



# The EU Defence Industry in Higher Gear

Time for an Innovation Ecosystem  
in Defence Technology

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## Key numbers

100 bn euros

annual turnover of EU defence sector

2.5 SMEs

in defence sector

0.5 m

jobs in EU defence sector

23

of the world's 100 biggest defence companies  
are based in the EU

682 bn dollars

US spending on defence in 2012

251 bn dollars

China's spending on defence in 2012

113 bn dollars

Russia's defence budget in 2012

3.44 bn dollars

US DARPA budget in 2019

0.5 bn euros

expected budget of European Centre  
for Innovative Special Research (ECISR)  
in its first year

## Key conclusions

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- 1.** The defence sector is one of the leading sectors in the EU economy. It is the foundation that the European Defence Technological and Industrial Base (EDTIB) has been built on for over a decade. Over the past few years, EU institutions have repeatedly called for EU defence companies to be supported. The breakthrough was the presentation of a European Action Plan for Defence by the European Commission in November 2016, followed by concrete legislative proposals.
- 2.** In 2017, the Commission launched the EU's first subsidy programme for projects concerning defence capacities, the Preparatory Action on Defence Research, with a budget of 90 m euros spread over three years (25 m euros in 2017). The Commission also suggested legal regulations on establishing a European Defence Industrial Development Programme (EDIDP) with a budget of 500 m euros for 2019-2020 (it launched in January 2019) and proposed to establish a European Defence Fund with a budget of 13 bn euros for 2021-2027.
- 3.** Despite declarations of support for the EU's Central and Eastern European (CEE) member states on sustainable access to building the EDTIB by the European Defence Agency in 2013, they have not received real financial or institutional support. For this reason, a CEE Defence Fund should be established as part of the European Defence Fund. It would involve establishing a EDA branch in Warsaw that would manage the Fund.
- 4.** The EU ecosystem of innovation in the defence industry should include establishing a new institution modelled on America's DARPA. It would be based on the European Institute for Innovation and Technology, and concretely on its branch in Wrocław, as part of which a European Centre for Innovative Special Research (ECISR) would be founded.
- 5.** The planned EU funds supporting R&D in the defence sector are linked to deepening industrial cooperation within the EU. Over the next decade, it will be increasingly difficult for European companies acting alone to compete with consolidated American corporations or Russian, Chinese and Korean companies that can count on direct subsidies from national budgets and orders from their governments in conditions of limited international competition. As global competition intensifies, European defence companies must bank on products based on innovative technical solutions. Support from EU funds would help them. New EU funds supporting the European defence industry and establishing the ECISR would help Europe take the next step in building an innovation ecosystem in the EU defence sector.

## The EU is in favour of establishing an innovative European defence technological and industrial base

The defence sector is one of the major pillars of the EU economy. The European Commission estimates that the EU defence industry directly employs around 0.5 m workers, with another 1.2 m jobs created through cooperation with defence plants. The sector's annual turnover is over 100 bn euros. It includes over 2500 SMEs<sup>1</sup>. According to the Stockholm International Peace Research Institute (SIPRI), 23 of the world's biggest defence companies are based in the EU, including four in the top ten (BAE Systems, Airbus Group, Thales and Leonardo)<sup>2</sup>. In 2016, the Commission established a European Network of Defence-related Regions (ENDR), a platform for exchanging best practices and finding business partners for initiatives in the defence sector<sup>3</sup>.

The debate on establishing a European Defence Technological and Industrial Base (EDTIB) began over a decade ago. In 2004, the European Defence Agency was founded to support European defence companies embark on industrial cooperation. That year, the Agency's Steering Board adopted a strategy

for a European defence technological and industrial base. The Commission indicated that improving European defence companies' competitiveness in the long term is of fundamental importance for European security and defence ambitions. It advocated sharing spending on R&D, support for SMEs and improving how the European defence market is managed<sup>4</sup>. In 2013, the European Parliament issued a declaration emphasising that the smooth functioning of the EU's common security and defence policy requires as strong European defence technological and industrial base. It called for the European Council to support the EDTIB using all means, including granting interested parties the special status of economic entities working in the field of defence in Europe. According to the Parliament, these entities should be supported by funds from European programmes<sup>5</sup>. It emphasised that the European defence industry should be built in a sustainable way, in all member states, based on existing industrial foundations and the established principles of European industrial policy.

