SILICON ALPS

Joint recommendations for the public participation process of the European Chips Act 2.0 from SILICON ALPS Cluster GmbH representing the Austrian semiconductor ecosystem with a focus on Start-Ups and SMEs.

Introduction and context

This document is the common result of a consultation process within the SILICON ALPS Cluster network. With a **focus on Start-Ups and SMEs** we collected feedback and recommendations from our members. SILICON ALPS Cluster represents a strong semiconductor network within **Austria with 140 members** from academia, industry and public authorities.

Our main goals art to boost competitiveness and innovation performance of our members. Silicon Alps Cluster helps to consolidate and strengthen a high-tech ecosystem in Carinthia and Styria, turning these regions into significant hubs for electronics and microelectronics in Austria. Approx. **67% of our members are Start-Ups and SMEs** and are the backpone of our network in the region. In a coordinated manner we collected feedback and input for the public consultation process for the Chips Act 2.0.

Furthermore Silicon Alps Cluster **fully supports the positon paper** from the Austrian large enterprises in semiconductors including the position paper of the **European Semiconductor Association (ESIA) as well as the position of the Autrian Federal Economic Chamber (F33113690).**

The recommendations objectives are outlined as follows

The main objective of the joint recommendations for Chips Act 2.0 is to present a comprehensive overview of the Austrian start-up and SME ecosystem that complements the broader European industrial context. This proposal aims to support the development of a coherent and efficient operational framework aligned with the sector's actual capabilities. In pursuit of this goal, the following strategic objectives are proposed:

a) **Enhancing Europe's global competitiveness**

   by fostering a more balanced integration of advanced design, manufacturing, and material capabilities, while placing a strong emphasis on R&D excellence and providing targeted support for technology-driven enterprises.

b) We recognise the strategic value of the **European fabless model** in enabling agility, reducing capital expenditure and focusing resources on design excellence and custom

solutions. Intellectual property (IP) and design are crucial for the growth of the future ecosystem.

c) Boosting private investment

By the Etsblishment of a strong effective System to enable the pairing of Public Investments like the Chips fund with Private Equity Instruments. We would like to encorage a focus on accelerator systems for scale ups.

d) Strenghtening the Value chain

widening the value chain within the measures in Chips Act II by integrating the elements of passive components, equipment manufactorers, packaging and system integration up to the application fields will strengthen Europes power in the semiconductor business.

e) Reducing Supply Chain risks

Remaining risks in the European semiconductor supply chain should be reduced by broadening the focus on sensitive areas like OSAT (outsourced semiconductor assembly test) for the semiconductor-dependent industries (e.g. automotive, aerospace, military, medical and others).

f) Closing the skills gap (EIT chips)

The skills gap should be addressed massively by a strong programme. A possible solution could be seen in a future KIC-Chips (in a future EIT call in 2027)

Recommendations for SMEs & Start-Up's

Start-Up's / Scale-Up's > Innovation to Market

The semiconductor ecosystem in Europe faces the challenge of translating cutting-edge research into successful and sustainable business models. The fabless model has emerged as a crucial driver of national and regional competitiveness and requires targeted support through business scaling policies.

From an Austrian perspective, the Chips Act 2.0 presents an opportunity to foster technological entrepreneurship, support startups and SMEs, and accelerate the transition from innovation to market-ready solutions. Austria's growing network of design and technology service companies has the potential to compete internationally if provided with access to advanced design tools, patient capital, and structured growth support. Strengthening this segment is

vital for reducing external dependencies, enhancing domestic value creation, and ensuring Austria's contribution to European technological sovereignty.

Recommendations:

- Incentives for **tech-incubators and accelerators** to catalyze innovation, reduce barriers for start-ups, build local expertise, attract investment, and ultimately make the domestic semiconductor industry more competitive and resilient.
- **Boosting national Accelerator Programs (**high-tech-support) for semiconductor scale-up companies by serving them as Accelerator & Incubator & Venture Fund & University Ecosystem & Silicon Europe access. Strucutred programs and access to advisory pool from research and industry for rapid growth.
- Reduce design & prototype costs by offering **open-source PDKs** (Process Design Kits), develop government- or university-subsidized EDA tool accessand afacilitating access to open EDA tools and shared tape- out services .
- Improve time-to-Market by providing **pre-verified platform SoCs for SMEs**, provide access to test and validation infrastructure.
- Offer **public-private co-funding programs** to reduce tape-out risk for early-stage companies, incentivate the development of revenue-sharing fabrication models, creation of semiconductor specific venture debt aligned to the long development cycles of hardware
- Foster Open-Source Silicon and **expand the RISC-V ecosystem**. Grow open source toolchains and support open source analog IP efforts.

