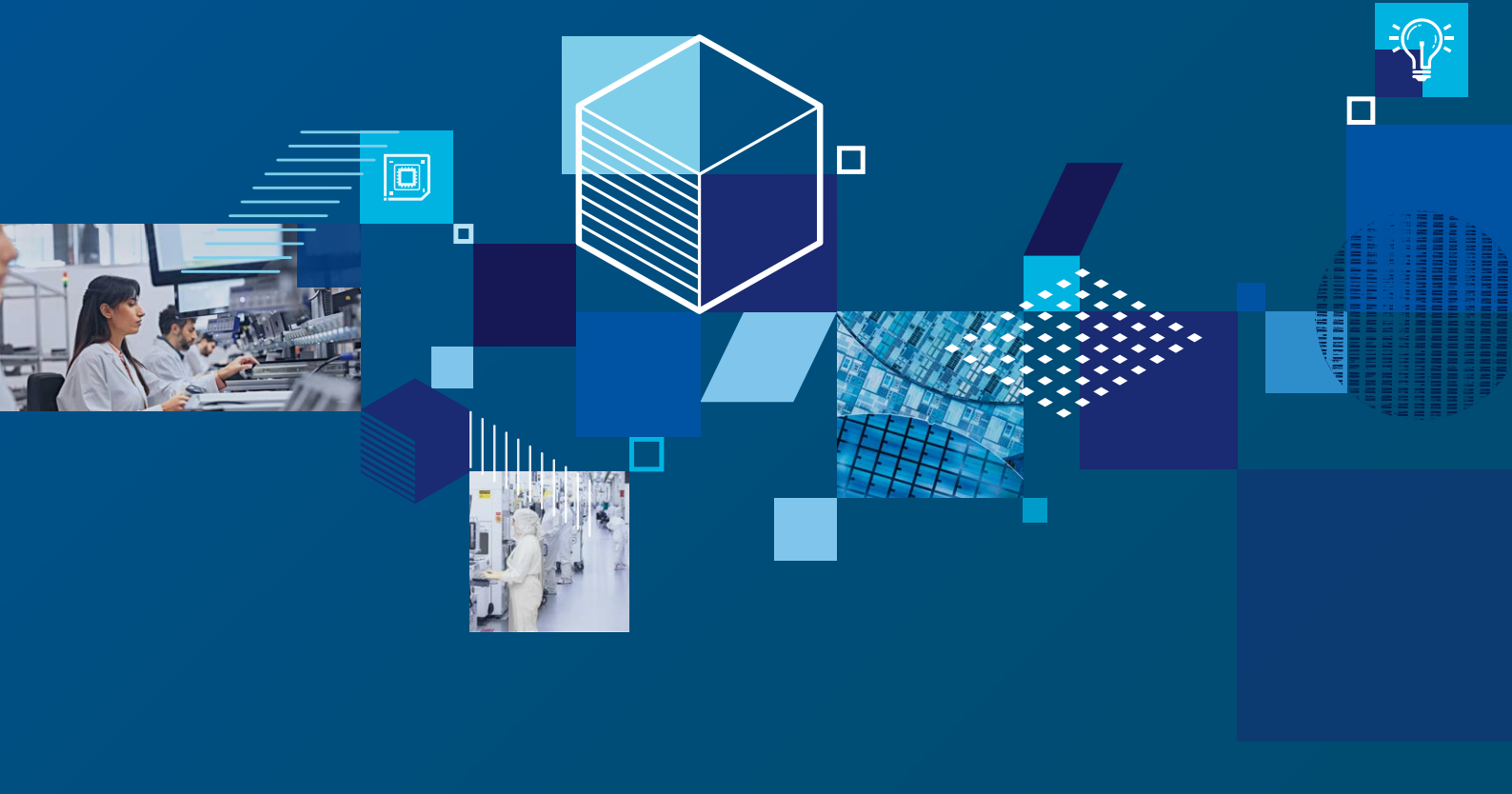


intel.

# Policy Actions for a Competitive and Resilient Europe



# Executive Summary

Europe is on a mission to decarbonize, digitize, and reindustrialize. The ongoing attempts to create a manufacturing renaissance can only succeed hand-in-glove with the deployment of disruptive technologies and large-scale decarbonization. The twin – digital and green – transition impacts sectors old and new. From automotive, energy, and telecommunications, to AI, supercomputing, and quantum, this progress is powered by small yet incredibly sophisticated devices: **microchips**.

**Silicon technologies** are the backbone of the EU economy, which is increasingly fully digitally enabled. Semiconductors are at the heart of every technological advancement today. Inevitably, the strategic importance of and demand for silicon-based technologies will continue rising steeply. To reach its climate objectives, while increasing its global competitiveness, Europe needs to develop a resilient, innovative, leading-edge semiconductor supply chain.

The EU has already taken an important step in that direction. With its own Chips Act, the EU aims to double its global market share in semiconductors to at least 20% by 2030 to contribute to the EU's future technological sovereignty. As an integral part of Europe's economic fabric for over the last 30 years, **Intel is expanding its manufacturing footprint across the EU**. The Silicon Junction that Intel is planning to create in Germany, combined with its existing and greatly expanded wafer fabrication facility in Ireland and its planned assembly and test facility in Poland, will create a first-of-a-kind, leading-edge end-to-end semiconductor manufacturing supply chain in Europe.

The incoming College of Commissioners and European Parliament have the opportunity to lay the foundation for decades of economic prosperity. To fulfill its ambitions, of harnessing the power of digital technologies and accelerating towards a greener Europe, the EU needs a **true manufacturing moonshot**, which, at its core, is a thriving semiconductor industry.

With this document, Intel is looking to offer contributions to policy debates for the years to come. These policy foundations rest on four priorities. The EU must realize the full potential of its industrial ambitions in all four of these areas simultaneously. To do that, Intel proposes **ten policy recommendations**.

