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**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL  
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Long-term competitiveness of the EU: looking beyond 2030**

## Long-term competitiveness of the EU: looking beyond 2030

European businesses are engines of our society, creating employment, innovation and prosperity. **Competitiveness and productivity** are essential conditions for businesses to flourish; they have been at the heart of EU policy for decades.

In the face of recent successive crises, the EU has quickly put in place a common and coordinated response, demonstrating that our common strength is greater than the sum of all Member States' efforts. The supply chains disruptions caused by the COVID pandemic and the spiralling energy prices after Russia's weaponization of gas, have put the European model to the test. These challenges forced us to adjust well-proven economic and industrial policies to continue delivering prosperity and stability to our citizens and businesses and be a major player on a global scene. Yet, crisis management does not build a robust and future-proof economy that secures our prosperity and global leverage. Economic productivity cannot be built on the basis of reactive measures alone.

Now is the moment to focus on the longer-term competitiveness of the EU in an increasingly challenging geopolitical context. It is **time to look beyond 2030**, the year for which the majority of EU policy goals have been set.

This Communication aims to inform Leaders' discussions on the long-term competitiveness and productivity of Europe's economy. European businesses have to decide on their investments for the future, in the face of uncertainties, supply constraints and not always fair competition.

**The EU can build on its strengths** and achieve more than merely trying to catch up and bridge the growth and innovation gap. **A forward-looking, well-defined and coordinated EU framework will foster thriving businesses, able to compete on the global market, with attractive jobs and setting global standards.** To set the EU economy on a sustainable growth path beyond 2030, the EU and its Member States need to actively ensure structural improvements, well focused investment and regulatory measures along the lines set out in this communication. The time is now to work differently, at a make or break moment for the EU's long term competitiveness.

### I. The EU's competitiveness today

The European Union has a lot to be proud of. It is one of the three major economic regions of the world, with the trade in goods and services with the rest of the world representing 16.2%<sup>1</sup> of world trade, higher than the EU27 share of world GDP: nearly 15%<sup>2</sup>. However, a closer look shows that since the mid-1990s, the **average productivity growth in the EU has been weaker than in other major economies**, leading to an increasing gap in productivity levels. Demographic change adds further strains. Analyses show that the EU is also not at par with other parts of the world in some transversal technologies, trailing in all three dimensions of innovation, production and adoption<sup>3</sup> and losing out on the latest technological developments that enable future growth.

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<sup>1</sup> [Own calculations on WB-WDI \(https://databank.worldbank.org/source/world-development-indicators\)](https://databank.worldbank.org/source/world-development-indicators)

<sup>2</sup> [DG Trade Statistical Guide - August 2022 \(europa.eu\)](#)

<sup>3</sup> These are the next-level automation, future of connectivity, distributed infrastructure, next-generation computing, applied AI, future of programming, trust architecture, bio revolution. The EU leads in the production

**The twin transitions** anchored in the European Green Deal<sup>4</sup> and the Digital Decade<sup>5</sup>, **spurs growth and the modernisation of the EU economy**, opening up new business opportunities and helping gain a competitive advantage on the global markets. In the period 1990 to 2021, the EU economy has grown by over 61% with emissions falling by 28%, thus clearly decoupling growth from CO<sub>2</sub> emissions. A highly digitalised industry will be capable of producing in a smarter, more efficient, safer and cleaner way. The productivity of companies already investing in data-driven innovation and data analytics grows approximately 5% - 10% faster than those not investing.<sup>6</sup>

To foster the post-pandemic recovery, the Commission has set up a path to promote **investments and reforms**. In addition to the Recovery and Resilience Facility, many EU programmes contribute to the twin transitions with, for example 35% of overall spending from all EU programmes dedicated to reaching the climate objectives. With the recent **Green Deal Industrial Plan**<sup>7</sup>, the Commission outlined what it takes for the net-zero sector to remain competitive in the medium-term and it underlined the need for faster and simpler procedures for business to thrive. Administrative simplification and streamlined permitting were developed for renewables deployment, critical raw materials and net-zero technologies manufacturing, and will be examined for broader implementation over time. This was done in a targeted manner, and without compromising on high sustainability standards.

## II. Boosting competitiveness beyond 2030

Today, there is a broad consensus on the **European model for inclusive economic growth, based on sustainable competitiveness, economic security, trade and open strategic autonomy and fair competition, as a source of prosperity**.

Sustainable competitiveness builds on productivity growth, environmental sustainability, macroeconomic stability and fairness. Economic security is the ability of the EU economy to withstand shocks and protect own interests, thanks to resilient and diversified supply chains and its well performing businesses. By pursuing an open strategic autonomy, the EU commits to open trade, while taking its responsibility in shaping a more sustainable and fairer world, building its own capacities to increase resilience and asserting itself against coercive and unfair practices.

There are lessons to learn from the European Union's history. Broad community-level programmes and reforms with a clear competitiveness dimension such as the *Common Commercial Policy* in the 1950s, and the *Single Market Programme* in the 1980s, boosted economic activity and productivity. **Stronger common EU-level action can spur prosperity and productivity again today.**

It is our European system of rights and values that attracts individuals and businesses to the EU, based on a strong European social model with **equal opportunities for all** and a market

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and adoption of next-generation materials and in clean tech. Source: McKinsey [securing-europes-competitiveness-addressing-its-technology-gap-september-2022.pdf \(mckinsey.com\)](#)

<sup>4</sup> COM(2019) 640 final

<sup>5</sup> COM(2021) 118 final

<sup>6</sup> OECD (2015). Data-driven innovation: big data for growth and well-being, OECD Publishing, Paris.

<sup>7</sup> COM(2023) 62 final

economy, leaving no one behind. The EU leads on most dimensions of social inclusion<sup>8</sup>, supported by the European Pillar of Social Rights. Robust institutions, a stable macroeconomic framework including a well-functioning labour market, sustainable debt situation and a policy geared to stable prices will continue to be the success factors of the EU's competitiveness. The rule of law guarantees fundamental rights and supports a stable, predictable and investment-friendly business environment with a guaranteed right of redress. In the same vein, high quality infrastructure and human capital with a well-educated and trained workforce are among the EU's assets.

Within **the European Semester**, the Commission will continue to provide analysis and propose country-specific recommendations to address key bottlenecks for sustainable and inclusive growth in Member States, ensuring an effective reform momentum to put in place **the right conditions to boost competitiveness and productivity**, including as regards fiscal policies and macroeconomic stability.

**To foster the future of Europe's competitiveness, the Commission proposes to work along nine mutually reinforcing drivers.** Accompanying these nine drivers and as a second leg of action, the Commission will work actively **towards a growth enhancing regulatory framework.**



<sup>8</sup> Income inequality as measured by the Gini index is 30, compared to 41 in the US and 39.7 in China. The trends on overall income inequality are showing a steady decrease [Social scoreboard indicators - European Pillar of Social Rights - Eurostat \(europa.eu\)](#)

## 1. A Functioning Single Market

*The Single Market accounts for 23 million businesses employing nearly 128 million people and contributes to a structural increase in EU GDP by around 9%<sup>9</sup>. It gives businesses access to a customer base of more than 440 million people and is the basis to grow across borders and make economies of scale.*

*The Communication ‘Single Market at 30’<sup>10</sup> looks at its achievements and potential, indicating where more can be done to bring down barriers and deepen the Single Market.*

Uncontestably, the Single Market is the core of the EU’s competitiveness and will remain so in the future. The Single Market is what makes the four fundamental freedoms of the Treaty a reality.

