Opinion of the European Economic and Social Committee on 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on "A Chips Act for Europe"'

(COM(2022) 45 final)

(2022/C 365/05)

Rapporteur: **Heiko WILLEMS**

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Outcome of vote (for/against/abstentions)	203/0/6

1. **Conclusions and recommendations**

1.1. The EESC welcomes the European Commission's objective of strengthening the semiconductor ecosystem, significantly increasing resilience and security of supply and reducing external dependencies. The Chips Act is a unique opportunity for all EU Member States to act together towards the goal of a stronger technological basis.

1.2. As well as small feature sizes (< 2 nm), the needs of the customer industry and the strengths of Europe's semiconductor industry must also be considered, particularly when it comes to power semiconductors and sensors that are significantly larger. Proficiency in smaller feature sizes is not the sole determining factor in the success of the semiconductor ecosystem. The specific requirements for microelectronics will become increasingly differentiated in the future and an ever-wider variety of chip solutions will also be needed that are disruptive and innovative, regardless of their size. The EESC therefore recommends a comprehensive approach, primarily based on an innovative semiconductor ecosystem.

1.3. To alleviate the semiconductor shortage in the long term, access to raw materials, R & D facilities, intellectual property and technological know-how and the availability of skilled labour are important. This requires private investment and significant support from the public sector. The EESC calls on the Commission to flesh out its investment plans, especially with regard to how the investments will be financed.

1.4. The EESC acknowledges that promoting the semiconductor industry is a key and strategic forward-looking project for the EU that will be decisive for security of supply and for the future of Europe as a centre of innovation and a place to do business. However, the economic viability of such facilities must be guaranteed, at least in the medium term, to ensure that investment from public funds is effective and sustainable. A subsidy race must be avoided and funds have to be spent efficiently without creating overcapacities and market distortions.

1.5. The EESC is convinced that the European semiconductor ecosystem should be strengthened with a view to achieving open strategic autonomy. The semiconductor value chain is one of the most globalised. Due to the high level of international interdependence in the semiconductor market, establishing a closed value chain in every part of the world would not make economic sense. However, technology segments that are particularly vulnerable, i.e. due to geopolitical concerns or due to their strategic relevance, should receive the required support.

1.6. This international interdependence must also be taken into account with regard to the envisaged emergency measures. As the European Commission increases Europe's resilience, it should also strengthen international partnerships.

1.7. The EESC regrets the absence of an impact assessment.

1.8. The EESC would like to draw attention to its related opinions ([1]).

2. **General comments**

2.1. In an increasingly digitalised world, semiconductors are an essential component of many different economic sectors and areas of life — both for industry and consumers. The value of chips sold worldwide has steadily increased in recent years and sales are expected to increase by 11 % in 2022 ([2]). Moreover, the green and digital transition targets cannot be met without semiconductors. Technological progress in this area allows for cross-sector innovation along the entire value chain.

2.2. There is also a growing geopolitical relevance of semiconductors. The semiconductor value chain is one of the most globalised. No single state has complete autonomy across the entire value creation process. Instead, there is a high level of division of labour and interdependence between nations and regions due to the high costs and complex stages of production. For this reason, the EESC firmly believes that establishing a closed value chain in every part of the world would not make economic sense. Rather, a detailed analysis of the strengths and weaknesses of the European semiconductor ecosystem should serve as the starting point for a debate on how targeted investments could increase Europe's resilience. In parallel, the European Commission should strengthen international partnerships in the semiconductor ecosystem in order to create synergies. Technology segments that are particularly vulnerable, i.e. due to geopolitical concerns or due to their strategic relevance, however, should receive the required support, financially as well as politically.

2.3. Given the increasing geopolitical tensions and bottlenecks along the semiconductor value chain, some economic regions are already making massive investments. With the CHIPS for America Act, the US plans to invest USD 52 billion between 2021 and 2026 and eliminate critical dependencies ([3]). China sees the semiconductor sector as key for its strategic orientation and aims to mobilise an estimated USD 150 billion by 2025 ([4]). Its goal is to be able to meet 70 % of its needs on its own by then. However, it remains to be seen if this goal is realistic.

