



SEMI Europe Position on the European Chips Act

Recommendations to the European Commission, Parliament,
and Council

Executive Summary

SEMI Europe, the industry association representing European member companies from across the global electronics manufacturing and design value chain, welcomes the European Chips Act and appreciates the opportunity to provide feedback on this crucial matter for Europe's technological competitiveness and sovereignty. SEMI members are responsible for the innovations in materials, design, equipment, software, devices, and services that enable smarter, faster, more powerful, and more affordable electronic products.

The European Chips Act comes at a time when semiconductors are recognized globally as the catalyst of technological innovation. As critical components are used across manufacturing, automotive, healthcare, the aerospace and defense industries, semiconductors are the main driving force behind the development of digitized products and digital services. With seemingly endless potential for application, mastering this key technology remains vital for Europe's aspirations to be at the forefront of the global shift to a digital, low-carbon and innovation-driven economy. It is critical that Europe takes initiative.

It is impossible for Europe to build a self-sufficient semiconductor value chain. Europe needs to decrease its dependencies in terms of production, but, at the same time, it has to strengthen its own position in the global semiconductor ecosystem by increasing the capabilities and performance of European products and technologies that Europe and others rely on. This will only work if the entire European ecosystem is strengthened and Europe becomes a more attractive place for investments – especially by global industrial frontrunners. Europe's sovereignty cannot be achieved tomorrow; the European Chips Act must lay the groundwork based on a long-term perspective by the European member states to provide public funding and support to the entire ecosystem – from R&D, to design, equipment, materials and production.

As a strong supporter of Europe's industrial growth and resilience, SEMI Europe encourages a swift adoption of the European Chips Act and makes the following recommendations pertaining to Europe's new semiconductor strategy for the consideration of the European Commission, the Parliament, and the Council:

Pillar 1: Chips for Europe Initiative

- **Further strengthen R&D capacities, ensure adequate funding in the short and long term, commensurate with the goal of growth to 20% market share**
- **Align new and existing pilot lines with anticipated future needs and trends of end-user industries and support open access to all parties within the EU semiconductor value chain**
- **The Chips Joint Undertaking must target Europe's semiconductor industry needs adequately**
- **Establish a dedicated skills and workforce development funding stream under the Chips Joint Undertaking**

Pillar 2: Security of Supply

- **First-of-a-kind "classification" must target all relevant technology projects**
- **The European Chips Act needs to foster fast track procedures**

Pillar 3: Preparedness and Monitoring

- The proposed mechanisms – mandatory information gathering, priority rated orders and common purchasing schemes – are extremely far-reaching and entail the risk of undermining the fundamental orders of the semiconductor value chain and the overall EU economic system
- Avoid additional and repetitive data reporting obligations posing unnecessary burden on companies
- Set out proportionate requirements for preserving industry data confidentiality and anonymity
- The European Chips Act should encourage European initiatives with global partners

Governance

- The European Semiconductor Board requires a balanced, inclusive representation of all stakeholders active in Europe's semiconductor ecosystem

Pillar 1: Chips for Europe Initiative

Aside from increasing demand for application-specific semiconductor components in the automotive, medical, aerospace and defense industries, technologies such as artificial intelligence, high-performance computing, blockchain and big data drive the need for chips with high-performance, low power consumption and robust security characteristics. In Europe, chip innovation starts from a position of strength. Europe's innovation continues to be driven through long-term partnerships, symbiotic value-added chains, lighthouse networks and collaborative projects forming together a productive research ecosystem.

For SEMI Europe, the "Chips for Europe Initiative" represents an important step to complement and deepen cross-border, open and accessible research, and innovation enabling the development of next-generation semiconductor design, system integration and chip production technologies. Following are our recommendations in support of this initiative:

- **Further strengthen R&D capacities, ensure adequate funding in the short and in the long term, commensurate with the goal of growth to 20% market share**

SEMI Europe recognizes the efforts of the European Commission to set out a new funding initiative within the frame of the running Multiannual Financial Framework (MFF). Given the ambitions and the strategic importance of semiconductors for the digital and green transitions it is of paramount importance that sufficient funding is available, including funding to build out Europe's strength in materials and equipment. **SEMI Europe recommends that the European Commission provides further information on the allocation of the budget to the different initiatives under the European Chips Act and advises to enable new forms of cross-border funding. Considering the ambitions of the European Chips Act, the overall EU budget is clearly insufficient. Hence, the European Parliament and the Council must seek budget increases where possible.**

- **Align new and existing pilot lines with anticipated future needs and trends of end-user industries and support open access to all parties within the EU semiconductor value chain**

Today's semiconductor technologies require substantial, capital-intensive research and development cycles. **SEMI Europe strongly supports the efforts of the European Commission to create and use extended pilot lines to scale up existing and future innovations from demonstrations performed in research and technology organizations and universities. Europe must focus not only on advanced CMOS nodes but extend the scope of advanced pilot lines in terms of nodes and domains. The involvement of the European industrial ecosystem in implementing such pilot lines is essential.**

Besides, the support for design automation, IP and libraries development, testing, and validation of application-specific semiconductors are highly important for Europe's manufacturing and automotive industry. It is of vital importance that European suppliers of semiconductor technologies, including advanced manufacturing equipment, are not left behind and have the possibility to simulate, test, experiment and validate their prototypes to underpin possible first-of-a-kind facilities.