**A level playing field in the Single Market and globally remains a priority.** For businesses, the Single Market is the main engine of growth, productivity and competitiveness. For consumers worldwide, it is a source of trust that the products purchased in the Union are safe and of high quality and produced with respect of high labour and environmental protection standards. As outlined in the “Single Market at 30”, correct and timely transposition of EU law is of critical importance to ensure that Single Market legislation achieves its intended effects.

**A robust competition** policy must remain at the heart of our efforts. It is key to delivering innovation and lowering prices for EU consumers<sup>11</sup>. The Commission is currently conducting a review covering more than 20 sets of competition rules and guidelines across all its instruments, taking into account the significant developments of the past years, in particular digitalisation and new ways of offering goods and services, and to reflect the increasingly interconnected and globalised nature of commercial exchanges. It has also introduced new tools to counter novel threats to competition. The Digital Markets Act ensures that large platform companies do not distort fair competition. The Foreign Subsidies Regulation protects the level playing field for all companies in the Single Market by addressing distortions caused by foreign subsidies. In parallel, the Commission will continue to make full use of trade defence instruments and rules-based international trade against unfair trade practices like dumping and distortive subsidies.

**Further integration of the Single Market**, as outlined in the ‘Single Market at 30’ communication, requires bringing down barriers and concentrate on some sectors. For example, the Commission will work to further implement the ‘once only’ principle, including by means of **one-stop-shops**, in areas such as taxation, customs, and regulatory reporting<sup>12</sup>. Looking ahead, there is significant potential for enhancing and completing the Single Market for services.

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<sup>9</sup> [Legal obstacles in Member States to Single market rules](#), Policy Department for Economic, Scientific and Quality of Life Policies, Directorate-General for Internal Policies, European Parliament, November 2020

<sup>10</sup> Communication: The Single Market at 30, COM(2023)162 final.

<sup>11</sup> COM(2021) 713 final

<sup>12</sup> Initiatives such as the VAT one-stop-shop for e-commerce, which applies since July 2021; the proposal for a European Single Access Point (ESAP) to improve public access to entities’ financial and sustainability information, under negotiation (COM(2021) 723 final) or the once-only technical system (OOTS) accessible through the EU’s Single Digital Gateway.

Further **broadening and deepening of the Single Market is the single most cost-effective measure to secure EU’s productivity**. The level of integration for trade in both goods and services has doubled in the last 30 years, but integration in the area of services, which account for around 70% of the EU’s GDP remains well below that for goods.

To monitor this driver, the following KPI is proposed:

KPI	Source	Target	Latest available data
1 Integration in the Single Market (trade vs GDP)	Single Market Scoreboard	Up	23.5% for goods (2021) 6.75% for services (2021)
2 Conformity deficit	Single Market Scoreboard	0.5%	1.3% (2021)

## 2. Access to private capital and investment

*Private investment represents more than 85% of total investment in the EU<sup>13</sup>. Investments needed to accelerate the green and digital transitions, enhance resilience and boost the Union’s competitiveness will have to primarily come from the private sector. The current size and depth of the EU capital markets is inadequate to support the EU’s future growth. The EU’s stock market capitalisation is less than half of the United States, in percentage of GDP, and lower than that of Japan, China and the UK. Yet, Europeans save much more than Americans. The EU venture capital industry is 20 times smaller than that of the US<sup>14</sup> and most venture capital investments are concentrated in few EU Member States.*

A competitive economy needs an efficient access to funding. While public support plays a crucial role as an enabler to mobilise investment, significant private financing is essential in view of the sheer scale of needs. Although access to finance has improved significantly in the EU over the recent years, risk capital (in particular for growing and scaling up businesses) continues to be scarce.

**Deepening the Capital Markets Union** is essential to unlock private investment, diversify sources of funding and allocate capital efficiently across the EU. Growing the capital markets and their cross-border integration will enable companies to access different sources of funding and investment opportunities when they are starting up and scaling up in Europe. Moreover, the EU must overcome fragmentation to ease cross-border investments. This requires more aligned insolvency laws, simplified access to capital markets, particularly for smaller companies, deeper engagement of retail investors in capital markets, robust market infrastructure, easy access to financial information and more integrated supervision.

The Commission stands ready to give its full support to the European Parliament and the Council to adopt its proposals quickly and step up the level of ambition, now and in the

<sup>13</sup> General government investment as % of total gross fixed capital formation. GDP and spending-Investment by sector – OECD Data.

<sup>14</sup> If assessed based on flows (2021; Source: InvestEurope for the EU; the National Venture Capital Association for the US).

future. All proposals under the Capital Markets Union Action Plan should be adopted before the end of this Commission's mandate. The time to act is now.

**Completing the Banking Union is also crucial for the competitiveness of the EU economy.** With 75% of corporate borrowing provided by EU banks, a strong Banking Union is key for financial stability. The Commission will follow up on the statement of the Eurogroup to review the bank crisis management and deposit insurance framework.<sup>15</sup>

**The Capital Markets Union and the Banking Union are not a sectoral policy – they underpin the health of the entire European economy.**

The **EU tax framework** is also key in supporting growth and private investment, in particular by removing tax barriers to cross-border investment. As announced, the Commission will put forward proposals for an EU-wide system for withholding tax and a new framework for income taxation for businesses in Europe (BEFIT).

The **regulatory framework for financial services** has undergone substantial changes since the financial crisis to ensure stability and foster capital markets. While a stable framework is conducive to a business-friendly environment and legal certainty for the market participants, financial services legislation should harness the opportunities of innovation and technology changes while addressing emerging risks, in line with the digital finance and retail payments strategies<sup>16</sup>.

The EU has established itself as a **leader in sustainable finance internationally**. It works towards the convergence of sustainability reporting standards at global level, notably through the International Platform on Sustainable Finance. The Commission will seek to streamline the implementation of disclosure obligations to the extent possible, while maintaining the EU ambition in terms of green transition and providing guidance to companies<sup>17</sup>. Work is ongoing on a comprehensive assessment of the implementation of the Sustainable Finance Disclosure Regulation.

**Seed public funds can leverage and mobilise private investment.** The European Innovation Council established under the EU Horizon Europe Programme has so far delivered more than 112 'centaurs'<sup>18</sup> and more than 12 'unicorns' through facilitating access to finance and advisory services. The InvestEU Programme aims at mobilising over EUR 372 billion of financing, mainly private, focusing on priority areas and the Commission has worked with the EIB and other implementing partners to design a product mix that responds to the current needs including through dedicated products in venture capital in early to growth stage companies. But this would not be sufficient to cater for the needs of the future. Therefore, the Commission is assessing how the overall funding for InvestEU could be increased, in particular for the period covering 2024 until 2027. In addition, a future European Sovereignty Fund would have a major role to play to crowd in private investment in critical and emerging technologies for the green and digital transitions.

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<sup>15</sup> [Eurogroup statement on the future of the Banking Union of 16 June 2022 - Consilium \(europa.eu\)](#) [Eurogroup statement on the future of the Banking Union of 16 June 2022 - Consilium \(europa.eu\)](#)

<sup>16</sup> COM/2020/591 final and COM/2020/592 final. For example, the Commission will propose an enabling framework for the potential issuance of a digital euro by the European Central Bank.