2.4. Considering the geopolitical situation, the EESC recognises the urgent need for the EU to take action in this area in order to reduce strategic and economic dependencies. In the Digital Compass ([5]), the Commission set the goal of ensuring that the production of cutting-edge and sustainable semiconductors in Europe accounts for at least 20 % of world production by 2030. This goal was reaffirmed in the proposal for the 2030 Policy Programme entitled 'Path to the Digital Decade' ([6]). The EESC welcomes the European Commission's objective of strengthening the semiconductor ecosystem, significantly increasing resilience and security of supply and reducing external dependencies, and supports the goal of playing a major role in the semiconductor ecosystem worldwide.

2.5. The EESC points out that the EUR 43 billion planned for by the European Commission is not 'fresh money'. The major chunk of the budget is already earmarked, e.g. in the Horizon Europe and the Digital Europe programme, and it will only be reallocated. The EUR 43 billion can only be reached with major private investments, that will still need to be secured. This stands in clear contrast to the USD 52 billion that have been granted by the US. At the same time, the EESC stresses the need to avoid a subsidy race and to spend money efficiently.

2.6. The EESC regrets the absence of an impact assessment on the Communication and the related proposals.

([1]) Opinion of the European Economic and Social Committee on 'Proposal for a Regulation of the European Parliament and of the Council establishing a framework of measures for strengthening Europe's semiconductor ecosystem (Chips Act)' (see page 34 of this Official Journal), Opinion of the European Economic and Social Committee on the Council Regulation amending Regulation (EU) 2021/2085 establishing the Joint Undertakings under Horizon Europe, as regards the Chips Joint Undertaking (see page 40 of this Official Journal) and Opinion of the Consultative Commission on Industrial Change (CCMI) on 'A Chips Act for Europe: Implications of the European Chips Act for defence and aerospace manufacturing' (supplementary opinion to this opinion).

([2]) IC Insights: https://www.icinsights.com/news/bulletins/2022-Semiconductor-Sales-To-Grow-11-After-Surging-25-In-2021/

([3]) Senate Passage of USICA Marks Major Step Toward Enacting Needed Semiconductor Investments — Semiconductor Industry Association (semiconductors.org).

([4]) A new world under construction: China and semiconductors | McKinsey.

([5]) COM(2021) 118.

([6]) COM(2021) 574.

3. **Specific comments**

3.1. In this section, the EESC assesses specific aspects of the European Chips Strategy's strategic objectives.

3.2. *Policy-driven investment*

3.2.1. To achieve the Chips Strategy's goals, the European Commission intends to mobilise around EUR 43 billion in public and private investment. This includes EUR 11 billion in public investment under the Chips for Europe Initiative. Moreover, the Commission plans to combine various measures, such as equity support, a Chips Fund worth EUR 2 billion, EIB loans, and funds from microelectronics measures in recovery and resilience plans and from national or regional funds. The Commission also mentions support for industrial research and innovation through Important Projects of Common European Interest (IPCEIs). In principle, the EESC supports the ambitious investment plans. However, it remains unclear how they will be financed. The EESC calls on the Commission to flesh out these plans.

3.3. *Strengthening research and technology leadership*

3.3.1. The Horizon Europe research framework programme already sets the goal of promoting next-generation technologies. The EESC strongly supports this objective. According to the European Commission, future research activities to be supported under the 'Chips Joint Undertaking' will help to better meet the needs of vertical industries in the future and to ensure that societal and environmental challenges are addressed.

3.3.2. The Commission intends for research efforts to focus on technologies to achieve transistor sizes below 2 nm, disruptive technologies for AI, ultra low-power energy-efficient processors, novel materials, as well as heterogeneous and 3D integration of different materials, and emerging design solutions. The EESC essentially welcomes and supports this approach. Europe has a good foundation as a research centre. Generating product-specific intellectual property for the European semiconductor value chain, including based on the RISC-V open-source approach, should further improve skills in semiconductor solutions for many key sectors.

3.3.3. The EESC agrees with the intention to promote the integration of key functions, sustainable energy consumption, increased computing performance and disruptive technologies such as neuromorphic and embedded chips for artificial intelligence (AI), integrated photonics, graphene and other technologies based on 2D materials. As well as small feature sizes (< 2 nm), the needs of the customer industry and the strengths of Europe's semiconductor industry must be considered, particularly when it comes to power semiconductors and sensors that are significantly larger. While technologies such as AI, machine learning, 5G/6G and high-performance computing require chip solutions of 5 nm and under, industrial production continues to require specialised chips of much bigger feature sizes on a large scale. Europe should therefore not focus exclusively on the smallest feature sizes. The EESC firmly believes that proficiency in smaller feature sizes (< 10 nm) is not the sole determining factor in the success of the semiconductor ecosystem. On the contrary, the specific requirements for microelectronics will become increasingly differentiated in the future and an increasingly wide variety of chip solutions will be needed that are also disruptive and innovative, regardless of their size. The EESC therefore recommends a comprehensive approach, primarily based on the innovative potential for the semiconductor ecosystem.

