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WIRTSCHAFTSKAMMER ÖSTERREICH

Austrian Federal Economic Chamber (WKÖ) Position Paper: European Chips Act 2.0

A mandatory review of the European Chips Act (Regulation EU 2023/1781) is scheduled for 2026. The initiative aims to strengthen the EU's resilience and technological sovereignty in the semiconductor sector by developing technological capabilities, attracting investment, and establishing crisis management systems. Since the regulation came into force, investments in manufacturing capacity totalling over € 80 billion have been announced, and eight state-aid decisions for first-of-a-kind facilities have been approved. While welcoming these achievements, the Austrian Federal Economic Chamber (WKÖ) sees scope for further measures.

Europe needs to boost productivity and growth

The famous Draghi and Letta reports pointed out that Europe has become a laggard in comparison to the USA with respect to growth and productivity, while China has leapfrogged both the USA and the European Union in key technology areas (ASPI). According to the Australian Strategic Policy Institute's (ASPI) Critical Technology Tracker, China leads in 37 out of 44 tracked critical technologies. The European Chips Act 2.0 is a chance to strengthen the European high technology sector and to boost innovation, productivity and growth in Europe.

Improving European industrial policy initiatives in this area will also directly impact Austrian competitiveness and innovation, given that Austria boasts a strong semiconductor and microelectronics ecosystem which far exceeds its relative economic size. Infineon's Villach site is a prime example, with its global competence centre for power semiconductors. AT&S has introduced advanced packaging technology to Europe by establishing the region's first IC substrate facility in Leoben, dedicated to numerous AI systems and AI infrastructure applications. Meanwhile, the Vienna-based IMS Nanofabrication supplies the multi-beam mask writers crucial for EUV lithography. In Upper Austria, EV Group is a leader in wafer bonding and nanoimprint lithography equipment, vital for 3D integration and chiplet architectures. In Villach and Salzburg, Lam Research develops and supplies manufacturing equipment essential for advanced semiconductor structures and new material classes (e.g. SiC, GaN), playing a central role in wafer cleaning technologies and panel-level packaging systems. Furthermore, ams OSRAM is carrying out sensing and opto-semiconductor activities in Premstätten. ams OSRAM has also started to implement first-of-its-kind semiconductor facilities in Styria; this is one of the 8 notified projects within the European Chips Act. All the companies mentioned contribute to and establish a robust presence of Austrian – and European – companies within pivotal segments of the global semiconductor supply chain.

The geopolitical landscape has become more adverse since the inception of the Chips Act

Semiconductors lie at the heart of the emerging 'electro-industrial stack', serving as a technological bridge that enables physical machines to be controlled and updated by software. They already play a key role in electric vehicles, drones and industrial robots, and past breakthroughs demonstrate how advances in one layer can unlock entire new industries. Therefore, mastery of this stack means having control over the tools that will run factories, transport systems, energy networks, critical medical infrastructure and autonomous weapons in the coming decades. Ensuring robust semiconductor innovation and a resilient supply chain is therefore essential for maintaining economic and technological leadership in the next industrial era.

The current geopolitical landscape is characterised by various geopolitical conflicts as well as a technological power struggle between the United States (an "extractive" superpower) and China

(a "dependency" superpower). To avoid being caught between geopolitical conflicts and competing power poles with respect to security-relevant technologies, such as semiconductors, the EU needs to achieve a certain degree of strategic autonomy. The Chips Act 2.0 initiative must form part of a broader European strategy for achieving strategic autonomy and economic security.

The joint declaration stresses the need for a reinforced Chips Act that reduces vulnerabilities and captures new technological opportunities. Europe must aim to strengthen its competitiveness in key technologies, such as high-end semiconductors, but also on mature nodes, while remaining realistic about the market shares that can and should be achieved.