<sup>17</sup> The Commission has already provided guidance on disclosure obligations, for instance in relation to Taxonomy, and will provide further guidance in relation to the Sustainable Finance Disclosure Regulation before mid-2023

<sup>18</sup> Centaur or aspiring unicorns are designations for start-ups that have reached valuations of more than EUR 100 million. Unicorns are start-ups that reached a valuation of more than EUR 1 billion.

Strong private investment is proof of faith in Europe’s competitiveness. Venture capital complements bank financing with more diversified financing models for businesses, in particular young innovative companies. The EU must step up its efforts to offer opportunities at par with the other leading economies.

To monitor this driver, the following KPIs are proposed:

KPI	Source	Target	Latest available data
3 Net private investment as a share of GDP	Single Market Scoreboard	Up	3.2% (2021) 2.6% (2020)
4 Venture capital investment	Single Market Scoreboard	Up	0.48% (2021) 0.03% (2018)

### 3. Public investment and infrastructure

*Public investment is essential for promoting competitiveness through investment in areas such as research and development, education and healthcare, for fostering a well-connected and seamless Single Market through investment in infrastructure, and for crowding in private investment. In 2022, public investment in the EU amounted to 3.2% of GDP. In 2021, public spending on education amounted to 4.8% of GDP.*

The public budgets of the EU together with its Member States provide citizens with a high level of public services and infrastructure. Quality health systems and an educated society prepared for the challenges of tomorrow are fundamental to the resilience of our economies.

**Cohesion Policy** is a major contributor to public investment at EU level delivering on commonly agreed European priorities, driving economic convergence and resilience. Going forward, cohesion funds will continue to be relevant for the Union’s competitiveness, tapping into all regions’ potential and addressing their specific needs.

**The European economic governance framework** needs to be urgently reformed to have a set of EU fiscal rules that fully takes into account the new economic and geopolitical reality. The Commission’s reform orientations aim to bring together the fiscal, reform and investment commitments of each Member State within a common EU framework. Country-specific fiscal trajectories as well as priority public investment and reform commitments together will guarantee sustainable and inclusive growth while ensuring sustained and gradual debt reduction.

Going forward, continued and increasing public investment in providing large scale decarbonised infrastructure is key. Increased capacity and modernisation of the **energy, transport and connectivity infrastructure** throughout the EU are necessary to support the growth of the industry and to benefit fully from the opportunities of the Single Market.

**Modernising the European transport infrastructure** will enable climate-resilient, smart, safer and more efficient mobility and logistics services for citizens and enterprises. Connectivity is crucial for cohesion, and even more so for Member States at the periphery of the Single Market. The EU should also continue playing a leading role to foster a global level playing field in aviation and the maritime sectors.

For these infrastructures, as well as for energy, **cross-border and multi-country projects** are of the essence. EU and Member States alike need to simplify, accelerate and harmonise

digitalisation and the regulatory process for infrastructure projects, especially for cross-border interconnections and bottlenecks.

**Space** is increasingly becoming a critical enabler for the well-functioning of our economies, and for **security and defence**. Space has multiple synergies with the defence sector<sup>19</sup>. Exploiting them and further consolidating EU space flagships (Galileo, Copernicus and IRIS) will allow the EU to achieve its geopolitical and strategic objectives (e.g. border defence, security, emergency management, reduction of dependencies), boost innovation, and enhance European economic growth.

**Public procurement** can stimulate supply chains through increasing demand. Used strategically, focusing not only on price, it can foster security of supply, sustainability and increase resilience of industrial ecosystems. The Net-Zero Industry Act<sup>20</sup> is a step in this direction. It should also become easier for innovative, sustainable SMEs or for consortia including such SMEs to participate in procurement. When possible, tenders should be designed in a way that allows for SME participation, including in projects under the Global Gateway strategy.

To provide high quality public goods, as well as to incentivise crowding-in of private investments, appropriate levels of public investment is needed. Sustainable public finances and growth can ensure the required fiscal space.

To monitor this driver, the following KPI is proposed:

KPI	Source	Target	Latest available data
5 Public investment as share of GDP	AMECO database	Up	3.2% (2022)

#### 4. Research and Innovation

*The EU represents about one fifth of the world highly cited publications, patents, and research and innovation, with less than 7% of the world's population.*

*The EU currently invests about EUR 330 billion per year in research and innovation, corresponding to 2.26% of its GDP.*

*In 2021, three key sectors accounted for 73.6% of corporate R&D investment in the EU: Automotive (31.3%), ICT producers and services (22,6%), and health industries (19.9%).<sup>21</sup>*

*In 2021, the EU counted 69 unicorns against 169 in China and 470 in the US<sup>22</sup>.*

*EU R&D investment intensity increased from 1.8% of GDP to 2.3% of GDP over 2000-2020<sup>23</sup>, yet remains below the US (3.5%), Japan (3.37%), and South Korea (4.8%) in 2021<sup>24</sup>.*

Europe remains a scientific powerhouse and coordination of research along common priorities in the EU has improved. Yet, compared to its competitors, Europe underinvests in research and innovation. **Investing in innovation today translates into enhanced competitiveness of tomorrow.** For the EU industry to remain competitive, it needs to

<sup>19</sup> EU Space Strategy for Security and Defence JOIN(2023)9

<sup>20</sup> COM(2023)161 final

<sup>21</sup> Data from the Industrial R&D investment Scoreboard.

<sup>22</sup> [Science, research and innovation performance of the EU 2022](#).

<sup>23</sup> Data from ESTAT.

<sup>24</sup> Data from OECD.

accelerate the pace of innovation, notably for the green and digital transitions and the sectors that are also shaping the economy and society of the future. The EU and Member States budgets make available significant funds. However, private expenditures on R&D are relatively low in comparison with the EU's global peers. Private funding on a bigger scale need to flow in as well. In addition to accelerating funding, business conditions should be right for innovative start-ups and SMEs to be able to scale-up and remain in the EU. The European Innovation Council combines grants and equity and aims precisely at providing the right conditions to enable start-ups to scale-up without relocating in search of funding.

In order to increase investment in research and innovation, the Commission encourages Member States to provide general **tax-based incentives for research and innovation activities**. **Public-private partnerships, R&D&I support measures including under IPCEIs** are key to de-risk innovation.

While cohesion policy supports the convergence of less developed regions through support to research, innovation and smart specialisation, the EU needs all its regions to excel in innovation. The new European Innovation Agenda aims at accelerating and strengthening innovation across the EU. This is particularly important for the areas of the future in **clean technology, biotechnology and digital**, marked by higher labour productivity than the traditional sectors<sup>25</sup>. The EU needs to tap into the potential of these technologies preparing its industry to be competitive beyond 2030 in order to lead, and not just follow, in these areas with high-growth-potential.

**Clean technologies** are the center of the green transition today and are one of the most promising areas where the EU can and should further develop its comparative advantage. The EU remains a leader in clean and smart production technologies and should particularly capitalise on its leadership in circularity and green high-value patents. It could build also on its strong position in the fields of advanced materials, technologies for climate neutrality in energy-intensive industries, and transform and develop the automotive and transport industries.