<sup>1</sup> Data of the Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs for 2014, [http://ec.europa.eu/growth/sectors/defence\\_en](http://ec.europa.eu/growth/sectors/defence_en) [accessed: 11.02.2019].

<sup>2</sup> The SIPRI Top 100 arms-producing and military services companies, 2017, December 2018, [https://www.sipri.org/sites/default/files/2018-12/fs\\_arms\\_industry\\_2017\\_0.pdf](https://www.sipri.org/sites/default/files/2018-12/fs_arms_industry_2017_0.pdf) [accessed: 11.02.2019].

<sup>3</sup> The ENDR's website: <https://www.endr.eu/> [accessed: 11.02.2019].

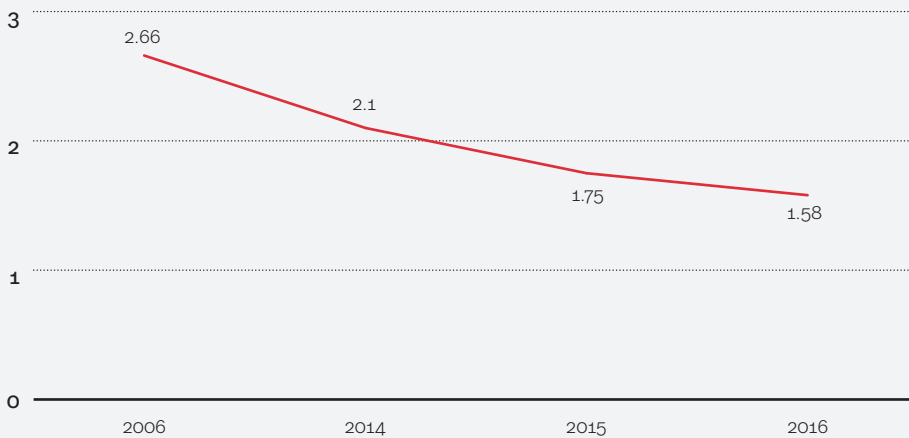
<sup>4</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A strategy for a stronger and more competitive European defence industry, 5 December 2007, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52007DC0764> [accessed: 11.02.2019].

<sup>5</sup> European Parliament resolution of 21 November 2013 on the European Defence Technological and Industrial Base, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2013-0514+0+DOC+XML+Vo//EN> [accessed: 11.02.2019].

The Parliament's resolution led to a declaration by president of the European Commission Jean-Claude Juncker on 15 July 2014. He called defence policy one of the whole Commission's priorities in its 2014-2019 term. In 2015, the Parliament repeated that creating a European market for defence equipment requires a highly competitive European industry

based on innovation and technology capable of creating synergy through closer trans-border cooperation<sup>6</sup>. In December 2018, the European Parliament published a report entitled EU Defence: The White Book implementation process, which presented member states' dilemmas relating to retaining national industrial autonomy.

➤ **Chart 1. EDA: R&D spending on defence technology in the EU27 (in billions of euros)**



Source: prepared by the author based on: European Defence Agency: Defence Data 2016-2017. Key Findings and Analysis, 7 September 2018, <https://www.eda.europa.eu/info-hub/publications/publication-details/pub/defence-data-2016-2017> [accessed: 11.02.2019].

On 1 March 2017, the European Commission presented a White paper on the future of Europe. Reflections and scenarios for the EU27 by 2025<sup>7</sup>. It cites a report by the British Ministry of Defence from 30 June 2014 entitled Trends Programme: Global Strategic Trends – Out to 2045, highlighting that by 2045 most of

the countries that currently spend the most on defence will double their spending on it: the USA from 682 bn dollars in 2012 to 1335 bn dollars in 2045, China from 251 bn dollars in 2012 to 1.27 bn dollars in 2045, India from 117 bn dollars in 2012 to 654 bn dollars in 2045 and Russia from 113 billion dollars in 2012 to

