



European Chips Act - Questions and Answers

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Why a European Chips Act?

Semiconductor chips are the essential building blocks of digital and digitised products. From smartphones and cars, through critical applications and infrastructures for healthcare, energy, communications and industrial automation, chips are central to the modern digital economy. The COVID-19 pandemic has exposed a weakness in the eco-system within both Europe and other regions in the world experiencing significant shortages of chips. EU industries manufacture many types of high-tech products, of which chips are essential parts.

Europe must reinforce its capabilities in semiconductors to ensure future competitiveness and maintain its technological leadership and security of supply. The sector is both capital and knowledge intensive and chips supply chains are global, complex and currently rely on a few manufacturing sites.

What is Europe's current situation in the chips market?

Europe has many strengths and some weaknesses in the semiconductor value chain. The semiconductor sector is characterised by intense R&D activity, with first-class companies reinvesting more than 15% of their revenues into research in next generation technologies. The EU is home to world-leading research and technology organisations and many excellent universities and research institutes spread across the Union. These are pioneering the techniques behind the production of some of the world's most advanced chips.

Moreover, Europe is very well positioned in terms of the materials and equipment needed to run large chip manufacturing plants, with many companies playing essential roles along the supply chain.

Despite these strengths, Europe has an overall global semiconductors production market share of less than 10% and is heavily dependent on third-country suppliers. In case of severe disruption of the global supply chain, Europe's chips' reserves in some industrial sectors (e.g. automotive or healthcare devices) could run out in a few weeks, bringing many European industries to a standstill.

As the digital transformation accelerates and penetrates every part of society, industrial needs for chips are set to increase, opening new market opportunities.

How has the Commission supported the semiconductors ecosystem so far?

The EU has a history of successful collaboration with industry in the framework of different programmes and actions in Research, Development & Innovation (R&D&I) in semiconductors e.g. in relevant Joint Undertakings, i.e. Public-Private Partnerships for research, development and innovation such as [ECSEL](#) and [the Key Digital Technologies partnership \(KDT\)](#). The European Innovation Council, which supports equity investment in breakthrough innovation, is already investing in creating dynamic and resilient semiconductor ecosystems, as part of its work. Reducing the cost and time of new chip designs, minimising the power consumption and waste generated during manufacturing, making chips faster and more efficient are only a few examples of the EIC funding portfolio. Through its Accelerator scheme, the EIC will reinforce its support to start-ups and SMEs with market creating innovation potential in the semiconductor and quantum technologies sector, and help them mature their innovations and attract investors.

A new Important Project of Common European Interest (IPCEI) on Microelectronics and Communication Technologies is currently being prepared by a significant number of Member States. An IPCEI is a State aid tool for Member States allowing public co-financing under the condition that it concerns large integrated cross-border projects to overcome market failures and enable breakthrough innovation in key sectors and technologies, up to first industrial deployment, as well as important infrastructure investments, with positive spill-over effects for the EU economy at large.

In addition as regards national R&D&I projects in the semiconductor sector, Member States can and

are providing aid under the R&D&I State aid rules, in particular the [R&D&I Framework](#) and the corresponding provisions of the [General Block Exemption Regulation](#).

Already in July 2021, the Commission [launched the Industrial Alliance on Processors and Semiconductors](#), bringing together businesses, Member State representatives, academia, users, as well as research and technology organisations with the objective to identify current gaps in the production of microchips and the technology developments needed for companies and organisations to thrive, no matter their size.

With the Chips Act, the EU is strengthening and further expanding such collaboration within the industry to involve all actors of the value chain, including also the designers and players from the demand side.

What is the European Chips Act package?

The Commission has adopted a Communication, two proposals for a Regulation and a Recommendation. The Communication spells out the European Strategy and rationale behind the package.

The European Parliament and the Member States will now discuss the Commission's proposals for a Regulation on a European Chips Act in the ordinary legislative procedure. Once adopted, the Regulation will be directly applicable across the EU.

In the meantime, the Member States are encouraged to follow the Recommendation. It sets out a toolbox for monitoring and mitigating disruptions in the chips ecosystem. This includes immediate actions that could be taken if they would be appropriate to help overcome the current shortage, before the Regulation enters into force.

How will the European Chips Act address current problems?

