of the [largest](#) known rare earth deposit in Europe in the far north of Sweden.

Microchips are also critical components, and are [ubiquitous](#) in defence materiel ranging from military aircraft to missiles; in fact, a Javelin missile system [contains](#) about 200 microchips. The EU itself, however, [produces](#) less than 10 % of global supply. Given this low level of production, the EU [imports](#) 'nearly all' microchips used in the Union, mostly from Taiwan, making the EU vulnerable to supply chain disruption and potentially to trade disputes. This dependence on Taiwan is a major [strategic vulnerability](#), especially since the majority of these chips are produced in a single factory located less than 200 kilometres from the Chinese mainland in a highly [volatile](#) region of the world. All of these supply issues are exacerbated by the global supply chain crisis following the COVID pandemic and Russia's war on Ukraine, which, among other things, has led to an [explosion of prices](#), [supply shortages](#) for raw materials and increased [delivery times](#).

Lack of manufacturing capability

Russia's war on Ukraine has laid bare European armament challenges, with production capacities being very low even for the most basic of equipment, such as ammunition, as the EDTIB is '[geared](#) to peacetime production'. Given the increased needs for defence materiel, which are exacerbated by EU Member States' deliveries to Ukraine, a ramp-up in manufacturing capacity is required, especially so due to the manufacturing times of defence equipment. The increased demand for defence materiel following Russia's invasion of Ukraine has already [led](#) to manufacturers being unable to meet government demands. This is hardly surprising, as European defence contractors have long been '[used](#) to a situation of modest demand, relatively low unit numbers per system, and long lead times for development'. The Joint Communication on [Defence Investment Gaps](#) of 18 May 2022 had already recognised that severe under-investment in defence resulted in both capability and industrial gaps in the EU. In light of Russia's war on Ukraine, there is an urgent need for ground-to-ground ammunition, artillery ammunition and missiles, which the Council has [recognised](#). As CNN [reports](#), 'Ukraine is burning through ammunition faster than the US and NATO can produce it'. In fact, the Ukrainian military fires 5 000 artillery shells every day, an amount [equal](#) to the annual orders of smaller European states prior to the war.

The current manufacturing capacity in the EU is a 'closely guarded [secret](#)'. However, a leaked Estonian document suggests that the maximum production in the EU sits at approximately 230 000 rounds per annum, an amount that Ukraine uses almost every [month](#). This is exacerbated by the fact that the European defence industry is based on a system of 'built-to-order', as traditionally defence contractors in Europe [avoid](#) producing arms without pre-orders due to the very high price of manufacturing, which in turn leads to very long waiting times for advanced defence capabilities. The main issue is that it takes large capital investment and [years](#) to create new plants, and for the defence industry to invest such large sums it would [need](#) solid, long-term orders for years to come to make it worthwhile from an economic perspective. Simply ramping up overnight is not an option. [According](#) to the Head of the German Security and Defence Industry Association, 'what we need are orders that allow better planning over long periods of time that create opportunities for greater profitability of investments'; and these long-term contracts are simply not there yet. According to one [expert](#), 'the European industry cannot ramp up production without a long-term prospect of sustained demand'.

Reinforcing the European defence industry

The [Strategic Compass](#) for Security and Defence, approved in March 2022, focuses on increased investment and a more collaborative approach to defence spending, capability development and research. EU Member States agreed to substantially increase their defence spending and to improve their defence budget spending by increasing interoperability and reducing fragmentation, especially by building upon existing EU tools such as the European Defence Fund (EDF) and PESCO. The Strategic Compass also hints at the possibility that the funds for the EDF will be increased. EU Member States agreed to fill critical capability gaps, and annual meetings of defence ministers that focus on capability development are meant to push forward implementation of the initiatives agreed in the Strategic Compass. Moreover, Member States committed to enhancing work on defence innovation by combining civil, space and defence research, and through initiatives such as establishing an EU defence innovation hub.

