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# Chips Act 2.0: From emergency response to strategic industry development

## Executive summary

The next European Chips Act must evolve from an emergency response into a strategic industrial policy that makes Europe competitive, indispensable and resilient within the global semiconductor ecosystem. It should be guided by realistic, market-driven objectives and strengthen the entire semiconductor value chain.

Geopolitical tensions over semiconductor technologies and critical inputs have increased and threats of supply disruptions persist, as the Nexperia case illustrates.<sup>1</sup> Projects under the existing Chips Act<sup>2</sup> have advanced unevenly, funding is still fragmented and business conditions in Europe remain challenging for critical parts of the semiconductor value chain. Other regions – especially the US, Japan, South Korea and China – now combine vast incentives with clear industrial strategies.

Europe needs a bold Chips Act 2.0 that fully aligns EU and Member States' efforts to make Europe an attractive destination for global semiconductor investments and meet expected demand. Industry strongly supports Member States' call for an ambitious revision of the Chips Act to revitalise Europe's semiconductor ecosystem. The Semiconductor Declaration's three strategic priorities – prosperity, indispensability, resilience – provide a solid foundation for this renewed ambition.<sup>3</sup>

Europe's objective cannot be self-sufficiency but must be indispensability: becoming a global leader that the world relies on for critical technologies, skills and innovation. Europe should invest where it already holds a competitive edge or can realistically catch up. For this, a centralised EU financing instrument for strategic semiconductor projects is essential to boost the EU's future competitiveness and security. Where direct competition with global market leaders is not viable, the EU should build reliable partnerships globally to secure access to key semiconductor technologies and supplies.<sup>4</sup>

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<sup>1</sup> See DIGITALEUROPE, 'EU must take urgent action to protect supply of chips and strategic assets,' available at <https://www.digitaleurope.org/news/eu-must-take-urgent-action-to-protect-supply-of-chips-and-strategic-assets/>.

<sup>2</sup> Regulation (EU) 2023/1781.

<sup>3</sup> *Declaration of the Semicon Coalition calling for a revised EU Chips Act in order to strengthen and revitalise Europe's position in the global semiconductor industry.* See <https://www.government.nl/latest/news/2025/09/29/all-eu-countries-join-semicon-coalition-to-secure-technological-leadership>.

<sup>4</sup> See DIGITALEUROPE, *The EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map*, available at [https://cdn.digitaleurope.org/uploads/2024/07/DIGITALEUROPE-CRITICAL-TECHNOLOGIES-REPORT-FINAL\\_JULY\\_WEB.pdf](https://cdn.digitaleurope.org/uploads/2024/07/DIGITALEUROPE-CRITICAL-TECHNOLOGIES-REPORT-FINAL_JULY_WEB.pdf).





To achieve prosperity, indispensability and resilience, the next Chips Act should be guided by five priorities:

- ▶▶ **Smart investment and speed:** Pool EU, national and private funding to mobilise €200 billion for semiconductor investments by 2035, whilst cutting approval times for strategic European projects to under seven months. Establish a central EU semiconductor budget line of at least €20bn under the European Competitiveness Fund to ensure critical mass and coordination.<sup>5</sup>
- ▶▶ **Demand creation and scale:** Shift from a supply-driven approach to a long-term strategy that addresses actual market demand for semiconductors and builds on Europe's existing strengths in the microelectronics ecosystem. By 2030, launch five semiconductor alliances linking chip makers with key sectors to stimulate demand, investment and innovation in coordination with downstream industries such as industrials, automotive, energy, defence, healthcare, telecoms, data centres, and AI applications, including industrial and edge AI.
- ▶▶ **Global indispensability:** Focus investment and support on areas where Europe can lead – for example, semiconductor manufacturing equipment, innovation at mature node sizes, chipllets, photonics and advanced materials – whilst expanding partnerships with trusted economies and investing strategically in underdeveloped yet promising areas to leap ahead (e.g., quantum chips).<sup>6</sup>
- ▶▶ **Skills and framework conditions:** Make Europe an attractive destination for semiconductor investments. Introduce coordinated, EU-wide tax incentives, train and attract the people needed to fill Europe's semiconductor workforce gap, and ensure fast-track permitting, affordable energy and infrastructure.
- ▶▶ **Sustainability:** Make energy-efficient chips and circular manufacturing Europe's hallmark contribution to the global industry.

Success should be measured not in global market share, but in Europe's relevance to the world, its ability to innovate, attract investment, meet demand, shape standards and lead in technology deployment. With clear objectives that reflect the needs of both the semiconductor ecosystem and downstream sectors, a second-generation Chips Act can turn Europe's semiconductor policy from a defensive subsidy scheme into a forward-looking industrial strategy that drives competitiveness and resilience across value chains.