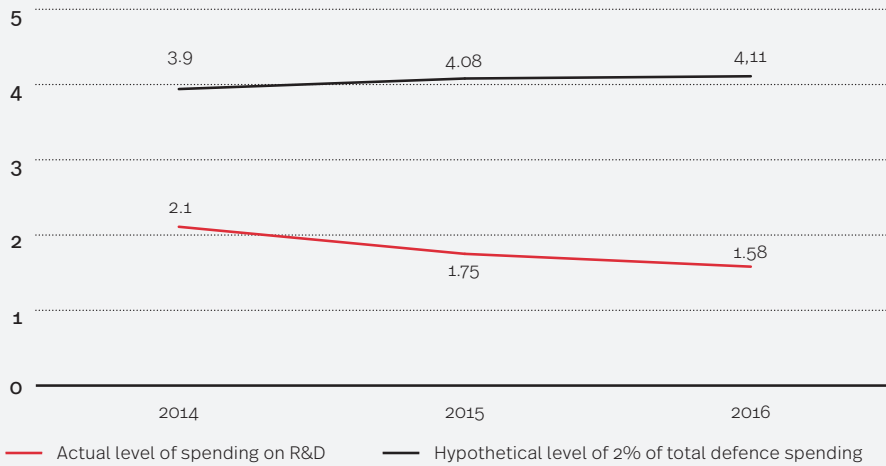
<sup>6</sup> European Parliament resolution of 21 May 2015 on the impact of developments in European defence markets on the security and defence capabilities in Europe, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2015-0215+0+DOC+XML+Vo//EN> [accessed: 11.02.2019].

<sup>7</sup> Document available on the European Commission's website: [https://eur-lex.europa.eu/content/news/white\\_paper.html?locale=en](https://eur-lex.europa.eu/content/news/white_paper.html?locale=en) [accessed: 11.02.2019].

295 bn dollars in 2045. This trend justifies the need to place greater emphasis on defence capabilities and real financial support for the EU's industrial base to prevent it from falling

behind technologically. Yet member states' spending on R&D remains low, which will not lead to technological breakthrough in the defence sector<sup>8</sup>.

▼ Chart 2. EDA: Level of R&D spending: actual state and hypothetical 2% of total defence spending



Source: prepared by the author based on: European Defence Agency: Defence Data 2016-2017. Key Findings and Analysis, 7 September 2018 <https://www.eda.europa.eu/info-hub/publications/publication-details/pub/defence-data-2016-2017> [accessed: 11.02.2019].

<sup>8</sup> EDA data on spending on R&D in the 27 EU member states, September 2018: <https://www.eda.europa.eu/info-hub/publications/publication-details/pub/defence-data-2016-2017> [accessed: 11.02.2019].



# The defence industry will drive the EU economy

In response to calls to strengthen the EDTIB, the Commission published a statement on 30 November 2016 on the adoption of the European Defence Action Plan (EDAP), which specified its intentions for building industrial defence capabilities in the EU for the first time ever. The EDAP foresaw strengthening the Defence Single Market, reducing duplicated industrial competencies and improving the competitiveness of EU defence companies. The Commission also announced the establishment of a European Defence Fund that would fund R&D by EU defence companies. It would be made up of two windows: a research window (4.1 bn euros) and a capability window (8.9 bn euros). On 6 March 2017, the EDAP was adopted by the Council of the EU, enabling further legislative work on creating new financial instruments.

The first closed meeting of the As-If Programme Committee for Defence Research made up of representatives of member states, which is supposed to support the Commission in selecting the subjects of defence programmes funded from the EU budget, was held in Brussels on 21 March 2017. Then, on 11 April 2017, the Commission initiated a Preparatory Action on Defence Research (PADR 2017) with a budget of 90 million euros spread over three years

(25 million euros in 2017). The areas that were supposed to be supported as part of PADR were selected in close cooperation with the Committee. Continuing the implementation of the guidelines in the EDAP, the Commission filed a motion to the Parliament and the Council of the EU on 7 June 2017 on adopting a regulation establishing a European Defence Industrial Development Programme (EDIDP) and proposed to create a European Defence Fund. The Commission also published a Reflection paper on the future of European Defence<sup>9</sup>. Then, on 18 September 2017, the Commission presented the assumptions of an EU industrial policy aiming to strengthen European industry and boost its competitiveness. One of its pillars is supposed to be supporting the defence industry<sup>10</sup>.

