

Fachverband der  
Elektro- und  
Elektronikindustrie

# **European Chips Act for Stability, Security and Sustainability**

Position Paper

May 2023

# European Chips Act for Stability, Security and Sustainability

## Act now to enable Europe's green and digital transition!

### Global Challenges

Humanity is currently facing enormous global challenges: global warming, demographic change, the consequences of the COVID pandemic, and geo-political shifts with huge security-related implications. The consequences include increasing energy prices, unusually high levels of inflation, high risks in the supply of key technologies and a continuing shortage of chips. And it is now clear that Europe is subject to increasingly strong global competitive distortions and is dependent on other powers. This endangers stability and security and bears the **risk** that **our economy and security** is increasingly controlled by third parties, which in turn destabilises **democracy and social stability**. Technology and technological expertise have therefore become decisive geo-political factors and this is particularly true for system-relevant key technologies. We need to ensure that tomorrow's technologies do not become the oil and gas of today!

### Necessity of strategic autonomy in key technologies

The key technologies in the electrical and electronics industry enable innovative and sustainable solutions to actively compensate these problem fields. Microelectronics ("semiconductors"), circuit boards, electronics, and the associated software are the foundation for a range of system-relevant applications - from stable energy supply and the availability of vital resources up to safe application in the health, communication, and automotive sectors. Software, equipment, and chips exist in an indispensable symbiosis. The pandemic made it very clear to us how essential **strategic autonomy** is for **our security and stability**, particularly in these technology fields.

### Addressing Europe's most urgent challenges – the green and digital transition

Electrical and electronics industry enables solutions for a green and secure digital transformation: from renewable energy such as photovoltaic or wind power, via sustainable mobility solutions, up to energy-saving technologies. Figure 1 impresses with a view of the huge potential of energy efficiency: when using traditional approaches, basically more energy is needed, in addition, almost 70 percent of the generated energy is lost during transmission. In contrast, renewable energy sources such as photovoltaic and wind power are more climate-friendly from the start and in conjunction with intelligent technologies, almost 70 percent of the generated energy can be used.

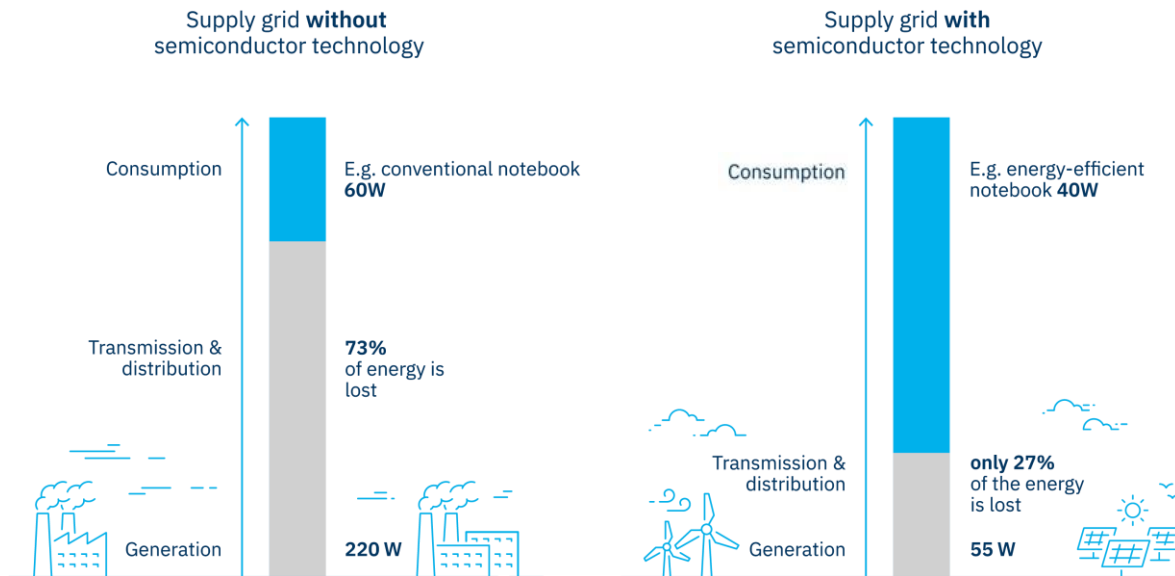


Figure 1: Comparison of energy supply networks with and without semiconductor technology: in the traditional way of providing energy, almost 70 percent of the energy is lost (left). In conjunction with renewable energy sources and intelligent semiconductor technology, almost 70% of the energy can be used.<sup>1</sup>