Lessons from the current Chips Act

Problem 1: Lack of strategic depth

The current Chips Act was drafted during the pandemic. Its primary objectives were to reduce supply-chain risks and increase the EU's share of global semiconductor production to 20%. However, this approach lacks a long-term geopolitical strategy and seems to be a collection of multiple initiatives. The Chips Act needs to address the necessity for integrated, end-to-end ecosystems required for diverse chip process technologies. Furthermore, setting a target for a certain share of domestic production may be appropriate for less diversified goods, such as commodities. However, it is not suitable for highly diversified technologies, such as semiconductors, which are produced within global value chains involving transnational divisions of labour, low levels of substitutability and strong customer–supplier alliances.

The current European approach differs from Japan's recent approach, which not only seeks to manage dependencies, but also aims to maintain, boost and obtain strategic indispensability. This strategy builds on Japan's position in the semiconductor supply chain, leveraging its market-leading suppliers of equipment and chemicals. Therefore, the success of Japan's semiconductor strategy is measured not only by its share in global value added, but also by the number of indispensable semiconductor technology suppliers it has. The EU semiconductor industry occupies a similar position in the value chain, supplying indispensable semiconductor manufacturing equipment to firms such as ASML and ZEISS. Retaining and enhancing these indispensable capabilities, while taking the new geopolitical landscape into account - should be a key part of a Chips Act 2.0 initiative.

Problem 2: Fragmented financing risks subsidy race between member states

Financing for the EU's semiconductor sector remains fragmented. Since the adoption of the Chips Act, investments totalling €100 billion have been announced from a combination of public and private sources. However, the EU budget only covers €3.3 billion of this, meaning that member states must provide most of the public funding. This pits EU countries against each other in a subsidy race.

Problem 3: Strategic dependencies in cutting-edge chips

The Commission's evaluation confirms that the EU lacks manufacturing capacity for advanced nodes below 10 nm and is fully dependent on suppliers outside Europe. Domestic demand is currently too low to justify a large-scale commercial foundry. Yet such chips are indispensable for current and future defence, space, automotive, and high-performance computing applications. At the same time, Europe holds a strong position in mainstream semiconductors, such as power electronics, sensors, and photonics, whose preservation is increasingly being challenged by global competition.

Problem 4: Gaps in knowledge about supply chains and ecosystems

Both the Chips Act and academic research demonstrate that the EU lacks comprehensive knowledge on the resilience of market participants and supply chains. Bonnet et al. (2025) emphasise that the semiconductor value creation process is complex and specialised on a global scale, and that disruptions can spread rapidly, affecting several industries simultaneously. European firms are leaders in the manufacturing of semiconductor equipment, but they are heavily dependent on imports for intermediate inputs and chip production. Around 80% of suppliers to European semiconductor firms are based outside the EU: 35% in the USA; 12.4% in Taiwan; 11.7% in China or Hong Kong; and 10% in South Korea. Without detailed monitoring, potential disruptions or economic policy measures in third countries could severely impact European semiconductor production.

The Chips Act neglects the back-end of the semiconductor supply chain; this has accelerated the shift of key manufacturing steps like PCB and EMS to Asia. The Nexperia case shows that this neglect can be fatal. Components, such as PCB and EMS, are not only critical for the whole electronics ecosystem and semiconductor supply chain. The defence and security sectors also rely on high-performance PCBs, especially since the rise of Advanced Semiconductor Packaging. Since 2000, global PCB output has more than doubled, while Europe's share has collapsed from 13.8% to 2.2%.[1] This trend is worsened by unbalanced trade conditions: Europe imposes high tariffs on base materials, but none on finished PCB imports from Asia. In contrast, the US, like Japan, has reacted to this strategic vulnerability by enacting the 'Protecting Circuit Boards and Substrates Act of 2023'. Europe needs to reflect on suitable measures, if it aims to achieve true technology sovereignty under its Chips Act.