On 7 August 2018, European Parliament and Council regulation 2018/1092 of 18 July 2018 establishing a European Defence Industrial Development Programme was published in the EU's Official Journal<sup>11</sup>. With a budget of 500 m euros, the EDIDP will function in 2019-2020. On 13 June 2018, the Commission filed a request to the Parliament and Council on adopting a regulation establishing a European Defence Fund, but legislative work is still underway<sup>12</sup>. It would have a budget of 13 bn euros for 2021-2027. Funds will

<sup>9</sup> Document available here: [https://eur-lex.europa.eu/content/news/european\\_defence.html?locale=en](https://eur-lex.europa.eu/content/news/european_defence.html?locale=en) [accessed: 11.02.2019].

<sup>10</sup> For more on the EU's industrial policy, see the Commission's website: [https://ec.europa.eu/commission/news/new-industrial-policy-strategy-2017-sep-18\\_en](https://ec.europa.eu/commission/news/new-industrial-policy-strategy-2017-sep-18_en) [accessed: 11.02.2019].

<sup>11</sup> Official Journal of the European Union, L 200, 7 August 2018, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2018:200:TOC> [accessed: 11.02.2019].

<sup>12</sup> Progress can be followed on the Eur-Lex website: [https://eur-lex.europa.eu/legal-content/PL/HIS/?uri=consil%3AST\\_14094\\_2018\\_REV\\_1](https://eur-lex.europa.eu/legal-content/PL/HIS/?uri=consil%3AST_14094_2018_REV_1) [accessed: 11.02.2019]

be spent on creating and supporting the development of new areas of knowledge and defence technology that could have significant effects in defence. The fund will only grant money when the request comes from three companies that are cooperating with one another but independent, and based in different member states or countries associated with the EU. One of the criteria for receiving funding will be helping increase the

European defence industry's competitiveness, especially by creating new market opportunities and accelerating companies' growth.

Moreover, on 11 December 2017, the Council of the EU launched the start of Permanent Structured Cooperation (PESCO) on defence and, on 6 March 2018, it approved a list of the first 17 projects, which was extended to another 17 initiatives on 19 November<sup>13</sup>.

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<sup>13</sup> PESCO website: <https://pesco.europa.eu/> [accessed: 11.02.2019]

# A defence cohesion policy for the countries of Central and Eastern Europe

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The financial support of building the EDTIB is significant in terms of the development of an innovative EU economy and increasing its defence capabilities in the context of military and non-military security threats, which are particularly present in Eastern and Southern Europe. It is worth adding that EU funds should be allocated in such a way that EU countries will lower economic potential are not dominated by stronger ones. Otherwise, it would disrupt the EU's cohesiveness and could turn the EU's defence sector into an oligopoly, which would go against its systemic foundations. According to the Treaty on the EU, the EU strives for Europe's lasting development based on sustainable economic growth.

The countries that joined the EU in 2004 and 2007 did not have the opportunity to embark on equal cooperation in the defence industry with partners from the former EU15 prior to accession. For decades, their factories were largely focused on producing, repairing and modernising equipment prepared in the USSR. In this context, it should be emphasised that in 2013 the European Defence Agency declared that it will seek to provide fair chances of access for building the EDTIB for all member states' defence industries. The Agency added that it will ensure Central and Eastern European countries' effective involvement in EU industrial programmes and international supply chains in Europe<sup>14</sup>. This is the right approach, but it must bring real, rather than declared,

financial and institutional support from EU institutions. The EU must designate specific aid funds and concrete institutional actions, sending both a political and an industrial signal of support for countries in Central and Eastern Europe. Member states in this reason have justified concerns that their poorly-developed industry will be dominated by defence companies from western member states. Without addressing these concerns, the European Defence Fund will not be an instrument integrating all member states.

The regulation establishing the European Defence Fund currently being designed should therefore consider the needs of Central and Eastern European countries' industrial defence potential. It should also encompass additional funds for the development, available through national envelopes foreseen as part of the Fund's functioning. The "Connecting Europe" financial instrument used for EU infrastructure investment would serve as a model.