3.3.4. The EESC supports research into quantum chips and welcomes the provision of funding from Horizon Europe's Quantum Technologies Flagship initiative.

3.4. *Leadership in design, manufacturing and packaging*

3.4.1. The EESC welcomes the goal to strengthen semiconductor technology and innovation capacities in the EU and to promote a vibrant and resilient semiconductor ecosystem. This comprehensive approach, which focuses not only on technology innovation stakeholders but also on supply and user industries, is to be viewed positively. The EESC stresses the need to strengthen the entire semiconductor value chain and ecosystem, since it is not just chips, but also skills in materials and processes, including packaging, that play a fundamental role in enabling new semiconductor technologies. Close cooperation between supply and demand-side stakeholders is important, with the Alliance on Processors and Semiconductor Technologies playing an advisory role, together with other stakeholders. The EESC recommends swiftly moving forward with the initiative. Ultimately, however, the actual implementation of the measures will determine whether these measures are successful and whether the expected investment is actually made.

3.4.2. The European Commission is planning to create design infrastructure for integrated semiconductor technologies. All interested stakeholders, including SMEs, will have access to this infrastructure. The EESC welcomes the introduction of clear intellectual property rules, which is crucial for the success of such a platform where there is considerable investment in research. It also believes that participation and, above all, the provision of designs should be voluntary. The concept of cooperation and creation of synergies, including at international level, is very welcome. However, the actual implementation will also be crucial here. The platform can only be successful, if various stakeholders from academia, research, universities, developers and industry demonstrate a strong willingness to participate.

3.4.3. The EESC welcomes the plan to create innovative pilot lines for prototypes based on existing pilot lines. It also makes sense to link them to the design infrastructure platform.

3.4.4. The semiconductor industry produces a range of high-tech products that are important for many applications. This product variety is embedded in international markets. The EESC therefore stresses that any attempts to introduce certification should be based on international norms and standards. Close cooperation with manufacturers, users and international partners is important in this regard. Recently, the semiconductor industry has been at the centre of regional trade tensions and friction in the supply chain. Combined with the ambitions of emerging market players, this leads to different national and regional approaches to standardisation as well as to tensions in formal standardisation at international level when it comes to international standard-setting and the associated certification schemes. The EU should make every effort to develop market-driven standards that can be translated into international standards. To this end, cooperation both within the EU and with international partners is of the utmost importance.

3.4.5. The EESC agrees with the European Commission that private investment in advanced semiconductor facilities is likely to require considerable support from the public sector. The Commission also intends to take into account whether production facilities are 'first of a kind' in State aid assessments under Article 107(3)(c) TFEU and states that even 100 % of a proven funding gap may be covered by public resources, if such facilities would not otherwise exist in Europe. The EESC acknowledges that promoting the semiconductor industry is a key and strategic forward-looking project for the EU that will be decisive for security of supply and for the future of Europe as a centre of innovation and a place to do business. At the same time, the EESC points out that granting significant State aid up to 100 % — financed by taxpayers — could lead to investments which are not commercially viable and could have a negative impact on the market. If the corresponding subsidy share and funds are too large and cover any economic risk, this could lead to unfair competitive conditions. The EESC also highlights the risk of costly international subsidy races, especially if the site selected for an advanced semiconductor facility is not optimal. The EESC draws attention to the European Commission's Communication on *A competition policy fit for new challenges* ([7]), which clarifies that such aid must be subject to strong safeguards and that benefits must be shared widely and without discrimination across the European economy. The EESC recognises that the first-of-a-kind principle creates attractive framework conditions for relocations, which could also have a catalyst effect on other economic operators. Ultimately, however, the economic viability of such facilities must be guaranteed, at least in the medium term, to ensure that investment from public funds is effective. This is the only way to avoid the worst-case scenario of an underused semiconductor factory that costs millions of euros a day.

