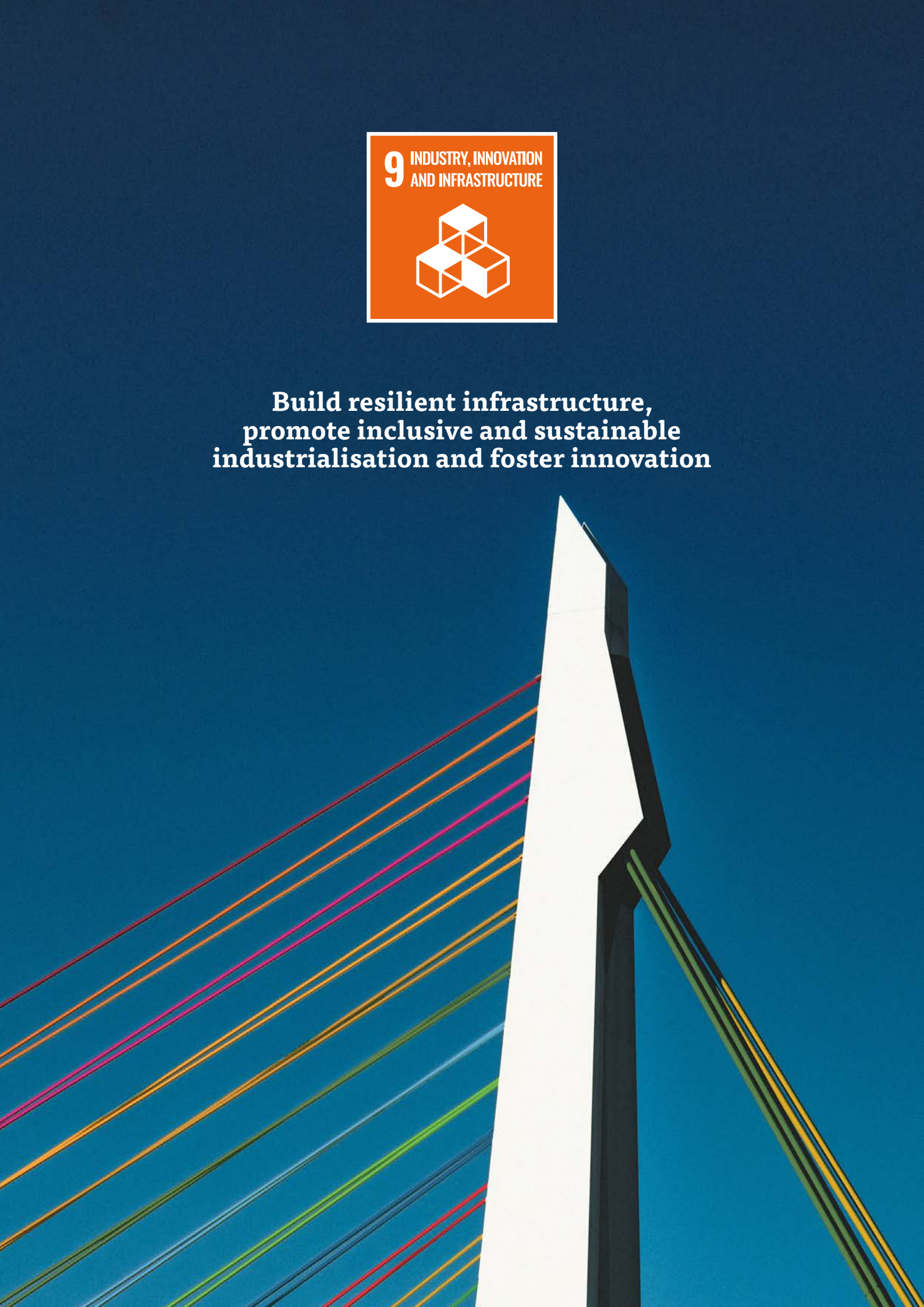


Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation

EU internal action

Overview and challenges

Between 2015 and 2022, numerous challenges shook the EU on its path towards implementing SDG 9. In the face of these challenges, the EU showed the added value of its open strategic autonomy approach. The COVID-19 pandemic and political tensions, compounded by environmental and health issues, have challenged the resilience of the EU's infrastructure and industry. The question of supply and value chain resilience has only grown more pertinent in the context of the international order.

Furthermore, while industrial greenhouse gas emissions have decreased, they have not done so fast enough to curb the effects of climate change. The EU is working to keep its climate action goals within reach, including through reducing emissions by at least 55 % by 2030. In order to achieve these goals, the EU also faces the immense challenge of organising the free movement of goods and people in the EU's internal market in an environmentally friendly way. Transitioning and transforming European industry requires a multi-pronged approach; this is why the EU Taxonomy for sustainable activities was put in place to help direct funding towards green investments.

Under pressure from these challenges, the EU's industrial landscape is undergoing a series of transformations, where the role of industry in our environmental, economic and societal well-being is acknowledged and acted upon.