The Chips Act is a unique opportunity for Europe to act jointly across all Member States, to the benefit of the whole of Europe. However, the current chips shortage is a systematic issue with no quick fix.

- In the **short term**, the toolbox set out in the Recommendation will immediately enable the coordination between the Member States and the Commission. This will allow to discuss and decide on timely and proportionate crisis response measures, if considered necessary.
- In the **medium term**, the Chips Act will strengthen manufacturing activities in the Union and support the scale-up and innovation of the whole value chain, addressing security of supply and a more resilient ecosystem.
- And, in the **long-term**, it will maintain Europe's technological leadership while preparing the required technological capabilities that would support transfer of knowledge from the lab to the fab and position Europe as a technology leader in innovative downstream markets.

What is the Chips for Europe Initiative?

This initiative, a major part of the overall Chips Act funding package, will pool together €11 billion of public investments up to 2030 from the Union and the Member States, and will leverage considerable private investments. (Other financing activities through a new EU Chips Fund, will support equity for start-ups and scale-ups in the sector, for a projected overall value of €2 billion.)

The Chips for Europe Initiative aims to reinforce the EU's semiconductor technology and innovation capabilities and ensure Europe's chips technology leadership in the mid- to long-term. It will ensure the deployment across Europe of advanced semiconductor design tools, pilot lines for prototyping the next generation of chips and testing facilities for innovative applications of latest chips technology. It will also build advanced technology and engineering capabilities in quantum chips.

The Chips for Europe initiative will be implemented by **the Digital Europe and the Horizon Europe programmes, using for most of its actions the new EU Chips Joint Undertaking**. **Digital Europe** supports digital capacity building in key digital domains: this is the case where semiconductor technology underpins performance gains, notably High Performance Computing, Artificial Intelligence, and Cybersecurity, together with skills development and the deployment of digital innovation hubs. The **Horizon Europe programme** supports intensive pre-competitive research, technology development, and innovation in the area of materials and semiconductors.

The initiative will build on Europe's leadership in research, including on the capabilities of its leading research centres and of key production equipment providers and strong users' sectors.

How is the Commission proposing to attract investments to strengthen EU

security of supply?

Investment in new advanced production facilities is imperative to safeguard the Union's security of supply, supply chain resilience and ecosystem spillovers and interactions, while generating significant positive impacts to the wider economy.

To attract such investments the proposed Regulation **provides the definition of two types of facilities to be considered as contributing to Europe's security of supply**. Such facilities are the so-called '**Open EU foundries**', which are facilities that design and produce **components** mainly **for other industrial players**, and the so called '**Integrated Production Facilities**', which are **factories** that design and produce components that serve **their own market**. Such facilities must be "**first of a kind**" in Europe and their operator should commit to continued investments in innovation in the Union's semiconductor sector.

The recognition as either type of facility triggers a **number of benefits**. It allows to have **access to fast-track permit granting in the Member States** for the construction and operation of the facilities.

The recognition as Open EU foundries or Integrated Production Facilities allows **prioritised access to pilot lines** set up under the proposed Chips for Europe initiative, under certain conditions.

In order to reach security of supply in the Union, Member States may offer public support to such facilities, without prejudice of State aid rules. The Commission will take the positive effects of such facilities for the European ecosystem into account for its State aid assessments, where relevant.

How will the Commission assess Member States' public support to chips manufacturing facilities under State aid rules?

Private investment in chips manufacturing facilities may likely **require public support**. In light of the extremely **high barriers to entry** and the **capital intensity of the sector**, as already announced in the [Communication on a competition policy fit for new challenges](#), the Commission may consider to approve aid to such facilities directly under Article 107(3)(c) TFEU. This provision **allows the Commission to approve State aid to facilitate the development of certain economic activities**, if the positive effects of such State aid outweigh its potential negative impact on trade and competition.

In its assessment, the Commission has to ensure in particular that the aid must:

- Have a so called "**incentive effect**" and be **necessary**. This means that State aid can be granted only to support a project that would not take place in the Union without public support.
- Be **appropriate** - meaning that there is no other possible tool that would be less distortive for competition.
- Be **proportionate**, and limited to the minimum necessary.