Europe has the ideas, expertise and industrial potential, but lacks focus, scale and speed. **DIGITALEUROPE's European AI and Tech Declaration** shows that with strong public-private partnerships, Europe can lead globally in critical technologies like semiconductors.<sup>7</sup> The next Chips Act must replace aspiration with execution – coordinating investment, tightening governance and linking innovation directly to industrial demand.

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<sup>5</sup> COM(2025) 555 final.

<sup>6</sup> Where direct competition with global market leaders is not viable, the EU should build reliable partnerships globally to secure access to essential semiconductor technologies and supplies. See DIGITALEUROPE, *The EU's critical tech gap: Rethinking economic security to put Europe back on the map*, available at [https://cdn.digitaleurope.org/uploads/2024/07/DIGITALEUROPE-CRITICAL-TECHNOLOGIES-REPORT-FINAL\\_JULY\\_WEB.pdf](https://cdn.digitaleurope.org/uploads/2024/07/DIGITALEUROPE-CRITICAL-TECHNOLOGIES-REPORT-FINAL_JULY_WEB.pdf).

<sup>7</sup> DIGITALEUROPE European AI & Tech Declaration, available at: [European AI & Tech Declaration page - DIGITALEUROPE](#)

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## Lessons from the first Chips Act

The first Chips Act injected political momentum to realise Europe's semiconductor ambitions but failed to create the coordinated industrial strategy that global competitors for semiconductor investments already had.<sup>8</sup> Its emergency-era design revealed structural weaknesses now impossible to ignore.

The EU adopted a top-down target of 20 per cent of global manufacturing capacity in value in the Digital Decade.<sup>9</sup> It has become clear that we remain far off this goal, and that we do not have an action plan based on industry needs to achieve it.<sup>10</sup> Consequently, Member States have recognised that the target is both 'unrealistic and too broad, lacking clear strategic direction on where and why Europe should lead in the semiconductor value chain.'<sup>11</sup>

Across all analyses of the Chips Act runs a single message: Europe has ideas, expertise and industrial potential, but lacks focus, scale and speed. The next Chips Act must replace aspiration with execution – coordinating investment, tightening governance and linking innovation directly to industrial demand.

We urge the European Commission to co-develop this strategy together with the semiconductor ecosystem and the involvement of sectorial end-users. A successful European semiconductor strategy must be grounded in real demand, reflect the realities of global production, avoid fragmentation, leverage Europe's competitive advantages and make Europe a leading hub for semiconductor investment and talent.

## European Court of Auditors findings

The auditors' special report on the EU Chips Act finds that, whilst the Chips Act has provided new momentum for Europe's semiconductor sector, it is highly unlikely to deliver on its headline goal of reaching 20 per cent global market share by 2030.<sup>12</sup> The Chips Act lacked a demand analysis and was drafted without a full impact assessment. The Commission controls only a fraction of available funding (about €4.5 billion) whilst Member States managed the bulk through insufficiently coordinated state aid. This fragmentation dilutes scale and leaves the EU without a clear picture of where investments were going.

According to the auditors, implementation progress is mixed: Pillar I (research and innovation capacity) is advancing but faces some delays.<sup>13</sup> Pillar II (FOAK manufacturing) has seen slow uptake and some setbacks, with seven FOAK projects approved so far, totalling €10.2 billion in state aid and €21 billion in private investments. The framework for Pillar III (monitoring and crisis response) is not fully operational and faces significant implementation challenges.<sup>14</sup>

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<sup>8</sup> See US CHIPS Act and RAPIDUS Project in Japan, which successfully attracted private investment and built manufacturing capacity by offering incentives through subsidy schemes, tax incentives and direct public support, or by forming industry consortia.

<sup>9</sup> Decision (EU) 2022/2481.

<sup>10</sup> The Commission's most recent forecasts (COM(2025) 290 final) suggest only a modest increase from 9.6 per cent in 2022 to 11.6 per cent by 2030.

<sup>11</sup> Semiconductor Coalition statement by EU Member States, available at: [All EU countries join Semicon Coalition to secure technological leadership | News item | Government.nl](#).

<sup>12</sup> European Court of Auditors Special Report 12/2025.

<sup>13</sup> P. 30, *ibid*.

<sup>14</sup> P. 28, *ibid*.



## Council position and Semiconductor Coalition

The Declaration of the Semiconductor Coalition, adopted by Member States on 29 September, demands a 'strengthened, second-phase EU Chips Act' grounded in three strategic objectives of prosperity, indispensability and resilience.

Member States stressed the need to align national, European and private funding streams, speed up certain funding decisions, improve access to funding for startups and scaleups, and mobilise more private capital. However, there is no commitment on the size of a new EU-level semiconductor budget, only the ambition to 'ensure that the new Multiannual Financial Framework (MFF) as of 2028 reflects the importance of strategic sectors and technologies such as semiconductors'.<sup>15</sup>

Member States proposed a balanced approach that supports the development of cutting-edge chips (a 'EU semiconductor value chain for AI'), while also addressing industrial demand for innovative foundational microchips that are critical to sectors such as mobility, energy, defence, and the green transition. International partnerships with like-minded countries would be 'crucial to ensure an open, connected and secure semiconductor supply chain and strengthening the innovation ecosystem'.<sup>16</sup>

EU governments also recognised necessary pre-conditions for the EU semiconductor industry (including permitting, nitrogen supply, grid access, power supply, housing and infrastructure). They committed to explore emergency permitting legislation to fast-track strategic investments (such as via a new, fast-track Important Projects of Common European Interest mechanism). They also recommend the launch of a European Chips Skills Programme and to further develop the EU Chips Design Platform.