## Boost European competitiveness

*More than anything else, what will strengthen the EU's economic security is the promotion of its competitiveness.*

1. **Keep industrial costs in check** to establish favorable business conditions in Europe, by e. g. ensuring affordable energy prices and a tax environment that incentivizes innovation and industrial leadership, and enabling fast track permitting for strategic industrial projects.
2. **Build a futureproof labor force** that can be the engine of the EU's digital and green ambitions through dedicated funding, better coordination across Member States of up- and re-skilling opportunities, simplifying and modernizing labor mobility rules, and through greater international movement of skilled workers from around the globe.
3. **Improve the coherence of EU laws to make the single market work better**, beginning with a policy coherence assessment conducted by the incoming European Commission. The key to the EU remaining attractive for investments lies in the clarity, predictability, and coherence of regulations that strengthen, deepen and broaden the single market.



## Drive sustainable and responsible growth in Europe

*The fastest, most effective, and most inclusive way of achieving the EU's sustainability and climate goals is by creating a compelling business case for the green transition.*

- 4. Avoid blanket bans of necessary chemical substances** to support 'strategically important' sectors. This can be done by providing sufficient lead-in time and funding for the innovation needed to phase out use of substances.
- 5. Apply a smart policy mix to sustainability** and responsible business conduct regulation. Effective legislation must create a level playing field while requiring collaborative input across the value chain. Consistent, balanced and credible industry schemes enable companies to meet requirements and allow Europe to achieve net zero and mitigate human rights and environmental risks in supply chains.

## Enable innovation for a vibrant EU tech ecosystem

*Focus on innovation, adoption of AI technologies and cybersecurity capacity-building are essential for the EU tech ecosystem to thrive and compete in the global digital economy.*

- 6. Invest more and better in R&D&I** by facilitating participation in and increasing EU budget for collaborative R&D projects, exploring new fiscal and non-fiscal incentives, and removing administrative barriers to encourage R&D across Europe.
- 7. Develop and deploy responsible artificial intelligence** by equipping national authorities with adequate resources to implement the AI Act in a consistent manner, engaging in international dialogue in pursuit of a coordinated approach to trustworthy AI, and by pushing for international standards and to build global capability in AI.
- 8. Increase foundational security capabilities across the digital infrastructure and supply chains** to enable technological innovation. Work together with industry to

combat threats to digital infrastructure by aligning with international standards, adopting best practices, coordinating with industry stakeholders, and allocating sufficient resources to designated agencies.

## Promote global collaboration

*Technology knows no borders. Playing an active role on the global stage is imperative for the EU to retain attractiveness to talent, ideas, and capital.*

- 9. Strengthen the Transatlantic relationship** to develop complementary and mutually reinforcing industrial policies. Deepen and broaden the collaboration through the U.S.-EU Trade & Technology Council, enhance U.S.-EU data agreements, and initiate a visa facilitation program for skilled technicians to support U.S. and EU industrial ambitions.
- 10. Foster international interoperability** to build a global level playing field that the EU can benefit from and rely on. Build stronger trade relationships with like-minded partners, develop clear common EU policy on export controls and a balanced approach towards foreign investment and outbound investment controls, and contribute to developing international standards and strengthening institutions of multilateral governance.

## Conclusion

The twin transition is Europe's generational challenge.

**Competitiveness, sustainability, and innovation at global level** are ingredients for turning this challenge into a sustainable growth model. As the EU will be working on strengthening its economic security, it needs to work closely with industry. Intel is convinced that Europe can play a leading role in the global supply chain while ensuring that it is first in line to benefit from technologies developed on its home turf.



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# Introduction

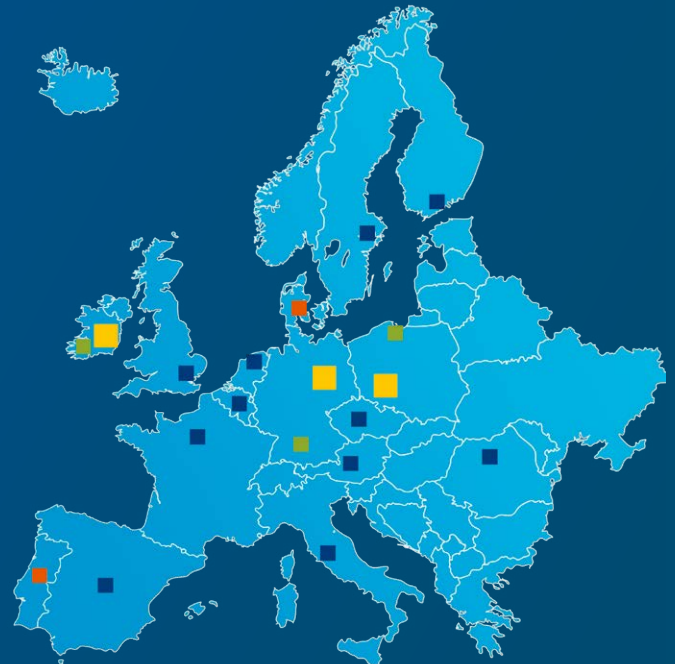
Today, the digital economy alone contributes to more than 15% of global gross domestic product (GDP). And it has been growing two and a half times faster than the physical world GDP over the past decade. As technology permeates nearly every aspect of people's lives, Intel sees a **growing demand for greater processing power to serve the digital and green transitions.**

With industries at the vanguard of technology, including artificial intelligence, telecommunications, quantum, data centers, automotive and more, demand for silicon-based technologies will only increase. In addition, with advanced technology providing the key to unlocking **large-scale decarbonization** across industries, Europe needs a resilient leading-edge semiconductor supply chain to secure its net-zero future.

**Silicon technologies** and microchips will be the backbone of the economy. The EU has already taken an important step to address and secure the future demand for advanced chips. With the EU Chips Act, the EU aims to double its global market share in semiconductors to at least 20% by 2030 to ensure the EU's future technological sovereignty.