Following a request from the European Council meeting held in Versailles in March 2022, which was reiterated in the Strategic Compass, the Commission presented a defence investment gap [analysis](#) on 18 May 2022; it found gaps in defence expenditure, defence industrial gaps and capability gaps. To remedy the gaps, the Commission proposed, among other things, initiatives to incentivise joint procurement, such as a short-term instrument on joint defence procurement to remedy the most urgent and critical defence capability gaps.

All of these actions which would benefit the European defence industry will certainly prove challenging to implement. An Egmont Institute [expert](#) notes that, especially when it comes to defence capabilities and defence spending, it will be essential for the Member States to maintain the necessary political will to implement all the initiatives planned in the Strategic Compass, which includes sufficient funds. Given the rapid increase in energy prices and rising inflation, it will certainly be a challenge to ensure sufficient finance to implement the many projects announced in the Compass. Experts [remind](#) us that the 'EU has been promising "substance" in defence capabilities since the St Malo Declaration in 1998, yet a quarter of a century has passed and the EU continues to be hampered by its "capabilities-expectation gap" – a gap between the goals it sets and what the EU is actually able to deliver – when it comes to defence'. A Delors Institute paper [refers](#) to a 'chasmic gap between ambition and implementation'. Despite these challenges, many significant steps have already been taken to reinforce the European defence industry.

More and better defence spending

In the Strategic Compass and the Versailles Declaration, Member States committed to spend 'more and better on defence'. For many Member States, Russia's aggression against Ukraine has been a [wake-up call](#) when it comes to their defence budgets; collectively, Member States have announced significant increases in their defence budgets, amounting to an additional €200 billion over the next few years. While experts [welcome](#) these commitments, they also note that this is not nearly enough and even suggest that the EU could borrow on the capital markets to support defence investment. However, the 2022 CARD report brings some positive news. It observes an increase in collective defence budgets of participating Member States of +6% to ~€214 billion in 2021, and notes that annual defence budgets are estimated to [reach](#) ~€290 billion a year (including [Denmark](#), which was not included in the most recent CARD report as it only recently joined the EDA). The

report notes that, with these increases, participating Member States 'will have possibly recovered from the underspending of the previous decade' and be able to close longstanding capability gaps.

At the Versailles Summit and in the Strategic Compass, Member States not only [committed](#) to 'invest more' but also to invest 'better'. It will therefore be important to increase the amount that is spent on common capability projects and joint acquisition of defence equipment. Indeed, a Delors Institute expert [notes](#) that there is a real risk of uncoordinated increases in defence budgets leading to increased fragmentation through a focus on national priorities and unnecessary duplication of efforts. Other experts [note](#) that a real risk to satisfying the short-term capability needs will be investing too much in non-European off-the-shelf defence equipment, as in the long term this may undermine the EDTIB and create additional dependencies on external actors. As an example, Poland has [signed](#) deals with South Korea to buy 1 000 K2 tanks, 672 self-propelled howitzers and 48 FA-50 light combat aircraft rather than purchasing European defence products. According to [Fiott](#): 'Europe's initial response to the war on Ukraine may have actually increased its strategic dependencies on external partners'. Worryingly, the 2022 CARD report, while it observes significant defence spending increases among Member States, finds that collaborative defence spending is falling. Recognising the opportunity provided by increased defence budgets, the report also

New financing solutions

The Commission has [launched](#) and has proposed several new ways to finance defence, such as:

- [recommending](#) that the EIB assess whether, given the current geopolitical situation, it should consider amending its lending policy to allow loans to the defence industry for defence research, capability development and joint procurement. The EIB currently cannot finance defence projects, but it does finance Europe's dual-use security and defence projects through the [strategic European security initiative](#);
- calling for a [strengthening](#) of the EDF budget by €1.5 billion in the mid-term review of the MFF;
- launching an [EU defence innovation scheme](#), with the aim of breaking down entry barriers for defence innovators (see below);
- reinforcing the European defence industry through the Common Procurement Act, European Defence Investment Programme (forthcoming) and Act in Support of Ammunition Production (see below).

highlights the challenges that these increases present if they fail to result in greater cooperation. According to the [report](#), 'this risk is already demonstrated by Member States favouring individual, non-EU off-the-shelf procurements over long-term investments in Research & Development (R&D), possibly impeding future cooperation in the EU, further fragmenting the EU defence landscape and weakening the EU's Defence Technological and Industrial Base'.