Research and development (R&D) are essential to promoting innovation and sustainable industrialisation in the EU in line with SDG 9. R&D is key to making transportation and societal infrastructure (e.g. hospitals, schools and universities) more sustainable, and to developing new green infrastructures. At Member State level, R&D investments remains uneven, with R&D intensity varying from 0.5 % to 3.5 % of GDP in 2020. Only seven Member States reached their 2020 targets. These targets have been renewed for 2030.

According to the latest edition of the European Innovation Scoreboard, the score for EU's innovation performance increased by 9.9 % between 2015 and 2022, mainly due to strong improvements in performance in broadband penetration, venture capital expenditure and international scientific co-publications.

Key initiatives

In support of achieving SDG 9, the EU has developed a 'twin digital and green transitions' narrative. This approaches the issues in a systemic way, with a wide range of policies in place addressing or touching upon infrastructures, industrialisation and innovation.

In order to reach the climate targets of the European Green Deal, the EU's "Sustainable and Smart Mobility Strategy" aims for a major revamping of infrastructure and sets various milestones for smart and sustainable transport modes. In particular, the

2030 targets and trends at EU level

Target and policy reference	Trends
3 % of GDP to be invested on EU research and innovation by 2030 Set in the European Research Area Communication and the European Research Area Pact	In 2021, EU research and development expenditure relative to GDP stood at 2.26 %, compared with 2.02 % in 2011.
35 % of the overall Horizon Europe budget in support of climate action for the period 2021-2027 Set in Horizon Europe	Total climate action related expenditure in 2021/22 was calculated *ex ante* at EUR 9.9 billion, equal to 37.2 % of the total. For the period 2023-2024, the EU has dedicated EUR 5.67 billion (over 42 % of the work programme's budget) to climate action objectives.
Doubling high-speed rail traffic by 2030 Set in the Sustainable and Smart Mobility Strategy	In 2019, the high-speed passenger activity represented 132 billion passenger-kilometres, an increase of 20 % on 2015. This corresponds to an annual growth rate of 4.7 % and would have put the EU on track to reach the 2030 milestone if it were not for the COVID-19 pandemic's severe impact on the transport system.
Doubling the rail freight traffic by 2050 Set in the Sustainable and Smart Mobility Strategy	In 2019, rail freight activity stood at 408 billion tonne-kilometres, an increase of 2.4 % on 2015. This corresponds to a moderate annual growth rate of 0.6 %. However, transport was one of the sectors most affected by the COVID-19 pandemic.
The multimodal Trans-European Transport Network (TEN-T) equipped for sustainable and smart transport with high-speed connectivity will be operational for the core network by 2030 and for the whole network by 2050 Set in the Sustainable and Smart Mobility Strategy	According to the 2020 progress report, significant progress was made in developing the TEN-T network in 2016 and 2017, both in technical compliance and financial investments. In any case, the major challenges of the TEN-T infrastructure network can only be met by a sound mix of funding and financial instruments. Further progress is to be expected during the years to come to meet the 2030 and 2050 objectives, as outlined in the 2020 Progress Report on the implementation of the TEN-T network.

More details on indicators and trends for SDG 9 can be found in the statistical and analytical annex and Eurostat's monitoring report on progress towards the SDGs.

Strategy states that there should be at least 30 million zero-emission cars in operation on European roads and more than 3 million publicly accessible recharging points deployed (see SDG 11). In order to achieve this goal, the Commission proposed a new Regulation on the deployment of alternative fuels infrastructure (AFIR) with binding targets for the rollout of recharging and refuelling infrastructure. Moreover, support to the digitalisation pillar of the sustainable and smart mobility strategy has also been promoted though investments for the digitalisation of all transport modes, including on board and fixed equipment for the European Railway Traffic Management System (ERTMS), Intelligent Transport Services (ITS) for road and Air Traffic Management (ATM), accompanying the green transition. In addition, the EU space-based technologies, such as Galileo and EGNOS, are key enablers for smart and sustainable transport, particularly for connected and autonomous driving. EGNOS can also aid in improving the safety and environmental efficiency of the aviation sector by enabling fuel-efficient landing and navigation solutions.

At the same time, the Trans-European Transport Network (TEN-T) policy aims at implementing an effective EU-wide and multimodal network of roads, railway lines, inland waterways, ports, airports and rail-road terminals. In 2021, the Commission proposed a revision of the TEN-T legal framework, strengthening technical parameters for all transport modes and including a proposal for extension of European Transport Corridors to neighbouring countries in the Western Balkans as well as Ukraine and Moldova. In addition, Member States are proposed to collect and report monitoring data on such aspects as greenhouse gas emissions, air and noise pollution and congestion in all cities designated as urban nodes.