## Intel in Europe: building an end-to-end supply chain contributing to Europe's resilience and innovation

Intel is investing in a global semiconductor supply chain that is resilient and geographically balanced. To date, Intel has announced or completed more than € 50 billion in investments in Europe, beginning with Fab 34 (Ireland) in 2019 (over €17 billion). Along with existing and planned investments in Poland (over € 4 billion) and Germany (over € 30 billion), Intel is building a first-of-its-kind, end-to-end, leading-edge semiconductor supply chain in Europe, serving as a catalyst for potential ecosystem investments and innovation by Intel suppliers and customers. Strengthening front-end and back-end manufacturing capacity in Europe help increase the EU's semiconductor supply chain resilience, its technology leadership and the EU's share of the global chip production (EU target: 20% by 2030).





Intel is well under way in helping Europe to secure its silicon-enabled future and the needs of its citizens, consumers, and businesses. As an integral part of Europe's economic fabric for the last 30 years, Intel is now expanding its manufacturing footprint across the EU. The **Silicon Junction** that Intel is planning to create in Magdeburg, Germany, combined with its existing wafer fabrication facility in Leixlip, Ireland, which doubled in capacity in 2023, and its planned assembly and test facility in Wrocław, Poland, will create a first-of-a-kind, leading-edge end-to-end semiconductor manufacturing value chain in Europe. By investing more than € 50 billion in the EU in this decade alone, Intel is significantly contributing to the very ambitious political objectives of bringing more semiconductor manufacturing to Europe and supporting Europe's technological sovereignty. Intel is helping the EU to achieve its ambitions for a more resilient semiconductor supply chain.

But the journey hasn't been easy, and these investments are not for the faint of heart. The last few years have rattled the European status quo. A global pandemic and the consequences of the conflicts at Europe's doorstep (energy prices, inflation and its consequence on the purchasing power of European citizens to name a few) are some of the most significant and disruptive challenges the EU has had to grapple with to date. And EU legislators have worked hard to tackle them. The **ambitious program for Europe's economic and societal future** that the EU has set out and started to implement is laudable. The Green Deal Industrial Plan, the AI Act, the EU Chips Act, and other initiatives invest in the technologies that Europe needs for the future to address the urgent need to rebalance global supply chains.

With this document, Intel intends to help shape the policy debate for the years to come – with its **views on how to make Europe more competitive, sustainable, and innovative at a global level**. Intel's recommended policy solutions are geared towards improving European citizens' lives and bolstering Europe's economic performance.



# The rocky road since 2019

The von der Leyen Commission has worked hard to address the geopolitical, societal and economic challenges such as the pandemic, wars, inflation, and economic headwinds, delivering on its promise of becoming a geopolitical Commission. In doing so, it has fully embraced the concept of **European 'strategic autonomy,'** as its compass for EU policymaking.

## **Making Europe stronger and more resilient**

The new EU reality entails an **industrial paradigm shift** where policymakers are seeking to bring industries back to their constituencies. Manufacturers across the continent are moving from 'just in time' (cost-efficient) to 'just in case' (more resilient and geographically balanced) supply chain models. The return of inflation has put increased pressure on consumers and developers. Consensus is growing that no actor can tackle the current challenges – such as volatile energy prices, single sourcing of raw materials or sky-high shipping costs – on their own. The need for public-private cooperation is greater than ever.

The **EU Chips Act** is an example of just that. This recently adopted regulation provides a much-needed stimulus into the chips industry, bringing together both public and private sector ambitions and investments to rebuild a thriving semiconductor ecosystem in Europe. But critically, with the EU Chips Act, everyone can see a seminal change in

EU policymaking, and one which is being replicated in other policy areas in support of Europe's strategic autonomy ambitions (e. g., Net Zero Industry Act, Critical Raw Materials Act).

## **From regulating the digital revolution to unleashing digital innovation**

The EU has taken significant steps to regulate the digital economy. The Digital Services Act, Digital Markets Act, Artificial Intelligence Act, and the Cyber Resilience Act are regulatory milestones with the ambition of becoming global standard-setters in those digital policy areas. An indispensable part of these efforts is inviting other regions of the world to follow in Europe's steps. In doing so, the EU has focused on addressing the **challenges** linked to the increased digitalization of the European society.

It is now time for the EU to foster the **opportunities** that digital technologies create. What are the conditions to enable innovation, technology creation and adoption in Europe? This paper proposes policy priorities that will support, improve, and enable more digital manufacturing in the EU: chips are at the core of technologies such as cloud, edge computing, autonomous driving, and artificial intelligence. To achieve this technology leadership, it is paramount that the EU creates a favorable environment for fabrication plants, products, and industrial plans for combining green and digital transformations.



## Four priorities on the road ahead

2024 will see a new European Parliament and a new College of Commissioners. Once in office, a daunting task will stand before them: increasing the momentum of the **digital industrial renaissance to drive social and economic growth**. To fulfill this ambition, the EU needs a true manufacturing moonshot. The new Commission and Parliament have the power to lay the foundation for decades of economic prosperity. To succeed, global private investment and innovative European business must be brought along with it. These foundations rests on four priorities:

- I. Competitiveness
- II. Sustainability
- III. Innovation
- IV. Global partnerships

The EU must realize its full potential of its industrial ambitions in all four of these areas simultaneously. To do that, Intel proposes **ten policy recommendations** within these four priorities.

Taken together, Intel believes that these recommendations offer a path towards a more prosperous and sustainable economic growth, driven by cutting-edge technologies and an international outlook.



# Boost European competitiveness

While being among the regions in the world with the strongest economic performance, Europe's relative position is slipping. According to the IMF, the EU accounted for nearly a quarter of the world's GDP in 1990. More than three decades and several enlargement rounds later, that share has dropped to slightly more than 14%.<sup>1</sup>

This is in no small part due to the uncertainty around the costs of doing business, reduced productivity, and the potential for stagnating growth in the internal market. By improving the business environment, expediting drawn-out procedures, and invigorating labor markets to close existing gaps, Europe can boost its potential and deliver on its sovereignty and **economic security ambitions**. The best method to strengthen the EU's economic security is by boosting its competitiveness.