Joint defence procurement

One of the major efforts undertaken by the Commission to strengthen the EDTIB focused on incentivising the joint procurement of defence products. Shortly after the publication of the defence investment gap analysis of 18 May 2022, a Defence Joint Procurement Task Force (DJPTF) was [set up](#), which supports coordination and assistance in [closing](#) the very short-term procurement needs. Significantly, the gap analysis also called for a progressive [move](#) towards a joint EU defence programming and procurement function, which would [represent](#) 'nothing short of a Copernican moment in EU security and defence' if it is implemented, and 'would unlock greater potential for the EDTIB'. Two months later, the Commission [presented](#) a proposal for a short-term joint defence procurement initiative, the European Defence Industry Reinforcement through Common Procurement Act ([EDIRPA](#)). It will encourage cooperation in defence procurement between Member States and enhance the competitiveness and efficiency of the EDTIB; the proposal will also consider the work of the DJPTF. The Commission proposed €500 million from the EU budget from 2022 to 2024 (now 2023 to 2025) for this purpose.

At the time of writing, interinstitutional negotiations on EDIRPA are ongoing. Based on this proposal, the Commission should have proposed a regulation on a European defence investment programme (EDIP) in the third quarter of 2022, which would establish the framework for European defence capability consortia (EDCC) – through which Member States would jointly procure defence capabilities – developed collaboratively for use by their participants and which would benefit from a VAT waiver. However, this proposal is now expected later in 2023 (see the Act in Support of Ammunition Production (ASAP) below). Experts from the Centre for Strategic and International Studies (CSIS) [suggest](#) fully leveraging the possibilities of EDIRPA by significantly expanding its financial scope given the huge needs in the future: 'Following the model of the 750 billion Next Generation EU recovery plan, the European Commission could borrow on capital markets to either support collaborative investments or pursue joint procurements on behalf of member states.' In a November 2022 column in Euractiv, several defence [experts](#) argue that the proposed €500 million for EDIRPA is a 'meagre incentive' in comparison to the announced increases in the defence budgets of EU Member States, which amount to €200 billion for the coming years. They underline that the EU 'must do more and faster' to ensure that its initiatives do not become irrelevant. They also caution that there is a real risk that spending on off-the-shelf equipment will weaken the capacity to fund future collaborative defence programmes and will increase dependencies on non-European equipment; this issue will be even more important for the more long-term EDIP.

Moreover, in another step in the right direction, the DJPTF [presented](#) its interim findings on 14 October 2022. Having consulted with Member States, the DJPTF identified a list of possible equipment categories for joint procurement, such as anti-tank systems and missiles, ammunition, explosives, and mortars. As a next step, the taskforce engaged with the European defence industry and, over the past year, produced a [mapping](#) of the supply capacities of the European defence industry to make sure that the identified demand can be met. This [should](#) also 'better inform the use of financial support and regulatory measures', which is especially important for EDIRPA and ASAP.

The European Defence Fund

In its 15 February 2022 [contribution](#) to European defence, which provided input into the Strategic Compass, the Commission announced plans for significant incentives to increase collaborative defence spending. This [relates](#) above all to money that the EDF – an EU fund of €8 billion to incentivise joint defence research, innovation and capability development – will have already

invested in collaborative defence research and capability development (see below). The EDF also had two precursor programmes: the €500 million European Defence Industrial Development Programme ([EDIDP](#)); and the €90 million Preparatory Action on Defence Research ([PADR](#)). However, the Commission announced its intention to set up new financing solutions for defence investments (see box above) and revamp the EDF bonus system to encourage joint procurement of equipment.