The EU is also transforming its industrial ecosystems with an updated **Industrial Strategy for Europe** and a novel approach to industrial transformation through co-created transition pathways. These pathways are involving industries, policymakers and stakeholders across entire value chains to work on identified gaps and fostering partnerships. So far, the Commission has adopted pathways for the tourism, proximity and social economy, chemicals, construction and textile ecosystems. To monitor twin and resilience transition of industrial ecosystems and the implementation of transition pathways, a new monitoring tool named the European Monitor of Industrial Ecosystems (EMI) has been created. The project will deliver a set of reports that support and Industrial Ecosystem analysis of industrial competitiveness, green and digital transition and resilience.

Small- and medium-sized enterprises (SMEs) are key actors in transforming the EU's industrial landscape. Representing 99 % of all businesses in the EU, SMEs are at the centre of the Commission's action and the 2020 **SME Strategy for a sustainable and digital Europe**. The strategy aims to considerably increase the number of SMEs engaging in sustainable business practices as well as the number of SMEs employing digital technologies. In doing this, it is being supported by the Enterprise Europe Network, European Clusters network and European Digital Innovation Hubs (see below).

The **Digital Decade Policy Programme 2030** has set ambitious targets, including with respect to Europe's connectivity infrastructure and the digital transformation of businesses by 2030. With the development of a state-of-the-art connectivity system, *IRIS2* (Infrastructure for Resilience, Interconnectivity and Security by Satellite), the EU will offer enhanced communication capacities to governmental users as well as to business users.

Europe seeks to make its transition sustainable and competitive by fostering sustainable innovation via the New European Innovation Agenda. This initiative aims to position Europe at the forefront of the new wave of deep tech innovation and start-ups, to develop new technologies to address the most pressing societal challenges, and to bring them to the market.

The new Innovation Agenda is completed by the new **European Research Area** (ERA). Based on excellent, competitive, open and talent-driven science, ERA will improve Europe's research and innovation landscape, accelerate the EU's transition towards climate neutrality and digital leadership, support its recovery from the societal and economic impact of the coronavirus crisis and strengthen its resilience against future crises.

The **European Chips Act** will ensure that the EU has the necessary tools, skills and technological capabilities to become a leader in this field, going beyond research and technology in design, manufacturing and packaging of advanced chips, to secure its supply of semiconductors and to reduce its dependencies.

Selected enablers

Financial resources, reforms and investments as well as science and innovation are strong means to implement the SDGs in the EU.

Horizon Europe is the EU's key funding programme for research and innovation with a budget of EUR 95.5 billion from 2021-2027. The programme helps implement the 17 SDGs, and boosts the EU's competitiveness and growth. It facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies in tackling global challenges. At the same time, it supports the creation and better dispersion of excellent knowledge and technologies, creates jobs, fully engages the EU's talent pool and optimises investment impact within a strengthened European Research Area. Under Horizon Europe, the European Innovation Council (EIC), with a budget of EUR 10.1 billion, aims to support game-changing innovations throughout the lifecycle, from early-stage research to proof of concept, technology transfer, and the financing and scale-up of start-ups and SMEs. The European Institute of Innovation and Technology (EIT) drives innovation by bringing together organisations from the business, higher education and research sectors to find solutions to pressing global challenges through offering support to entrepreneurial education, developing innovative projects and business creation and acceleration.

The Connecting Europe Facility (CEF) is a key EU funding instrument that supports the development of high performing, sustainable and efficiently interconnected trans-European networks in the fields of transport, energy and digital services. In 2014-2020, CEF supported over 1000 projects on the trans-European transport network for a total amount of EUR 23 billion. The great majority of such projects concerned sustainable modes of transport such as railways, maritime transport and inland waterways, as well as alternative fuels infrastructure and intelligent traffic management systems. In 2021-2027, a further EUR 25.8 billion are available for projects aimed at completing the TEN-T network. Resilience of EU's infrastructure to climate change will be further strengthened with the extended climate-proofing requirements for new investments.

The **European Regional Development Fund (ERDF)** and the Cohesion Fund also contribute to enhance mobility by developing a climate resilient, intelligent, secure, sustainable and intermodal Trans-European Transport Network (TEN-T), access to TEN-T, urban and cross-border mobility. EU cohesion Funds support regions and cities to reach the targets of climate neutrality and circular economy by 2050 and contribute to a just transition. Under the objective "A more connected Europe", **European Regional Development Fund (ERDF)** and the Cohesion Fund will dedicate around EUR 40 billion of EU funding to increase investment in the digital and green transition of the transport sector, while also continuing

to improve connectivity and traffic safety, in line with the Sustainable and Smart Mobility Strategy.

The Recovery and Resilience Facility is instrumental in developing the EU Member States' research and innovation systems, with a real transformative impact should the efforts be maintained over time. The research and innovation investments in the Member States' recovery and resilience plans (with a budget of around EUR 50 billion) represent between 4 % and 13 % of each country's Recovery and Resilience Facility allocation, with only a few outliers and an average of about 10 %.

Cyprus provides an example of how recovery and resilience plans are being used to reform the research and innovation system. The Cypriot plan includes ambitious reform to develop a comprehensive national research and innovation policy to support the innovation ecosystem and to strengthen the links between policymaking and implementation. The reform consists in the adoption of a national strategy for research and innovation, a related action plan, and the revised smart specialisation strategy, with the latter including priorities to build competitive advantages by developing and matching strengths to business needs.