## 1. Keep industrial costs in check

Europe's business environment is under unprecedented pressure. Supply chain shocks, increasing demand for key materials and products, and skyrocketing energy prices have driven up both capital and operating costs across Europe's industries. In capital- and energy-intensive sectors, the effects on profitability and long-term sustainability are felt the hardest. De-risking strategies will require a structural redesign of supply chains.

The EU needs to find the right balance between the global and the local dimensions, cost efficiency and resilience. To guarantee the future of record-level investments and the dependent ecosystems around them, enterprises operating in Europe should have **favorable business conditions** so the European economy can retain attractiveness and regain competitiveness. While costs are higher than ever, investors face an ever-greater disadvantage compared to other parts of the world, where governments have heavily subsidized several industrial sectors. Bringing the costs of doing business in the EU to a low and stable level is paramount to Europe's long-term global competitiveness.

- **Provide more certainty to investors and operators on operational costs** by, for example, bringing down and minimizing volatility of energy prices, ensuring a reasonable tax environment that incentivizes innovation and industrial leadership, or by broadening possibilities for local, regional, and national governments to attract investments.
- **Crowd-in investments for regional and cross-border suppliers** across the entire value chain to reduce the costs of more resilient supply chains. Costs that stem from factors such as long-haul shipping, the need for more warehousing capacity, and foreign exchange risks in particular, make it relatively more expensive for firms to operate in the EU and will ultimately be passed further on the shoulders of the consumers.
- **Enable fast-track permitting processes for strategic industrial projects** for national and regional governments. This will reduce red tape and time for execution of investments for strategic industries, ensuring the semiconductor sector remains anchored in the EU's industrial fabric.

## 2. Building a labor force ready for the future

Europe must bridge the current skills gap. Sourcing the right workforce with the right skillset – whether hiring or training – **remains a major bottleneck for modern digital manufacturing.** In addition to Europe's talent shortages, industry is facing a global deficit in skilled labor. This is exacerbated by factors that limit labor mobility. In addition, as the realities of making the green transition are becoming more and more apparent, millions of workers are worried about the future of their jobs in industrial sectors (chemistry, automotive, machine tools) where Europe has been traditionally a world leader. Putting in place adequate re- and up-skilling projects is a matter of economic necessity for modern society.

If Europe is to significantly grow its semiconductor manufacturing base, national and regional authorities, academia, and the private sector must join forces in **public-private partnerships to prepare for jobs of the future.** While companies compete among themselves for talent, governments, universities, and vocational schools every actor must work together to produce a large, motivated, and diverse talent pool that industry can select from. A vibrant European semiconductor industry that delivers for Europe's green and digital ambitions hinges on having the right talent.

- **Match Europe's ambition for growing its modern digital manufacturing** base with a dedicated 'Talent Fund' that

can bring this vision to fruition. Such a fund can empower all local areas where there is significant inward investment in strategic sectors to utilize, develop and upskill their existing training capacities to support the industry e. g. for manufacturing technicians.

- **Facilitate and coordinate upskilling and reskilling initiatives** implemented by Member States, including binding national and European targets in STEM and advanced applied technical education. This can create a stronger and more durable talent pipeline across the EU single market.
- **Include contributions to workforce development** as requirement to public support allocations and state aid approval across all industrial sectors, as per the EU Chips Act.
- **Shape secondary and tertiary education curricula** working with industry to raise awareness of career prospects in the semiconductor industry, develop a diverse talent pipeline and equip students with the right toolbox of hard and soft skills.
- **Facilitate international movement of highly skilled workers** in strategic sectors by (i) modernizing and fast-tracking visa processes and creating national and regional one-stop shops to assist highly skilled workers in relocating; and (ii) facilitating recognition of qualifications across borders and outside of traditional learning patterns.



## Intel's contributions to the EU semiconductor talent pipeline

Intel is playing its part in building a talent pipeline to support the semiconductor industry that will need thousands of additional engineers and technical workers. Intel's close collaboration with local and national universities, research and educational institutions enables the creation of a sustainable talent pool that benefits all, Intel as well as service providers.

**In Germany,** Intel is increasing its academic engagement with new multi-annual research projects in areas such as advanced semiconductor materials, sustainable process technology and manufacturing. In September 2023, Intel announced a commitment to Saxony-Anhalt's higher education system, forming partnerships with six universities and allocating € 1.2 million. Intel Labs also intends to expand collaborations with other universities across Germany.

**In Ireland,** Intel is working closely with the national education ecosystem and have implemented programs across the education life cycle, from primary through to tertiary level. Intel has taken steps to sign Memorandum of Understanding (MoU) agreements with universities in Ireland to further connect education and industry and drive forward the nation's innovation economy. Intel has also focused on specific initiatives to support skills development for manufacturing technicians like with our Advanced Manufacturing Technician Maintenance Skills program.

**In Poland,** since the establishment of its R&D center in Gdansk in 1999, Intel has fostered potential future workforce via programs focused on STEAM subjects, including ICT student scholarships and internships, AI upskilling and reskilling programs, and university deep-tech curricula for cutting-edge technologies (cybersecurity, networking, AI, pre-silicon design & verification, neuromorphic computing, and application-specific integrated circuit design). Intel currently collaborates with major universities such as those in Gdansk, Warsaw, Poznań, Kraków, Katowice, and Wrocław. To promote workforce gender diversity in Poland Intel created the first female student scholarship program (220 scholarships since 2015), a consortium of partners for women in IT (IT4She), as well as a dedicated scholarship program for female students from Ukraine.





### 3. Improve the coherence of EU laws to make the single market work better

The last years have seen the introduction of important new legislation. Delivering on high-level ambitions requires on-the-ground commitment and resources to make sure legislation is effectively implemented. With clarity, predictability, and regulatory coherence, Europe can become an attractive place for very much needed capital investment. That would help propel the continent to a prominent global position. It would also give the guarantees **large investment projects need to succeed**.