## Recommendations in the Draghi report

The 2024 Draghi report also called for a more strategic European approach to reduce dependencies on semiconductors and strengthen capabilities in areas where the EU has or can build a competitive edge.<sup>17</sup> The report proposed an expanded Chips Act with a larger and centralised EU budget, tax incentives for design capabilities and fabless companies, subsidies for foundries in strategic segments (especially in larger nodes for automotive, manufacturing and network equipment), and support for innovative production stages like back-end 3D advanced packaging, advanced materials and finishing processes.

Draghi also recommended a new fast-track IPCEI for chip-related projects, supporting European consolidation and leadership in semiconductor manufacturing equipment (lithography, depositions, etc.), a friendly EU-wide permitting regime, a long-term EU quantum chips plan, a 'Tech Skills Acquisition Programme' featuring special visas for skilled professionals, EU-wide scholarships and early-industry placements to build and retain world-class expertise in advanced electronics and semiconductors.

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<sup>15</sup> Council conclusions on the European Court of Auditors special report, available at: [Council conclusions on the European Court of Auditors' special report No 12/2025: 'The EU's strategy for microchips - Reasonable progress in its implementation but the Chips Act is very unlikely to be sufficient to reach the overly ambitious Digital Decade target' \(adopted on 20 June 2025\)](#).

<sup>16</sup> Semiconductor Coalition statement by EU Member States, available at: [All EU countries join Semicon Coalition to secure technological leadership | News item | Government.nl](#).

<sup>17</sup> Draghi report, Part B, p. 90.



## DIGITALEUROPE assessment of the Chips Act

The Chips Act laid important groundwork by enabling state aid for strategic projects and launching the FOAK (first-of-a-kind) framework, which helped catalyse investment into both leading and mature nodes.

However, the Chips Act's design and implementation revealed several shortcomings:

- ▶▶ Industry was insufficiently consulted in its development. As a result, key challenges such as high operational costs, demand forecasting and dependencies on upstream inputs were overlooked.
- ▶▶ The focus was put on increasing manufacturing capacity as a percentage compared to other regions, rather than boosting innovation and strengthening European competitiveness.
- ▶▶ Cooperation across Member States has been slow, and both the Commission and the Semiconductor Board lack the authority to ensure proper alignment or set strategic priorities.
- ▶▶ Available funding has been too fragmented and modest to match global competition. The state aid process proved too complex and slow to deliver timely support.
- ▶▶ Differences in national procedures and approaches taken by Member States to support Pillar II projects added complexity and led to delays in the Commission's approval of state aid.
- ▶▶ The FOAK scope was narrowly designed, excluding key parts of the value chain such as upstream materials and chemicals, critical design capabilities, printed circuit board manufacturing, downstream packaging capacities and systems integration.
- ▶▶ Even though the Design Centres of Excellence represent a promising idea, their role remains underdeveloped and relevant delegated acts have not been adopted.
- ▶▶ Efforts to build reliable partnerships with trusted third countries – to coordinate support measures, address supply chain vulnerabilities, and pursue joint R&I objectives – have fallen short amid heightened geopolitical and trade tensions.
- ▶▶ Overall, targets were vague and unrealistic. This created difficulties in steering the implementation of the act, defining strategic projects and coordinating Member State action.

A revised Chips Act must directly address these challenges to ensure Europe becomes globally competitive and, as a result, an indispensable player in the semiconductor ecosystem.

## New targets for a revised Chips Act

The first Chips Act measured progress by a single, misleading number: 20 per cent of global market share for Europe until 2030.<sup>18</sup> Europe needs a more practical compass. The EU's next targets must reflect strategic relevance, not production quotas. Progress should be measured by Europe's ability to innovate, attract investment and talent, and shape global semiconductor networks – indispensability, not isolation, defines success.

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<sup>18</sup> Member States have recognised in the *Declaration of the Semicon Coalition* that the target is both 'unrealistic and too broad, lacking clear strategic direction on where and why Europe should lead in the semiconductor value chain.'

