

European Semiconductor Industry Association

POSITION PAPER

ESIA's position on Mario Draghi's Report "The future of European competitiveness"

Brussels, 25 November 2024

New EU Semiconductor Strategy needed

- ESIA calls for an approach that strengthens the semiconductor ecosystem in Europe.
- **IPCEIs** are a critical instrument for competitiveness but must be simpler to access, faster to process and implemented more swiftly.
- New market-oriented funding instruments for innovation serving clear **roadmaps for research**, **development and manufacturing** should be developed.
- A skilled workforce is crucial to remain innovative and competitive on a global level.
- International partnerships and access to global markets are key.
- Additional **administrative burden** must be avoided.
- An EU-wide permitting regime for chips would support the EU's competitiveness.
- Lower energy costs are crucial for the further development of the semiconductor ecosystem in Europe.

Introduction

The challenges of the European economy since the beginning of the century must be addressed by a holistic European industrial strategy. Mario Draghi's report 'The future of European competitiveness' has been presented as the blueprint for future policy initiatives of the European Commission and serves as guideline for the strategic priorities for the EU electoral mandate 2024-2029.

The report is published while the implementation of the EU Chips Act is ongoing. ESIA values this Act since it enables competitive investments for the semiconductor industry in Europe. Going forward, a more strategic approach to semiconductors is needed, and close involvement of the industry must be ensured. ESIA believes the report and the proposals for the semiconductor industry are important to accelerate the global competitiveness of the

semiconductor industry in Europe in view of an international level playing field. Below, ESIA provides more detailed comments on Mr. Draghi's proposals.

New EU Semiconductor Strategy needed

Mr. Draghi proposes to draft a new semiconductor strategy and a revised EU Chips Act. He puts the emphasis on "de-risking strategic dependencies and improvement of capabilities in semiconductors, with a focus on supply chain segments where the EU has or can develop a competitive advantage"¹ and calls for the creation of effective tools to strengthen Europe's semiconductor ecosystem on the global level.

ESIA believes that funding and innovation rightfully represent key aspects of a future EU semiconductor strategy. The existing R&D toolbox should be further developed and sharpened. Additionally, calls from the report to address the skills gap in Europe, to develop international partnerships, to improve permitting and reduce bureaucracy and to strengthen the EU energy market, are fundamental building blocks of an effective EU semiconductor strategy.

The mission letter to the Executive Vice-President for Tech Sovereignty, Security and Democracy Henna Virkkunen also includes a follow-up initiative to the EU Chips Act. ESIA welcomes this intention and calls upon the European Commission to build a framework that strengthens the semiconductor ecosystem in Europe.

'Fast-Track' IPCEIs

Semiconductors are one of the world's most research- and capital-intensive technologies. The EU is advancing complex and strategic projects in semiconductor technologies with the existing Important Projects of Common European Interest (IPCEI) 'Microelectronics' and 'Microelectronics and Communication Technologies'. In today's highly competitive environment, the IPCEI is a critical instrument. ESIA, however, recommends giving a more important role to the industry in defining the next IPCEI priorities. For example, the Joint European Forum should involve industry from the very beginning when discussing the scope of upcoming IPCEIs.

In general, future IPCEIs on Microelectronics must be simpler to access, faster to process, and implemented more swiftly. Multi-year approval cycles for innovations *beyond state of the art* are difficult to justify. Given the short innovation cycles and harsh competition from other regions, such delays lead to a loss of competitive edge. In the semiconductor industry only a leading position in a specific market can justify high R&D costs for chips and material innovations. This must be reflected in future IPCEIs and their respective approval procedures.

Harmonization of procedures across participating Member States is equally pressing. The pan-European character of the IPCEI instrument requires collaboration between different countries, which the industry sees as an advantage. However, approval times differ significantly among Member States, leading to unfortunate delays in project execution. Thus,

¹ <u>Report</u>: *The future of European Competitiveness, Part B, September 2024*, Mario Draghi, p. 89, (last retrieved 25.11.24).