- **Conduct a policy coherence assessment review of the existing legislation** to assess inconsistencies, clarity, and market fragmentation to achieve better implementation through evidence-based policy. EU agencies and national authorities must be funded adequately to ensure effective implementation.
- **Ensure harmonization and consolidation of market access requirements** for consumer products and input materials. For instance, the future revision of the so-called New Legislative Framework for product safety would help avoid conflicting requirements between safety, security, and sustainability by clearly stating which requirements should be prioritized in case of conflicts.
- **Maintain regulatory and funding coherence for strategic industrial sectors** to avoid inconsistencies across legislation and secure access to input resources like raw materials and chemicals. While the EU Chips Act aims to attract investments in the semiconductor sector, legal uncertainties and risks introduced by other legislation (e. g. revised Product Liability Directive) could discourage innovative companies from investing and marketing their products in Europe.
- **Increase legal certainty and ensure a level playing field in enforcing legislation** (such as the Foreign Subsidies Regulation or Due Diligence legislation) by publishing early guidelines and creating additional means for adequate stakeholder engagement.

# Enable sustainable and responsible growth in Europe

The EU Green Deal has been one of the cornerstones of the von der Leyen Commission's political strategy and goal to become climate-neutral by 2050 and to reduce net greenhouse gas emissions by at least 55 % by 2030. Intel endorsed the EU Strategy and supports it with **goal of achieving net zero by 2040**. Intel fully acknowledges and supports the central role technology plays in meeting the objectives of the green and digital transitions, as well as Intel's own **RISE** strategy and goals. Sustainable business practices are core to Intel's business strategy.

To most effectively grow, a green European economy needs to maintain and attract new investment. Regulation has increased exponentially, often in a divergent and inconsistent, incoherent way that fragments the internal market, as we see with the **German Supply Chain Act**, the French Duty of Vigilance Law, the EU **Corporate Sustainability Due Diligence Directive (CS3D)** and **Sustainable Battery Regulations**. Moreover, the lack of regulatory scrutiny and limited scope of impact assessments compounds this effect and is not what is considered as 'better regulation'.

## 4. Avoid blanket bans on necessary chemical substances

Europe must provide lead times to ensure continued access to **chemical substances and materials** essential to semiconductor manufacturing and, ultimately, the entire technology ecosystem. It is critical that existing legislative frameworks (such as REACH, RoHS, F-Gas Regulation) avoid double regulation both at EU and national levels. One chemical assessment should lead to one chemical substance being regulated through one chemical framework only.

- **Avoid blanket bans on chemical substances** as they won't serve Europe's industrial ambitions. Critical use cases that support the EU's goals should be exempted until alternatives are available.
- **Provide industry with sufficient time to develop innovations and alternatives** as semiconductor R&D cycles are long and complex, both for legacy and state-of-the-art manufacturing.

- **Direct EU research funding towards the semiconductor industry's** collaborative research into chemical substance substitution, alternatives' development, advancing capture technologies, and analytical techniques.

## 5. Apply a smart policy mix to sustainability and responsible business conduct regulation

To make the twin (digital and green) transition a reality, Europe needs to create a level playing field, making sure the regulatory environment allows local manufacturing to flourish and provide unhindered market access for products. Europe's ambitions to bring back local manufacturing are at an all-time high. However, this will be hindered by high capital and operational expenditure costs. Intel supports Europe's global leadership while ensuring legislative outcomes and implementation are pragmatic. In this respect, it will be essential that Europe first ensures the effective completion and successful implementation of all Green Deal legislation, both current and pending, before undertaking any new



initiatives. In addition, legislation must not be considered as the answer to all sustainability and responsibility challenges.

- **Ensure a risk-based approach** according to the international frameworks (OECD MNE Guidelines, UNGPs etc.) when developing EU sustainability legislation.
- **Introduce accompanying measures** to help deliver the goals and objectives of the legislation coupled with detailed guidance to assist enforcement authorities, industries and other stakeholders.
- **Acknowledge the use of credible industry schemes** to boost compliance and encourage public-private partnerships and multi-stakeholder initiatives.



## A smart policy approach to regulating responsible minerals supply chains

Increasing the resilience of global supply chains is a common goal for the industry and government alike. Close cooperation of the public and private sectors is therefore crucial for achieving this goal. Global governance of minerals supply chains offers good examples of a smart regulatory policy leading to effective public-private collaboration.

In 2016, the **Responsible [‘conflict’] Minerals Regulation** was adopted. This introduced legal obligations for importers of 3TG (tin, tungsten, tantalum and gold) and banned the import of these minerals into the Union if they are sourced from Conflict-Affected and High Risk Areas (CAHRAs). Together with international partners, the EU developed accompanying measures to help achieve the goals of the Regulation.

To that end, the **European Partnership for Responsible Minerals (EPRM)** has become a highly-successful public-private partnership. Bringing together governments, industry, and civil society, it effectively increases the demand for and supply of responsibly sourced minerals from CAHRAs.

To help companies comply with the Regulation, the EU also recognized credible industry schemes such as the Responsible Minerals Initiative (RMI), one of the flagship programs of the Responsible Business Alliance (RBA). Intel is proud to have been one of the founding strategic partners of these initiatives.

Such industry schemes are governed by the **OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from CAHRAs**. As a member of the dedicated OECD Multi-Stakeholder Group (MSG), Intel plays an important role in the implementation of this guidance.

Lastly, standardization can also be instrumental to delivering international policy goals. The **IPC -1755 Conflict Minerals Data Exchange Standard**, which Intel helped draft, is intended to benefit suppliers and their customers by providing consistency and efficiency to the conflict minerals due diligence data exchange formats that facilitate and improve data transfer along the entire global supply chain. These examples can serve as a blueprint for public-private cooperation for achieving common goals.

# Drive innovation for a vibrant EU tech ecosystem

Lagging investment into research and development is slowing innovation and undermining long-term economic growth across the EU. If the EU is to reclaim leadership and sovereignty in new technological fields such as quantum computing, it must **continue investing in innovation** and increase resources for its future framework funding programs. Intel has enhanced its R&D&I collaborations with European Research Technology Organizations and Universities – for example, imec in Belgium, CEA-Leti in France, Fraunhofer in Germany, Lukasiewicz in Poland, Tyndall in Ireland, IUNET and CNR in Italy – with the view of creating the right ecosystem for Intel’s future facilities in Europe.