To this end, a branch of the European Defence Agency should be established in Warsaw to manage a fund supporting modernisation and innovation at defence companies in the region. This additional instrument could be called the CEE Defence Fund and be part of the European Defence Fund. It would not prevent defence companies from this region from applying for funding for their projects from the Fund's general pot of funding. The European Defence Fund's

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<sup>14</sup> Balanced Access to the European Defence Technological and Industrial Base – Central and Eastern European Countries, <https://www.eda.europa.eu/what-we-do/activities/activities-search/balanced-defence-industry-in-europe> [accessed: 11.02.2019].

budget would have to be increased by at least 10 bn euros, which is feasible with the good economic situation in Europe<sup>15</sup>. It would develop a new dimension of the EU's cohesion policy, which has so far brought excellent results for the whole EU<sup>16</sup>. Representatives of Central and Eastern European countries would be invited to join the CEE Defence Fund's board and it would work closely with the main Fund.

Located on the EU and NATO's eastern flank, Poland is a natural location for the

European Defence Agency's branch. It borders directly with Russia and its close military ally Belarus. Its defence and industrial potential, and the need to ensure the security of supplies of modern weaponry and military equipment for the countries of the region, are vital for the security of the entire EU. The EU should therefore support the region institutionally and with experts' help. As a "defence cohesion fund", the CEE Defence Fund would benefit all the countries in Central and Eastern Europe.

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<sup>15</sup> Data on the economic situation in individual EU member states is available on the Commission's website: [https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts\\_en](https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts_en).

<sup>16</sup> [https://ec.europa.eu/regional\\_policy/sources/docgener/informat/basic/basic\\_2014\\_en.pdf](https://ec.europa.eu/regional_policy/sources/docgener/informat/basic/basic_2014_en.pdf) [accessed: 11.02.2019].

## The EU defence industry in a higher gear. Time for an innovation ecosystem in defence technology

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As a global player in the international arena aiming for strategic autonomy, the EU should not limit itself to providing defence companies with financial support for R&D. It should also establish a special institution grouping together top engineers, constructors and programmers that could conceptualise new, ground-breaking defence and dual-use technology, build prototypes, test them and then implement them in EU member states' armies.

Since it was established in 1958, the US Defense Advanced Research Projects Agency (DARPA) has developed numerous defence and dual-use technology that have boosted the United States' industrial potential. Russia has been trying to develop its own institution responsible for creating ground-breaking technology since 2012. Initially, it was the Fund for Advanced Studies, which was transformed into a technological park for defence projects operating under the name ERA in February 2018. China has been building an institution that will concentrate on modern defence technology since 2016. It has appointed a military steering committee on innovation<sup>17</sup>.

The EU has already established a special institution that has so far concentrated on civilian technology. The European Institute of Innovation and Technology (EIT)<sup>18</sup> was founded

in 2008 to support cooperation between companies, universities and research centres to create an environment in Europe that fosters innovation and entrepreneurship. The EU's strategic decision to support the development of the defence industry and accelerate building the EDTIB means that in 2020 the EIT should naturally broaden its activity to defence and dual-used technology. The EIT's Polish branch, currently operating as PORT Polish Center for Technology Development in Wrocław, should deal with this task<sup>19</sup>. An additional organisational unit, the European Centre for Innovative Special Research (ECISR), should be established as part of its structures.

The American DARPA's budget will amount to 3.44 bn dollars in 2019<sup>20</sup>. Let us assume that the ECISR will receive at least 0.5 bn euros to start operating, recruit leading specialists, build research infrastructure and for its first projects. Still, its budget should grow systematically, reaching a similar level to DARPA's by the end of 2027 at the latest. The new Centre would cooperate closely with the EDA, the Innovation and Networks Executive Agency (INEA) (its scope would be extended to defence)<sup>21</sup>, the Organisation for Joint Armament Cooperation (OCCAR), EU member states' defence agencies, research centres throughout the EU, the NATO Science

<sup>17</sup> <https://thediبلوماس.com/2017/08/china-has-its-darpa-but-does-it-have-the-right-people/> [accessed: 11.02.2019].

<sup>18</sup> <https://eit.europa.eu/eit-home> [accessed: 11.02.2019].