### Semiconductors are indispensable

Figure 2 clearly shows how necessary these key technologies are: almost all fields of application of our daily lives are enabled by semiconductors. They create the basis for further innovation and depend on the availability of semiconductors. **Semiconductors are the basis for up to 50 percent of the global gross domestic product!**

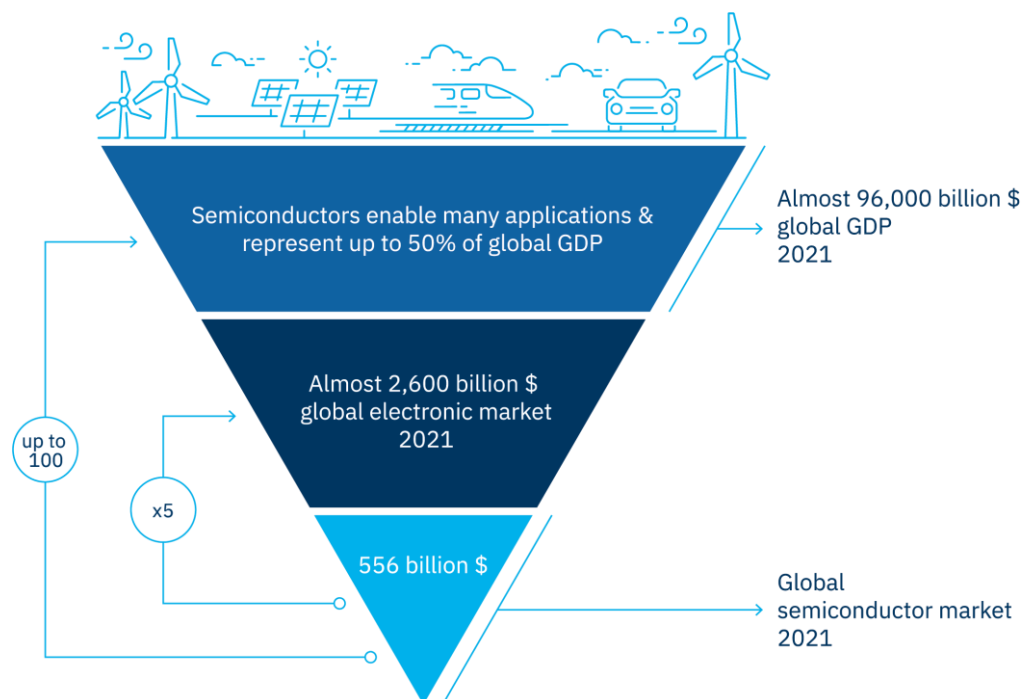


Figure 2: The semiconductor market is the basis for the largest share of global GDP<sup>2</sup>

<sup>1</sup> Source: Infineon Technologies AG

<sup>2</sup> IMF for worldwide GDP. TechInsights for electronics sale, WSTS for worldwide semiconductor

Austria has an unusually high density of companies in the field of electronic systems that collaborate extremely well along the value creation chain, ensure high levels of economic performance, and are well connected with European partners and research institutes. Silicon Austria Labs (SAL), Austria's non-university research center for electronic based systems (EBS), is worth mentioning here. Around 250 international researchers are developing novel technologies in the fields of Microsystems, Sensor Systems, Power Electronics, Intelligent Wireless Systems and Embedded Systems – from chip to intelligent systems. SAL works together with partners from academia, research and industry to bring fundamental research into industrial applications. This helps Austrian companies to assume an outstanding role and they are global market leaders in central technology fields as the selected examples in Figure 3 show.