## 6. Invest more and better in R&D&I

Design and manufacturing breakthroughs are not the work of single innovators, but of thousands of individuals working towards common goals and ambitions. To unlock the power of our collective innovation efforts, the EU needs to provide the **right incentives and remove administrative barriers** that stand in the way. In doing so, the EU can provide fertile ground for SMEs, multinationals, and research partners to make new leaps in technological development.

Use of patents also creates effective incentives for innovation. Patent systems best serve their purpose when they combine strong protection for strong patents with effective means to challenge weak patents and apply proportionate remedies for patent infringement. Bringing **innovation ‘from the lab to the fab’** can be fostered through several policy measures:

- **Significantly increase the EU budget for R&D while exploring new fiscal and non-financial incentives** and simplifying participation criteria in collaborative projects to develop new R&D&I partnerships.
- **Develop a bigger and stronger European Venture Capital Market** by achieving a true Capital Markets Union, allowing faster and better financing of European start-ups and scale-ups.
- **Review bureaucratic burdens on businesses in Europe and reward the innovators** to facilitate enterprises bringing new products to the market, thus boosting Europe’s technological potential.
- **Foster industry investment in innovation through balanced patent enforcement frameworks and codify the need to avoid disproportionate patent infringement injunctions** to deter abusive patent litigation against innovators, and to remove undue investment risk for high-tech products.
- **Adopt an EU Regulation on Standard Essential Patents (SEPs) based on the European Commission’s proposal** to ensure that industry can rely on fair, reasonable, and non-discriminatory licensing conditions in support of standards as a critical enabler of Union objectives of green, digital, and resilient growth.





## 7. Develop and deploy responsible artificial intelligence

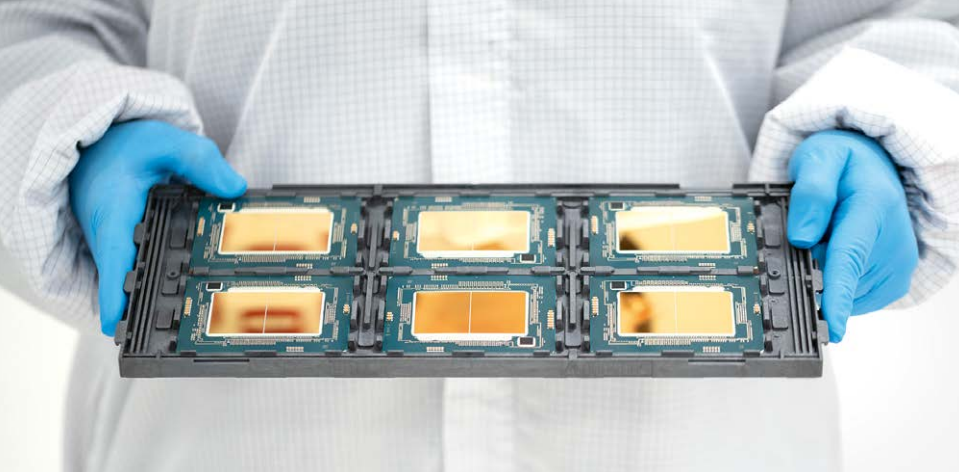
Artificial intelligence (AI) can be harnessed to tackle critical global challenges like pandemics, natural disasters, and global public health. AI capabilities and solutions are being developed to amplify human potential, enhance inclusion, and improve accessibility for people with disabilities. In helping to realize these potentials, Intel is committed to advancing AI technology safely and responsibly and by **implementing processes founded on international standards** and industry best practices.

The EU is playing an important role in shaping the global AI landscape. The EU's AI Act is a comprehensive piece of legislation that will regulate the development and use of trustworthy AI across Europe. The AI Act is expected to have a significant impact on the European and global AI market. As a new piece of legislation, set against a fast-evolving market, the implementation of the AI Act could face some challenges, which must be dealt with foresight - the application and enforcement of the Act, technical complexity, legal uncertainty, issues of administrative burdens, or international coordination.

- **Effectively equip national competent authorities with enough resources**, including sufficient staff with the right

knowledge and skills, to ensure the smooth and consistent implementation of the AI Act.

- **Be mindful of and participate in international discussions on AI governance and industry initiatives** when drafting implementing and delegated acts for the AI Act.
- **Promote the adoption of internationally accepted standards for AI** leveraging EU's position in this field and considering industry initiatives. Ensure that the EU AI Act implementation is consistent with these standards.
- **Evaluate the impact of the AI Act on the AI ecosystem**, namely at the level of European competitiveness, while engaging in dialogue and cooperation with stakeholders, to pursue a coordinated approach to trustworthy AI.
- **Foster adoption and automation of AI technologies** to address daily operations to long-term viability of business risks, by improving mitigation strategies, and training workers for disruption scenarios.
- **Invest in digital readiness programs** providing the necessary technical assistance and expertise to help other European citizens as well as developing nations build the skills necessary for encouraging responsible use of emerging technologies to achieve broader socio-economic benefits.



## Responsible AI initiatives at Intel

Intel is committed to advancing AI technology responsibly, by utilizing rigorous, multidisciplinary review processes throughout the development lifecycle, establishing diverse development teams to reduce biases, and collaborating with industry partners to mitigate potentially harmful uses of AI. Internally, Intel's multidisciplinary advisory councils review various AI development activities through the lens of **six key areas: human rights; human oversight; explainable use of AI; security, safety, and reliability; privacy; and equity and inclusion.** Externally, consistent with Intel's Global Human Rights Principles, when Intel becomes aware of a concern that products are being used in a way that violates these Principles, Intel will take appropriate action to mitigate that abuse up to and including restricting or ceasing Intel's business with the business partner. In addition, Intel seeks to collaborate with academic organizations worldwide to research key areas where Intel can have the most significant impact: privacy, security, human/AI collaboration, trust in media, AI sustainability, explainability, and transparency. Intel also offers platforms and solutions to make responsible AI pragmatic and manageable for developers.