ESIA strongly supports Mr. Draghi's proposal for simplified procedures for upcoming IPCEIs to accelerate their approvals and implementation.

New Funding Instruments for Innovation

Mr. Draghi proposes the creation of an EU semiconductor budget to complement member states' allocations for priority initiatives and industrial projects. If well-equipped and accompanied by transparent and swift approval procedures, such an initiative can serve as a valuable addition to existing schemes. To yield the highest potential possible and ensure a consistent path to developing marketable products, close alignment with the semiconductor industry in the EU on strategic priorities will be key, for example in the form of an Advisory Council.

It is also important to cover the whole supply chain in future initiatives. This includes the material, equipment and manufacturing industry - foundries, as well as fabless companies and Integrated Device Manufacturers (IDMs).

ESIA also applauds Mr. Draghi's emphasis on support for innovation of "mainstream chips"² ('foundational chips', which are highly innovative chips above 20 nm in node sizes), as these represent the EU's strength and, thus, must be a focal area for future innovation initiatives.

Overall, ESIA strongly recommends a strategic shift in defining R&D priorities with market needs as the starting point, like semiconductor strategies in the US and China. An EU semiconductor strategy should have competitiveness at its core and 'markets' as its north star. Achieving critical mass to serve global markets must be the key guiding principle.

Mr. Draghi suggests an EU Quantum Chips plan, funding for testing labs for sub-7-nm chiplets, and for back-end manufacturing (e.g. 3D advanced packaging). It must be understood that markets for these technologies are not necessarily in Europe, and they require high investments. However, these investments can be justified if the goal is clearly defined, e.g., keeping European equipment manufacturers and Research Technology Organisations (RTOs) in globally leading positions. Still, it will be of utmost importance to set a clear focus on industrial deployment and gaining global market share for semiconductor companies in Europe.

Therefore, three roadmaps – 'research', 'development', 'manufacturing' – should be developed with clear strategic objectives for each category:

- A 'research' roadmap should reflect the priorities of Europe's world-leading RTOs and universities to keep their globally leading position. This roadmap should be guided by Technology Readiness Level (TRL) 1-4³.

² <u>Report</u>: *The future of European Competitiveness*, Part B, September 2024, Mario Draghi, p.89 (last retrieved 25.11.24).

³<u>European Association of research and Technology:</u> *The TRL Scale as a Research & Innovation Policy Tool, EARTO Recommendations*, p. 4-5, (last retrieved 25.11.2024).

- The 'development' roadmap should focus on industry priorities, where the EU can gain significant market share within the next 3 to 8 years and increase strategic autonomy. This roadmap should be guided by TRL 5-7⁴.
- A 'manufacturing' roadmap should create the industrial outlet for products developed under the 'research' and 'development' roadmaps.

To ensure efficiency, these roadmaps should be allocated with separate but significant budgets from EU and Member State levels. Today's situation, where RTOs, universities, SMEs and large industry are competing for the same and – given the variety of topics – too small budgets, has proved to be a competitive disadvantage for Europe.

Bridging the Skills Gap

The skills shortage is a serious challenge for the European economy and particularly for the semiconductor industry. Several new semiconductor manufacturing sites will be constructed in Europe over the next few years, and this will require between 10.000 and 15.000 new skilled workers. Experts predict that there will be a shortfall of up to 75.000 employees⁵ in the broader semiconductor ecosystem in Europe by 2030.

The lack of a skilled workforce must be understood as one of the most severe risks to the sector's ability to stay ahead of competition. A scenario based on the status quo will lead to serious gaps in the operation of manufacturing sites and, equally important, in the design of semiconductor innovations.

ESIA thus strongly supports Mr. Draghi's proposal of a "Tech Skills Acquisition Programme^{"6} to facilitate visa regulations and procedures for non-EU citizens and new EU-wide scholar opportunities. ESIA also suggests increasing the visibility of the semiconductor industry among students in high schools, to increase the number of STEM (science, technology, engineering and mathematics) students at universities. Special focus should also be given to programs attracting more female students.