### Austria's Companies are Global Leaders

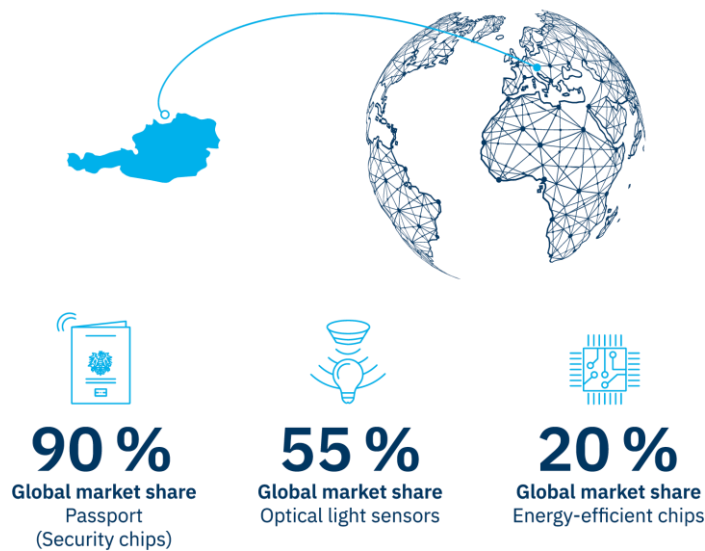


Figure 3: Austrian companies lead in terms of technology in security chips in passports with their almost 90% share of the global market. Austria's companies are also number one in the market for light sensors with a global market share of 55 % and for technologies for the creation of energy-efficient chips with a global market share of 20 %.

### Austria is a top performer in a European Comparison

Austria has been able to establish a leading role in Europe using a combination of entrepreneurial courage and clever site policies over the recent years and decades.

**Austria is Europe's number 1** in the field of electronic components<sup>3</sup> – in relative numbers, related to the country's size, as shown in Figure 4:

- Number 1 in terms of share of the overall value creation
- Number 1 regarding share of total employment
- Number 1 in terms of share of entrepreneurial research and development<sup>4</sup>

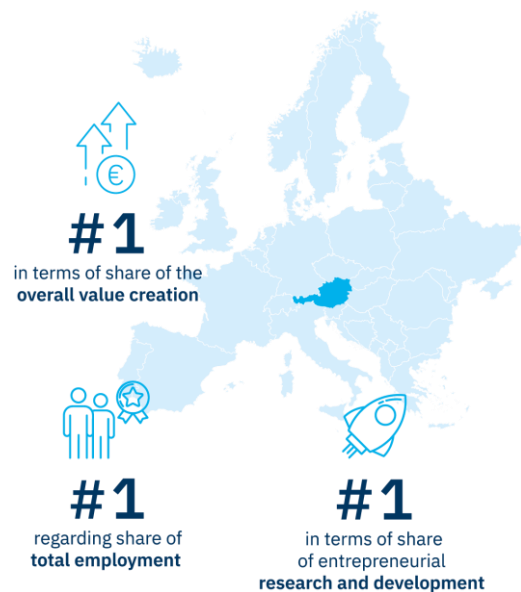


Figure 4: Austria's share of the European semiconductor industry in a European comparison<sup>3 & 4</sup>

<sup>3</sup> Joanneum Research study in 2023; comparison of European key technology countries

<sup>4</sup> B. Dachs, AIT commissioned by the FIW; OECD ANBERD, 2019

The direct impact of the Austrian success story is not only illustrated by the **enormous growth dynamic of the value creation**, as shown in Figure 5, but also by the strong growth in the number of employees. The **number of employees** in the fields of these key technologies has **increased by more than 15 %** to more than 72,000 in recent years.<sup>5</sup>