The results of the [2021](#) and [2022](#) EDF calls for proposals are a positive sign of things to come: In the 2021 round, 61 collaborative defence research and development projects were chosen and awarded a total of €1.2 billion in funding. The successful proposals involve 18 entities from eight EU Member States plus Norway, on average, and half of the capability development proposals selected are linked to PESCO. In the 2022 round, €832 million will be [invested](#) in 41 defence projects, with an average of 22 entities from nine EU Member States plus Norway participating per project, with 11 of the selected development proposals linked to PESCO. The third EDF [work programme](#) for 2023 has another €1.2 billion in funding and includes dedicated calls for SMEs and targeted measures to stimulate defence innovation, with a particular focus on disruptive technologies. Projects in critical domains include space situational awareness, the European patrol corvette, countering hypersonic missiles, and 'preparing the ground for the development of next generation fighter systems, main battle tanks and strategic air transportation'. With the adoption of the third work programme, the total EDF financing for EU collaborative defence R&D, including its precursor programmes, will [amount](#) to €3.6 billion since 2017 (€3 billion EDF + €500 million EDIDP + €90 million PADR).

Experts from the Centre for European Policy Studies (CEPS) [note](#) that: 'The European Commission should raise the bar for EDF eligibility from the current 'three entities from three Member States' rule. The involvement of more Member States would lead to the better integration of armaments supply chains ... which would subsequently allow for improvements in interoperability.' This could be further [encouraged](#) by providing an EDF bonus for the joint operation of commonly developed equipment.' CSIS [experts](#) and an Egmont [analyst](#) suggest significantly expanding the size of the EDF given the huge needs in the future. Two important milestones to achieve these goals will be the mid-term evaluation of the EDF (by 2024) and the mid-term evaluation of the MFF, [scheduled](#) for 2023, where an increase in the budget could be decided. In its June 2023 proposal for the mid-term review of the MFF, the Commission [calls](#) for an additional €1.5 billion for the EDF.

Permanent Structured Cooperation

A further EU initiative that benefits the EDTIB is [PESCO](#), as it provides a legal framework for the deepening of defence cooperation between its 26 Member States (all EU Member States except Malta) and 20 legally binding commitments to, inter alia, achieve higher levels of defence investment and hike defence innovation budgets. The more visible parts of PESCO are the 68 multinational [projects](#) in fields such as space, maritime, cyber, air and strategic enablers. Importantly, there is a significant bonus if EDF projects are [organised](#) within the PESCO framework, further incentivising cooperation to the benefit of the EDTIB.

According to the EDA, PESCO projects are [forging](#) ahead; of the 60 projects, 20 are 'maintaining their ambition to deliver by 2025'. Two projects are fully operational (European medical command and cyber rapid response teams). However, six projects have fallen behind in their goals to achieve concrete results by 2025, while 15 projects are facing delays. This is due to 'lack of planning, both financial and practical in terms of project timelines'. Some 3 % of PESCO projects have a high chance of failure, according to the PESCO Secretariat (this is prior to the latest [wave](#) of PESCO projects from May 2023). [Experts](#) have viewed PESCO progress with more scepticism, describing a 'lack of purpose', as participating Member States fail to define which force package/capabilities they are aiming for through PESCO. They also see a 'culture of non-compliance', as Member States continue to maintain a national focus in their defence planning and fail to comply with the commitments that they undertook. Indeed, when it comes to more binding PESCO commitments, the Council acknowledged in November 2022 that Member States have made progress to 'varying degrees' in their implementation and saw a need to step up [efforts](#) to fulfil all commitments.

Defence innovation

At Versailles in March 2022, EU leaders committed to significantly enhancing defence expenditure, to investing in critical and emerging technologies and innovation for security and defence, and to fostering synergies between space, civilian and defence innovation and research. These commitments were repeated in the Strategic Compass. Significant developments have already taken place in boosting EU defence innovation; back in February 2021, the Commission [put forward](#) an action plan on synergies between defence, space and security, which seeks to increase complementarity between relevant EU programmes such as Horizon Europe and the EDF to profit from the disruptive potential of technologies at the intersection between space, defence and civil uses. In addition, on 15 February 2022 the Commission adopted a [roadmap](#) on critical technologies for security and defence outlining how the EU can enhance research, technology development and innovation in critical technologies and how to reduce strategic dependencies. Among other things, it invites Member States to contribute to the Observatory on critical technologies that has been set up within the Commission, and encourages dual-use research and innovation at EU level.