Semiconductors as an Essential Security Interest

The Chips Act 2.0 should explicitly acknowledge that semiconductors, microelectronics, photonics, and their key enablers (materials, production equipment, spare parts, chip design, testing and integration capabilities) are of vital importance to national and European **security**. In other words, ensuring capacity and sovereignty in these areas is not only an economic priority but a security imperative. Resilience in legacy and specialized chip production, in particular, is a prerequisite for European defence readiness. Most chips used in today's aerospace, defence, and secure communications systems are "legacy" semiconductors produced with mature process nodes. At the same time, Europe currently lacks manufacturing capacity for the most advanced nodes below 10 nm and remains dependent on non-EU suppliers for many specialized chips that are indispensable for cutting-edge defence, space, and high-performance computing applications. To maintain Europe's competitiveness and industrial security, the Chips Act review should explicitly classify semiconductors and their supply chain inputs as strategic assets of essential security interest.

Strengthening supply-chain security for defence

The Chips Act 2.0 should move away from an exclusive focus on increasing overall output and instead concentrate on areas of excellence and strategic indispensability, capitalizing on Europe's existing strengths (in semiconductor equipment, materials, advanced packaging, power electronics, photonics, etc.). Nevertheless, defence readiness requires at least a minimum assured access to critical semiconductors and inputs. Given the concentration risks and recent export restrictions affecting materials like gallium, germanium, and rare earth elements, the review should introduce measures to bolster security of supply, including:

[1] IPC: Securing the EU's Electronics Ecosystem (2024)

- **Diversifying sources of critical raw materials.** The EU should establish "allied supply partnerships" for crucial semiconductor-related materials (for example, with countries such as Ukraine, Australia, Canada, Chile, Greenland, Kazakhstan, and Uzbekistan) to reduce reliance on any single external supplier or region.
- **Mapping and monitoring defence-critical supplies.** The European Semiconductor Board (per Arts. 19–20, 28 of the Chips Act) should be explicitly tasked to map and regularly assess defence-relevant semiconductor nodes and materials – including second-tier dependencies in upstream components – as part of its monitoring activities.
- **Developing mitigation plans for supply gaps.** Where critical vulnerabilities are identified, sector-specific access plans and mitigation measures should be developed. These could include strategic stockpiles or pre-procurement agreements for certain chips/materials, as well as support for small, specialized "lab-to-fab" or trusted manufacturing lines dedicated to defence and space needs (ensuring Europe can produce limited batches of sensitive components in case foreign supply is cut off).
- **Ensuring national fallback capacities.** In areas vital to national security, Member States should maintain a baseline capability to access or produce required semiconductors, if operational plans demand it. This could involve coordinating with industry on reserving some emergency production capacity or investing in domestic prototyping lines for the most mission-critical components.

Aligning with European defence-industrial initiatives

The Chips Act 2.0 should not remain a standalone instrument; it must be interlinked with Europe's broader defence-industrial policy tools to maximize effectiveness. We urge the European Commission to connect semiconductor policy with defence programs and funding mechanisms. For example, the European Semiconductor Board – using its monitoring and governance toolbox – could identify semiconductor projects that are critical for defence. The Commission could then designate such projects as "European Defence Projects of Common European Interest" (EDPCIs) eligible for coordinated EU co-financing under the proposed European Competitiveness Fund (ECF), in alignment with the European Defence Industrial Programme (EDIP). This would ensure that semiconductor initiatives which matter most for the European defence technological and industrial base (EDTIB) receive priority status, proper oversight, and multi-year funding, rather than depending solely on fragmented national funding or ad-hoc state aid.

Clear selection criteria should guide the identification of semiconductor EDPCIs. Projects should demonstrate a commitment to defence or high-end dual-use applications – for instance, by reserving a portion of production capacity for defence/aerospace or by prioritizing critical-sector orders in times of shortage. While the ECF proposal (Art. 45(2)) defines EDPCIs broadly to include strategic sectors, additional specificity is needed to ensure that projects with significant defence relevance are eligible and prioritized in practice. Implementing this approach would operationalize the European Commission's own identification of advanced semiconductors as a key strategic technology area (see C(2023) 6689 final on security and defence-related technologies). In sum, closer integration between Chips Act initiatives and defence-industrial funding would strengthen Europe's semiconductor ecosystem and its defence readiness simultaneously.