3.5. *Facilitating private investment*

3.5.1. The EESC welcomes the creation of the 'Chips Fund', particularly if it will make it easier for businesses, especially SMEs and start-ups, to obtain adequate funding.

3.6. *Addressing the acute skills shortage*

3.6.1. Digitalisation and technological change require continuous education and training. The EESC calls on the Commission and the Member States to address skills gaps in key digital areas in order to meet the high demand for skilled workers, both with and without university degrees, especially in STEM fields (science, technology, engineering and mathematics). This needs to begin in school. When establishing study and career guidance, the foundations for lifelong learning also need to be laid. In particular, it is also vital to structurally promote greater representation of women in the IT sector through programmes to improve digital skills. Companies should also play their part, by enabling women to improve

([7]) COM(2021) 713 final.

their IT skills through a variety of digital skills programmes and training courses. Initiatives at EU level and in the Member States that aim to get more women involved in digitalisation, such as WomenTechEU ([8]) and SheTransformsIT ([9]), set good examples. Cooperation between national and European initiatives should be stepped up.

3.7. *Understanding global supply chains and anticipating future crises*

3.7.1. The EESC commends the strategic approach of identifying and assessing potential shortages in the semiconductor supply chain. Monitoring is an important tool for assessing and anticipating trends and events that may lead to disruptions in the supply chain. The European Commission is already conducting a stakeholder survey ([10]) on the semiconductor ecosystem to gather information on the current demand for chips and wafers, as well as specific business forecasts for demand in the future. This will also contribute to the third pillar of the Chips Act and to upstream emergency measures. However, the EESC calls on the Commission to keep the results of this survey strictly confidential, as answering questions regarding actual semiconductor production involves providing sensitive data and, potentially, trade secrets. It is therefore important that such surveys be voluntary and that these sensitive data be treated with the utmost confidentiality.

3.7.2. The EESC thinks that the measures for dealing with disruptions are extremely far-reaching. Prioritisation of orders for critical sectors, common purchasing schemes and export controls are extensive market interventions that must be reserved for exceptional situations. Against the background of a market-based ecosystem, globalised value chains, and the high level of interdependence between different world regions, state intervention must be limited to the necessary minimum. The Commission should outline the preconditions for the envisaged measures in more detail. The EESC is also critical of the fact that the 'Semiconductors Board', which is to decide on the measures, will consist exclusively of representatives of the Member States and the Commission, without involving relevant market players and social partners.

3.8. *International cooperation*

3.8.1. Due to the global interdependence of the semiconductor ecosystem, efforts to strengthen the semiconductor industry should be coordinated internationally, for example in the G7 and G20, to support the entire semiconductor value chain and create synergies. The EESC advocates equal market access and a level playing field. This includes the reciprocal removal of barriers to investment and the prevention of new trade restrictions as retaliatory measures. Joint strategies should be developed in close coordination with industry and social partners to safeguard the semiconductor supply chain, including equipment, materials and raw materials. The development of market-driven and consensus-based European standards with the aim of translating them to the international level as well as international cooperation on standardisation are also key to achieving economies of scale that benefit end users in the form of affordable, high-quality products.

Brussels, 15 June 2022.

The President
of the European Economic and Social Committee
Christa SCHWENG

([8]) Women TechEU (europa.eu).
([9]) *Digitalisierung braucht mehr Frauen* | SheTransformsIT
([10]) https://ec.europa.eu/growth/news/stakeholder-survey-european-chip-demand-2022-02-16_en

ANNEX

Opinion of the Consultative Commission on Industrial Change (CCMI) on 'A Chips Act for Europe: Implications of the European Chips Act for defence and aerospace manufacturing'

(supplementary opinion to INT/984)

Rapporteur: **Maurizio MENSI**

Co-rapporteur: **Jan PIE**

Plenary Assembly decision	18.1.2022
Legal basis	Rule 37(2) of the Rules of Procedure
	Supplementary opinion
Section responsible	Consultative Commission on Industrial Change (CCMI)
Adopted in section	13.5.2022

1. **Conclusions and recommendations**

1.1. The EESC believes that semiconductors are at the core of modern geopolitics and technological-industrial leadership. Fostering a state-of-the-art European semiconductor ecosystem and resilient supply chains is thus vital for the EU's strategic autonomy, technological sovereignty, resilience, and industrial competitiveness, including in the strategic defence and aerospace sectors. The EESC therefore fully supports the ambitious objectives of the European Chips Act.