- **The Chips Joint Undertaking must target Europe's semiconductor industry needs adequately**

SEMI Europe applauds the European Commission for recognizing the need to establish a Chips Joint Undertaking to reinforce public-private research and innovation collaborations in Europe. **SEMI Europe recommends the future work programme of the Chips Joint Undertaking be designed to fully support the innovation and development of all essential semiconductor assets for Europe's industrial ecosystem.** Low-power semiconductor technologies, sensor systems, power management components for automotive and industrial automation, as well as raw materials, special gases, chemicals and advanced manufacturing equipment, are essential for the sustainable greening of Europe's semiconductor industry and should be extensively supported. Just as critically, aspects related to funding must be clarified. The principle that new legislative initiatives must come with new financial resources, rather than reallocated funding from other important programs, must remain valid.

- **Establish a dedicated skills and workforce development funding stream under the Chips Joint Undertaking**

Europe's future industrial strength and resilience are intimately bound to a well-trained, technologically-literate workforce. Despite high literacy rates and availability of higher education across Member States, an acute shortage of STEM (Science, Technology, Engineering and Math) talent and skilled professionals continues to impact the growth of Europe's semiconductor ecosystem. With learners often having limited access to on-site training, up-to-date experimentation, and research facilities, it is of paramount importance that the Chips Joint Undertaking takes the role of a facilitator and helps the Member States to grow and diversify Europe's talent pipeline. **It is SEMI Europe's recommendation for the Chips Joint Undertaking to build on Europe's existing initiatives such as the Pact for Skills; introduce a systematic European initiative targeting modernization and expansion of industry-academia partnerships, university research and experimentation centers; and extend access to workforce re-skilling and up-skilling programs and industry traineeship opportunities.** The program should address inequality gaps in employment and promote equal access to opportunities for talents regardless their gender, belief, age, background or country of origin.

Pillar 2: Security of Supply

Europe's digital transformation will not be achieved without a substantial capacity to develop and produce semiconductors. It is important to note that the EU's goal to secure local supply of critical components must be based on an approach that can match the Commission's ambition for technological sovereignty with the dynamics of the global semiconductor value and supply chains.

The European Chips Act proposes the creation of 'first-of-a-kind' facilities in the form of Open EU Foundries – design and production facilities for other industrial players (e.g., aerospace industry) – and Integrated Production Facilities focused on design and production of components for European markets and also beyond. In either case, such facilities will require substantial private investment, accompanied by public support suggested to cover up to 100% of a proven funding gap.

To that end, SEMI Europe makes following recommendations for the consideration of the European Commission, Parliament, and Council:

- **First-of-a-kind “classification” must target all relevant technology projects**

According to the Regulation Articles 10 and 11 of the European Chips Act, companies interested in investing in the EU may have their installations recognized as a (first-of-a-kind) Integrated Production Facility or Open EU Foundry.

These should however not be limited only to advanced technologies and particularly not to only advanced-CMOS nodes below 10nm. **It is the view of SEMI Europe members, that such endeavors should include or be extended to all relevant semiconductor technologies such as equipment, materials, design and device manufacturing.**

- **The European Chips Act needs to foster fast track procedures**

The Commission communication “A competition policy fit for new challenges” from November 18, 2021, should be the main legal basis for the “first-of-a-kind facilities.” SEMI Europe appreciates the efforts for fast-track procedures and encourages the Commission to further simplify state-aid assessments in Europe in order to provide incentives for investments.

Investors need to be able to receive binding information on investment support within six months to be able to make adequate risk assessments and investment decisions. Therefore, it is crucial that member states implement their semiconductor-related plans swiftly. Fast-track procedures and clear guidance will not only help European companies to properly assess their investment plan, but it will help to attract international companies to expand their operations in Europe.

Pillar 3: Preparedness and Monitoring

Today, resilience and security of the semiconductor supply chain has vaulted to the forefront of policy considerations due to current chip shortages. With technological advances depending less and less on geometrical shrink and more on the design and manufacture of new, advanced transistor and interconnect structures using new, innovative and complex material stacks, access to diversified and secure global supply chains has become critical.

As highlighted by the ongoing chip shortages, semiconductor supply chains have little excess capacity available for demand shifts, resulting in cascading effects throughout numerous downstream industries. Supply constraints, whether they be in devices, equipment, or materials, can lead to significant semiconductor shortages, which will result in ripple effects throughout Europe's digital economy.