The Danish recovery and resilience plan will provide funding to the public and private sectors to boost research and development, particularly in innovative green technologies. The programme will be structured around at least four public-private partnerships, called 'green partnerships'. These bring together research institutions, private businesses, public authorities and innovation actors to develop solutions to four mission-based challenges of reducing emissions in the transport, agriculture, food and waste sectors.

The '**PANOPTIS**' project, with an EU contribution of EUR 5 million, aims to increase the resilience of road infrastructures in the face of unfavourable conditions such as extreme weather, landslides and earthquakes. By means of an application, the project combines climate change scenarios with simulation tools and data, using terrestrial and airborne sensors and advanced modelling tools.

The Horizon Europe-financed 'ECOS' project ('EU SDG-driven Innovation Ecosystems: Stimulating economic growth and addressing innovation support imbalances in Europe and beyond') aims to build capacity to co-create and foster an inclusive EU SDG-driven innovation ecosystem, focused on the greatest social, economic and environmental needs of our time, thereby contributing to the realisation of the green and digital transition of Europe. The project provides capacity-building activities to enable the establishment of SDG-driven innovation ecosystems across project members, which can then be used to plan an interconnected and sustainable ecosystem by delivering new research and data, facilitating knowledge exchange, and creating new collaboration and engagement opportunities within existing networks and beyond.

The Horizon Europe Missions emphasise the evolution of industrial, societal and cultural structures towards sustainability. One notable example, the **Climate-neutral and Smart Cities Mission**, is a partnership between the Commission and 112 European cities, each resolving to become climate-neutral by 2050, and to transform their economic and societal landscape to achieve this goal in a sustainable way.

Another example is the 'Startup Ecosystem Strategy' project in Romania, supported by the Structural Reform Support Programme under the call for 2020. Romania's innovative capacity ranked last in the EU in 2019, and public and private spending for research, development and innovation was one of the lowest, and the start-ups' survival rate was low. The project aimed to address the lack of an evidence-based strategic framework and tailored policy measures to support the development of an entrepreneurial ecosystem, with a focus on innovative start-ups. The support was delivered through the exchange of good practices, recommendations, inputs and a pilot for the design of strategic planning to animate the Romanian entrepreneurial ecosystem.

Stakeholder engagement

The EU delivers on SDG 9 using a collaborative approach. For example, the **European Research and Innovation Days** is the European Commission's annual flagship R&I event, bringing together policymakers, researchers, entrepreneurs and the public to debate and shape the future of research and innovation in Europe and beyond.

The high-level **expert group on the economic and societal impact of research and innovation** (ESIR) provides evidence-based policy advice to the Commission on how to develop a forward-looking and transformative research and innovation policy. Its 16 experts provide independent advice on how EU research and innovation policy can best support the transformation of our economy and society throughout the social, green and digital transitions.

The EU Industrial Forum is the main platform for discussing industry challenges and co-developing opportunities and policy responses in an inclusive dialogue with a wide range of stakeholders, including social and environmental partners. It informs industrial policies at European, national, regional and local levels and ensures that a coherent framework is in place for European industry to deliver sustainable jobs, growth and innovation in Europe. The EU Industry Days remain the EU flagship event for industry and a valuable moment for discussion with a variety of stakeholders.

The **Connecting Europe Days** brings together stakeholders involved in infrastructure development so to discuss transport and mobility and their role in achieving the ambitious goals set out in the EU Green Deal and the Sustainable and Smart Mobility Strategy. The next edition of the event will take place

in early 2024, with discussions focused on the implementation of the revised TEN-T policy and the financial means needed to complete the core TEN-T network by 2030.

The Enterprise Europe Network (EEN), a support network for SMEs across the EU, provides a dedicated package of tailored services to help individual SMEs with a proven record of success to innovate and grow both within the EU and beyond. It is made up of more than 450 partner organisations in more than 40 countries, including chambers of commerce, innovation or enterprise agencies, regional development agencies, SME organisations, research institutes and technology centres. The EEN has recently introduced dedicated Sustainability Advisors to help SMEs make a successful transition to sustainability while growing internationally.

Horizon Impact Award is a European Commission initiative to recognise and celebrate outstanding projects that have used their results to provide value for society.

Horizon Prizes are challenge prizes (also known as inducement prizes) offering a cash reward to whoever can most effectively meet a defined challenge. The aim is to stimulate innovation and come up with solutions to problems that matter to European citizens.

The European Capital of Innovation Awards (iCapital) is an annual recognition prize awarded to the European cities that best promote innovation in their communities.

Multi-level approach

SDG delivery requires ambitious action at all levels. Some good practices in implementing SDG 9 are set out below.

