

International: The European Union Chips Act - Redrawing the European Union semiconductor industry's map with new opportunities and risks for Nordic companies

In brief

On 13 September 2023, the EU adopted Regulation 2023/1781 ("**EU Chips Act**"), which draws out a new legal framework for the EU semiconductor industry. The Act's main purpose is to create the conditions necessary for the security of supply and to bolster the competitiveness of the EU semiconductor industry. In this article, we have compiled the central features of the EU Chips Act and addressed which opportunities and risks we see associated with the Act for Nordic companies.

Key takeaways

- i. The EU Chips Act introduces a comprehensive framework for the EU semiconductor industry, offering companies both opportunities and risks. While it provides substantial funding for research, development, and production, it also comes with stringent protective measures in times of supply crises.
- ii. Companies may benefit from large-scale funding initiatives for the development, research, and production of semiconductors and chips design, channeled by an investment facilitation framework that will be financed by various programs under the Chips for Europe Initiative.
- iii. The EU Chips Act introduces special statuses, such as integrated production facility (IPF) and open EU foundry (OEF), that are intended to streamline administrative procedures and offer priority access to resources to reduce transactional costs, including the opportunity to seek State aid.
- iv. Companies should be aware of the Act's extensive powers during a semiconductor crisis. The powers vested in the Commission amount, in practical terms, to an expropriation of the business, constituted by information obligations and a requirement to adhere to priority-rated orders. Non-compliance may result in fines up to EUR 300,000 or periodic fines, depending on the nature of the infringement.
- v. Nordic companies in the semiconductor sector should carefully navigate the opportunities and risks presented by the EU Chips Act. By strategically leveraging the funding and streamlined processes while ensuring compliance during crisis situations, they can position themselves for success in the evolving EU semiconductor landscape.

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In more detail

Introduction

Europe has found itself tiptoeing on the edge of uncertainty in the semiconductor market, holding a small fraction of the global market share at less than ten percent. Like a high-stakes juggling act, the EU has also historically relied heavily on suppliers in third countries, leaving it vulnerable to potential disruptions. Until recently, the EU, like most of the world, has had market dependence

on Taiwan, South Korea and China.¹ These three countries have thus far produced the overwhelming majority of the world's supply, with Taiwan having a market share of over 60 percent. However, increased geopolitical tensions in that region posed a significant risk and exposed weaknesses in the EU's supply of semiconductors.

To deal with these issues, the EU adopted Regulation 2023/1781 ("**EU Chips Act**"), which entered into force on 21 September 2023 and sets out a comprehensive framework promoting the development and manufacture of semiconductor technologies and strengthening the security of supply for the resilience of the semiconductor ecosystem in the Union.

The EU Chips Act is built on a **progressive element** intended to ensure the conditions necessary for the Union's competitiveness and capacity for innovation, as well as a **protective element** intended to ensure the adjustment of the industry to structural changes and ensure the security of supply.

This newfound ambition to domesticize production creates potential benefits and, equally, potential risks for companies in Europe, including the Nordics. Effects on future business operations are expected, by leaps and bounds, in the following areas: the opportunity to invest in and develop new technologies, a potential interference in production in case of supply crises in the EU, and, lastly, the granting of State aid for companies active in the semiconductor industry.

Support for developing new technology and R&D

The EU has mobilized more than EUR 43 billion of policy-driven investments through an investment facilitation framework, where EUR 11.15 billion of public investments has been earmarked for the Chips for Europe Initiative ("**Initiative**") to finance technology leadership in research, design, and manufacturing capacities until 2030.

The Initiative is mainly R&D-focused, with emphasis on securing the progressive element of the EU Chips Act and a particular focus on support systems for start-ups and small and medium-sized enterprises (SMEs). The toolbox presented in the Initiative opens opportunities for many companies to expand, research, and build on their technological capacity and knowledge of the design and manufacture of semiconductors.

The Initiative sets out five operational objectives intended to boost the investment and innovation efforts of companies operating in the EU:

First, it sets up a "design platform." This is an open-access, cloud-based virtual tool to be made available across the Union, integrating a wide range of design facilities, from IP libraries to Electronic Design Automation (EDA) tools, as well as support services. Its core objective is to stimulate wide cooperation between users and key actors of the ecosystem and reinforce Europe's chip design capacity.

Second, it establishes pilot lines to facilitate process development, testing, and experimentation, as well as small-scale production. These will serve as a platform for European research and development. Three pilot lines of strategic importance for Europe are as follows:

- Development of Sub-2nm GAA process technology
- FD-SOI technology at 10nm and below
- Heterogeneous integration

Third, the Initiative addresses the requirements of next-generation information processing components, with a notable focus on quantum chips (i.e., chips that leverage quantum effects). It will provide backing for the creation of design libraries for quantum chips, new or existing pilot lines, cleanrooms, and foundries for prototyping and producing quantum chips, as well as facilities for testing and validating advanced quantum chips produced by these pilot lines.

Fourth, it establishes a network of competence centers across the Union that will provide access to technical expertise and experimentation in the area of semiconductors, helping companies, particularly SMEs, to approach and improve design capabilities and developing skills. Competence centers will provide services to semiconductor stakeholders, including start-ups and SMEs.

¹ A similar legislation has been enacted by the United States of America: the CHIPS and Science Act.

Finally, a Chips Fund is established to facilitate access to debt financing and equity in the semiconductor value chain, particularly for start-ups, scale-ups, SMEs, and small mid-caps, through a blending facility under the InvestEU Fund and via the European Innovation Council.