Next to clean technologies, **biotechnology** can offer high-value bio-based solutions for a broad range of uses and sectors, such as health, and can substitute renewable home-grown materials for fossil or extracted and imported materials. Concerning the blue biotechnology, collecting, processing and using data on the ocean and related human activity has potential to conquer global markets. A circular bioeconomy offers huge potential to explore substitution possibilities where natural resources are scarce.

As the EU's financing arm, the EIB Group boosts public investment to support research and development of innovative projects and technologies in line with EU priorities. It helps to crowd in private investors by providing risk finance as well as technical and financial expertise to innovative projects including under InvestEU.

The EU has made too little progress towards the target of spending on Research and Development as percentage of GDP, and based on current trends will fall well short of the 3% target by 2030. Even greater efforts will be necessary to remain competitive beyond 2030. While a high number of patents is proof of the creativity and innovation in the EU, the bringing to market can be helped with regulatory testbeds and funding support.

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<sup>25</sup> For example, the productivity of companies investing in data-driven innovation and data analytics grows approximately 5-10% faster than that of companies not investing (OECD: Data driven innovation: big data for growth and well-being, 2015).

To monitor this driver, the following KPIs are proposed:

KPI	Source	Target	Latest available data
6 R&D intensity % GDP	Single Market Scoreboard	>3% beyond 2030	2.26% (2021)
7 Number of patent applications	Eurostat	Up	67 713 (2021) 65 925 (2020)

## 5. Energy

*From the peak of the gas price spike last August, gas prices have been trending downwards and are now around 50 EUR/MWh, comparable to those observed before the war in January 2022. However, electricity prices for business and consumers in the EU remain higher than in other parts of the world, being for instance twice as high as in the US<sup>26</sup>. In 2021, 21.8 % of EU's gross final energy consumption was from renewable sources. In 2022, installed capacity (353 GW) increased by 16% saving around 11 bcm of gas equivalent in a year.*

To maintain its competitiveness, the EU requires reliable and secure supply of affordable energy and a well-integrated market for energy able to withstand disruptions. **Energy prices** are historically higher in the EU than in other regions of the world, and this gap has recently increased due to the Russian war of aggression against Ukraine. Higher energy prices than for some of the global competitors will persist in the EU for a certain number of years. The REPowerEU plan<sup>27</sup> aims at increasing the energy independence of the EU and at accelerating the decarbonisation objectives of the European Green Deal. Several pieces of legislation are under negotiation or have been recently approved to increase ambition in the fields of renewables and energy efficiency and to stabilise markets and shield consumers from the high energy prices.

The **faster roll-out of renewables** and energy efficiency are key to improve our economic fundamentals, lowering the energy prices, while securing our energy independence. This will require significant investment in energy generation, networks as well as industrial capacity in these sectors. The revision of the Electricity Market Design<sup>28</sup> will enhance the incentives for private investments in renewables. Following the Green Deal Industrial Plan and subject to approval from its governing bodies, the EIB has expressed willingness to increase its contribution to the REPowerEU Plan from EUR 30 billion to EUR 45 billion, which could leverage over EUR 150 billion overall of investment for net-zero industry capacity and deployment.

In addition, the electrification of the economy requires the upgrade of the grid to support the integration of renewables and the **digitalisation of the energy system**. **Energy storage** will also play a significant role in ensuring flexibility and security of supply by facilitating the

<sup>26</sup> Energy prices, International Energy Agency (2022). In Q3 2022, electricity prices for industrial consumers were 192.59 USD/MWh compared to 94.22 USD/MWh in the US.

<sup>27</sup> COM(2022) 230 final

<sup>28</sup> COM(2023) 148 final and COM(2023) 147 final

integration of renewable generation, supporting the grid, and shifting energy to the time when it is most needed.

The EU has set ambitious targets for renewable energy generation and now has to meet them to increase energy independence and progressively reduce the cost differential with other parts of the globe.

To monitor this driver, the following KPIs are proposed:

KPI	Source	Target	Latest available data
8 Share of energy from renewable sources	Eurostat	45% in 2030	21.77% (2021)
9 Electricity prices for non-household consumers	Eurostat	Down and then steady	EUR 0.1604 per kWh (Semester 1 2022)

## 6. Circularity

*A circular economy, enabled by the technology revolution, is crucial for decoupling the EU's economic growth from primary resource use. It would also allow Europe to grow resource productivity by up to 3% annually. This would translate into a GDP increase of 7% relative to business as usual, with additional positive impacts on employment and environment.<sup>29</sup>*

*In 2021, the rate of circularity of material use in the EU was 11.7 %<sup>30</sup>. According to Eurostat estimates, the circular economy sectors accounted for almost 4,3 million jobs<sup>31</sup> and a value added of around EUR 299 million in 2021<sup>32</sup>.*

**A circular economy offers a major opportunity to decrease resource dependence and waste, and increase resource productivity, employment and growth.** It also has the potential to create a new range of services, circular business models with product-as-service, peer-to-peer sharing, on-demand manufacturing and digital solutions. EU policies on the circular economy support the EU's goal to reduce its trade dependencies. Products that are designed for repair, reuse and recycling and getting more value from material will be key to the circular economy. Industrial symbiosis, when the waste and by-products on an industry become raw materials for other, is another area of sustainable industrial growth.

A well-functioning market for secondary material will be crucial in times of scarce resources. To this end, the Critical Raw Materials Act<sup>33</sup> will incentivise recycling with the policy objective to supply 15% of the EU demand from recycled critical raw materials. This will help strengthen the waste and circularity framework for such materials and promote material-efficient recycling to secure a strong secondary market.

<sup>29</sup> Growth Within: A Circular Economy Vision For a Competitive Europe; McKinsey Centre for Business and Environment & Ellen Macarthur Foundation; June 2015

<sup>30</sup> [Circular economy - material flows - Statistics Explained \(europa.eu\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Circular_economy_-_material_flows); [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Circular\\_economy\\_-\\_material\\_flows](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Circular_economy_-_material_flows)

<sup>31</sup> Data from [Eurostat](#).

<sup>32</sup> Data from [Eurostat](#).

<sup>33</sup> COM(2023)160.

Common rules applicable throughout the EU make it easier for businesses to rise to the challenge. Once adopted, **eco-design rules for sustainable products** will boost resource and energy efficiency increasing the recuperation and recycling of materials from products at the end of their life cycle and avoiding and minimising waste production. The accompanying **digital product passport** will allow consumers and businesses to easily access key information on energy use, recycled content durability, reparability and recyclability of products in the EU. The materials and resource intensive sectors identified in the Circular Economy Action Plan<sup>34</sup> will be prioritised in setting future-proof eco-design rules and upcoming rules promoting a right to repair will support competition in the repair sector.

With increasing quantities of products and materials recycled, repaired and re-used, circularity will improve sustainability, spur innovation, support job creation, lead to lower input costs for EU industry and reduce dependencies for raw materials, including critical ones.