1.2. The EESC believes that more resources than currently envisaged are needed for the EU to achieve its ambitious goals in semiconductors. To make best use of its limited resources, the EU should also consider prioritising specific technologies or value chain segments and pursuing complementary efforts with like-minded partners.

1.3. The EESC firmly believes that the European Chips Act should ensure that, in particular, defence and aerospace are supported in accordance with their strategic importance and status as critical sectors, regardless of their market size. This should be reflected in all pillars of the initiative, including by incentivising new chip designs that meet defence and aerospace-specific requirements. Specific measures would entail priority-rate access to pilot lines and the possibility to prioritise orders from critical sectors to Integrated Production facilities and EU Open Foundries outside 'crisis mode'.

1.4. In the EESC's view, industrial stakeholders from the semiconductor and downstream critical sectors should be full members of the European Semiconductor Board and its subsidiary bodies, to ensure maximum coordination between policymakers and upstream and downstream market actors.

1.5. The EESC considers that investments in both advanced and mature chips production in Europe are necessary to ensure resilient supply chains for defence and aerospace manufacturing, as well as that innovation should be supported for all semiconductor types needed by European industry.

1.6. The EESC believes that the EU's strategy should include specific measures to address the supply of raw materials.

1.7. The EESC considers that, to avoid a detrimental subsidy race, funding should be coordinated at the EU level as much as possible, while the State Aid control mechanism under Article 107 TFEU should be adjusted to ensure assessment predictability and coherence with other EU goals.

1.8. The EESC believes that state aid should be granted to Integrated Production facilities and EU Open Foundries that directly benefit multiple Member States, and that public support could be focused on initiatives that are closely linked to 'green' applications.

1.9. In the EESC's view, data gathering for monitoring supply chains and anticipating future crises should be undertaken by a single body at EU level.

1.10. The EESC advocates an appropriate data governance framework, covering data transparency, interoperability, sharing, access, and security.

1.11. The EESC believes that, as strategic sectors, defence and aerospace should be prioritised for developing certification procedures and the Chips for Europe initiative could support the development of joint military-civilian standards in the context of the European Standardisation Strategy.

1.12. The EESC considers that the European Chips Act must be coherent and clearly linked with all other EU and national policy instruments with related objectives, including the Industrial Alliance on Processors and Semiconductor Technologies, the Observatory for Critical Technologies and the European Raw Materials Alliance.

1.13. The EESC welcomes the European Chips Act and calls for negotiations on the initiative to begin without delay, and for its swift, ambitious, effective implementation.

2. **Background**

2.1. In an increasingly digitalised world, semiconductors are an essential component of many economic sectors and areas of life. They power all digital products, enable key technologies of the future, such as AI, 5G, and cloud/edge computing, and underpin critical infrastructures that support our societies.

2.2. Semiconductors are also vital for defence and aerospace manufacturing. The sophisticated systems that European militaries and other end-users increasingly rely on contain chips of all kinds, including many of those found in commercial products. However, whereas commercial chips production focuses on cost-efficiency at large volumes, defence and aerospace require small volumes and emphasise durability, reliability and security of information. The defence and aerospace sectors together made up around 1 % of the global chips market in 2020 ([1]).

2.3. The global acceleration of the digital transformation is fuelling a booming demand for all types of semiconductors across industry sectors, which is expected to double by 2030. The outbreak of the coronavirus pandemic reinforced demand and disrupted global supply chains, and significant supply challenges have since affected every downstream industrial sector worldwide. This has led to long delivery delays, order cancellations and factory shutdowns with serious economic consequences. For example, the ratio of PMI new orders to suppliers' delivery times for manufacturers in the euro area more than tripled between 2019 and 2021, particularly in industries that use semiconductors for production (e.g. auto, technology equipment), while motor vehicle production in the euro area felt by 18,2 % between November 2020 and March 2021 ([2]).

2.4. These developments have revealed Europe's dependence on a small number of foreign suppliers of chips and components, and its resultant vulnerability to supply chain disruptions. In particular the Union's defence and aerospace industry has felt this vulnerability acutely. Unable to meet rising global demand and driven by a market logic, chips manufacturers prioritise domestic markets and high-volume industries, leaving the rest underserved.