The EU Chips Act also opens the possibility of establishing one or several legal entities with the purpose of implementing actions funded under the Initiative: a so-called European Chips Infrastructure Consortium (ECIC). It would be governed by EU law and the national law of the member state where it is seated. It must be founded by three member states or three legal entities from three different member states. An ECIC is liable for its debts.

Granting of status as IPF, OEF, or "design center of excellence" — streamlined administration for the opportunity to invest

The Commission can grant a manufacturing entity the status of an integrated production facility (IPF) or an open EU foundry (OEF) or award a label of **design center of excellence**. An IPF is a vertically integrated semiconductor manufacturing facility involved in front-end manufacturing (that is, in the production of equipment or key components of equipment predominantly used in semiconductor manufacturing in the Union, as well as in the design of integrated circuits) or the provision of back-end services, or both. An OEF is a semiconductor manufacturing facility that dedicates at least a certain extent of its production capacity to produce chips according to the design of other companies.

To be granted IPF or OEF status, the company must be a **first-of-its-kind** facility, i.e., it must offer an element of innovation in its operations. Its operations must also ensure the security of supply and resilience of the Union's semiconductor sector. A label of "design center of excellence" may also be awarded by the Commission for innovative chip designs.

The practical effect of either status is a streamlined approach to administrative applications and priority access to the pilot lines set up under the Initiative. It also allows access to fast-track permit-granting in the member states for the construction and operation of the facilities, provided that it is regulated in national law. Another benefit is that member states may offer public support to these facilities without prejudice to EU State aid rules.

Granting of State aid to IPFs and OEFs

Companies carrying IPF or OEF status may benefit from State aid. Since semiconductor and chip manufacturing facilities face high barriers to entry in a capital-intensive sector, the Commission has announced that it may consider approving State aid for these facilities on the basis of Articles 107 and 108 of the TFEU, including under the R&D&I State aid framework or Commission Regulation no. 651/2014.

State aid can be granted only to support a project that would not be possible without public support, and the aid must be appropriate and proportionate. The assessment is done on a case-by-case basis, and the positive effects of State aid must outweigh the negative. For chip manufacturing facilities, these could be: (a) that an equivalent facility does not already exist in Europe, i.e., it is **first-of-its-kind**; (b) the supported facility will not crowd out existing or committed private initiatives; and (c) the public support covers a maximum of 100 percent of a proven funding gap, i.e., the minimum amount necessary to make sure these investments take place in Europe.

Depending on the unique circumstances of each situation, additional positive effects could be considered. These could involve the reinforcement of the semiconductor supply chain to ensure European businesses have a dependable source of chips, consistent with the EU Chips Act's satisfaction of priority-rated orders. Furthermore, a project may help attract skilled professionals to Europe and foster innovation, ultimately benefiting SMEs and end users. The commitment to invest in innovation, as specified in the EU Chips Act for recognizing the status of IPFs and OEFs, will play a pivotal role in this respect.

Interferences in business operations in case of a supply crises

The EU Chips Act grants considerable powers to the Commission in case of a supply crisis in the EU semiconductor ecosystem. In fact, the measures that the Commission can take may amount to a **de facto** expropriation of the business operations of a company. While such measures are, in principle, compliant with the EU Charter's right to establishment, according to the Act's preamble, companies should still be attentive to the amount of interference in their businesses where relevant.

The Commission must, according to the EU Chips Act, carry out a strategic mapping of the semiconductor sector. Based on this

mapping, it shall develop a list of early warning indicators that will be reviewed on a regular basis, at least every two years. To this end, the Commission can collect information from identified key market actors in critical sectors on a voluntary basis.

When a semiconductor crisis stage is activated pursuant to the fulfillment of certain conditions on the market, the Commission's powers are increased in relation to the intensity of the crisis. A semiconductor crisis stage can have a maximum duration of 12 months.

During a crisis stage, the Commission may do the following:

- Request semiconductor supply chain entities to provide information on production capabilities, capacities, and current disruptions. Non-compliance may result in fines of up to EUR 300,000 (for SMEs, the maximum penalty is EUR 50,000).
- Mandate IPFs and OEFs to prioritize crisis-relevant product orders (priority-rated orders) over other legal obligations, potentially resembling a **de facto** expropriation. Periodic penalty payments may be imposed for intentional or gross negligence in conducting priority-rated orders.
- In response to requests from two or more member states, act as a central purchasing body for these states' joint public procurement of crisis-relevant products in critical sectors, exclusively addressing semiconductor supply chain disruptions leading to the crisis.

Concluding remarks

The EU Chips Act presents both opportunities and risks for Nordic companies in the semiconductor industry. It offers substantial funding for research, development, and production, which can boost innovation and technological capabilities. It also streamlines administrative processes and makes State Aid available to further support industry growth.

However, companies should be mindful of the Act's protective measures in case of a semiconductor supply crisis. Compliance with information requests and prioritizing crisis-related orders is crucial to avoid fines and penalties. The Act grants significant powers to the Commission during such crises, which could impact business operations. In light of these opportunities and risks, Nordic companies in the semiconductor sector should carefully assess their strategies and compliance measures, keeping a keen eye on the evolving landscape of the EU semiconductor industry.

Contact Us



Olof König

Partner, Stockholm

[olof.konig](mailto:olof.konig@bakermckenzie.com)

[@bakermckenzie.com](https://www.bakermckenzie.com)



Larissa Barhebréus

Associate, Stockholm

[larissa.barhebreus](mailto:larissa.barhebreus@bakermckenzie.com)

[@bakermckenzie.com](https://www.bakermckenzie.com)

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