At national level, Poland has launched the Clean Air Priority Program (CAPP) in 2020 with the aim to improve energy efficiency and reduce emissions of dust and other pollutants into the atmosphere. Through the programme, funding is granted to replace old solid fuel domestic stoves and boilers and modernise the heating systems of single-family houses. The programme earmarks more than 100 billion PLN and is implemented by local municipalities processing requests and awarding the subsidies to beneficiaries.

At local level, the city of Braga in Portugal created Startup Braga, its innovation hub, to support entrepreneurship with global ambition. The hub helps entrepreneurs in the creation, incubation and acceleration of start-ups, mainly in the areas of digital economy, health technologies, nanotechnology, biotechnology and sustainability. It is also giving access to a wide range of partners, mentors and investors. The hub's community now has 190 start-ups, responsible for the creation of more than 1 000 jobs, and has raised more than EUR 375 million in investment.

EU external action

Global trends

Infrastructure sits at the crossroads of many different sectors, from transport to digital transformation and from climate mitigation to green energy. It is an important element of the EU Global Gateway strategy. According to G20 estimates, the global infrastructure investment deficit will reach EUR 13 trillion by 2040. While mobile broadband communication has been a significant success story across most regions, some gaps in the poorest regions remain. The global manufacturing industry has progressed unevenly across different regions and countries, and its value added stagnated in the least developed countries following the COVID-19 pandemic.

Internal/external coherence including policy coherence for development

The EU's efforts towards SDG 9 also have important positive spin-off and synergetic effects. These particularly concern innovation that can benefit Europe and its partner countries alike, in areas such as sustainable infrastructure, transport, industrial transition, agricultural research and digital transformation.

In terms of positive externalities, Galileo and Copernicus have been instrumental in reinforcing and creating more resilient and efficient infrastructure across the EU, and EU space data is also being used to support innovation. This is combined with cooperation projects such as the creation of a regional Copernicus centre in Panama, which – through earth observation – will lead to mutual benefits for the EU and Latin America and the Caribbean countries in the areas of climate change mitigation and adaptation, food security, tracking of emissions and disaster risk reduction.

In addition, the EU's Global Approach to Research and Innovation encourages global cooperation across a whole range of thematic areas and across a wide array of non-EU countries. It does this by financing programmes such as Horizon Europe, which associate research bodies from EU countries with low and middle-income partner countries for R&I projects benefiting partner countries. Openness is a staple of the R&I framework programme, where non-EU countries are encouraged to participate and are treated on an equal footing as EU countries in terms of access to funding once an association agreement has been signed.

EU and Member States external financial support for SDG implementation and results

In 2021, EU institutions reported to OECD commitments of EUR 5.8 billion in projects contributing to SDG 9. The main share of the EU contribution to SDG 9 is accounted for projects that target SDG 9 as the main SDG. These projects also contribute to other interlinked SDGs, with the largest contributions going to SDGs 8, 11, 13 and 17. Projects targeting other SDGs also contribute to SDG 9 as a significant objective. The main contributors are projects related to SDGs 1, 3 and 8. When taking into account other official flows, private funds mobilized through public intervention and support to international public goods, the Total Official Support to Sustainable Development (TOSSD) of the EU to SDG 9 amounted to EUR 12.3 billion in 2021. In terms of selected results of assistance, ([23]) 79 000 km of roads were supported by the EU through construction, rehabilitation and maintenance in the period 2018-2021.

Collectively, the EU and those Member States that reported on SDGs to the OECD in 2021 contributed EUR 8 billion to SDG 9. EU and Member State flows to SDG 9 predominantly focused on projects in Africa (49 %), Asia (21 %) and other countries in Europe (16 %).

Main policy orientations and initiatives for external engagement

The roll-out of the Global Gateway strategy is particularly relevant for the achievement of SDG 9. With sustainable and high-quality projects in the field of infrastructure, the EU is aiming to enhance the resilience and connectivity of its partner countries while enabling closer cooperation through sustainable, smart infrastructures. The EU aims to mobilise investments of up to EUR 300 billion between 2021 and 2027across different sectors reflecting the cross-cutting nature of SDG 9, notably digital infrastructure and transport, climate and energy, transport, health, education and research. The Global Gateway strategy follows a Team Europe approach and supports global infrastructure development in accordance with the key EU principles of democratic values, good governance and transparency and the G20 Principles for Quality Infrastructure Investments, which the EU endorsed in 2019.

The Global Gateway strategy will support development of a framework to promote high social, environmental and governance standards, taking full account of climate change impacts, the transition to low-carbon economies, and financial

([23]) For the methodology on results, see the same section under SDG 2.

sustainability and transparency, thereby contributing to a range of interrelated SDGs.