To monitor this driver, the following KPI is proposed:

KPI	Source	Target	Latest available data
10 Circular material use rate	Eurostat	Double by 2030 compared to 2020 (Circular Economy Action Plan)	11.7 (2021)

## 7. Digitalisation

*Ranking as one of the largest industries, the ICT global market is forecasted to reach a size of EUR 6 trillion in 2023<sup>35</sup>. The total value added of the EU's ICT sector was over EUR 604 billion in 2021, representing 4.9% of EU's GDP.*

*Despite the essential nature of the ICT industry for the competitiveness of many sectors, the EU share in the global ICT market has fallen from 21.8% in 2013 to 11.3% in 2022. In 2022, only 69% of SME reached a basic level of digital intensity and 8% of companies used AI technologies (2021)<sup>36</sup>.*

**Digital technologies have a profound impact on the competitiveness of the EU economy as a whole, boosting efficiency and innovation.** Their adoption and integration across the economy will be vital to the overall competitiveness and productivity. At the same time, to retain industrial leadership, the EU needs to attain a leading role in key digital technology 'verticals', from artificial intelligence to quantum computing, microelectronics and virtual reality, and to deploy digital infrastructures, from cybersecurity, 5G to cloud computing and data.

Safe, secure and sustainable **digital infrastructures** are being set up across borders, in areas such as 5G networks, satellite connectivity and cloud computing. The future connectivity

<sup>34</sup> COM(2020) 98 final . The Commission is engaging with stakeholders<sup>34</sup> to define the priorities for defining such market-shaping rules which will be reviewed regularly to keep pace with technological evolution. Public consultation on [New product priorities for Eco-design for Sustainable Products](#)

<sup>35</sup> [ICT global market share by country 2022 | Statista](#)

<sup>36</sup> Data from Eurostat.

network will be a blend of transmission and computer data storage linked across all corners of the planet thanks to submarine cables and to our satellite networks. The EU needs to start planning and developing future connectivity.

**Artificial intelligence** offers many new possibilities to boost competitiveness. To bridge the gap from lab to the market, together with Member States, the Commission is co-funding testing and experimentation facilities for companies to test their latest AI-based technologies in real-world environments. The Commission will promote the potential of artificial intelligence applications also in public administrations.

Building on the success of the European High Performance Computing Joint Undertaking<sup>37</sup>, the EU will accelerate research and innovation in **quantum computing**, communication and sensing, which will have decisive impact and unleash opportunities in different application sectors including finance, logistics, and electronic communications, as well as national security and defence. **Semiconductors** are already critical for the resilience of the industry and they will become even more necessary. The European Chips Act<sup>38</sup> will support the competitiveness of the EU semiconductor ecosystem, increasing EU technological sovereignty and ensuring security of supply.

Looking ahead, the **Web 4.0**, where everything will be seamlessly interconnected, will be ground-breaking. Organisations and businesses are already investing in **digital twins**, which provide accurate digital simulations of an object. They will enable more efficient planning and prediction of needs, downtimes or prevent breakdowns. The Commission is developing a digital twin of the Earth (Destination Earth) to model and simulate natural phenomena, which will be available mid-2024. The digital twin of the Oceans is foreseen for the end of 2024. Other digital twins will follow, such as the urban digital twins or ‘virtual twin of the human’ as a ground-breaking aid to medical research (expected by 2025 at the earliest).

An increasingly connected world does not come without risks. **Cybersecurity** is essential for security and resilience. The EU legislative framework for cybersecurity is being strengthened, including through the proposed Cyber Resilience Act that aims at protecting connected products – it will establish high common standards, which will also benefit the European cybersecurity industry globally. The Commission is also assisting SMEs to become more cyber resilient through the Digital Innovation hubs. Investments in research and development of cutting-edge cybersecurity technologies and their deployment at all levels of the economy are a necessity and an opportunity for the European cybersecurity industry.

Digitalisation is the backbone of future competitiveness and efforts must be made for the EU to catch up and lead in this key sector globally. The Digital Decade Policy Programme has set the targets to achieve by 2030. We aim for more than 90% of SMEs reaching a basic level of digital intensity and at least 75% of enterprises taking up cloud computing services, big data or AI technologies<sup>39</sup>.

To monitor this driver, the following KPIs are proposed:

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<sup>37</sup> Thanks to the EuroHPC, the EU now counts 8 supercomputers in operation, 2 of which are among the top 10 most powerful supercomputers of the world.

<sup>38</sup> Proposal for a COUNCIL REGULATION amending Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe, as regards the Chips Joint Undertaking. COM/2022/47 final.

<sup>39</sup> Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030, OJ L 323, 19.12.2022, p. 4–26.

KPI	Source	Target	Latest available data
11 Digital intensity of Union SMEs	Eurostat	90% by 2030	69% (2022)
12 Digital technologies adoption by companies	Eurostat	75% by 2030	Cloud computing services 41% (2021) Big data 14.2% (2020) Artificial Intelligence 7.9% (2021)

## 8. Education and skills

*With the green and digital transitions, more and more individuals will have to acquire new skills to keep up with technological developments in their own jobs, or to take on jobs in other sectors. This is why the European Pillar of Social Rights Action Plan sets the headline target for at least 60% of all adults to participate in training every year by 2030, up from 37% in 2016 and for at least 78% of employment rate by the same year.*

*Addressing skills shortages requires facilitating mobility by making it easier to recognise skills and qualifications across Member States and those of third country nationals.*

The EU's high-quality and inclusive education and training systems are one of its biggest strengths<sup>40</sup>, essential for EU competitiveness. However, Europe is already facing shortages of skilled labour, also due to demographic change. A workforce with the requisite skills is essential for succeeding in the twin transitions, enabling companies to expand in growth sectors. Therefore, it is imperative to foster not only the supply of training opportunities adapted to present or upcoming needs, but also recognition by businesses and public authorities of the skills and qualifications acquired, and sufficiently attractive conditions for current or potential workers to seize such opportunities to improve their skills and to practise them through high quality jobs.

The 2020 **European Skills Agenda**<sup>41</sup> is the EU's roadmap to ensure the EU has the skilled workforce it needs to thrive in the context of the digital and green transitions and boost economic competitiveness and employment. It recognises that individuals need to continuously upskill but also reskill, as they are more likely to change jobs and even sectors throughout their careers. This requires access to training, but also guidance and validation services. The structural dialogue on digital education and skills aims to ensure future oriented skillset as a foundation for long-term competitiveness.

The 2023 European Year of Skills will put the spotlight on skills to help workers and companies, in particular SMEs, to address skills shortages in the EU. It will promote a mindset of reskilling and upskilling, helping people to get the right skills for quality jobs.

<sup>40</sup> The share of the population aged 25-34 who have successfully completed tertiary studies has increased from 32.2% in 2010 to 41.2% in 2021, while the overall share of early leavers from education and training fell in the EU by 3.5 percentage points between 2011 and 2021 to 9.7%. Source: [Early leavers from education and training - Statistics Explained \(europa.eu\)](#)

<sup>41</sup> COM/2020/274 final

**One-stop-shops** at national/regional level can facilitate individuals' access to all skills-related services. The Commission will continue to facilitate the exchange of best practices, building on existing tools, such as Individual Learning Accounts.

Further steps are needed to provide a sustainable solution to the skills shortages affecting the EU economy, promoting a **'Skills-first' approach**. This can be particularly beneficial for people from disadvantaged or underrepresented groups as this approach values and recognises the actual skills instead of formal qualifications.