Objective area	2030–2035 targets and indicators
<b>Competitiveness and indispensability</b>	<p>Europe's goal must not be to replicate others, but lead where it is or can be indispensable:</p> <ul style="list-style-type: none"> <li>▶ At least <b>two European design firms</b> ranked amongst global market leaders in their segments by <b>2030</b>.</li> <li>▶ <b>Global leadership by 2035</b> in at least <b>three mainstream or specialty chip niches</b> – MEMS, sensors, radiofrequency components or photonics – where European firms already hold a competitive edge.</li> <li>▶ <b>Consolidate global leadership in photolithography</b>, including Extreme Ultraviolet (EUV).</li> <li>▶ <b>Strengthen Europe's position</b> in high-value equipment, materials and chemical processes – e.g. <b>atomic-layer deposition</b> – cementing a European lead in enabling technologies that underpin chip innovation.</li> </ul>
<b>Investment and speed</b>	<p>Europe must show that public funding translates into private investment and rapid execution:</p> <ul style="list-style-type: none"> <li>▶ <b>Mobilise €200 billion</b> in combined EU, national and private investment in semiconductor R&amp;I, design, pilot lines and production by <b>2035</b>, achieving a <b>minimum 2:1 and aspirational 5:1</b> private-to-public leverage ratio.</li> <li>▶ <b>Approve and implement at least one new fast-track IPCEI on advanced semiconductors by 2028</b>.</li> <li>▶ Reach <b>average approval times under seven months</b> for all semiconductor-related strategic investments, measured across EU and national procedures.</li> </ul>
<b>Demand and innovation</b>	<p>Semiconductor funding should be tied to Europe's industrial base – automotive, energy, telecoms, health and defence:</p> <ul style="list-style-type: none"> <li>▶ <b>Launch five European industry alliances by 2030</b> to promote vertical R&amp;I collaboration and stimulate demand for European chip manufacturing.</li> <li>▶ <b>Increase Europe's share</b> in semiconductor segments dedicated to <b>edge AI, industrial AI and powering AI</b>.<sup>19</sup></li> <li>▶ Establish <b>EU-wide incentives</b> (e.g., tax credits) encouraging long-term supply contracts between end-users and European fabs, aiming to support <b>at least ten FOAK facilities</b> across Europe by <b>2035</b>.</li> </ul>
<b>Skills and talent</b>	<p>Competitiveness depends on people:</p> <ul style="list-style-type: none"> <li>▶ <b>Train and upskill 300,000 semiconductor professionals by 2030</b> to meet projected demand.</li> <li>▶ <b>Attract 25,000 foreign experts and researchers by 2030</b>, rising to <b>50,000 by 2035</b>, through streamlined visa pathways and competitive conditions.</li> </ul>
<b>Partnerships and resilience</b>	<p>Europe's benchmark should be whether it becomes an essential global partner:</p> <ul style="list-style-type: none"> <li>▶ <b>Conclude at least five new strategic technology partnership agreements</b> with key international partners by <b>2035</b>, strengthening R&amp;I collaboration and supply-chain resilience.</li> </ul>
<b>Sustainability</b>	<p>Europe should <b>lead globally in energy-efficient chip design, low-carbon and circular manufacturing</b>, and chips enabling the green and digital transitions:</p> <ul style="list-style-type: none"> <li>▶ <b>Leadership in green semiconductors</b> – combining energy performance, material efficiency and reduced environmental footprint – should become a measurable indicator of indispensability.</li> <li>▶ <b>Funding mechanisms</b> should reward green production, resource-efficient processes and circular material use across the semiconductor value chain.</li> </ul>

<sup>19</sup> This should be done in alignment with the Apply AI Strategy (COM(2025) 723 final) and the upcoming Cloud and AI Development Act.

## DIGITALEUROPE Recommendations

### Boost smart and strategic investment

Europe's semiconductor funding landscape remains fragmented, slow and modest compared to global competitors. The US, Japan, South Korea, Taiwan and China have launched long-term programmes combining massive incentives with predictable governance and tax frameworks.<sup>20</sup> By contrast, the EU still relies on uncoordinated national subsidies, complex state-aid procedures and limited central resources.<sup>21</sup> If Europe wants to be an attractive location for chip research, design and manufacturing, investment must be faster, larger and strategically directed.

Investment decisions must build on Europe's existing strengths rather than duplicating efforts. In this context, the European Commission's envisioned focus on 'AI chip' production in Europe raises concerns, particularly if it implies subsidising European production of GPUs in the range of below 5nm. Such an initiative would require very large public investments as well as attracting leading foreign companies willing to grow their manufacturing capacity. It would also require nurturing an advanced manufacturing ecosystem in Europe to provide key inputs, which increases the complexity, costs and related investment risks.