Enhancing resilience and monitoring for critical sectors

We support the objective, set out in Articles 19–20 and 28 of the Chips Act (Regulation (EU) 2023/1781) and reaffirmed in the Commission's recent call for evidence (Ares(2025)7293034), to strengthen monitoring and resilience capacities within the

semiconductor ecosystem. The Chips Act 2.0's enhanced monitoring and early-warning mechanisms should deliver real benefits for continuity of supply in critical sectors, including defence. It is crucial that business perspectives are considered, when formulating, implementing, and evaluating these tools. Many defence and security companies operate in highly classified environments, so data confidentiality, proportionality, and operational feasibility must be respected in any information-sharing or stockpiling scheme. In practice, this means designing the monitoring system in partnership with industry to ensure that it provides actionable insights to authorities *and* companies, without creating undue administrative burdens or risking sensitive data.

Any shift from the current voluntary information-sharing regime towards obligatory reporting by private actors should be approached with caution. Mandatory requirements should apply only to clearly defined key market actors and clearly defined crisis situations, based on objective criteria set by the European Semiconductor Board. Furthermore, any new reporting obligations must add genuine value for resilience. They should be co-developed with industry stakeholders so that they avoid duplication of existing reporting channels and do not impose unnecessary overhead on companies. By focusing on targeted, well-designed data collection and analysis – and by maintaining trust with industry through robust confidentiality protections – the Chips Act's monitoring system can provide early warnings and help coordinate effective responses to emerging semiconductor supply threats, without unduly burdening or alienating the very companies whose cooperation is needed.

Proposed policy adaptations

The review of the Chips Act should realign European semiconductor strategies, leverage the strengths of European industry, and promote an open, competitive, and innovation-friendly policy.

Define technological priorities strategically:

- **Focus on European strengths rather than production share alone**. Europe's semiconductor industry is a world leader in certain segments, particularly chip manufacturing equipment, specialty chemicals, sensors, and power electronics. These niches give the EU geopolitical leverage. Rather than pursuing the questionable 20 % production target, the Chips Strategy should establish clear technological priorities and build on existing competitive advantages.

  For example: The Chips Act 2.0 initiative should explicitly focus on and strengthen Europe's supplier and equipment industry. Austrian companies such as Lam Research, IMS Nanofabrication, EVG, and Besi are indispensable to Europe's technological sovereignty, as they provide key production technologies and drive innovation in areas like edge AI, power devices, and advanced packaging, forming a rich ecosystem for manufacturers. Funding programmes and strategic projects must therefore address the needs and innovation potential of these actors.

  The current definition of first-of-a-kind (FOAK) fabs unfortunately reinforces a sole focus on production volume. Chip design centers and facilities for critical chemicals, materials, and equipment that support semiconductor manufacturing should also be eligible as FOAK investments.

  Pillar 1 of the European Chips Act is crucial when it comes to choosing technological priorities as well as laying the foundation for future growth of the European semiconductor industry. Strengthening Pillar 1 through the best possible coordination with other EU initiatives and programs in the field of electronic-based systems is thus important for the success of the entire Act. Based on good industrial and R&D cooperation Pillar 1 sets a

framework for future European value chains. This function gains increased significance due to the changes in global value chains and the high need for resilience. Pilar 1 and Pilar 2 should therefore be better connected to create value, production and supply of key technologies for Europe.

- **Cooperate with like-minded partners to achieve strategic indispensability**. The ECFR recommends adopting Japan's concept of 'strategic indispensability'. Japan deliberately builds capacity and protects key companies to resist economic coercion. The EU Chips Act 2.0 should strengthen partnerships with technologically advanced and geopolitically like-minded countries such as Japan and South Korea, launching joint projects in areas such as photolithography equipment and semiconductor materials. In addition, incentives for foreign investors (e.g. TSMC and Samsung) should be created through long-term planning certainty, minimal red tape, and legally compliant, non-discriminatory state aid rules.