In this context and, in line with partner countries' own policies and plans to achieve SDG 9, the EU's priorities are:

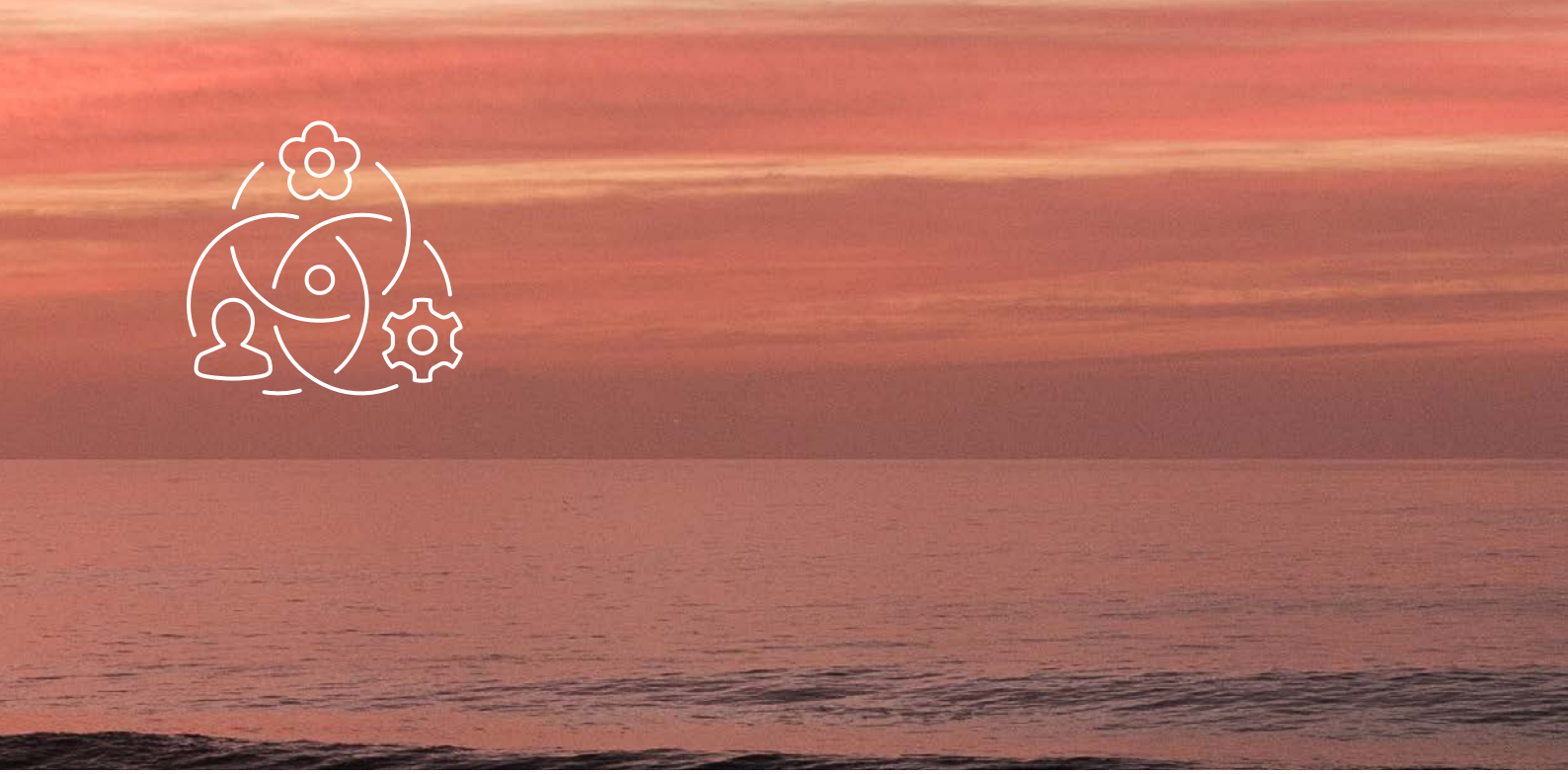
- creating climate-resilient and sustainable infrastructure, including transport corridors and improved urban infrastructure; and
- ensuring inclusive and human-centred digital connectivity, including the roll-out and expansion of fibre-optic cables, especially in unserved areas, and the digitalisation of businesses.

Out of the EUR 300 billion in investments targeted under Global Gateway, Africa could benefit from at least EUR 150 million. On the margins of the EU-AU Summit, the 2022 Global Gateway Africa-Europe Investment Package was unveiled as one of the key areas of investment and focus. The 11 strategic transport corridors in Africa for increased mobility and trade aim to contribute to expanding internet access through fibre-optic connections, and to fostering satellite-based connectivity. Further, through the EU-AU Data Flagship Initiative, support is provided to develop green data centres to encourage progress towards a data economy in Africa.

Broadly, the EU will support African governments and their national and regional authorities in their efforts to ensure a well-regulated ICT ecosystem that fosters telecommunications investments and to protect end-users. Science, technology and innovation in Africa will be supported through partnerships with African regional centres of excellence, collaboration on earth observation and space technologies, and a joint AU-EU innovation agenda. Business development, with a focus on young people and women, is also an important part of the Africa-Europe Investment Package. As part of the Invest in Young Businesses in Africa initiative, the EU will implement up to 180 programmes aiming to help young African businesses to flourish. These programmes are expected to facilitate access to finance and improve the entrepreneurial ecosystem.