In its first round of selected proposals (2021 EDF call), over 5 % of the budget was [allocated](#) to emerging disruptive technologies (the EDF Regulation specifically allocates 4 % to 8 % of the EDF's annual budget to such technologies); for instance, a next-generation electro-optical sensing device will be [developed](#). In the 2022 round, 4.5 % of the budget was [dedicated](#) to funding projects on disruptive technologies – for example, a defence research [project](#) on adaptive camouflage solutions for soldiers. On 17 May 2022, an EU defence innovation hub (HEDI) was [launched](#) within the EDA to enhance innovation and act as a catalyst for new activities in close collaboration with Member States and EU stakeholders; this was one of the first concrete deliverables of the Strategic Compass. The first progress report on the implementation of the action plan on synergies between civil, defence and space industries was [presented](#) on 10 November 2022, which highlighted that most actions would be completed by the end of 2022.

The Commission has also launched an EU defence innovation scheme ([EUDIS](#)) to support defence innovators. It includes a wide range of support measures for innovative companies to bring their ideas to the market, such as a Defence Equity Facility (using €100 million from the EDF, it should leverage €400 million to €500 million in additional equity from public and private sources). The Commission will leverage the available budget from different sources during the current MFF, amounting to almost €2 billion. Despite these notable signs of progress, CEPS experts worry that 'innovation is taking a backseat to more urgent matters'. They [note](#) that, with the approach taken to defence investment in the gap analysis, the focus has shifted to 'replenishing, replacing and reinforcing' instead of defence innovation, which may lead to the EU losing its technological edge and increase third-country dependencies.

Defence-specific skills

The defence industry's workforce poses a significant future [challenge](#), as a large part of it is composed of older generations that will soon retire. The increased demand has exacerbated staff shortages in an industry that is already [struggling](#) to recruit personnel. While the skills required for the defence industry are not different from the civil sector, the industry has trouble competing for young talent with the civil sector, especially technology companies. This has led to companies experiencing [skills shortages](#).

The Commission has launched several programmes in this area, including a European defence skills [partnership](#) – which supports cooperation between stakeholders and contributes to development of a sectoral skills strategy – and stakeholder workshops on skills for Europe's defence sector. Further [measures](#) are currently being considered to ensure the defence sector retains the necessary skills; an example is the [European Year of Skills](#) 2023, which will also help defence companies to address skills shortages.

European Peace Facility

For the first time in EU history, mere days after Russia invaded Ukraine, the Member States [agreed](#) to jointly finance the provision of lethal weapons to a country at war, namely Ukraine. Funding for

the move comes from the European Peace Facility (EPF), an off-budget fund worth [€12 billion](#) in current prices. At the time of writing, support for Ukraine under the EPF amounts to €5.6 billion. The EPF can be [used](#) to fund the common costs of CSDP missions and operations, support peace operations and strengthen the capacities of third countries. The latter opens the door for significant procurement of military equipment, thus strengthening the EDTIB.

On 2 March 2023, Ukraine sent a [request](#) for assistance to the EU for the supply of 155 mm-calibre artillery rounds. On 20 March 2023, the Council recognised the specific urgent need for ground-to-ground and artillery ammunition, and missiles. It agreed on a [three-track proposal](#) on ammunition (delivery from existing stocks; joint procurement from industry; increasing production), which was [endorsed](#) by the European Council on 23 March 2023. Its aim is to 'in particular, speed up the delivery and joint procurement aiming at one million rounds of artillery ammunition for Ukraine in a joint effort within the next twelve months'. On 13 April 2023, the Council [adopted](#) a €1 billion assistance measure under the EPF to support the Ukrainian army. It will enable the EU to reimburse Member States for ammunition donated to Ukraine from their own existing stocks (Track 1); Member States have [provided](#) 220 000 artillery rounds of different calibres and 1 300 missiles as of 23 May. On 5 May 2023, the Council [adopted](#) another €1 billion assistance measure (Track 2) under the EPF to jointly procure ammunition and missiles from the European defence industry and deliver them to Ukraine. Under Track 2, on 20 March 2023 EU Member States and Norway (24 participants as of 1 May 2023) [signed](#) an EDA project arrangement for the collaborative procurement of ammunition; complementary projects, led by France and Germany are [going on](#) in parallel. Track 3 will be fulfilled through the ASAP (see below).