The EU currently does not have a strong internal market for chips with the smallest node sizes because sectors such as automotive, energy and industrial automation rely primarily on mature chips, typically 28nm and larger. Accordingly, the supply disruptions during the Covid-19 pandemic were not caused by shortages of cutting-edge chips but by a lack of mainstream chips in the 65-90nm range. Survey data from 2022 to 2024 confirms that most projected demand remains for mature nodes above 28nm. In addition, over 30 per cent of mainstream chips are currently imported from China, and the Joint Research Centre has identified a trade deficit of around six billion euros in both advanced and mature chips, a gap that is expected to widen given their importance in green transition technologies.<sup>22</sup>

To transform Europe into a top destination for international semiconductor investment, DIGITALEUROPE recommends:

- ▶▶ **Member States need to allocate at least €20bn to a centralised EU-level semiconductor budget under the next Multi-annual Financial Framework (2028-2034)**, integrated within the European Competitiveness Fund and Horizon Europe and drawing on all four envisioned technology windows to reflect the cross-cutting, foundational nature of chips.<sup>23</sup> The budget would enable the EU to match Member States' investments, as is already the case in the context of the Chips Joint Undertaking. This co-funding approach should be expanded to Pillar II projects, allowing the EU a bigger stake in funding strategic semiconductor projects across Europe.

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<sup>20</sup> The US Chips and Science Act allocates around €267 billion over ten years; Japan's RAPIDUS aims to produce 2 nm chips by 2027 and Taiwan targets 80 per cent of global advanced semiconductor manufacturing by 2033. Many of these strategies include substantial tax incentives, which the EU currently lacks.

<sup>21</sup> According to the European Court of Auditors, the Commission directly controls only €4.5 billion of Chips Act public funding, whilst €21.9 billion is managed nationally for FOAK facilities and €8.1 billion through the 2023 IPCEI on microelectronics. This fragmentation limits scale and coordination.

<sup>22</sup> Joint Research Centre report *Semiconductors in the EU. State of play future trends and vulnerabilities of the semiconductor supply chain*, available at: [Semiconductors in the EU - Publications Office of the EU](#).

<sup>23</sup> COM(2025) 543 final.



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- ▶▶ **The centralised semiconductor budget needs to prioritise strategic European projects, aligned with national and private funding streams.** Crowding-in of private investment is key for Pillar II projects aimed at increasing European manufacturing capacity to meet projected demand. Funding should be allocated based on demonstrated excellence and strategic relevance. This includes doubling down on EU strengths across process technologies (e.g., lithography, atomic layer deposition), chip design (e.g., SoCs for 6G and edge AI), MEMS (e.g., sensors), advanced materials (e.g., carbon nanotubes and high-frequency, high-voltage, non-fossil and biocompatible materials), photonics (e.g., laser and XR technologies) and analogue technologies.
  - ▶▶ **Broaden the innovation concept:** The Chips Act 2.0 must broaden what counts as innovation on 'novel chips' beyond the pursuit of ever smaller node sizes. Increasing energy efficiency at mature node sizes, novel chiplet architectures as well as quantum, neuromorphic and photonic chips should be supported in Europe all the way to industrial adoption. Enabling further scaling down of chiplet technologies to lower complexities at competitive price points for heterogeneous integration and industrial applications (even in edge computing) could boost EU competitiveness.
  - ▶▶ **Centralise, simplify and speed up funding decisions:** Long wait times for funding decisions decrease the EU's attractiveness as an investment destination. The next Chips Act needs to cap approval times for strategic projects, particularly under IPCEIs and FOAK projects, to 7 months from the submission of applications for Pillar II projects to the signature of the state aid agreement.
  - ▶▶ **Expand the scope of First-of-a-kind (FOAK) projects:** The narrow definition of FOAK has contributed to the delays in approving state aid projects. Eligibility for FOAK projects should therefore be expanded. EU competitiveness and resilience can only be strengthened through a resilient upstream supply chain (e.g., chemicals, equipment and materials suppliers). The same applies downstream (e.g., printed circuit board manufacturing) and assembly, testing and packing. In addition, Pillar II state aid should also be available for the modernisation of European fabs (e.g., through the deployment of industrial AI to improve productivity, quality and green production).
  - ▶▶ **Investment tax credits and targeted tax breaks:** To compete globally, the EU must complement grants with coordinated tax incentives for operational costs and capital expenditures. These incentives are proven instruments to unlock large-scale private investment. In June 2025, the US increased its semiconductor investment tax credit to 35 per cent (from 25 per cent) for new fabs breaking ground before 2026, a key driver of private investment.<sup>24</sup> The EU has no equivalent.
  - ▶▶ **Make better use of existing funding mechanisms:** The European Investment Bank (EIB) and the European Innovation Council (EIC) need to play a bigger role. This includes larger funding envelopes, expanded funding eligibility and simplified application procedures. Both institutions have proven valuable in providing loans, equity investments and advisory services to the semiconductor sector, but their impact has been limited by rigid risk criteria and complex applications.


## Encourage demand and scale

The European electronics systems market is fragmented, with no single player generating the market demand to attract sustained semiconductor investment. To secure its place in global value chains, Europe must better link the semiconductor ecosystem with high-volume industrial demand. This means coupling innovation in chip design and manufacturing with the needs of end-users and system makers, ensuring that investment risks are shouldered together and semiconductor breakthroughs translate into commercial success in downstream sectors.