2.5. Since chips lie at the heart of our economies, supply chain disruptions pose an economic, and potentially social, challenge. However, when it comes to strategic sectors like defence and aerospace, dependence also becomes a security problem, as it endangers the delivery of defence and aerospace products in the EU.

([1]) TechNavio, *Semiconductor Market in Military and Aerospace Industry by Product and Geography — Forecast and Analysis 2021-2025*, November 2021; Gartner, 'Worldwide Semiconductor Revenue Grew 10,4 % in 2020', *Gartner Press Release*, 12 April 2021.

([2]) Attinasi, Maria Grazia, et al. 'The semiconductor shortage and its implication for euro area trade, production and prices', *ECB Economic Bulletin* 4/2021, April 2021.

2.6. This is highly problematic in a context of rising geopolitical tensions and weaponisation of trade and technology flows, which has made semiconductors geopolitically critical. As a result, leading economies are making intensive efforts to strengthen their production capacities and reduce their dependencies. For example, the US plans to invest USD 52 billion in its semiconductor ecosystem until 2026, China aims to have mobilised USD 150 billion to achieve 70 % self-sufficiency by 2025, and South Korea plans to mobilise up to USD 450 billion in private investment by 2030.

2.7. Against this background, the EU must urgently reduce its dependencies, boost its competitiveness, and reinforce its security of supply for chips, by strengthening its position in the global supply chain. This goal is especially relevant for a strategic sector like defence and aerospace. At the same time, high complexity, costs and barriers-to-entry make autarchy in semiconductor production both unrealistic and undesirable. Therefore, bolstering international partnerships will be key to enhancing Europe's security of supply.

2.8. In the 2020 Industrial Strategy, the Commission recognised semiconductors as a strategic industrial area where European dependencies should be addressed. The 2021 Digital Compass outlined the goal of doubling Europe's share of global production of cutting-edge and sustainable chips to 20 % by 2030. In her 2021 State of the Union speech, Commission President von der Leyen announced the European Chips Act, aimed at creating a state-of-the-art European chips ecosystem. Finally, in March 2022, the European Council reaffirmed the importance of this initiative, calling for reducing EU strategic dependencies in highly sensitive areas including semiconductors.

3. **General comments**

3.1. *Vision*

3.1.1. While Europe is strong in some segments of the chips value chain (e.g. R & D, manufacturing equipment), it must strengthen its position all along the chain. Therefore, the EESC welcomes the European Commission's aim of leveraging existing strengths to close the gap 'from lab to fab'.

3.1.2. The EESC is concerned that Europe's strategy does not sufficiently address the topic of raw materials, which is a key dimension of security of supply and where Europe has dependencies on third countries for certain inputs (e.g. photoresist, silicon metal). The European Chips Act should feature specific measures to tackle this risk, including links to the European Raw Materials Alliance.

3.1.3. The EESC fully supports the aim of boosting European production of cutting-edge and sustainable semiconductors. However, critical sectors including defence and aerospace manufacturing also need older generation chips. The EESC considers therefore that investment in both advanced and mature chips production is necessary to ensure resilient supply chains.

3.1.4. The EESC firmly believes that the strong involvement of the entire ecosystem, including start-ups, scale-ups and SMEs as well as larger undertakings, is indispensable for supporting large-scale technological capacity building and innovation throughout the Union.

3.2. *Investment*

3.2.1. To achieve the aims of its chips strategy, the European Commission counts on around EUR 43 billion of policy-driven investment up to 2030, including EUR 11 billion of public investment under the Chips for Europe Initiative. Much greater clarity is needed, however, on the sources and amounts of financing, the usage of existing budget appropriations, and the objectives to be supported by each budget line.

3.2.2. The EESC is sceptical that the amounts of public investment foreseen in the EU's chips strategy, some of which were already earmarked for actions in microelectronics, match its level of ambition. The EU's industrial competitors have been providing and continue to provide much greater support to their semiconductor ecosystems, which are already better positioned in the global value chain. Therefore, the EESC believes that more resources than currently envisaged are needed to achieve the ambitious initiative's stated objectives, both in terms of market share and time frame. Cutting the administrative burden to access those resources should be viewed as a priority.

3.2.3. To use its limited resources most efficiently, the EU should also consider prioritising specific technologies or value chain segments. Coordination with like-minded partners in this respect could ensure complementarities and non-duplication of effort.

