



On 8 February 2022, the European Commission has presented its proposal for a “Regulation establishing a framework of measures for strengthening Europe’s semiconductor ecosystem” (“EU Chips Act”), alongside a Communication and amendments to the Key Digital Technologies Joint Undertaking. The package is an important milestone and provides the opportunity to implement measures to strengthen the European semiconductor ecosystem, building on R&D&I, enhanced security of supply as well as increased supply chain transparency.

A strong European semiconductor ecosystem is the backbone for a competitive and resilient EU economy. It is also indispensable in achieving the ambitious targets of the green and digital transition. The EU and its member states have agreed to reduce greenhouse gas emissions by 55% and set the goal to reach carbon neutrality by 2050<sup>1</sup>. The use of more renewable energy technologies, smart grids and meters, innovative industrial and building automation solutions, electric vehicles and energy-efficient consumer devices bear high potentials to help achieving these goals. What all these applications have in common is that they rely on semiconductors. Not a single electric and electronic device can function without chips. Consequently, a green and digital transformation building on smart technologies will largely depend on secure semiconductor solutions across a wide range of technologies and node sizes - analog (e.g. battery management) and digital (e.g. edge processing) chips. Being as independent as possible on key IP for these crucial applications and technologies must be the goal. In parallel, to meet the rising demand for semiconductors, additional manufacturing capacity must be built up on European soil to reduce geographic dependencies and geopolitical risks.

### **Pillar 1 Chips for Europe Initiative**

Enhancing EU’s capabilities in chip design is a key building block of a sustainable and impactful EU semiconductor strategy. The plan to set up a dedicated *Chips JU* is a strong signal. It should build on already planned activities (e.g. KDT JU) and use existing and well-proven infrastructures (Aeneas, EPoSS, Inside).

IP development for the EU key verticals Automotive, Industrial, Telecommunication Infrastructure (5G/6G), Health, Smart Home must be a priority area of the *Chips for Europe Initiative*. This will strengthen the European semiconductor sector and the ability of EU’s lead industries to develop cutting-edge products overall. Targeted programs aiming at bringing industry, RTOs and universities together to create IP with a clear commercialization roadmap for these verticals must be a main objective. In addition, it must be ensured the *Initiative* is equipped with additional financial resources. Shifting already allocated budgets from other, not less important programs to the *Chips for Europe Initiative* does not comply with the ambitious political targets being defined in the EU Chips Act.

### **Pillar 2 Security of Supply**

The introduction of “European first-of-a-kind facilities” – being either “Open EU Foundries” or “Integrated Production Facilities” - is a milestone towards more strategic autonomy of the EU. The EU has set itself the target of a 20% semiconductor production share by 2030. This translates into investment needs of € 300-600 bn.. The “first-of-a-kind” instrument gives chip manufacturers and foundry operators a framework to consider investments to build up these production capacities in Europe.

The definition of “European first-of-a-kind” will foster capabilities in Europe which are highly relevant for EU’s key verticals, e.g. production of nodes in the range of 12 to 40nm. This will lead to the creation of a more complete EU ecosystem, enhancing innovation and supply chain resilience. Since the instrument is not restricted to certain technologies or structural sizes, it will be possible to realize projects which will directly serve EU industry’s demand, mid- and long-term. As outlined in the Regulation proposal, the direct benefit of these projects for the EU, its industry and citizens should be a key criterion when selecting eligible projects. It is also important that the required path

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<sup>1</sup> [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en)

of evolution towards the „next generation of chips“ leaves room to drive innovations in digital but also analog/mixed signal ICs – making it possible to further enhance EU’s leadership position in that field. However, to achieve consistency with EU’s state aid policy, the main legal basis for that instrument should be the Communication “A competition policy fit for new challenges” from November 18, 2021.

### **Pillar 3 Supply Chain Monitoring**

Increased transparency and a better understanding of critical supply chains is key to anticipate and effectively address future disruptions. Regarding semiconductors, technological complexities require a balanced approach when it comes to monitoring and crisis management measures.

Pillar 3 of the EU Chips Act suggests far-reaching and unprecedented market interventions. The current definition of “*crisis*” is raising questions. It is important to understand that the current semiconductor shortage is not caused by a crisis in chip production due to production stops of semiconductor factories or disruptions in raw material supply. The shortage is a consequence of unanticipated rising demand for semiconductors needed during the pandemic, coupled with significant fluctuations in chip demand of important sectors such as automotive and industrial. It triggered a supply-demand imbalance felt across the world. That shift has accelerated a trend which was developing since several years already: a disconnect between the thriving chip demand for IoT devices, digitalisation, and electrification on one side, and building-up of respective chip manufacturing capacity across a broad range of node sizes on the other. In this sense, the term “semiconductor crisis” as suggested in the proposal is severely misleading. The current chip shortage, contrary to the Recital (1) of the Chips Act, is not a symptom of permanent and serious structural deficiencies in the Union’s semiconductor value chain. In fact, the current shortage is a global phenomenon and cannot be solely attributed to one region’s semiconductor ecosystem.

The proposed measures of the “toolbox” are not reflecting the complexity and uniqueness of the semiconductor supply chain, the requirements of the users (downstream) as well as the manifold reasons why a shortage may occur. The suggested, static measures – priority-rated orders and joint procurement of chips – will not be effective in preventing future supply disruptions. Today, an average car comprises approx. 1,000, a smartphone ca. 160 different chips. For the most part, chips are not “off-the-shelf” or “one-size-fits-all” products. In addition, chip factories are not homogeneous and only able to manufacture a specific range of node sizes and transistor technologies. This means that Open EU Foundries (OEF) and Integrated Production Facilities (IPF) in the EU would only be able to manufacture and supply a very limited number of the chips required. “Just-in-time” supply chains of downstream sectors are increasing the risk of disruptions since they do not reflect the long lead times for chip production (4-6 months). Therefore, the focus of the toolbox should shift to instruments that can effectively help chip users to enhance their security of business continuity. Member states and the European Parliament should therefore assess the implementation of a framework that includes safety stock requirements for crisis-relevant products.

### **About NXP Semiconductors**

The Dutch NXP Semiconductors, with its global headquarters in Eindhoven and its largest factory in Nijmegen, enables a smarter, safer and more sustainable world through innovation. As the world leader in automotive and secure connectivity solutions for embedded applications, NXP is pushing boundaries in the automotive, industrial & IoT, mobile, and communication infrastructure markets. Built on more than 60 years of combined experience and expertise, the company has approximately 31,000 employees in more than 30 countries and posted revenue of \$11.06 billion in 2021.