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<sup>24</sup> The One Big Beautiful Bill Act (H.R. 1) raised the advanced manufacturing investment credit from 25 per cent to 35 per cent. The legislation also restored full deductibility of domestic R&D expenses and made permanent the modified deduction for foreign-derived intangible income.





Fostering demand creation and early adoption of innovative chips made in Europe is key to overcoming the return on investment dilemma. The Commission and Member States need to support industry-led vertical alliances and consortia that bring together chip providers and end-users, enabling co-development and rapid scaling of next-generation technologies.

- ▶▶ **Launch five European industry alliances by 2030** that connect the semiconductor ecosystem with key verticals (automotive, energy/renewables, defence and connectivity). These alliances would serve as platforms for co-innovation and anchor demand, aligning chip manufacturers, system integrators and end-users to accelerate the design and adoption of advanced European chips.<sup>25</sup> Each alliance should be designed to stimulate demand, ensuring a stable market pull for new semiconductor technologies developed in Europe. These alliances can bridge the pillars of the Chips Act, linking research (including by imec, CEA-Leti and Fraunhofer) with manufacturing capacity. Dedicated clusters of industry experts associated with the Design Centres can support these consortia. Joint purchasing mechanisms should be avoided because the high differentiation of semiconductor products will make this demand aggregation challenging, slow and uncompetitive.
- ▶▶ **Create a dedicated funding instrument for chip-to-system acceleration.** A key gap between Pillar I and II of the Chips Act is the lack of a dedicated funding instrument to bridge innovation within the semiconductor ecosystem and commercialisation in downstream sectors. The Commission should extend existing funding programmes to include 'chip-to-system acceleration' projects that take ideas the full way to industrial deployment. This also requires addressing chip design not in isolation but as part of systems design and reflecting this broader challenge in the setup of the Design Centres.
- ▶▶ **Strengthen chips pilot lines through involvement of downstream sectors:** Current pilot lines are predominately labs used for research and predevelopment, rarely supporting small volume production series. A seamless link to industrial mass production remains tentative at best. A genuine 'lab-to-market' concept requires the involvement of the industry all the way to large-scale chip users (across industrial, automotive, mobility, energy, digital infrastructure and other key sectors).
- ▶▶ **Facilitate the formation of strong verticals by supporting further investments in digital thread technologies.** Digital thread technologies ensure the availability of trusted data along the semiconductor value chain, which is key to boost both productivity and resilience. Yet, this technology requires significant investment in data integration, analytics and collaboration tools (covering all sites, chip and PCB design, manufacturing and customers).


## Make Europe indispensable in global value chains

The renewed Chips Act's guiding principle should be indispensability: ensuring that Europe's strengths are essential to the global semiconductor ecosystem. Indispensability means being globally competitive and leading in technologies and capabilities without which global supply chains cannot function.

To apply this principle, Europe must take a strategic and positive approach to global value chains. Instead of reacting to vulnerabilities and choke points, policy should focus on building European assets that the world depends on, turning interdependence into influence. Member States should therefore clarify the roles of the public and private sectors in strengthening Europe's semiconductor position, supported by a comprehensive mapping of existing strengths in research, manufacturing, equipment and design to inform where Europe can lead.

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<sup>25</sup> The Semiconductor declaration called for 'strong complementary European industrial alliances' to support commercialisation and strengthen EU competitiveness.



Europe's ambition should target long-term leadership in globally relevant and specialised technologies, those that combine scientific excellence, industrial scale and sustainability advantages. The revised Chips Act should:

- ▶▶ **Prioritise support for areas where Europe is or should become indispensable**, such as chip design (e.g., edge AI and 6G chips), electronic design automation (EDA) tools, foundational semiconductors (e.g., MEMS/sensors), semiconductor manufacturing equipment (lithography), advanced materials and process innovations (e.g., atomic layer deposition), as well as specialised chips for key applications such as mobility, industrials, AI, aerospace, medical and electrification.
- ▶▶ **Protect Europe's strengths in mature node manufacturing**, which underpins automotive, energy and defence sectors. European producers have come under increasing competitive pressure from non-market policies and practices in third countries. If Europe fails to invest in its existing strengths, it risks losing an important foothold in the semiconductor ecosystem and the associated industrial know-how in the value chain. The next Chips Act must improve conditions for the design and manufacturing of mainstream chips, recognising them as an asset for European resilience and competitiveness across downstream sectors, including their essential nature for defence applications.
- ▶▶ **Accelerate the development of chip design ecosystems**. Build design capabilities and intellectual property by supporting fabless design business models. Leverage competence centres to better connect existing European design clusters. This requires expanding the scope of Design Centres of Excellence, ensuring the participation of startups, SMEs and large companies focused on state-of-the-art chip design and architecture and EDA tools.<sup>26</sup>
- ▶▶ **Finance the increased use of AI for chips design**. Increasing productivity when it comes to chips design is also critical to meet the challenges of skills shortages and the growing cost of design and verification of leading-edge chips designs. The integration of AI in Electronic Design Automation (EDA) and Electronic Components and Systems (ECS) tools is one of the key enablers to successfully meet these challenges and should therefore receive EU funding support.
- ▶▶ **Provide increased funding support for disruptive technologies** like neuromorphic, photonic, quantum or memristor technologies that can make Europe indispensable in future markets. Chiplet-based architectures should be further developed and supported beyond the actions already in place in the EU Chips Act.
- ▶▶ **Develop strategic advanced packaging capabilities**. Europe currently does not have substantial advanced assembly and packaging capabilities, creating dependencies as revealed by the Nexperia case. This requires increased automation to overcome labour cost differentials.<sup>27</sup> The EU needs to support R&I, capital investment and operational cost during a starting period to incentivise investments in Europe. These facilities need to collaborate closely with end-users to ensure that developments reflect market needs.
- ▶▶ **Support the development of green chips and sustainable manufacturing techniques**. This should include R&I and deployment incentives for energy-efficient chips, green energy applications, circularity, integrated photonics, heterogeneous integration, sustainable materials, renewable energy use, safer substances and resource efficiency across the value chain.

