

**MINISTER FOR INDUSTRY,
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European Chips Act ‘2.0’ – The Danish Government’s response to the call for evidence

The European economy and society are highly dependent on access to semiconductors to function and remain globally competitive. The Chips Act was introduced at a pivotal moment, amid intensifying global competition from the United States and China. The disruptions caused by the COVID-19 pandemic demonstrated that semiconductors are critical to businesses across a wide range of industries.

Recent geopolitical developments have again put stress on global supply chains and highlighted their vulnerabilities, which underline the need for action. Whilst Europe will be dependent on imports of semiconductors in the foreseeable future, Europe must build stronger resilience. That has to be done through building a stronger ecosystem in the EU as well as continuing to develop strategic partnerships with like-minded third countries.

The Chips Act has already laid the foundation for the next steps, introducing forward-looking measures, such as pilot lines, that can scale European production and attract global companies. This approach will strengthen the Union’s prosperity, given the significant economic benefits expected.

With the Chips Act 2.0, the European Union should also seek to:

1. Promote technological leadership while reducing the EU’s dependency

- Build production capacity in advanced chip manufacturing. This requires massive, long-term investments and a focus on the entire value chain, from production to end users.
- Concentrate on new technologies, such as quantum chips. This will offer a unique window of opportunity for Europe to position itself as an indispensable player in global value chains. And Europe can avoid repeating current vulnerabilities in the semiconductor supply chain.
- Cooperate with like-minded third countries. A competitive EU requires continued collaboration with a broad range of countries.

Monitoring and coordination

- Monitoring and early warning. This gives industry the ability to mitigate temporary supply shortages in critical value chains. Important that administrative burdens are minimized in the collection process.

Promote technological leadership while reducing the EU’s dependency

Strategic and purposeful planning of the entire value chain

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To strengthen its resilience, the EU must expand chip manufacturing capacity. It requires massive and long-term investments. Therefore, Europe must act purposefully and strategically to mobilise investments that bring real value. The aim should be for a semiconductor industry to compete on commercial terms. That requires a focus on the entire value chain, from semiconductor manufacturing to the demand-side (e.g., data centres, electronic vendors and the defence sector). Ensuring an end-user market and commercial sustainability will also support the attractiveness for private capital, which should be the key source of investments.

The Chips Act should not specify investment priorities for semiconductors in order not to pre-empt discussions of the Commission proposal for the multiannual financial framework (MFF) for 2028-2034, including the proposed European Competitiveness Fund.

Critical technologies

While investments in traditional semiconductor technologies remain crucial, the key focus for Chips Act 2.0 should be for the EU to secure a leading position in critical technologies, such as quantum chips. It will strengthen future European leadership and competitiveness, rather than solely trying to catch up in the field of traditional semiconductors, which has benefited from decades of refinement in mass production techniques.

Efforts should be targeted towards building capacities in niche areas such as energy-efficient chips, neuromorphic systems (a computing approach inspired by the human brains structure), sensor technologies and photonics. Emphasising critical technologies and niche chips, the Chips Act 2.0 can position the EU strongly in the development of new value chains. It requires long-term investments, especially in research and development, to achieve industrial scaling. This also provides a possibility to secure critical control points in the value chain, thereby reducing vulnerabilities in other areas through strategic leverage. Additionally, the Chips for Europe Initiative should continue its focus on the development of mass-scale chip production, including advanced packaging and with a strong focus on integrating fundamental research.

Existing initiatives under the Chips Joint Undertaking, such as quantum pilot lines, have been important to strengthen the development of capabilities and cross-border collaboration between Member States. The Chips Act should support the quantum pilot lines and joint infrastructure. It will make a robust, long-term mechanism to bridge fundamental research and industrial scaling. This will especially be important for establishing new European value chains and position the EU as an attractive partner for global partners. Furthermore, interaction between national competence centres and the EU's pilot lines should be easier and have a clear structure. In that

way, smaller national chip factories can function as flexible hubs, bringing technologies more rapidly from the laboratory to the market.

The EU needs to align work in photonics and quantum with strategic areas like space and defence, as advanced chips are increasingly key to Europe's technological sovereignty. The many new initiatives currently underway require an effective coordinated effort by the EU and all Member States. A coordinated approach will support the alignment of existing and new initiatives, such as the upcoming Quantum Act, to ensure resources are pooled effectively.

International Cooperation

Recent geopolitical tensions have clearly exposed significant vulnerabilities in the EU's critical supply chains, which are not only limited to advanced chips but also include legacy chips. Therefore, the EU must become more technologically self-reliant but should at the same time maintain openness to international supply chains and technological cooperation in order to remain competitive. Semiconductor production is extremely complex and dependent on a wide range of suppliers across different countries. No region can achieve complete self-sufficiency, as even Taiwan, which produces about 90% of the most advanced chips and 60% of total chip production, is dependent on, among other things, European components.

Therefore, the Chips Act 2.0 must support a clear framework for international cooperation with trusted and strategic partners, e.g., Japan and South Korea. International cooperation with strategic partners will be essential for a wide range of reasons, including access to semiconductors, acquiring materials and tools and partaking in scientific and industrial collaboration for both existing and critical technologies. This should also allow the EU to attract strategic capabilities from outside the EU to complement and reinforce the European ecosystem.

Monitoring and coordination

Monitoring

Monitoring and early warning systems are valuable because they, under certain conditions, allow the industry to take pre-emptive actions to cushion temporary supply shortages in key value chains. For example, companies can prepare contingency plans and expand their inventories before shortages occur, helping to minimise disruptions. However, we must also recognise the limitations of what public initiatives can contribute in terms of additional information, compared to the information accessible to market actors through their existing role in the value chain. This makes it important to encourage end-users proactively to use the information they already have.

In designing a monitoring system, it is essential to keep burdens and costs for businesses and authorities at a minimum. The Commission's initiative under the current Chips Act, with the engagement of external strategic consultants monitoring the electronics value chain, is a way to reduce burdens and ensure effective monitoring in a highly complex field.

Coordination

Coordination is essential before, during, and after a crisis to ensure effective preparedness, response, and recovery. The European Semiconductor Board exemplifies this by serving as a valuable platform that enables timely sharing of information, as recent events have also shown. This applies not only to crisis situations, but also to the overall coordination between Member States in relation to the European semiconductor ecosystem. Going forward, it is important to establish a clear division of responsibilities and ensure effective information flow between boards operating under, for example, CRMA, IMERA, and the broader economic security framework, including during times of crisis.