More information is available at:



Policy Actions for a Competitive and Resilient Europe



## 8. Increase foundational security capabilities across the digital infrastructure and supply chains

The European Union works on various fronts to promote cyber resilience, safeguarding citizens' and businesses' communication and data and keeping online society and economy secure. Europe's legislative and regulatory framework has expanded significantly over the past decade to address threats to security and stability and to build the response capacity and capabilities across Member States.

To engrain foundational cybersecurity capabilities and practices across digital infrastructure, while enabling innovation and technological competitiveness, the EU should consider the following actions:

- **Maintain the closest possible alignment with international standards.** Industry best practices, consolidated in international standards, should continue to serve as the reference point for both strategic and operational policy activities. Any divergence (e. g., in the context of coordinated vulnerability disclosure and management) should be carefully considered by practitioners for potential global regulatory conflicts or negative operational externalities.
- **Avoid EU cybersecurity solutions that would create market barriers.** Implementing critical cybersecurity legislation (e. g. the Cyber Resilience Act) will depend on the availability of recognized, publicized, and harmonized standards, built on international best practice, to conduct the necessary conformity assessments and demonstrate compliance. Lack of genuine collaboration with industry

on the standards underpinning this and future security regulations for products and digital infrastructure will only hamper well-intentioned efforts at bolstering the EU's cybersecurity.

- **Equip cyber security agencies at European and national level with the much-needed resources, capabilities, and skills.** Incident and vulnerability reporting requirements of the Cyber Resilience Act, as well as the supervision and enforcement of the ever-growing EU security regulatory ecosystem, require ENISA and the Member States authorities to be trained for these tasks. Skills development for regulatory enforcement agencies should supplement broader societal cybersecurity education efforts.
- **Enhance supply chain security and resilience through outcome-oriented traceability and transparency efforts.** Public and private collaboration on sharing actionable security information to improve risk management practices is vital. Creating harmonized standards on efforts like hardware bill of materials (HBOM) and software bill of materials (SBOM) is an important first step in achieving better transparency.

## Intel's comprehensive approach to security

System trust is rooted in security – if hardware isn't secure, a system cannot be secure. Intel's goal is to design and build the most secure hardware on the planet, enabled by secure software. Intel's longstanding commitment to security includes:

**a) Security by Design:** following rigorous policies and procedures spelled in the Security Development Lifecycle (SDL) to integrate security principles and privacy tenets at every step of hardware and software development. **b) Continuous Technology Innovation:** from accelerating cryptography and Confidential Computing, to safeguarding its supply chain and manufacturing operations, Intel never stops innovating to relentlessly advance security. **c) Security Research and Vulnerability Handling and Disclosure:** Intel invests extensively in vulnerability management and offensive security research (e. g. collaborations with researchers and leading academic institutions, or Intel's Bug Bounty program) for the continuous improvement of its products. **d) Unwavering Customer Focus and Transparency:** Intel works with customers and industry partners to achieve levels of secure performance for citizens to trust technology. Intel communicates security advisories and product updates to keep customers and their systems protected. **e) Community engagement:** no single entity can solve complex security challenges alone. Intel works with partners, academic institutions, industry organizations, and standardization bodies worldwide to support shared policies, industry guidelines, standards, and research that benefit everyone.

Find more at [intel.com/security](https://intel.com/security)

# Promote global collaboration

Having played a key role in establishing global standards in many other areas, the EU often sets the tone and pace in new areas. Across the globe, legislators and investors still look up to Brussels as a rule-setter and a role model. But with great power comes great responsibility. Responsibility to always consider the external impact of its internal decisions - and provide safeguards to national and regional economic security. In these times of geopolitical turmoil and increasing protectionism, many turn to the EU as a safe haven for multilateralism and international cooperation. Europe's openness is one of its main strengths. It drives innovation, fosters talent, and attracts investment. It fuels technological advancement.

Perhaps nowhere else is this as evident as in the semiconductor industry. Value chains are built and thrive on global inter-connections. And **Europe is a strong and vital link in this global ecosystem**. The EU Chips Act recognizes that, and rightly sets out to strengthen that link even further. It also recognizes that Europe cannot be the only link. That is why international cooperation, especially with like-minded partners, is critically important to the semiconductor sector. To remain relevant and competitive, Europe must resist the pressure to turn inwards.

## 9. Strengthen the Transatlantic relationship

For over 75 years, the transatlantic alliance has underpinned Europe's success. By continuing to build on the strong foundations laid over decades of collaboration, the future Parliament and Commission can guarantee continued success across the globe and deliver on its promises to future generations.

Cooperation is especially pertinent in industrial policy. As the world's major economies are growing increasingly concerned about economic security, governments are seeking to shape, rather than merely regulate, markets. This creates points of friction, even among such steadfast allies like the EU and U.S. The European Union and the United States have the largest bilateral trade and investment relationship and enjoy the most integrated economic relationship in the world. The work of the **Trade and Technology Council (TTC)** and the respective EU and U.S. Chips Acts demonstrate that collaboration leads to great results. These experiences should serve as a blueprint for close transatlantic cooperation going forward.

- **Develop complementary and mutually reinforcing approaches to industrial policy** with the U.S. to avoid regulatory duplication between the two largest markets and most innovative blocs.
- **Continue, deepen, and broaden the work of the TTC** to develop a genuinely transatlantic semiconductor ecosystem, consider inviting other like-minded partners to the forum.
- **Enable data transfers across geographies** to facilitate trade and investments, as well as intra-company collaboration. The EU-U.S. Data Privacy Framework and the other legal tools available for companies operating on both sides of the Atlantic





## 10. Contribute to international interoperability

To make Europe's industrial ambitions a success, Europe must strive to protect current and open new market opportunities. Global trade can only work on a level playing field, with respect for intellectual property and the establishment of global standards. That's why the EU needs to work closely with **multilateral organizations** such as the OECD or the WTO to build the necessary international consensus on critical technologies like semiconductors. Taking guidance from evidence-based policy recommendations from reputable international experts can foster bilateral digital partnerships. Such as those the EU is promoting with countries like Japan and South Korea on skills, infrastructures, transformation of business and of public services.