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<sup>26</sup> Positive examples include the Bavarian Chip Design Centre, part of the Fraunhofer network.

<sup>27</sup> The labour-intensive assembly, test and packaging market segment is concentrated in low-cost areas of the world (predominately Taiwan, China, South Korea and Malaysia), meaning only increased automation can bridge the cost gap.

## Enhance coordination, governance and industry engagement

The next Chips Act must streamline decision-making on semiconductor policy. Governance remains fragmented across multiple actors and fora, diluting the impact of EU policy and funding.

Member State experts meet in the Semiconductor Board, which has faced significant challenges in coordinating national and EU-level initiatives. Industry is supposed to feed into the Board via the Industrial Alliance on Semiconductors, which has not been an effective instrument for stakeholder consultation. The main vehicle to administer EU-level funding under Pillar I is the Chips Joint Undertaking. Yet, Member States and regions make their own decisions on projects to support with national funds. State aid decisions under Pillar II fall under the authority of the Directorate-General for Competition. IPCEIs have their own coordination mechanisms. The European Investment Bank Group and European Innovation Council, which provide funding support, have separate processes.

Effective governance and implementation should include:

- ▶▶ **An empowered Semiconductor Board to ensure real coordination across Member States.** Considering Member States' shared ambition, coordination mechanisms need to be strengthened to better align national chips plans.<sup>28</sup> The EU needs increased pooling of national funding to achieve critical mass for projects of strategic relevance for Europe, increased collaboration to avoid additional regulatory burdens. A consolidated and transparent overview of all semiconductor investments and funding options across the Union is needed. Current arrangements leave the Commission with only partial oversight of funding.
- ▶▶ **Strengthen and broaden the Industrial Alliance on Semiconductors.** Industry must play a central role in advising on priorities, informing strategic choices and guiding investments, potentially via direct representation at the Board. The Industrial Alliance on Semiconductors needs to be made more relevant, including by including end-user industries.
- ▶▶ **Streamline and simplify complex approval and permitting procedures.** Differences in national procedures to support Pillar II projects add complexity and delay the allocation of state aid. A better aligned or centrally coordinated, fast-track permitting process for strategic EU investment projects could reduce time-to-market and thereby better position Europe in the chips investment cycle.
- ▶▶ **Reconsider implementation of Pillar III and new data-gathering tools.** New measures must avoid additional reporting burdens. DIGITALEUROPE strictly rejects mandatory information sharing from undertakings along the semiconductor supply chain to public authorities, noting the risks of sharing confidential and sensitive business information such as detailed supply and demand planning. More fundamentally, we question the purpose of providing information such as the proposed 'early warning indicators' mentioned in the Call for Evidence (percentage increase in lead times, specific price thresholds, or the unavailability of a non-substitutable component), and how public authorities would be able to interpret such complex and highly context-specific market signals in order to determine appropriate policy interventions.
- ▶▶ **Ensure regulatory coherence:** The drafting and implementation of the Chips Act should align closely with other EU legislation such as the upcoming Quantum Act, Advanced Materials Act, Cloud and AI Development Act and defence initiatives to guarantee a smooth interplay and strong complementarity across policy domains.

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<sup>28</sup> Semiconductor Coalition statement by EU Member States, available at: [All EU countries join Semicon Coalition to secure technological leadership | News item | Government.nl](#).



## Strengthen reliable international cooperation and security

Semiconductors are the most globalised industrial ecosystem in existence. No region possesses end-to-end capabilities. Europe's competitiveness depends on remaining deeply connected to trusted partners whilst managing security and resilience risks intelligently.