- **Promote smaller, strategically important manufacturing facilities**. The Commission's evaluation notes that EU demand for cutting-edge chips is low in volume but crucial in strategic terms. Rather than investing in large-volume megafabs, European programmes should make sure that sufficient support is provided to small(er), specialised manufacturing facilities ('lab-to-fab') for defence, space, and high-performance computing applications, and accelerate technology transfer from research laboratories.

- **Identify areas that are relevant to European safety and security.** The EU needs to identify areas where safety and security concerns make access to reliable semiconductor producers particularly important, and where it is necessary to produce semiconductors in Europe. Since buying from reliable partners can be more expensive than buying from the cheapest market participant, clear strategic criteria must be established to determine when it is necessary to purchase from reliable partners, when European production is necessary (i.e. the 'make or buy' decision), and where substitution is possible in the event of supply disruptions.

- For example: For some of Europe's most critical vulnerabilities (like GPUs, processors and other high-performance chips), partnerships with allies should be developed and global industry leaders should be incentivized to invest in European production. This would help transfer know-how – via well-enforced spillover requirements benefiting startups and universities – and narrow Europe's acute technology gap. Additionally, original equipment manufacturers (OEMs) delivering products or services in the 13 critical sectors identified by the Chips Act should, where possible, prioritize the use of semiconductors developed or financed under Chips Act Pillar 2, to increase Europe's technological sovereignty and resilience.

- **Identify the framework conditions conducive to European chip production.** What conditions are necessary for market-based chip production to be successful in Europe? Producing high-tech innovations, such as state-of-the-art microchips are key to driving European productivity and growth. What makes firms research and produce microchips in Europe?

- It must be ensured that Europe's semiconductor industry and its suppliers are not put at a disadvantage compared to international competitors by new EU regulations – for example, concerning vital chemicals such as PFAS. The regulatory framework should enable innovation and production in Europe and must not unintentionally jeopardize the sector's competitiveness. Impact assessment systems need to be improved in this regard, to better gauge the cumulative effect of regulatory initiatives on semiconductor manufacturing.

- **Promote partnerships along the semiconductor value chain via Pillar 2.** First-of-a-kind fabs involving consortia of integrated device manufacturers (IDMs), foundries, Tier-1

suppliers, and/or OEMs (for instance, the planned European Semiconductor Manufacturing Company joint venture between TSMC, Bosch, Infineon and NXP) should be incentivised under Chips Act Pillar 2. This would increase the use of Europe-made, Chips Act–financed chips in key applications and strengthen vertically integrated collaborations in Europe's semiconductor ecosystem.

- **Bridge the gap between innovation and the market.** Strong industry involvement is essential for the success of research-organization-driven pilot lines, because their value depends on actual use of new infrastructure by industry and the intensity of industry–research cooperation. The first calls for "lab-to-fab accelerator projects" under the Chips Joint Undertaking are a step in the right direction, but this approach should be expanded. Operators of the pilot lines should launch joint projects with industry partners, funded by Chips JU 2.0 calls, to ensure that innovations make it out of the lab and into commercial use.

- **Develop a skilled workforce and talent pipeline.** Securing a highly qualified talent base is crucial for the success of Europe's semiconductor strategy. Notably, Germany's newly adopted microelectronics strategy includes a dedicated pillar aimed at addressing the skills shortage in this sector. For the first time, targeted funding is being provided to promote education and training specifically for microelectronics, complementing the general workforce initiatives of the federal government and closely interlinking with research and investment measures. The goal is to train more qualified specialists, attract international talent, and thereby lay the groundwork for successful new investments. At the EU level, Chips Act 2.0 should likewise emphasize measures to develop, attract, and retain skilled semiconductor professionals as a key element of Europe's competitiveness and resilience.

Reform financing and state-aid policy

- **Expand joint EU funding:** As the Draghi report highlighted, the EU's current contribution of only €3.3 billion from its budget (out of ~€100 billion in total planned semiconductor investments) has led to a subsidy race among Member States to fill the gap. The proposed European Competitiveness Fund (ECF) will be instrumental in better aligning EU industrial policy on semiconductors with national efforts, enabling coordinated co-investment in high-impact projects and reducing beggar-thy-neighbour dynamics.