International Partnerships

Throughout his report, Mr. Draghi emphasises the need for the EU to enter strategic partnerships with third countries to reinforce the global supply and boost the EU's strategic autonomy. This is particularly critical for the semiconductor industry which needs scale and hence must be able to serve the largest possible global markets. In addition, interdependencies with other regions must be acknowledged and incorporated in future strategies. In areas vital for the semiconductor supply chain in Europe, such as critical raw materials, dedicated international partnerships should be negotiated.

⁴ <u>European Association of Research and Technology:</u> *The TRL Scale as a Research & Innovation Policy Tool, EARTO Recommendations*, p. 4-5, (last retrieved 25.11.2024).

⁵European Chips Skills Academy: Skills strategy 2024, , p. 3, Raphaël Beaujeu, Léo Saint-Martin, and Cédric Lebon (latest retrieved 25.11.24).

⁶ <u>Report</u>: *The future of European Competitiveness*, Part B, September 2024, p. 89, Mario Draghi (latest retrieved 25.11.24).

'Chips Procurement Preferences'

Mr. Draghi's recommendation to define "chips procurement preferences for EU products and a new 'EU Chips' certification for public and private procurement tenders"⁷ requires further indepth assessments and analysis. The goal of such an initiative must be clearly defined before the right tools can be agreed. Additional chip certification requirements that would increase administrative burden and cost, and consequently make chips by European semiconductor companies less competitive, must be avoided, as well as discriminatory market access. Procurement preferences would need to be underpinned by clear criteria and be agreed within the largest possible group of countries (e.g. G7 and beyond) to avoid market fragmentation.

"EU-wide Permitting Regime for Chips"8

ESIA welcomes Mr. Draghi's proposal of a more efficient and EU-wide harmonized permitting regime for chips, as the industry is highly dependent on infrastructure for resources like water, electricity etc. To build more capacities for innovation and manufacturing, a simplified and accelerated permitting regime would increase Europe's competitiveness compared to other regions.

Harmonization of national approval regimes for strategic projects is another key aspect to be addressed. Under the EU Chips Act, semiconductor companies in Europe have experienced important differences in approval times and in the complexity of procedures, depending on the headquarter or project location. These inconsistencies must be addressed, to ensure a level-playing field within the EU and strengthen its semiconductor ecosystem overall.

More Competitive Energy Costs

ESIA supports Mr. Draghi's call for a genuine Energy Union. High energy prices are hindering the industry's growth and competitiveness. ESIA calls for an EU energy policy aiming at low energy prices to allow industry to be more competitive globally and make Europe a more attractive region for production and investment. Today, diverging energy prices within the EU Single Market are leading to competitive disadvantages depending on where the companies are headquartered or where the operations are located. The national differences in grid stability policies and the related risks for chip companies are equally concerning the overall competitiveness of the European semiconductor industry, its suppliers, and customers.

Conclusion and Outlook

ESIA would be privileged to establish and continue a close working relationship with the EU Commission, EU Parliament and Member States, to jointly build on the strengths of the semiconductor industry in Europe as well as to assess and address its needs and challenges to sustainably strengthen EU's technological sovereignty, resilience, and innovation. We are looking forward to this important exchange and to working together on clear implementation milestones.

⁷ <u>Report</u>: *The future of European Competitiveness*, Part B, September 2024, p. 90, Mario Draghi (latest retrieved 25.11.24).

⁸ Original wording of the report.

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ABOUT ESIA

The European Semiconductor Industry Association (ESIA) is the voice of the semiconductor industry in Europe. Its mission is to represent and promote the common interests of the Europe-based semiconductor industry towards the European institutions and stakeholders in order to ensure a sustainable business environment and foster its global competitiveness. As a provider of key enabling technologies, the industry creates innovative solutions for industrial development, contributing to economic growth and responding to major societal challenges. Being ranked as the most R&D-intensive sector by the European Commission, the European semiconductor ecosystem supports approx. 200.000 jobs directly and up to 1.000.000 induced jobs in systems, applications and services in Europe. Overall, micro- and nano-electronics enable the generation of at least 10% of GDP in Europe and the world.