3.2.4. The EESC also believes that the budgetary reallocations from Horizon Europe and Digital Europe should not leave other priority areas, such as space, AI and cybersecurity, with insufficient resources to achieve their own specific objectives. Moreover, no reallocations should take place from the European Defence Fund, as this would reduce the already limited resources supporting the strategic defence sector.

3.3. *Critical sectors*

3.3.1. The European Chips Act recognises the importance of 'critical sectors', including defence and aerospace, and provides for their prioritisation in case of significant supply disruptions. The EESC welcomes this strategic approach, as it reflects the vital role of these sectors in the security and resilience of our societies.

3.3.2. However, the EESC believes that the notion of 'critical sectors' should be reflected across all pillars of the initiative. In particular, the Chips for Europe Initiative should include specific measures to support critical sectors, including priority-rate access to pilot lines, while Integrated Production Facilities and EU Open Foundries should reserve a minimum of their total production capacity to cover demand from these sectors.

3.4. *Strategic importance of defence and aerospace*

3.4.1. The EESC firmly believes that the European Chips Act should ensure support for the defence and aerospace sectors in accordance with their strategic importance and their 'critical' status. The support should consider these sectors' specific features, including their small market share and limited ability to influence related investments and market choices.

3.4.2. Given these specificities, ensuring security of supply for these sectors requires an appropriate balance between a market-driven, volume-based approach and a strategic, criticality-based approach. This balance should be reflected, in particular, in the relative prioritisation of orders to production facilities and the allocation of products following common purchases, where defence and aerospace manufacturing would compete against much larger industries.

3.5. *Environment*

3.5.1. The EESC believes that the European Chips Act should be fully aligned with and support the EU's strategic objective of a green and sustainable EU economy by 2030. To this end, research on the environmental impact of semiconductor initiatives should be strengthened, to gain an in-depth understanding of the environmental impact of the entire value chain, instead of just the performance of the final product.

3.5.2. Accordingly, public support should be focused on semiconductor initiatives that are closely linked to 'green' applications, including by granting undertakings that develop such products better terms for public support.

3.6. *Governance*

3.6.1. Industry stakeholders are better placed than anyone to monitor market trends and assess potential remedies to supply disruptions. The EESC therefore firmly believes that such stakeholders, particularly from the semiconductor sector and critical sectors, should be closely involved in the governance of the chips strategy, including as full members of the Semiconductor Board and its sub-groups. Involving downstream and upstream sectors will also improve their coordination, thus enabling industry to address supply disruptions without extensive market intervention.

3.7. *Coherence*

3.7.1. Multiple policy instruments at the EU level already focus on chips, such as Horizon Europe, Digital Europe, the Industrial Alliance on Processors and Semiconductor Technologies, and the Observatory for Critical Technologies. The European Raw Materials Alliance also deals with related topics. To maximise overall effectiveness and efficiency, these instruments and the European Chips Act must be fully coherent and clearly linked. Coordination will be necessary between EU-level initiatives and the national projects that Member States are actively developing.

4. **Specific comments**

4.1. *Strengthening research and technology leadership*

4.1.1. The EESC welcomes the European Commission's intention to support next-generation technologies, such as < 2 nm transistors, disruptive AI technologies, and quantum chips. These technologies have great potential for addressing the future needs of strategic industries, including defence and aerospace, therefore it is crucial to swiftly develop and protect European IP in these areas.

4.1.2. At the same time, European downstream industries, including defence and aerospace, will continue to require specialised chips of larger feature sizes. Therefore, the European Chips Act should not focus exclusively on the smallest chips but promote innovation for all needed chip types.

4.2. *Leadership in design, manufacturing and packaging*

4.2.1. The EESC welcomes the emphasis of the Chips for Europe initiative on close collaboration between supply and demand-side actors, and the envisaged advisory role of the Alliance on Processors and Semiconductor Technologies, that will both help ensure coherence of effort.

4.2.2. The EESC firmly believes that it is particularly important for the resilience and autonomy of Europe's defence and aerospace industry that the EU has its own capabilities to design future electronics, including for features such as cyber protection, AI capabilities, modularity and re-use.

4.2.3. The EESC fully supports the creation of innovative pilot lines for prototypes. With a view to fostering synergies between commercial production and the strategically important defence and aerospace manufacturing sector, chip designs developed in this context should consider the unique requirements of these two sectors. Designs that aim to cover defence and aerospace needs should also have priority access to pilot lines.