### Growth Dynamic

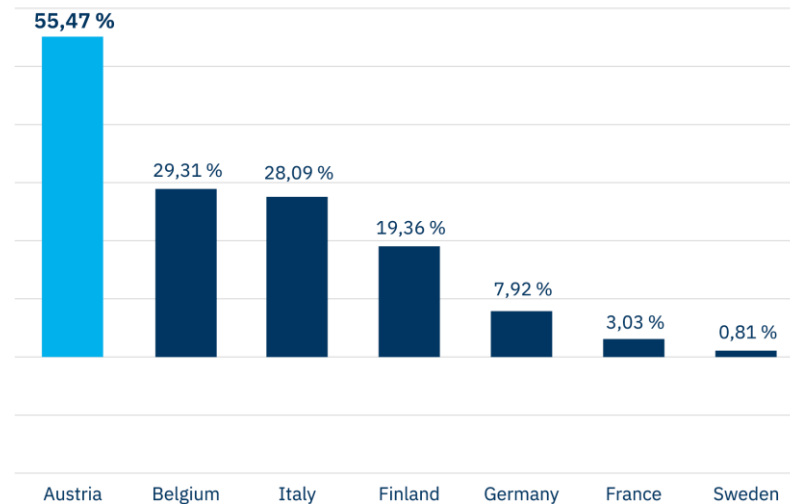


Figure 5: Growth dynamic of value creation - A comparison of European key technology countries in the field of "production of electronic components" - 2015 compared to 2019<sup>5</sup>

#### The Austrian company's areas of strength lie in the geo-political and strategic fields of competence:

- **Power electronics:** to tap in the huge potential offered by energy efficiency and renewable energy (see Figure 1)
- **Sensors:** to acquire information from the environment (e.g. measurement of air quality)
- **Security in the digital world:** technologies for secure identification documents and payment systems (passports, credit cards, etc.)
- **Design:** secure and reliable systems for data processing and maintenance of data sovereignty need to be designed - they are used in systems for production, mobility, and energy
- **High density of value creation:** cooperation between different technology segments such as special machines, manufacturing, circuit boards and packaging, up to special software
- **In-depth fundamental and application expertise:** Austria has the in-depth and comprehensive technical expertise to be able to develop and manufacture these highly complex systems in an economical fashion and on a top level.

Beyond the increasing direct effects, **Austria's strength** in these key technologies works as a **catalyst** in practically all application industries. For example, almost 90 percent of automotive innovation is enabled by semiconductors. This catalytic function ensures widespread innovation and value creation, both in our country and in the European network. Our goal is to do everything necessary to maintain these strengths and increase them further.

<sup>5</sup> Joanneum Research study 2023; comparison of European key technology countries

## Use the European Chips Act to maintain and increase European strengths for global competition

The USA and Asian countries have been driving key technologies forwards strategically with high levels of financial support. Just recently, the U.S. Inflation Reduction Act in addition to the U.S. Chips Act has contributed to a further intensification of competition and to the shifting of competitive relationships with Europe. Figure 6 shows the substantial investments by these countries in the semiconductor industry. Europe is rapidly losing ground and even the currently planned 43 billion EUR in grants, which will have to be financed to a large part on a national level, although they are a good first step, will not allow Europe to catch up.