Moving toward a single market for skills requires **portability** of skills throughout the EU. The Commission will encourage making full use of the provisions of the Directive on the recognition of professional qualifications, in particular as regards common training frameworks and common training tests. The Commission will also examine ways to facilitate validation and recognition of credentials, including qualifications outside the scope of the Directive on the recognition of professional qualifications.

We need to tap into the potential of **women and the young** with measures to improve women's participation rate in all sectors and at all levels and to promote the early integration of the young to the labour market. In addition, we need to encourage equal opportunities and participation for all, including for people from disadvantaged background, minorities and people with disabilities. The upcoming initiative to update the Quality framework on traineeships aims to address the latter. The integration to the labour market of people with low levels of educational attainment, and other under-represented groups will be overall beneficial to society and contribute to address the current shrinking of the EU's workforce. **Legal migration** can also help alleviate the most pressing labour and skills shortages. The Commission will present this year an initiative on the recognition of third country nationals' skills and qualifications by combining systemic long-term measures to improve recognition, with short-term action to address some of the most imminent EU skills gaps.

Technical and manual work must be revalued and promoted, so that more professionals are attracted to develop their careers in those fields. **Vocational education and training (VET)** needs to be embedded in planned economic reforms and regional and sectoral strategies to ensure timely delivery of skills for professions needed in the future. The Centres of Vocational Excellence EU initiative play an important role, working closely with businesses including SMEs, and contribute to regional development, entrepreneurship, innovation, industrial clusters, and smart specialisation strategies. The Commission also continues to support apprenticeships through the European Alliance for Apprenticeships (EAfA), which has gathered over 1 million apprenticeships through 400 pledges in the past 10 years. More generally, building on initiatives such as the 2020 Council Recommendation on VET, both the supply of educational and training opportunities and the attractiveness of such learning opportunities to potential learners must be ensured. The Commission will continue to work closely with Member States to ensure not only the quantity of training but also the quality of outputs and their adaptation to sectoral needs.

Strong education systems, availability of skilled workforce grounded in a European system with equal opportunities and quality employment are key to help businesses thrive and retain the best workforce. The KPI on participation in education and training will be available every second year to monitor how workers adapt their skills to changing requirement. A strong trend for the ICT KPI will not only allow to track digital support in business, but also how women progress in this field.

To monitor this driver, the following KPIs are proposed:

KPI	Source	Target	Latest available data
<b>13</b> Adult participation in education and training every year (female and male)	Adult Education Survey/Labour Force Survey	60% by 2030	37 % (2016)
<b>14</b> Adult employment rate	Eurostat	78% by 2030	73% (2021)
<b>15</b> ICT specialists (female and male)	Eurostat	20 million by 2030	8.5 million 19.1% women (2021)

## 9. Trade and open strategic autonomy

*Over the last decades, the EU has drawn economic and political strength from being a trading power, benefiting from the advantages of open trade not only in terms of goods, but also services and intellectual property protection. Two-thirds of the EU's imports are made of intermediate inputs, such as raw materials, parts and components contributing to the production process. Long-term evidence from EU countries shows that a 1% increase in the openness of the economy is associated with an increase of 0.6% in labour productivity<sup>42</sup>.*

**Open and diversified trade makes the EU more prosperous, competitive and resilient.** In a shifting geopolitical environment, the EU needs to continue strengthening its supply chains and reduce trade dependencies on critical raw materials<sup>43</sup>, as well as for other strategic products and technologies where the EU faces dependencies on third countries, while building partnerships and tapping into external growth poles. Free, rule-based and fair trade is a prerequisite for the EU's security and diversification of supply.

The EU will continue working to open markets for EU companies by deepening ties with allies and trading partners. In particular, the Commission will continue to advance the EU's **network of Free Trade Agreements (FTAs)**, while making the most of those already in place through effective implementation and enforcement. The EU will also continue engaging with the World Trade Organization including on its reform, and champion multilateral trade rules as the most effective way to ensure a level playing field for economic operators worldwide.

The EU should continue leading in international cooperation to the mutual benefit of all parties. The EU will continue to **build partnerships**, not only through trade agreements but also through other arrangements establishing cooperation with partners on issues of mutual interest. Global Gateway, the EU's positive offer to emerging markets and developing economies to promote the twin transitions and human development, is key in this regard. Furthermore, the EU is pursuing agreements on digital trade rules, with a focus on partners in Asia, building, where applicable, on digital partnerships<sup>44</sup> thereby promoting EU rights and values. The EU-India Trade and Technology Council is another example of how to strengthen our international partnerships with strategic partners. Critical raw materials are also an area

<sup>42</sup> European Commission, European Competitiveness Report 2007.

<sup>43</sup> COM(2023)165 final and COM(2023)160 final.

<sup>44</sup> In this context, the EU will engage on digital trade rules with South Korea and Singapore, as well as seek cooperation on digital trade with ASEAN partners.

where the EU will seek to expand its network of partnerships and cooperate in the framework of a future raw materials club bringing together consuming countries and resource-rich countries to foster sustainable investment.

The EU will also continue engaging ever more closely with the US, as a partner with shared strong common values. The EU and US are working to implement a new Transatlantic Initiative for Sustainable Trade to advance shared objectives of achieving a green, sustainable trade and support the transition to low-carbon and resilient economy, in a mutually supportive manner.<sup>45</sup> As agreed between President Biden and President von der Leyen on 10 March, the EU and US will deepen cooperation on diversifying critical mineral and battery supply chains and economic security.

In deploying the above objectives, the EU and the Member States cannot afford to be solely reactive but is putting in place a coordinated framework for economic security that addresses the risks in a targeted way, while safeguarding the benefits of open trade and digital cooperation. The EU will also make a strategic use of available autonomous tools such as the trade defence instruments (TDI), the Regulation on Foreign Subsidies, the International Procurement Instrument, or the proposed EU Anti-Coercion Instrument.

Reciprocal market access and removal of trade barriers (for both goods and services) will bring more opportunities for trade, investment, innovation and productivity growth.

To monitor this driver, the following KPI is proposed:

KPI	Source	Target	Latest available data
16 Trade with the rest of the world (as a share of GDP)	Eurostat	Up	21.5% (2021) 20.2% (2020)

### III. A growth enhancing regulatory framework

**The quality of public administration and that of the regulatory framework are crucial for the Union’s competitiveness.** The EU has become a high standard-setter in policy areas such as consumer protection, competition, environment, and workplace safety, and provides regulatory stability and certainty. When preparing new regulation, the Commission relies on one of the most advanced better regulation systems ranked top by the OECD. Yet, improvements are possible.

The new **competitiveness check** ensures that the impact assessments of legislative proposals present in an integrated manner the expected impacts of each proposal on cost and price competitiveness, international competitiveness and the capacity to innovate, and also on SME’s competitiveness. To complement it, the Commission will work on how to better assess the cumulative impacts of different policy measures at the EU level with a view to develop a methodology. Furthermore, the ‘**one-in, one-out**’ approach aims at avoiding unnecessary burdens, where administrative costs, such as reporting obligations, certification or labelling are offset in the same policy area. The forthcoming Annual Burden Survey will show first promising results in that respect.

<sup>45</sup> Following the announcement at the Ministerial Meeting of the EU-US Trade and Technology Council in December 2022.