4.2.4. The EESC believes that, as strategic sectors, defence and aerospace should be prioritised for developing certification procedures. The development of standards will be pivotal. To maximise the potential for synergies, the Chips for Europe initiative could support the development of joint military-civilian standards in the European Standardisation Strategy.

4.3. *Boosting Europe's ecosystem and ensuring the security of supply*

4.3.1. The EESC agrees that considerable and rapid public support will be required to incentivise the large private investments needed to reinforce Europe's production capacity. Ensuring legal certainty and cutting to the maximum extent possible the red tape will be key in attracting these investments. It is thus essential to clearly define the criteria for designating Integrated Production facilities and EU Open Foundries and for authorising State aid, and to streamline administrative procedures. Criteria for coordinating the different support measures available should also be identified, to ensure an efficient and non-discriminatory application of State aid rules.

4.3.2. The EESC welcomes the fact that the 'first-of-a-kind' principle provides for supporting innovation in terms not only of technology node, but also of process technology, performance, and sustainability. A complementary 'EU-wide' principle could be introduced to recognise facilities that directly benefit multiple states (e.g. by committing to supplying companies from several Member States on an equal footing).

4.3.3. To avoid a costly subsidy race among Member States, the EESC suggests coordinating public funding at the EU level as much as possible (e.g. by making use of the Joint Undertaking and IPCEI framework and by coordinating the digital chapters of the national Recovery and Resilience Plans which are supposed to spend 20 % or 145bn EUR to the digital transformation). Adjustment in the application of the State aid control mechanism under Article 107 TFEU is also warranted to allow faster and more predictable assessment of public support. We note to this extent that, e.g., the Covid temporary Framework proved successful in ensuring timely and adequate support as well as the Guidelines on broadband support. While public support for Integrated Production facilities and EU Open Foundries can be supported up to 100 % of the funding gap, further guidance on the analysis is highly welcome. For instance, Integrated Production facilities and EU Open Foundries that also meet the EU-wide criterion could be eligible for faster aid authorisation.

4.3.4. The EESC believes that, when assessing State aid, the Commission should consider additional objectives, for example promoting strategic sectors such as defence and aerospace, and ensuring coherence with EU sustainability goals.

4.4. *Addressing the acute skills shortage*

4.4.1. Digital skills are key for achieving Europe's ambitions on semiconductors, and demand for them will continue to grow. The EESC therefore welcomes the focus on addressing Europe's digital skills gaps and calls for the ambitious implementation of the foreseen relevant initiatives.

4.5. *Understanding global supply chains and anticipating future crises*

4.5.1. The EESC welcomes the strategic focus on mapping and monitoring supply chains and identifying disruption risks. Certain risks are particularly relevant for the defence and aerospace sectors, including the impact on suppliers of ESG policies, EU regulations like REACH, and the foreign and export policies of foreign suppliers' home countries (e.g. US ITAR/EAR).

4.5.2. This task demands an approach that reflects the complex, cross-border nature of supply chains and ensures coherence of information. The EESC thus calls for data gathering to be undertaken centrally by a single designated body at the EU level, to which companies across the Union would report following clear and streamlined requirements. Appropriate mechanisms should be established to ensure confidentiality of sensitive information provided by industry.

4.5.3. Finally, it is important to have clarity on the rules that apply in 'crisis mode'. For example, since most chip types are used across different industries, during a global shortage, companies from multiple critical sectors will likely need access to the same products and production capacities. Clear criteria for prioritisation of orders and allocation of products following common purchases are thus necessary.

4.6. *International cooperation*

4.6.1. The global semiconductor ecosystem is complex, specialised and highly interdependent. As such, efforts to boost production capacity and resilience at the EU level must be coupled with cooperation with like-minded international partners. Leveraging each partner's strengths and developing coordinated strategies will promote synergies, avoid duplication of effort, and increase efficiency along the entire value chain.

In pursuing cooperation with partners on chips, the EU should make best use of existing fora, such as the EU-US Trade and Technology Council, with the involvement of industry stakeholders, given their expertise and role in implementing projects on the ground.

Brussels, 13 May 2022.

The President
of the Consultative Commission on Industrial Change
Pietro Francesco DE LOTTO