Relevant aspects to ensure that the positive effects of State aid outweigh the negative are, among others, that:

- The facilities will be "**first-of a kind**" in Europe, meaning that an equivalent facility does not already exist in Europe. In assessing whether a facility is "first of a kind", the Commission will take into account the definition contained in the proposed Chips Act.
- The supported facility will **not crowd out existing or committed private initiatives**.
- The public support covers a maximum of 100% of a proven funding gap, i.e. the minimum amount necessary to make sure such investments take place in Europe.

Depending on the merits of each individual case, additional positive effects to offset risks of competition distortion will be considered, such as:

- A **strengthening of the semiconductor value chain**, to ensure security of supply for European businesses using chips in their products. The acceptance to satisfy EU priority-rated orders, as also set out in the proposed Chips Act, will play a role in this respect.
- A **positive contribution in terms of attracting qualified workforce** to Europe.
- A **positive impact on innovation in Europe**, bringing benefits to SMEs and end users. The commitment to invest in innovation, set out in the proposed Chips Act for the recognition of Open EU Foundries and Integrated Production Facilities, will play a role in this respect.

How to address the skills shortage?

Demand for talent in electronics has been increasing in the last 20 years, with the microelectronics industry in Europe being directly responsible for 455,000 high-skilled jobs in 2018. One of the main challenges for the sector is to attract and retain highly skilled talent.

The Chips for Europe Initiative **will support education, training, skilling and reskilling initiatives**. Action will support access to postgraduate programmes in microelectronics, short-term training courses, job placements/traineeships and apprenticeships and training in advanced laboratories. Additionally, the Initiative will support a network of competence centres, located across Europe. The aim is to increase the availability of internships and apprenticeships, raise students' awareness of the opportunities in the field and support dedicated scholarships for masters and PhDs, also aiming at increasing female participation.

What investments are needed?

There are various ways into achieve the objectives of the strategy. Huge investments are required to achieve this ambition. This will require the pooling of investment from the Union, Member States and significant contributions from private investors.

The strategy underlying the EU Chips Act will mobilise more than €43 billion euros of public and private investments. This public investment includes € 11 billion to be directly provided under the Chips for Europe Initiative to finance technology leadership in research, design and manufacturing capacities up to 2030.

These investments will complement existing actions in research & innovation in semiconductors such as those from Horizon Europe and the Digital Europe programme as well as additional support already envisaged by Member States (e.g. specific measures in recovery and resilience plans, national or regional funds etc.).

The new Joint Undertaking "Key Digital Technologies" just started in December 2021. Why a new one now?

The new generation of Horizon Europe partnerships are flexible to adapt to changing technology, market and policy environment. By changing the mandate of the Key Digital Technologies Joint Undertaking set up under the Single Basic Act, the Commission is responding to urgent needs.

The Chips Act is a promising opportunity for a wide range of stakeholders, not only for chip manufacturers but also for user industries, in transport, healthcare, communication, manufacturing, etc. The new Chips Joint Undertaking should be open to the participation of new stakeholders in this respect.

What is the aim of the Recommendation addressed to EU countries?

The Commission encourages the European Council and Parliament to discuss the European Chips Act as soon as possible. In the meantime, Member States are encouraged to work together with the Commission to monitor the semiconductor supply chain and anticipate potential disturbances. Member States gather and provide information on the current state of the semiconductor crisis in their national markets, discuss and adopt appropriate, effective and proportionate measures to address the current shortage on national and Union level. This immediate coordination mechanism can take steps to overcoming the current shortage until the proposal for a Regulation is adopted.

What is being done at international level?

By improving its supply chain security and through its capacity to design and produce powerful and resource-efficient semiconductors, the EU is contributing to the rebalancing of the semiconductors global supply chain. Additionally, the EU has as an overall objective to serve the global demand, which will increase substantially, and to win its share of the growing market.

Europe will aim at building balanced semiconductor partnerships with like-minded countries. The aim of these partnerships would be to cooperate on initiatives of mutual interest and ensure continuity of supply in times of crisis.

At the same time, the EU should be prepared for possible sudden changes in the political situation or unforeseen crises, which could threaten the EU's security of supply. The crisis response toolbox within the EU Chips Act would give the EU the necessary means to address such situations and, in the last resort, to ensure Europe's overall resilience.

When will the Chips Act enter into force?

The proposed Regulation will be discussed by the European Parliament and the Council. The Commission will assist the co-legislators to reach an agreement as soon as possible.

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