- **Clarify and streamline state-aid rules:** The Commission's evaluation identifies ways to simplify notification of aid for one-of-a-kind facilities. We advocate clear criteria and shorter approval timelines, prioritizing projects that strengthen European value chains and that are embedded in international partnerships. For example, some Member States prefer other state aid instruments, such as Regional Aid, with different rules and procedures, including proposals in the national language, which must be avoided. The communication and collaboration between DGs in Brussels and member-states should be streamlined and optimized. At the same time, market distortions caused by state aid must be minimized. Transparent monitoring and uniform rules are crucial to ensure that small businesses (SMEs) do not feel disadvantaged by large subsidy deals. A transparent and simplified approach for the notification of projects is essential, to give investors a better understanding and predictability of the process.

- **Combine efforts with other programs**: Other EU funding instruments (such as the Connecting Europe Facility and the Cohesion funds) could support the infrastructure needed by new semiconductor facilities – including water and energy supply, social infrastructure like schooling and housing for workers, digital networks, and other physical infrastructure

projects necessary to complement FOAK fabs, depending on the fund's allocations and taking the support needs of other priorities into account.

- **Shorten time-to-approval for state aid:** The EU state-aid approval process should be shortened to a maximum of six months after a Member State's prenotification. This expedited timeline can be achieved by expanding General Block Exemption Regulation (GBER) thresholds to allow smaller projects to proceed without full Commission notification/approval, and by streamlining approval procedures for larger strategic projects.

Reform Pillar 3 of the European Chips Act

- **Introduce transparent industry involvement:** The European Semiconductor Board's decision-making currently lacks a formal mechanism for consulting with the semiconductor industry, despite the industry's essential expertise in market dynamics, technological advances, and supply chain vulnerabilities. The Chips Act 2.0 should institutionalize structured involvement of industry stakeholders in the Board's strategic deliberations. This could be achieved by establishing a formal advisory group composed of representatives from key semiconductor companies, research institutions, and industry associations, and by requiring that the Board transparently consider the group's recommendations in its decisions.

- **Built trust between industry and regulators**: The current reliance on ad-hoc secured emails for information sharing poses security risks, and the provision in Article 27(2) of the Chips Act allowing information-sharing with third countries lacks adequate safeguards in today's geopolitical climate. To enhance data protection, a standardized, encrypted platform should be established for collecting and storing sensitive industry data, with robust cybersecurity measures. Article 27(2) should be revised to restrict sharing of information with third countries unless clear safeguards are in place to protect European companies' proprietary and strategic data. Companies should also have a mechanism to review and challenge information-sharing decisions that could compromise their competitive position. Stronger confidentiality measures will encourage industry cooperation by ensuring that sensitive data is handled securely, thereby reinforcing trust in regulatory institutions.

- **Streamline the information gathering process**: The European Commission should adopt a unified, EU-wide template for semiconductor supply-chain information requests, ensuring consistency in content and deadlines across Member States. Currently, information requests sent via different Member State authorities are fragmented and often lack clear objectives. Companies operating in multiple jurisdictions must respond to redundant and uncoordinated surveys with varying deadlines, formats, and questions – all without a clear understanding of how the information will be used. Going forward, information should ideally be collected through the Member State where a company's headquarters is located, and each request should clearly state its purpose, the intended use of the data, and any planned follow-up actions. Streamlining and harmonizing these requests will reduce administrative burdens, improve data quality, and enhance industry compliance.

- **Adopt a long-term strategic approach to resilience**: The Chips Act's emergency toolbox focuses primarily on short-term supply disruptions, which limits Europe's ability to proactively address broader risks and security issues beyond immediate shortages. Pillar 3 should be expanded to include planning for long-term challenges such as geopolitical threats, foreign supply dependencies, technological vulnerabilities, and other security concerns. This means implementing concrete measures like incentives for scaling up

domestic production of critical chips, accelerating R&D investments in next-generation technologies, securing raw material supply chains, and protecting critical know-how.