<sup>19</sup> <https://www.port.org.pl/en/> [accessed: 11.02.2019].

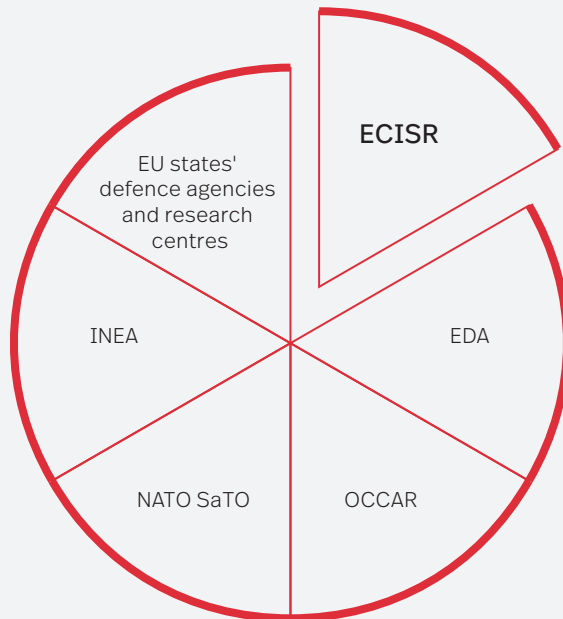
<sup>20</sup> Data published by DARPA: <https://www.darpa.mil/about-us/budget> [accessed: 11.02.2019].

<sup>21</sup> INEA website: <https://ec.europa.eu/inea/> [accessed: 11.02.2019].

and Technology Organization and DARPA itself. Together with new funding instruments, the

ECISR would help create a complete European ecosystem for innovation in defence technology.

» **Chart 3.** Building the ECISR and the development of the European system for innovation in defence technology



Source: prepared by the author.

## Summary

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Additional support from the European Defence Fund and establishing the proposed CEE Defence Fund would help the European defence industry that makes up the EDITB develop faster and become more competitive on the global defence market. The rules for funding defence project using the new financial instruments encourage companies from various EU member states to cooperate. This will make them more cost-effective and help create defence consortia capable of submitting more viable offers in tenders organised outside the EU. Moreover, EU funds will help European defence companies complete innovative R&D projects developing defence capabilities as part of PESCO. Orders by European governments for next-generation military products developed by the EU defence industry will boost the EU's strategic autonomy and strengthen NATO's potential. The European Political Strategy Centre think-tank linked to the European Commission backed similar solutions strengthening defence cooperation in its report entitled *Joining Forces. The Way*

*Towards the European Defence Union* on 14 February 2019<sup>22</sup>.

Without deepening cooperation over the next decade, it will be increasingly difficult for European companies to compete with consolidating American corporations or Russian, Chinese and Korean companies, which can count on direct subsidies from national budgets. As global competition intensifies, European defence companies must bank on products characterised by innovative technical solutions. Support from EU funds would help them.

R&D projects conducted by EU defence companies would be supplemented by the European Centre for Innovative Special Research (ECISR) funded by EU member states. They would benefit from its work, thereby strengthening the EU's defence potential. New EU funds supporting the European defence industry and establishing the ECISR would help Europe take the next step in building an innovation ecosystem in the EU defence sector. Europe could maintain its position as one of the leaders in industrial and defence innovation in the 21<sup>st</sup> Century.

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<sup>22</sup> *Joining Forces. The Way Towards the European Defence Union*, European Political Strategy Centre, [https://ec.europa.eu/epsc/publications/other-publications/joining-forces\\_en?pk\\_source=mailing\\_list&pk\\_medium=email&pk\\_campaign=epsc-2019-edu](https://ec.europa.eu/epsc/publications/other-publications/joining-forces_en?pk_source=mailing_list&pk_medium=email&pk_campaign=epsc-2019-edu) [accessed: 14.02.2019].

# The Polish Economic Institute

The Polish Economic Institute is a public economic think-tank dating back to 1928. Its research spans trade, energy and the digital economy, with strategic analysis on key areas of social and public life in Poland. The Institute provides analysis and expertise for the implementation of the Strategy for Responsible Development and helps popularise Polish economic and social research in the country and abroad.