The EU should deepen semiconductor partnerships with trusted economies – the US, Japan, South Korea, Taiwan and India – linking joint R&I, reciprocal market access and coordinated investment-screening and export-control regimes. The revised Chips Act should:

- ▶▶ **Lay the foundations to agree at least 5 new strategic technology partnership agreements with key international partners until 2035.** New and more ambitious partnerships are needed to promote co-investments and joint ventures with global leaders in line with the principle of open strategic autonomy. This could, for example, include closer collaboration with Japan on the RAPIDUS project to diversify supply and guarantee future access to cutting-edge semiconductors.
- ▶▶ **Ensure a harmonised and well-coordinated EU approach to export controls, investment screening and trade defence to prevent fragmentation.** Divergent national rules deter investors and fragment markets. A single EU approach under the Dual-Use Regulation, aligned with allies, can protect sensitive technologies without stifling trade.<sup>29</sup>
- ▶▶ **Lead the development of international standards**, rather than taking unilateral EU action. The development of harmonised standards should follow an inclusive and technology-neutral approach without undermining market access.
- ▶▶ **Enhance the role of semiconductor related activities in the context of G7, OECD and World Semiconductor Council**, providing frameworks to align policies, drive digital innovation, and strengthen critical infrastructure and supply chain resilience.


## Cultivate skills, infrastructure and framework conditions

Europe needs to ensure the right enabling conditions for the semiconductor industry, ranging from energy and raw material to talent. If the EU's semiconductor ambitions are to be realised, this requires a substantial expansion of the skilled labour pool. Europe already suffers from structural skills shortages and 'the current talent gap in the EU semiconductor industry is expected to widen annually by 2030' because the number of graduates entering the EU semiconductor industry is not expected to accelerate significantly.<sup>30</sup> The European Chips Skills Academy estimates that even moderate growth of the European semiconductor ecosystem would result in 271,400 job openings until 2030.

- ▶▶ **Launch a European Chips Skills Programme** aligned with the goals of the Chips Act, the Union of Skills and relevant actions under Erasmus+ and the DigitalEurope programme. This should leverage Chips Competence Centres to promote STEM education, vocational training, upskilling and reskilling initiatives and aim to scale existing public-private collaborations between the semiconductor industry and educational institutions.
- ▶▶ **Improve Single Market mobility for key talent.** As the European Chips Skills Academy recognised, countries like Spain, Romania, Greece, Bulgaria, and Croatia have a surplus of

<sup>29</sup> Regulation (EU) 2021/821.

<sup>30</sup> European Chips Skills Academy: *Skills Strategy 2024*, available at: [ECSCA-Skills-Strategy-2024.pdf](#)



electrical engineering graduates relative to their semiconductor ecosystems.<sup>31</sup> Member States need to ensure that these professionals do not face hurdles when trying to relocate to high-demand regions because of bureaucracy, diverging labour and social security requirements and inconsistent recognition of professional qualifications.

- ▶▶ **Create incentives for talent attraction and retention** by quickly implementing the Blue Carpet initiative and Choose Europe campaign. The EU also needs to think bigger and introduce incentives to attract, grow and retain key talent in Europe: coordinated EU-wide talent visas, simple and transparent rules for cross-border remote work, harmonised treatment of employee stock options and coordinated tax incentives across Member States.
- ▶▶ **Attract leading researchers and build industry-academia joint curriculum activities.** The EU should use Erasmus+ and other EU funding tool to support the development of new academic degrees specialised on the next chips technologies, including industry-led modules provided by industry professionals and time spent in the semiconductor sector.
- ▶▶ **Support operational costs of semiconductor manufacturers:** High energy costs remain challenging for manufacturers in Europe. The EU should explore coordinated, EU-wide tax incentives for the European semiconductor industry and targeted state support to counteract Europe's high energy prices. Ensuring operations are competitive is key to attract investment for the next round of global capacity building.
- ▶▶ **Access to critical raw materials:** Current developments on export controls show that Europe remains dependent foreign actors for access to critical raw materials. While primarily addressed by the Critical Raw Materials Act, a dedicated Chips Act R&I stream focused on substitute materials, material innovation and advanced recycling for semiconductors could help reduce reliance on critical minerals from foreign sources and strengthen Europe's sustainability and strategic autonomy. This should include tangible rewards for adopting sustainable chips production methods in Europe to ensure quick scaling.

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<sup>31</sup> European Chips Skills Academy: *Skills Strategy 2024*, available at: [ECSA-Skills-Strategy-2024.pdf](#)



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## About DIGITALEUROPE

DIGITALEUROPE is the leading trade association representing digitally transforming industries in Europe. We stand for a regulatory and investment environment that enables European businesses across multiple sectors, as well as citizens, to prosper through digital technologies. We wish Europe to grow, attract and sustain the world's best digital talent, investment and technology companies. Together with our members, we shape industry positions on all relevant policy matters, and contribute to their development and implementation. Our membership represents over 45,000 businesses who operate and invest in Europe. It includes corporations and scaleups which are global leaders in their fields, as well as national trade associations from more than 30 European countries.