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Resolution EU Digital Sovereignty and Chip Production

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Recognising that:

1. The European dependency on the supply of semiconductors that come from a limited number of companies and geographies is exposing the Union to a collective and structural vulnerability in the face of shortages in the global semiconductor industry. Shortages in chip production are caused not only due to logistical reasons but also by political and strategic ones.

2. Supply disruptions directly affect individuals and communities, companies, industries, and state entities, as microchips are playing a leading role in many sectors, including health and education, energy and automotive, communication, as well as defense and security.

3. Semiconductor chips are central to the digital economy, as well as to the rest of our interactions and transactions, and therefore strengthening the Union's semiconductor ecosystem automatically translates into strengthening our ecosystem of freedom of movement for persons, goods, services, and capital.

4. There is a clear disparity between the global economic weight of the European Union and its global semiconductors market share.

5. The European semiconductor ecosystem supports approx. 200.000 jobs directly and up to 1.000.000 induced jobs in systems, applications, and services in Europe. Overall, micro- and nano-electronics enable the generation of at least 10% of GDP in Europe and the world. Moreover, the European semiconductor sales are up 20.4 percent year-on-year. [1]

6. On 15 September 2021, the Commission announced an EU Chips Act, pointing out the need to link together Europe's world-class research capacities and to coordinate EU and national investment along the value chain. The European Chips Act aims to ensure Europe meets its digital decade target of doubling its global market share in semiconductors to 20%.

7. The Chips Act builds on previous initiatives. In June 21 the Commission launched the European Alliance on Processors and Semiconductor technologies which will play an advisory role in the delivery of the Chips for Europe initiative[2]

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8. The Chips Act is expected to mobilize more than €43 billion of policy-driven EU public and private investments until 2030, enabling the EU to anticipate and respond to future supply chain disruptions. Of that, €11 billion will be repurposed from Horizon Europe and Digital Europe funds to boost research, development, and manufacturing of microprocessors.

9. The geopolitical and geo-economic pressures resulted in the chips crisis, so the EU Chips Act was launched with urgency, and without an *ex-ante* impact assessment. Therefore, the implementation of its policies is vulnerable to political commitment and the industry's short-term orientation.

10. A majority of the crucial raw materials used for the production of chips & semiconductors in the EU is sourced in countries outside of the EU. E.g. 97% of all Gallium is sourced in China, 69% of all silicon used is sourced in China, 43% of all Palladium used is sourced in Russia, and 68% of all Cobalt sourced comes from the DRC. [1]

Acknowledging that:

1. While in many industries it makes economic sense to outsource the production of some components to third countries, applying the same logic of outsourcing motivated by lower labor costs to the chips industry will be detrimental to all of us. This is because supply shortages of semiconductor components can rapidly affect our entire way of life.

2. The industry of semiconductors and microchips is both capital-intensive and highly skilled and specialized. Massive investments in the EU semiconductor production facilities would bring along high-paying jobs, would incentivize European companies to increase their R&D budgets, would increase the efforts for designing chips that perform better for specific industrial tasks, and would ultimately give Europe a strategic edge.

3. Even if European research & development in terms of semiconductors and microchips is intensive and innovative, the lack of semiconductor production capabilities within Europe places us in the position of not being able to fully harvest the results of the research. This is because, at the moment, we cannot translate these results into competitive advantages for our industries, nor can we benefit from these results before others.

[1] https://hcss.nl/wp-content/uploads/2022/10/Reaching-breaking-point-The-semiconductor-and-critical-raw-material-ecosystem-at-a-time-of-great-power-rivalry-October-2022-Full-Version.pdf.pdf

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4. The European Union has a strong position in terms of the materials used to chip manufacturing and is the only supplier of machines that can build high-end chips (below 7nm) using Extreme Ultraviolet Lithography (EUV) technology.

5. Currently, the European market is worth about 10%[3] of the global semiconductor market, and the market size is estimated at more than €550 billion[4] and is forecasted to rapidly grow to more than 800 billion until 2030. Therefore, the EU semiconductor market will require huge additional investments, with capital expenditure to bridge the gap between investment needs and funding from policy plans.

6. EU's absolute strategic autonomy is unlikely to be achieved, because of dependencies on third countries for the provision of materials necessary for advanced semiconductor manufacturing (i.e rare elements). However, these countries will likely remain dependent on the USA and the EU for designs or production equipment.

YEPP Calls on:

1. European institutions and Member States to work towards reinforcing the current framework to attract more investments in chip production facilities on European territory and set up favorable conditions for private investments to take place.

2. European institutions and Member States to provide strategic financial planning, including further investment incentives to shore up the credibility of efforts to achieve strategic autonomy, to facilitate the establishment of production capabilities, as well as for the design, testing, assembly, and packaging of chips, and to set up legal and financial incentives to initiate and support the constant collaboration among actors that are using microchips and operate in the same value chains.

3. European institutions and Member States to support universities, R&D centers, and companies in order to increase access to knowledge and research in the microchips industry, and create a skilled workforce for the industry.

4. European institutions and Member States, as well as all stakeholders from the public and private sectors, to increase dialogue, coordinate, and establish long-term partnerships valorizing the European Alliance on Processors and Semiconductor technologies to create a well-established semiconductor ecosystem in Europe and to allocate the capabilities among the value chains in a manner in which each member state to benefit from chip production and the rise of the EU as a digital superpower. Moreover, to

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consider expanding the Alliance to like-minded countries to support international partnerships that will better position the EU in the market.

5. EU to issue a plan for public procurement and export controls, and provide specific guidance for foreign direct investment (FDI) scrutiny or partnering.

6. EU and Member States to create a favourable investment environment for companies producing chips and semiconductors as well as reducing bureaucratic burdens to get the respective production permissions to allow Europe to get more independent and move on with the green transition.

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[1] https://www.eusemiconductors.eu/sites/default/files/ESIA_WSTS_PR_2205.pdf

[2] https://digital-strategy.ec.europa.eu/en/policies/alliance-processors-and-semiconductor-technologies

[3] https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-chips-act_en

[4] https://www.statista.com/statistics/266973/global-semiconductor-sales-since-1988/