Access to critical raw materials and semiconductors

On 16 March 2023, the Commission [proposed](#) a regulation (the [Critical Raw Materials Act](#)) and [communication](#) to ensure the EU's access to a 'secure, diversified, affordable and sustainable supply of critical raw materials'. The Critical Raw Materials Act is supposed, inter alia, to make sure that the EU has the tools to ascertain and sustain the EU's access to critical raw materials, and sets a regulatory framework to increase domestic capacities and ameliorate circularity of critical raw materials supply chains in the EU. On 8 February 2022, the Commission proposed the [European Chips Act](#) to remedy the shortage of semiconductors and strengthen the whole EU chips value chain. The Chips Act is based around three main pillars: Pillar 1 seeks to strengthen large-scale technological capacity building and innovation in the EU chips ecosystem; Pillar 2 should enhance the EU's security of supply; and Pillar 3 will establish a monitoring and crisis response mechanism. If there were to be a supply crisis, the Commission would be allowed to implement emergency measures. On 18 April 2023, the co-legislators [struck](#) a provisional deal on the Act.

Ramping up production

The European defence industry is a peacetime industry used to a situation of modest demand. The war in Ukraine has fundamentally changed this situation, leading to a surge in demand and an acute need for the European defence industry to scale up its production capacities. According to the defence investment gap analysis: 'The Commission will support the defence industry in its effort to modernise its production lines and processes, and ramp up manufacturing capacities.' For this to happen, the Commission [proposed](#), inter alia, an in-depth mapping of the EU's current and necessary additional industrial manufacturing capabilities, the defence industry's access to critical raw materials, and measures to promote defence-specific skills. Following the Council decision of 20 March 2023 (see above), Commissioner Thierry Breton [visited](#) the EU's main ammunition production sites. He found that the EU does not currently have the necessary production capacity, 'but certainly has the potential' to develop it.

Delivering on the Council request to support the European defence industry in increasing ammunition production, on 3 May 2023 the Commission proposed the [ASAP](#). The ASAP will facilitate the ramping-up of the EU's production capacity for ammunition and missiles, to ensure that the European defence industry can better support Ukraine and Member States (Track 3 of the Council approach described above). For the ASAP, the Commission also proposed a budget of €500 million.

On 9 May 2023, the European Parliament [agreed](#) to trigger the urgent procedure to proceed quickly with the legislative proposal on the ASAP without a report. On 1 June 2023, the plenary agreed to refer the file back to the Industry, Research and Energy Committee (ITRE) for interinstitutional negotiations without amending the Commission's proposal. MEPs will now start negotiations with the Council, which on 23 June 2023 [agreed](#) its negotiating mandate that confirms the main features of the Commission proposal, most notably the 'Instrument' to support the reinforcement of industrial production and various features of the regulatory part. However, some [parts](#) have been separated from the proposal to be able to start interinstitutional negotiations.

The European defence industry has already taken some measures to address the new strategic reality. For instance, Rheinmetall, Germany's largest defence contractor, [announced](#) plans to build new ammunition production facilities in Germany, and [acquired](#) Expal Systems to enhance its manufacturing capacity for artillery and mortar ammunition. Upon finalising the acquisition, Rheinmetall will be [able](#) to increase its production of 155 mm artillery ammunition to 600 000 rounds per year, from the current 450 000 rounds. However, it is not only prime contractors that will benefit from increased demand and available funds; one way of ramping up production will be to revive under-producing facilities. For instance, it was announced that Hellenic Defence Systems (EAS) will [receive](#) up to €80 million from the EDF (which will partly fund the ASAP) to increase production of 155 mm ammunition at its Lavrio (Greece) production site. [CSIS](#) experts suggest several measures to strengthen Europe's defence industry, such as mobilising civilian industry to help support the defence sector and encouraging industrial alliances.