Furthermore, as part of its Economic and Investment Plans, the EU has extended its Trans-European Transport Network (TEN-T) to the Western Balkans, Türkyie, and the Eastern Partnership region, thereby fostering sustainable mobility.

Additionally, the EU is cooperating with the US under the Trade and Technology Council to support secure and resilient digital connectivity and information and communication technology and services (ICTS) supply chains in third countries, provided by trusted suppliers. After the creation of a dedicated



taskforce on this issue, the EU and the US announced their support to inclusive ICTS projects in Jamaica and Kenya based on the common overarching principles. In addition, under the G7, the G7 Partnership for Global Infrastructure and Investment was launched to help partner countries create the essential infrastructure to better navigate global shocks such as the recent COVID-19 pandemic.

Examples of EU actions (with a focus on Global Gateway and Team Europe initiatives)

EU actions on SDG 9 also contribute to the achievement of other SDGs in Europe and the world.

In illustration, the 'Green Economy in Senegal' Team Europe initiative, contributing to the Global Gateway investment priorities on digitalisation in relation to SDG 9, is closely linked to SDGs 8, 11 (Sustainable Cities) and 15 (Life on Land). It aims to strengthen convergence between agro-industries, green agriculture, communications and services in the most important agro-ecological regions of Senegal and to improve the living conditions of people living in urban areas.

Equally interlinked with SDGs 9, 8, 11 and 15 is the 'Smart, green and digital recovery' Team Europe initiative in Ghana. The EU and eight Member States are supporting this Global Gateway initiative, which focuses on three thematic areas, namely sustainable inclusive growth, sustainable cities and urban governance, and agribusiness and the cocoa value chain. The support provided takes the form of expertise, capacity building, technology transfer, scientific cooperation, scholarships, twinning and covenants, innovative financing, and private and public partnerships.

By contributing to SDG 9, the EU supports a broad range of projects related to enhanced connectivity and digitalisation, in line with the EU's connectivity agenda. Using a Team Europe approach, a range of initiatives contribute to the roll-out of the Global Gateway strategy.

Thus, the 'LAC Digital Alliance' aims to launch a comprehensive political and cooperation framework for digital engagement (regulatory and policy issues, connectivity infrastructure, innovation, private sector cooperation and e-services and earth observation) with Latin America, Central America and the Caribbean.

The 'Human-Centred Digitalisation' initiative in Kenya aims to boost inclusive, human-centric, gender-responsive and rights-based digitalisation. Actions under the project will support digital connectivity, jobs and skills and digital governance, benefiting youth, women, marginalised groups and unserved areas.

In Central Asia, the regional Team Europe initiative 'Digital Connectivity', launched at the EU-Central Asia Connectivity Conference, and which contributes to the roll-out of the Global Gateway strategy. will be spearheaded by the EU's financing of the extension of the EU-financed Black Sea fiber-optic cable between the EU and Georgia to Central Asia via Azerbaijan and the Caspian Sea to tackle the connectivity gap in the region.

The EU is also launching 'Digital Economy Packages'. One such package is the EU-Nigeria Digital Economy Package, into which at least EUR 820 million will be injected by 2024. It will help Nigeria enhance secure connectivity, digitalise public services, support entrepreneurship and build digital skills, while at the same time developing a human-centric, democratic governance framework for technology.

Besides digital connectivity, in relation to SDG 9, the EU has continuously supported the development of strategic multimodal transport corridors relying on resilient cross-border infrastructure. The 'Knowledge Hub–Global Gateway Support Mechanism' action contributes to developing the connectivity

agenda and applying good practices on quality infrastructure, in particular in the transport sector. Thus, in Ethiopia the Road Sector Policy Support programme supported the establishment of an efficient road network at federal, regional and rural levels and contributed to the maintenance of 28 000 km of roads in the country under the Global Gateway Africa-Europe Investment Package.

Several infrastructure projects under SDG 9 are further interlinked with Climate Action (SDG 13), Education and Culture (SDG 4) and Health (SDG 3).

The EU, together with some Member States, is supporting the ASEAN Catalytic Green Finance Facility, part of the ASEAN-Green Initiative, a regional Team Europe Initiative developed in cooperation with the Asian Development Bank. This infrastructure fund initiative supports governments in Southeast Asia to prepare and finance infrastructure projects that promote environmental sustainability and contribute to climate change goals.

After the Albanian earthquake of November 2019, the EU launched two programmes to help the country recover from the shock and increase resilience to natural disasters. The EU4Schools programme has supported the reconstruction and repair of education facilities, while the EU4Culture programme has supported the rehabilitation of cultural heritage sites and associated economic activities to support tourism. The programme integrates accessibility with environmental protection, disaster risk reduction, and sustainability. In the West Bank, the EU supports communities with basic **social and public infrastructure** such as roads, schools, public parks, and public buildings

Through its 'Manufacturing and Access to Vaccines, medicines & health technology products in Africa' Team Europe Initiative, which supports the roll-out of the Global Gateway strategy, the EU provided over EUR 3 billion to the COVAX Facility thus supporting manufacturing capacity development in Africa for enhanced pandemic preparedness, access to vaccines, medicines and other medical equipment, thereby contributing to SDG 9 in erm of industrialisation and innovation in addition to health objectives under SDG 3. The initiative is part of the Global Gateway Africa-Europe Investment Package.