Talent, training and microcredentials

It would be necessary to merge the various European and national education initiatives in the semiconductor sector into a **pan-European program comparable to "KIC Chips"**. Below you will find a description of the most important Austrian contributions to these projects.

GreenChips-EDU is a European education initiative (2023–2027) designed to build a comprehensive talent pipeline for sustainable, energy-efficient microelectronics in support of the EU Chips Act. It develops new bachelor's and master's curricula, micro-credentials, and professional training programs, and integrates mobility, internships, and industry-embedded project work to address Europe's semiconductor skills shortage. The consortium includes seven European universities—among them TU Graz—and eight industry and research partners collaborating to train roughly 600 students and upskill professionals in "green" chip technologies.

Unite! is a European alliance of nine leading science- and technology-focused universities that jointly build a transnational "inter-university campus" to enable shared education, research, and innovation. The alliance develops joint curricula, flexible learning paths, virtual and physical mobility opportunities, and collaborative initiatives in fields such as sustainable energy, AI, digitalization, and entrepreneurship. Its members include TU Graz, Aalto University, KTH Royal Institute of Technology, TU Darmstadt, Grenoble INP – UGA, Politecnico di Torino, Universidade de Lisboa, UPC BarcelonaTech, and Wroclaw University of Science and Technology.

The TRANSFORM initiative—launched in April 2024 by the Silicon Alps Cluster together with TU Graz Life-Long Learning and partner technical universities (e.g. FH JOANNEUM) — aims to strengthen the Southern Austrian electronics and microelectronics industry (Electronic Based Systems, EBS) by building advanced competences in areas like "Power Cyber Physical Systems", digitalization, cybersecurity, smart sensors and embedded systems.
projekte.ffg.at

Recommendations:

- Merging GreenChips EDU and other Programs into a **pan European Knowledge and Innovation Community KIC Chips**.
- Using the **microcredentials framework** that recognizes skills in microelectronics and design, promoting labour mobility and transnational cooperation **for Life Long Learning Programmes** to ensure transparent values of teriary education in semiconductors.

State aid and regulatory framework

State aid and regulatory frameworks in the semiconductor industry are clearly aimed at supporting innovation, supply-chain resilience, and regional technological sovereignty. SMEs and start-ups are key drivers of innovation. However, they often struggle to access funding programmes because the application processes are complex, there are high matching-fund requirements, strict compliance obligations and limited eligibility for advanced-node facilities. Large corporations benefit from scale and dedicated resources. Smaller companies do not. They face **disproportionate administrative burdens** and long approval timelines. These impede their ability to compete globally and bring new technologies to market. A more SME-oriented policy design is essential to unlock their full contribution to the semiconductor ecosystem.

Recommendations:

- Create fast-track application paths for SMEs with simplified documentation

- Provide cascade funding programs (lump-sum) for feasibility studies, prototyping and MPW shuttel
- Create a specific regulatory framework for the semiconductor sector, with differentiated rules compared to other industrial sectors that favor investment and R&D.
- Support regional semiconductor design hubs linked to universities and research centers
- Provide clear, long-term guidance on state-aid rules and semiconductor funding cycles.
- Allow direct aid to design centers, equipment suppliers and laboratories.
- Establish regulatory sandboxes for emerging semiconductor technologies.

European Competitiveness Fund (ECF) and private capital

The European Competitiveness Fund (ECF), in conjunction with private capital, aims to strengthen Europe's strategic autonomy and technological competitiveness. However, semiconductor SMEs and start-ups still face significant funding barriers. Deep-tech hardware ventures require substantial, long-term investment, while private investors often prefer software models with faster returns, creating a persistent financing gap. **Access to ECF instruments** remains challenging due to the **complexity of eligibility rules**, the length of disbursement timelines, and the stringent due-diligence requirements. These factors create significant disadvantages for young companies. Consequently, many semiconductor start-ups encounter difficulties in securing adequate early-stage capital, particularly in the "valley of death" between prototyping and first industrial deployment. In order to unlock the full potential of Europe's semiconductor innovation engine, it is necessary to implement more flexible, SME-oriented financial mechanisms and stronger incentives for private investors.

Recommendations:

- Introduce automatic double-equity matching, where every euro of private investment in semiconductor SMEs is matched by ECF or national funds.
- Prioritize early-stage and first industrialization rounds to bridge the capital gap for tape-outs, packaging, and verification.
- Implement milestone-based co-investment to reduce risk for private investors while maintaining accountability for start-ups.
- Allow convertible instruments or revenue-sharing structures to accommodate diverse business models in the semiconductor sector.