**Reporting obligations are necessary** to properly monitor and enforce legislation, however they entail costs, particularly for SMEs. Further **streamlining reporting obligations and reducing administrative burden is a Commission priority**<sup>46</sup>. To date, fitness checks<sup>47</sup> have been conducted in several policy areas and have identified potential to simplify the requirements and reduce reporting costs. The Commission will make a **fresh push to rationalize and simplify reporting requirements** for companies and administrations with first proposals for each of the **green, digital and economic thematic areas before the autumn**. The aim should be to reduce such burdens by 25%, without undermining the related policy objectives. In light of the major legislative activity of this Commission mandate, this is an especially appropriate moment to intensify such work. Such measures have the potential not only to reduce red tape and simplify the regulatory environment but also to free up skilled resources, benefiting business competitiveness. The same can apply to other cross-cutting topics, such as simplifying/digitalising labelling rules.

Well-designed EU rules have the advantage of simplifying life for citizens and businesses, especially SMEs, including in areas where they replace the patchwork of 27 national frameworks with a single set of rules. The Commission will further develop a **more innovation-friendly approach to regulation** through greater use of **regulatory sandboxes/testbeds** which allow to test novel solutions in a controlled environment for a limited amount of time. The Commission has already proposed such sandboxes for artificial intelligence and the net-zero industries and will propose to do so in the pharmaceutical sector. Building on this, the Commission will actively consider an extension to other areas/sectors.

The Commission will also consider applying wherever possible **regulatory models** which incentivise<sup>48</sup> rather than prescribe, and therefore reduce compliance costs while achieving the same results.

Competitiveness depends on renewal. The Commission will continue to **regularly assess the EU legislation** to see whether it remains fit for purpose. In areas subject to significant technological change, the Commission will explore making better use of **sunset and review clauses** in its legislative proposals to ensure regulation remains future-proof. Where timely adoption of key legislation is necessary to provide stability and predictability to market players and other stakeholders, the Commission will seek a clear political commitment from the European Parliament and the Council as co-legislators.

Once legislation is adopted, the Commission will continue to assist Member States in **transposing EU law correctly, fully and on time**. This dialogue will be pursued. Member States have an obligation to apply correctly what they have agreed as European legislators, including refraining from the still frequent addition of regulatory or administrative burden beyond of what is required and placing of unnecessary burdens on business and citizens when transposing EU directives into national law (so-called ‘gold-plating’). Many of the practical benefits of harmonisation in the Single Market can be lost if implementation widely varies across Member States. Transposition also needs to be timely, to minimise the risk of uncertainty as regards the state of the law, especially for business. In this respect, Member

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<sup>46</sup> For example: the Regulation (EU) 2018/1999 on the Governance of the Energy Union, which brought together energy and climate planning and simplified the monitoring of progress; the 2007 High-Level Group on Administrative Burden.

<sup>47</sup> For example, the Fitness check of Reporting and Monitoring of EU Environmental Policy, SWD (2017) 230, which reviewed 180 reporting obligations in 60 pieces of legislation.

<sup>48</sup> Through business or financial incentives.

States, regional and local authorities are encouraged to carry out a review of current processes for the transposition of EU legislation.

A strong public administration is indispensable for the public sector to keep implementing EU policies. The Commission will outline several actions<sup>49</sup> to deepen and enhance administrative cooperation, support authorities to improve the skillsets of civil servants, and facilitating the exchange of practices and staff to support the implementation of specific reforms, development of policy initiatives or the introduction of new management tools and approaches.

This KPI reflects the extent to which businesses perceive how easy it is to comply with government regulation and administrative requirements. An upward trend will reflect the extent to which EU and its Member States collectively can be successful in ensuring a legislative and administrative framework conducive to growth.

To monitor this driver, the following KPI is proposed:

<b>KPI</b>	<b>Source</b>	<b>Target</b>	<b>Latest available data</b>
<b>17</b> Ease of regulatory compliance	Single Market Scoreboard	Up	3.64 (2021) 3.33 (2018)

## **Conclusion**

In the face of strong global competition and a new geopolitical context, competitiveness can never be taken for granted. It deserves political attention at the highest political level. The renewed attention to long term competitiveness is about the European Union taking charge of its attractiveness and standing in the world economy.

The EU is at a key moment for the next decade and it needs a joint push from businesses and policy makers to put Europe on the right path to the future. Businesses have long-term perspectives and need predictable and competitive framework conditions for their investments. This is what will decide where the future economic growth will take place.

This Communication highlights the main drivers for long term competitiveness. The drivers are interlinked and there is no single answer to our current challenges. In an ever-changing environment, these drivers will be measured on the basis of KPI, objectives, and monitoring frameworks that have already been developed in sectoral policies<sup>50</sup>, the Single Market Scoreboard, the Digital Decade Policy Programme, and the European Semester. The Commission intends to present the update on an annual basis in the Single Market and Competitiveness Scoreboard. They can thus provide a combined measure of the state of EU competitiveness for the March European Council as well as to the European Parliament, in order to inform and prompt discussion on any necessary policy measures. They will also help guide the Commission in its daily work and the co-legislators in finalising legislation that has an impact on Europe’s competitiveness. Member States’ commitment to reforms and aligned,

<sup>49</sup> European Administrative Space in the EU (ComPAct)

<sup>50</sup>The sustainable development framework, the digital economies and societies index, the social pillar, the innovation scoreboard and many more provide a more granular view on related developments in the EU.

strong messages to business backed up by the required investment and implementation will allow to build future competitiveness on Europe's strength.

In the meantime, the Commission will actively screen its regulation, assess if it is fit for purpose and work towards a more innovation-friendly approach to regulation. A clear regulatory framework, support for key innovation, a skilled workforce as well as reduced reporting requirements where possible will enable a business environment for EU industry to grow in the long-term.

The European Council and the European Parliament are invited to endorse the priorities identified in this Communication and take stock of progress made on a regular basis.

## Annex – KPIs to monitor the competitiveness of EU industry

No	KPI	Source	Description	Target	Latest value
<b><i>A Functioning Single Market</i></b>					
1	Integration in the Single Market	Single Market Scoreboard <sup>51</sup>	Trade flow in goods and services within the EU as a share of EU GDP.	Up	23.5% for goods (2021) 21.5% for goods (2020) 6.75% for services (2021) 6.5% for services (2020)
2	Conformity deficit	Single Market Scoreboard <sup>52</sup>	It measures the number of directives transposed for which infringement proceedings for incorrect transposition have been launched by the Commission	0.5%	1.3% (2021)
<b><i>Access to private capital and investment</i></b>					
3	Net private investment as a share of GDP	Single Market Scoreboard <sup>53</sup>	Private investment is directly linked to the ease of access to private capital.	Up	3.2% (2021) 2.6% (2020) 4.4% (2019)
4	Venture capital investment	Single Market Scoreboard <sup>54</sup>	Progress in this field is a good indicator of progress in access to private capital in general. Recent progress, but low in comparison at international level.	Up	0.48% (2021) 0.03% (2018)
<b><i>Public investment and infrastructure</i></b>					
5	Public investment as share of GDP	AMECO database <sup>55</sup>	Public investment plays a key role in developing and maintaining business supporting infrastructures like energy,	Up	3.2% (2022)

<sup>51</sup> [Integration of goods and services | Single Market Scoreboard \(europa.eu\)](https://ec.europa.eu/economy_finance/single_market_scoreboard)