In its current scope, the European Chips Act sets up a coordination mechanism to monitor semiconductor supply and value chains, anticipate shortages, estimate demand, and trigger the activation of a crisis stage with a dedicated toolbox of measures. Should a possible disruption or significant fluctuation of supply be identified, the Act empowers the European Commission to request information from relevant industries and issue priority orders for crisis-relevant products.

To that end, SEMI Europe supports the Commission's direction to seeking data-driven solutions to address future supply chain bottlenecks and disruptions, and offers the following constructive suggestions for consideration:

- **The proposed mechanisms – mandatory information gathering, priority rated orders and common purchasing schemes – are extremely far-reaching and entail the risk to undermine the fundamental orders of the semiconductor value chain and the overall EU economic system**

Our sector believes that collaboration and cooperation remain at the forefront of any effort to advance Europe's preparedness in addressing supply chain disruptions. As such, SEMI Europe is in favor of building on existing industry best practices (such as the World Semiconductor Council which includes a government and authorities meeting on semiconductors), and mechanisms to share business-sensitive data. SEMI Europe encourages the European Commission to engage actively with relevant stakeholders (including like-minded governments) to identify long-term, suitable, and sustainable approaches as means to address supply-chain disruptions. **To that end, SEMI Europe stands ready to assist the European Commission to develop a stronger, more resilient semiconductor supply chain monitoring mechanism. Protective measures need to be used carefully, especially in a globally interdependent semiconductor industry. The crisis stage activation needs to be defined in such a way that it serves as a last resort. Export control measures must be narrowly defined and implemented in close coordination with Member States, as well as with like-minded partner nations. Overall, the toolbox should be assessed and revised in terms of effectiveness.**

- **Preserve industry data confidentiality and anonymity**

Preserving confidential information and protection of commercially sensitive information is a key element of the European Chips Act. Businesses require legal certainty and guarantees addressing possible issues concerning data anonymity and the disclosure, processing, storing and sharing of data. Wherever possible, SEMI Europe recommends reporting data at the Member State level. **Data requests need to be targeted and purpose driven. To that end, working with relevant industry representatives and trade associations is an absolute requirement. Leading by example, SEMI Europe – as a trusted semiconductor industry association – has extensive experience in collecting and aggregating direct market information from businesses as well as ensuring comprehensive, timely and accurate data collection.**

- **Avoid additional and repetitive data reporting obligations posing unnecessary burden on companies**

The majority of supply and value chain data is dynamic. Given the number of locations where raw materials are sourced, equipment procured, and chips manufactured, monitoring of supply chain risks can become a challenge with bottlenecks and disruptions changing on a frequent basis. It is crucial that the collection of industry data is coordinated and paced in line with evolving global developments, ensuring data accuracy and relevance. **Critically, SEMI Europe members support alternative approaches to enhance the effectiveness of the instruments suggested in the toolbox. Given the current scope, the technical and legal enforcement is seen as complex and burdensome. The European Commission should discuss alternative approaches to data reporting – such as an inventory mechanism for critical products – with chip producers and end-users, and regularly engage with stakeholders on a consultative basis to determine the extent of supply chain changes and availability of relevant data.**

- **The European Chips Act should encourage European initiatives with global partners**

Considering the EU-US Trade and Technology Council, the European Chips Act should encourage European initiatives with global partners to identify ways to ensure stronger, long-term resilience of supply chains that are essential for the microelectronics industry to withstand future crises. Exchanging information with competent authorities of other countries could potentially be beneficial for collaboration and exchange, for example in the context of the EU-US Trade and Technology Council or existing multilateral agreements.

Governance

- **The European Semiconductor Board requires a balanced, inclusive representation of all stakeholders active in Europe's semiconductor ecosystem**

European Commission President von der Leyen presented the vision of the European Chips Act articulated around five strategic objectives in her 2021 State of the Union speech. To successfully translate these into practice, industry advice, guidance and expertise will be of paramount importance.

SEMI Europe strongly recommends the European Commission include semiconductor ecosystem stakeholders as permanent members of the European Semiconductor Board. The Board's responsibilities will be substantial – including decisions on complex, technical subjects such as production, certification and standardization of semiconductor technologies. Industry insight will be essential for the development and application of constructive recommendations. In the same way, industry participation will further enhance the EU's and its industrial ecosystem's preparedness to supply networks disruptions, shortages and geopolitical shocks impacting the supply of critical components, materials, chemicals and technologies. That is why **SEMI Europe highly recommends adopting a balanced approach within the European Semiconductor Board that actively involves all relevant stakeholders present in Europe's semiconductor ecosystem. As a first step, the proposed Alliance on Processors and Semiconductor Technologies needs to be started swiftly. Overall, lean structures should be sought. Redundant bodies need to be avoided and the governance needs to be in alignment with industry.**

Conclusions

SEMI Europe would welcome the opportunity to discuss the preceding recommendations with the Members of the European Parliament, the Member States and the European Commission. The microelectronics sector is a key enabler and remains ready to work together with all interested stakeholders to develop new avenues of growth to maintain technological leadership.

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