Third-country participation in defence industrial initiatives

The EDF and PESCO Regulations allow for the [participation](#) of third countries in projects. The EDA has concluded administrative agreements (AA), which enable cooperation with third countries, with Switzerland, Norway, Serbia, Ukraine and, most [recently](#), the US; each AA is tailored to the specific country. The Council established rules exceptionally permitting third countries to participate in PESCO, providing the countries add 'substantial added value' and share the EU's values, and that no external dependencies occur; the US, Norway and Canada [participate](#) in the PESCO military mobility project. The participation of third countries in the EDF is subject to conditions defined to ensure the security and defence interests of the EU and its Member States and [cannot](#) receive EDF funding. For instance, the US defence company John Cockerill [participates](#) in three EDF projects, including the European Future Highly Mobile Augmented Armoured Systems ([FAMOUS2](#)). Both the Council general approach and the AFET/ITRE report on EDIRPA also permit the participation of third countries under certain conditions. As a RUSI expert [argues](#), 'the EU emphasises that third-party cooperation is always an exception, and done for specific projects in an ad hoc manner, as the EU's line is to draw a clear line between those inside and outside the Union'. The Commission's proposal for the ASAP regulation [limits](#) the support to defence companies established in the EU and associated countries (defined as members of the European Free Trade Association which are also members of the European Economic Area).

EU-NATO cooperation on defence industrial matters

Developed into a strategic partnership in the early 2000s, EU-NATO cooperation focuses on issues of common interest. It was expanded through three joint EU-NATO declarations in 2016, 2018 and [2023](#), which outline areas for strengthened cooperation; one of the key areas of cooperation is 'defence industry and research'. The latest progress [report](#) on EU-NATO cooperation notes that the two organisations 'have continued consultations on wider industry matters and concrete topics related to industry engagement, to ensure mutual awareness and sharing of best practices'. For instance, this included reciprocal presentations, such as that by Commissioner Breton to the North Atlantic Council in December 2022 on industrial production capacity for munitions and initiatives for refilling national stockpiles. It highlights the development of staff contacts on research and innovation, especially on EUDIS, HEDI, and NATO's Defence Innovation Accelerator for the North Atlantic (DIANA). The third joint EU-NATO declaration also highlights 'tangible results' in the area of

the defence industry and research and commits to strengthening cooperation further in this area. Some experts have long argued that there should be a [division of labour](#) between the two organisations and that it is [feasible](#). One opinion is that, as NATO remains the cornerstone of collective defence, the EU should focus on resilience against non-military threats. Others [argue](#) that a division of labour 'may seem rational ... [but] it would not work'. However, this issue is not taken up at all in the declaration.

European Parliament position

In its [resolution](#) of 18 January 2023 on the implementation of the common security and defence policy – annual report 2022, Parliament welcomes the new EU defence initiatives, including EDIRPA. It also welcomes the announced presentation of the EDIP, after the finalisation of EDIRPA in 2023. MEPs highlight that these initiatives constitute a major step towards a European Defence Union, and call for increased ambition in joint procurement by Member States and in defence investment expenditure. Parliament urges Member States to commit to 'a significant increase' for joint EU procurement mechanisms, including EDIRPA and the EDIP; in fact, Parliament has [repeatedly](#) called for increased funds for defence initiatives such as the EDF and military mobility.

MEPs also [highlight](#) the need for more active involvement of Parliament in decision-making on CSDP and the defence industry, including on EDIRPA; highlight the importance of making full use of the EU's capability development initiatives and budgets, with a special emphasis on European defence industry reinforcement through EDIRPA, the EDF, PESCO, CARD and military mobility; call for increased funding opportunities for the European defence industry; repeatedly underline the need to establish a truly European defence equipment market; highlight the positive effects of investments in the defence industry in economic and technological terms; call for the facilitation of private funding for the defence industry and for the industry to have sufficient access to private and public funding; and make the important point that a swift revision of the MFF is necessary to provide the necessary funds for EU defence initiatives. On 9 May 2023, MEPs [adopted](#) a resolution on critical technologies for security and defence, in which they highlight the need for a coordinated EU-wide strategic approach to critical technologies for security and defence.

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