<sup>52</sup> [Transposition | Single Market Scoreboard \(europa.eu\)](https://ec.europa.eu/economy_finance/single_market_scoreboard)

<sup>53</sup> [Economic resilience | Single Market Scoreboard \(europa.eu\)](https://ec.europa.eu/economy_finance/single_market_scoreboard)

<sup>54</sup> [Access to finance | Single Market Scoreboard \(europa.eu\)](https://ec.europa.eu/economy_finance/single_market_scoreboard)

<sup>55</sup> [https://ec.europa.eu/economy\\_finance/ameco\\_dashboard](https://ec.europa.eu/economy_finance/ameco_dashboard)

			transport or digital connectivity.		
<b>Research and Innovation</b>					
<b>6</b>	R&D intensity % GDP	Eurostat <sup>56</sup>	The total R&D expenditure (public and private).	>3% beyond 2030	2.26% (2021) 2.3% (2020) 2.22% (2019)
<b>7</b>	Number of patent applications <sup>57</sup>	Eurostat <sup>58</sup>	Patents reflect the capacity of an economy to exploit knowledge and indicate the competitiveness edge that can be obtained through innovation.	Up	67 713 (2021) 65 925 (2020) 66 510 (2019)
<b>Energy</b>					
<b>8</b>	Share of energy from renewable sources	Eurostat <sup>59</sup>	Renewable energy generation (as proposed for the Renewable Energy Directive).	45% in 2030	21.77% (2021) 22.04% (2020) 19.89% (2019)
<b>9</b>	Electricity prices for non-household consumers <sup>60</sup>	Eurostat <sup>61</sup>	Electricity price for industrial consumers gives a good indication of energy affordability.	Down and then steady	EUR 0.1604 per kWh (Semester 1 2022) EUR 0.0818 (Semester 1 2020)
<b>Circularity</b>					
<b>10</b>	Circular material use rate	Eurostat <sup>62</sup>	The circular material use rate measures the share of material recovered and fed back into the economy in overall material use. Target from the Circular Economy Action Plan: Doubling compared to 2020.	23.4% by 2030	11.7%% (2021) 11.7% (2020)

<sup>56</sup> [Database - Science, technology and innovation - Eurostat \(europa.eu\)](#)

<sup>57</sup> Patent applications to the European Patent Office by applicants' country of residence, default view in the Eurostat dataset

<sup>58</sup> [Statistics | Eurostat \(europa.eu\)](#) Online data code: SDG\_09\_40

<sup>59</sup> [Statistics | Eurostat \(europa.eu\)](#) Online data code : NRG\_IND\_REN

<sup>60</sup> Band IC, consumption between 500 and 2000 MWh, default view in Eurostat dataset

<sup>61</sup> [Statistics | Eurostat \(europa.eu\)](#) Online data code : NRG\_PC\_205

<sup>62</sup> [Statistics | Eurostat \(europa.eu\)](#)

<b>Digitalisation</b>					
<b>11</b>	Digital intensity in SMEs	Eurostat <sup>63</sup>	Share of EU enterprises with at least a basic level of digital intensity. A basic level entails the use of at least four of twelve selected digital technologies (such as using any AI technology; having e-commerce sales account for at least 1% of total turnover; etc.) as defined in the Digital Decade.	90% by 2030	69% (2022)
<b>12</b>	Digital technologies adoption by companies	Eurostat <sup>64 65 66</sup>	Share of European enterprises that have taken up cloud computing services, big data and Artificial Intelligence . Target set in the Digital Decade.	75% by 2030	Cloud computing services 41% (2021) 23.9% (2018) Big data 14.2% (2020) Artificial Intelligence 7.9% (2021)
<b>Education and skills</b>					
<b>13</b>	Adult participation in education and training every year (female and male)	Adult Education Survey/Labour Force Survey <sup>67</sup>	An increased participation in training will indicate good progress in the development of skills for sustainable competitiveness (target set in Porto Summit Targets, Social Pillar).	60% by 2030	37.4% (2016) <sup>68</sup> Based on the adult education survey, which was carried out in the past once every 6 years.

<sup>63</sup> [How digitalised are the EU's enterprises? - Products Eurostat News - Eurostat \(europa.eu\)](#)

<sup>64</sup> [Statistics | Eurostat \(europa.eu\)](#) Online data code : ISOC\_CICCE\_USE. Size of the enterprise : 10 persons employed or more

<sup>65</sup> [Statistics | Eurostat \(europa.eu\)](#) Online data code : ISOC\_EB\_BD. Size of the enterprise : 10 persons employed or more

<sup>66</sup> [Statistics | Eurostat \(europa.eu\)](#) Online data code : ISOC\_EB\_AI. Size of the enterprise : 10 persons employed or more

<sup>67</sup> This indicator will be implemented from 2022 onwards, with data available every two years

<sup>68</sup> [Circabc \(europa.eu\)](#) DG EMPL data from the Adult Education Survey, excluding 'guided on the job training'

<b>14</b>	Adult employment rate	Eurostat <sup>69</sup>	An increased participation in the labour market implicates less labour shortages, enhancing sustainable competitiveness (target set in Porto Summit Targets, Social Pillar).	78% by 2030	73% (2021)
<b>15</b>	ICT specialists (female and male)	Eurostat <sup>70 71</sup>	This indicator, one of the targets of the Digital Decade, measures progress towards a well dimensioned workforce specialised in the development and deployment of digital technologies.	20 million by 2030	8.5 million <sup>72</sup> (2021) Percentage of women 19.1% (2021) 17.8% (2019)
<b><i>Trade and open strategic autonomy</i></b>					
<b>16</b>	Trade with the rest of the world (as share of GDP)	Annual Single Market Report <sup>73</sup>	Trade flow in goods and services with the rest of the world as a share of EU GDP.	Up	21.5% (2021) 20.2% (2020) <sup>74</sup>
<b><i>Regulatory burden</i></b>					
<b>17</b>	Ease of regulatory compliance	Single Market Scoreboard <sup>75</sup>	Business perception by replying to the question: "In your country, how easy is it for companies to comply with government regulation and administrative requirements (e.g. permits, reporting, legislation)? (1 = Overly-complex; 7 = Extremely easy)" in the survey for the Global Competitiveness Index of the World Economic Forum.	Up	3.64 (2021) 3.33 (2018)

<sup>69</sup> [Statistics | Eurostat \(europa.eu\) Employment and activity by sex and age - annual data. Online data code: LFSI\\_EMP\\_A.](#)

<sup>70</sup> [Statistics | Eurostat \(europa.eu\) Employed ICT specialists, percentage of total employment. Online data code: ISOC\\_SKS\\_ITSP](#)

<sup>71</sup> [Statistics | Eurostat \(europa.eu\) Employed ICT specialists by sex. Online data code: ISOC\\_SKS\\_ITSPS](#)

<sup>72</sup> Estimates. Base for calculation: 189,7 M people employed in 2021 [Employment - annual statistics - Statistics Explained \(europa.eu\)](#)

<sup>73</sup> [ASMR 2023.pdf \(europa.eu\) Figure 1](#)

<sup>74</sup> World trade in goods and services - an overview - Statistics Explained (europa.eu)

<sup>75</sup> [Responsive administration and burden of regulation | Single Market Scoreboard \(europa.eu\)](#)