While a more assertive EU trade policy is certainly desirable, it must not slide into protectionism. For example, assessing key strategic technologies is vital for avoiding unhealthy dependencies and minimizing risks of future supply disruptions must be at the heart of efforts to beef up economic security.

- **Establish ever-closer trading relationships with like-minded partners** across the world to secure access to all kinds of production inputs needed for the twin

transition – raw materials, R&D&I, ideas, talent, and capital. This should be the guiding principle in Europe's trade policy to make Europe a future export hub.

- **Forge clear common EU policy approach on export controls** and other trade defense measures that could impinge on industry competitiveness in the EU and coordinate these approaches with like-minded countries. Lead in building new multilateral export control regimes in the context of the limitations of the current Wassenaar Arrangement.
- **Lead in strengthening institutions of multilateral governance** working closely with Member States to equip the World Trade Organization (WTO) with the necessary tools to effectively arbitrate international trade regimes.
- **Work closely with the OECD and other international expert organizations** to develop mutually beneficial, effective, evidence-based international standards. Identify technical areas to improve market access and cross-border transfers of goods, services, knowledge, talent, and capital.
- **Emphasize global voluntary and industry-led standards** to support compliance with Regulations. Maintain the EU's present legal framework on standardization and improve implementation to strengthen the availability of Harmonized Standards.



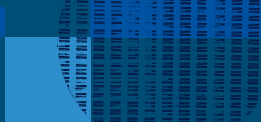
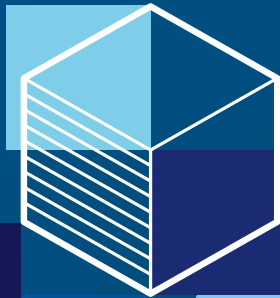


# Conclusion

Europe's economy is undergoing a once-in-a-generation change. The decisive decade for climate action is now, and new technology and data have the power to unlock large-scale decarbonization across industries. The twin digital and green transition is happening, and Intel is ready to be part of it by making investment commitments. Intel is working to contribute towards building the foundation for the EU's digital and green future and Europe's long-term competitiveness: new manufacturing facilities will be a catalyst for research centers and new ecosystems for suppliers, and for upskilling, reskilling, and attracting global talent.

The new Commission and Parliament have the opportunity to lay the foundation for decades of prosperity. The focus needs to be on policy priorities that **make Europe more competitive, sustainable, and innovative at a global level**, from creating favorable operating conditions for new technology and green investments and harnessing the power of emerging technology like AI through to creating the enabling conditions for innovation and for developing a highly skilled pipeline of talent. In an increasingly digital world, everything is connected. The EU must realize the full potential of its industrial ambitions across these areas simultaneously – linking its industrial and economic security priorities.

Intel believes Europe should simultaneously grow the internal market and boost its role on the global stage. Of course we need to acknowledge the strategic interdependences between likeminded partners and global suppliers. Nevertheless, Intel is convinced that the chips and technologies that we are already – and will in the near future – build in Europe and for Europe and the entire world will once again push the limits of what's possible. Moore's law is truly alive and well in Europe as anywhere else in the world.





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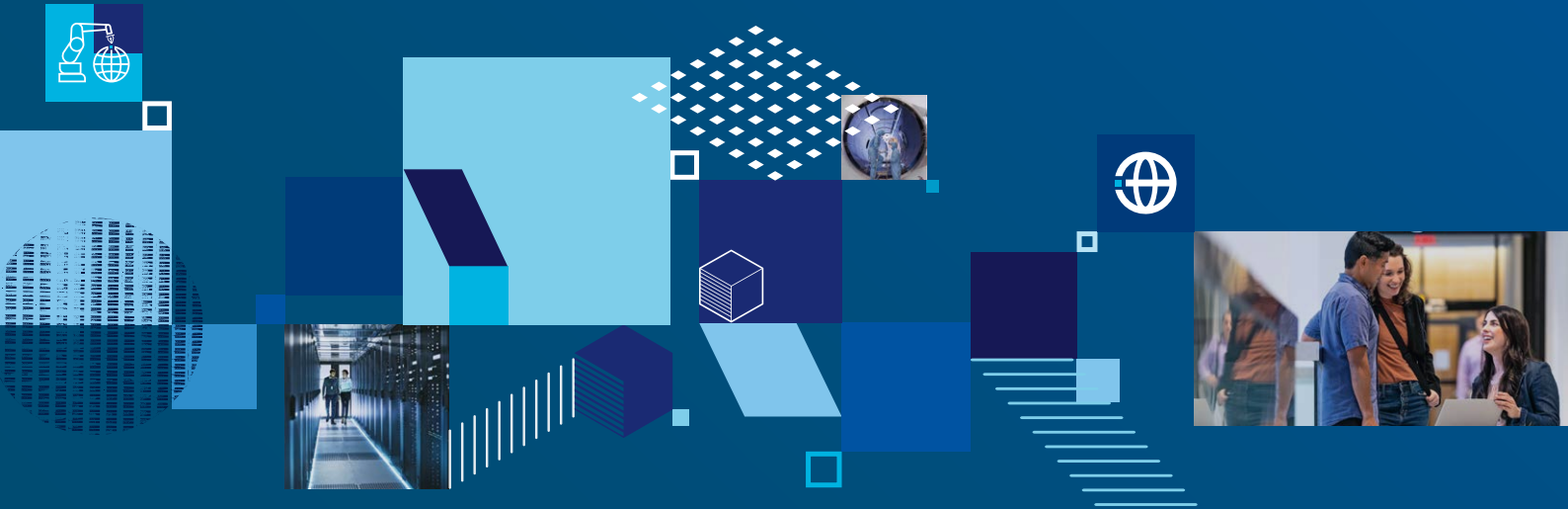
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