- Provide tax credits or deductions for private investors who fund semiconductor start-ups.
- Offer R&D tax super-deductions tailored to capital-intensive hardware development (design, MPW runs, testing, and EDA tooling).
- Implement capital gains tax reductions for long-term investments in deep-tech hardware ventures.
- Incentive like reductions of payroll tax for semiconductor start-ups hiring specialized engineering talent to scale faster.

Industry associations, governance and coordination

To ensure the success of the Chips Act 2.0 regional associations, **clusters and networks should be incorporated within the decision making process** and not just for consultation. Structured coordination between different levels of governance are necessary to have a common understanding about Chips Act 2.0 on all levels of governance.
Silicon Alps Cluster, as a member of the **Silicon Europe Alliance (SEA)**, fully supports the recommendation letter provided by the Alliance.

Recommendations:

- Integrate industry associations into the Chips Joint Undertaking (Chips JU) and the European **Semiconductor Regions Alliance (ESRA)**.
- Consult call for **Silicon Europe Alliance (SEA)** as a European Committee of Semiconductor Clusters to channel joint positions to the EU Commission.

Demand incentives and driving sectors within Europe

Chips Act 2.0 should extend beyond supply-side initiatives and act as a catalyst for wider economic transformation across Europe. Promoting the adoption of European-produced chips in strategic industrial sectors can enhance technological independence, reduce reliance on external sources, and support sustainable economies of scale. Industries such as automotive, energy, defense, telecommunications, and healthcare are well-positioned to serve as key drivers of innovation, stimulating demand and reinforcing the domestic market. It is essential that policy measures are designed to encourage forward-looking public procurement and facilitate strategic partnerships between manufacturers and end users

Recommendations:

- **Create incentive programs for the adoption of European chips** in automotive, energy, defense, healthcare and industry 4.0.
- **co-development programs** between chip suppliers and industrial users.

- **Public procurement strategies** focusing on Made in Europe

Strategic challenges and opportunities

The current geopolitical context and global competition in cutting-edge technologies demand a more ambitious and cohesive European strategy. The Chips Act 2.0 must focus on those areas where Europe can differentiate itself, maximizing its industrial and technological impact.

Integrated photonics, AI hardware, advanced materials, and energy efficiency are fields where **Austria** already excels and can contribute significantly to European leadership. This section identifies priority opportunities to transform public investment into an engine of strategic autonomy.

Recommendations:

- Promote **integrated photonics** and **edge AI** as areas of strategic specialization.
- Strengthening the role of **RISC-V, open design, and sustainable AI hardware**.
- Support the development of critical materials and **processing equipment** to reduce dependencies.
- Consolidate **international cooperation** with partners such as Japan, South Korea and the USA in advanced R&D.
- **Packaging and IC substrates**
- **Passive components**

Lower entry barriers for market entry to EU market

- European semiconductor manufacturers face significant regulatory hurdles that slow down the expansion of production capacity. Complex and lengthy permitting processes for building new fabs, stringent environmental requirements, and differing national standards across EU member states create delays and increase costs. These fragmented bureaucratic obstacles make it challenging for companies to scale operations quickly, hindering Europe's competitiveness in the global semiconductor market. Chips Act I itself does not override all technical standards or national laws — according to the official explanatory memorandum, it does not automatically lead to harmonization of national laws and regulations. Many technical standards, environmental and safety regulations, production standards, etc. continue to be regulated at the national

level or by standardization organizations (e.g. standardization associations, industrial consortia) — where progress may vary from country to country.

Recommendations:

- Standardization work (e.g., within the CRA) is currently (2024/2025) still in the development stage — this process should be accelerated to eliminated the barriers.

Conclusions

The recommendations outlined in this document highlight the critical role of SMEs and start-ups in strengthening Europe's semiconductor ecosystem, with Austria's Silicon Alps Cluster serving as a key example of regional excellence and innovation. By addressing funding gaps, regulatory barriers, skills shortages, and market access challenges, Chips Act 2.0 can provide a comprehensive framework to accelerate innovation, enhance technological sovereignty, and stimulate demand for European chips across strategic industries. Targeted measures—ranging from support for fabless start-ups and open-source design initiatives to tax incentives, demand-driven programs, and coordinated governance—are essential to unlock the full potential of Europe's semiconductor sector. A coherent, SME-focused approach will not only foster competitiveness and resilience but also transform regional capabilities into globally relevant industrial leadership.

About SILICON ALPS Cluster

The SILICON ALPS Cluster is a fast growing network of companies, organizations and research institutions dedicated to support the electronic and microelectronic sector in the South of Austria. Alongside Germany, Beglium, France and Italy, Austria is one of the top five regions in the European electronics and semiconductor industry. The network represents approx. 130 members from academia, industry and public authorities.