Actions by the EU and its Member States are mutually reinforcing and coordinated to ensure complementarity and impact in support of the SDGs. In addition to acting together with the EU through joint programming and Team Europe Initiatives, EU Member States carry out their own projects in support of the 2030 Agenda including SDG 9. A few examples of such initiatives are set out below for illustrative purposes.

Estonia is actively involved in numerous digitalisation initiatives. Through the 'EGOV4UKRAINE' U-LEAD Project, Estonia supports Ukraine, in line with the country's administrative reform, by delivering a systemic e government approach supporting decentralisation and improving the delivery of public services by local government.

The Netherlands focuses on providing partner countries with good, publicly accessible infrastructure which contributes to sustainable economic growth. The Netherlands Enterprise Agency administers bilateral programmes, which invest in the development and construction of public infrastructure, particularly in the water, energy, food security and healthcare sectors.

Spain's cooperation agency, AECID, addressed its priorities, such as zero hunger, water and sanitation, health and education through the ACERCA programme. ACERCA focuses on the creation of creative industries and innovation, with special attention paid to cultural industries as an engine of economic development and the training of professionals in the sector. 38 countries in Africa, the Middle East, the Caribbean and Latin America have already benefited from the programme.

Looking ahead

The new European innovation agenda aims to help the EU to develop new technologies to address societal challenges and bring them to the market. It will in particular:

- improve access to finance for European start-ups and scale-ups;
- enable innovators to experiment with new ideas through regulatory sandboxes;
- help create 'regional innovation valleys' that will strengthen and better connect innovation players throughout Europe, including in regions lagging behind;
- attract and retain talent in Europe, for example by training 1 million deep tech talents, increasing support for women innovators and innovating with start-up employees' stock options;
- improve the policy framework through clearer terminology, indicators and data sets, as well as policy support to Member States.

Concurrently, these innovations will be completed by the transformation of the European Industrial ecosystems towards sustainability and resilience. This **transition is under way in many sectors**. For example, to promote a sustainable textile industry and to achieve the EU Textiles Strategy, the proposal for a regulation on eco design and sustainable products will set binding design requirements for more sustainable and circular textiles. Similarly, the forthcoming revision of the waste framework directive in 2023 will introduce extended producer responsibility rules for textiles. The EU also aims to tackle the unintentional release of microplastics from textiles and to introduce mandatory green public procurement requirements for textiles.

To prevent supply chain disruptions or imbalances and to prepare for future market turbulences, the EU fosters strategic storage capacities for raw materials through its recently proposed EU critical raw materials Act. This act aims to ensure a strong and sustainable level playing field, avoid discrepancies across Member States and prevent possible disruptions along supply chains. It also aims to secure a sustainable supply of critical raw materials to support the green and digital transition and strengthen EU resilience.

In order to scale up its manufacturing of clean technologies, the EU has proposed the **Net-Zero Industry Act**. Regarding the act's international dimension, the Commission announced as part of the **Green Deal Industrial Plan** its intention to conclude Net-Zero Industrial Partnerships with non-EU countries covering net-zero technologies. These partnerships shall support the adoption of net-zero technologies globally and support the role of EU industrial capabilities in paving the way for the global clean energy transition.

These changes will go hand in hand with sustained and coordinated efforts to build infrastructure all around the world, both physical and digital: the adoption of the regulation establishing on the EU's secure connectivity programme for 2023-2027 (IRIS2) follows up on the results of the Conference on the Future of Europe and in particular on its recommendations on access to digital infrastructure. The Commission is exploring ways to enhance the EU's and Member States' strategic autonomy and resilience by ensuring reliable, secure quantum-based encryption and cost-effective European connectivity capabilities.

On the external side, the EU will continue to take determined action to accelerate the implementation of SDG 9 globally. Projects supporting the roll-out of the Global Gateway strategy will in the long-term enable partner countries to gain strategic autonomy while creating new potential for global synergies. In line with EU and global targets on climate action, Global Gateway, as a climate-neutral strategy, aims to speed up sustainable development and recovery, create inclusive growth and jobs and transition to a cleaner and more circular global economy. A tangible contribution to SDG 9 (and other interlinked SDGs) will be the deployment of Global Gateway flagship projects on transport infrastructure — including ports, road construction and modernisation/rehabilitation and public transport — and on digital infrastructure — including digital connectivity, network construction and roll out of optic fibre, data centres and 5G, such as:

- 'Digital Connectivity' in Central Asia
- the 'LAC Digital Alliance'
- the Strategic Corridors for an Enhanced and Greener EU-Africa Connectivity
- the ASEAN Catalytic Green Finance Facility, as part of the ASEAN-Green Initiative.