### Planned Investments in the Semiconductor Industry

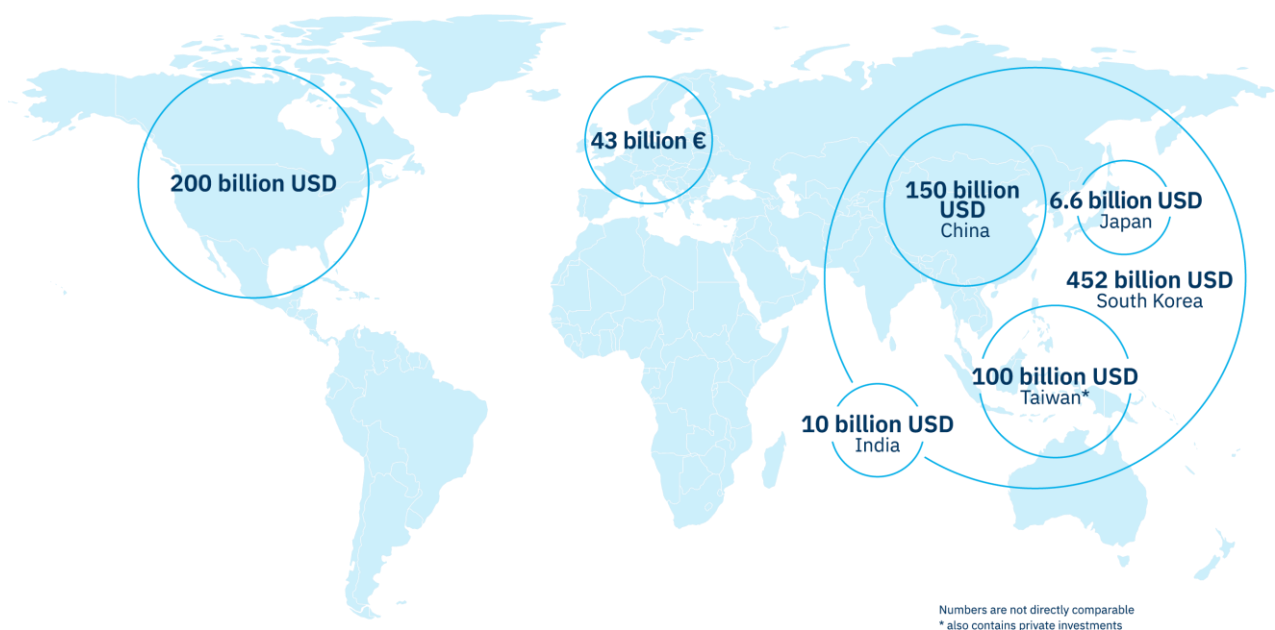


Figure 6: Planned investments in the semiconductor industry<sup>6</sup>

It is high time that the **European Chips Act**, as the European answer in a globally competitive environment, is **shaped so that European strengths are increased, and is competitively funded and quickly implemented**. We need an overall European strategy to create fair, inner European competition that increases strengths and closes gaps.

#### The following is needed on an EU level:

- **Establish/maintain strategic autonomy**
- Ensure **global competitiveness and value creation** in Europe
- **Immediately implement the European Chips Act and work on an overall, European strategy** to increase strengths, close gaps, and avoid inner European distortion of competition
- Estimates assume a total volume of investment of 500 billion EUR (private and public) of which 200 billion EUR is grant volume **in order to reach the commission's goal of 20% semiconductor production in Europe by 2030.**

<sup>6</sup> SIA, from ZVEI PK Semiconductor, 2023

- We assume around 20-50 billion EUR of EU funds for a European **"Recovery & Resilience Plan for Microelectronics"**, with which a fair compensation mechanism can be guaranteed for smaller EU member states.
- **Build up and massively strengthen design and manufacturing capacity** in Europe
- **Reduce bureaucracy, significantly accelerate, and simplify processes.**

#### **Austria needs:**

- **To prepare for national co-financing** of manufacturing plans on a typical EU level in Austria for company investments ("first of a kind" according to Chips Act)
- **A European negotiation process to the Chips Act:** Austrian negotiation of EU means as a compensation mechanism for small EU member states (see above)
- **18-22 Million EUR p.a. (2024-2027) for research and development**, to enable Austrian participation in the Chips Joint Undertaking<sup>7</sup>
- **120 Million EUR (2024-2027)** as an impulse for Austria's fields of strength

#### **About the FEEI – Trade Association for the Electrical and Electronics Industry**

The Trade Association for the Electrical and Electronics Industry in Austria represents the interests of around 300 companies employing almost 69,000 people and a production value of 19.7 billion Euros (in 2021). Together with its network partners – these include the University of Applied Sciences Technikum Vienna, UFH, Silicon Labs Austria, the Industry 4.0 platform, Forum for Mobile Communication (FMK), the Association of Alternative Telecommunications Operators (VAT), and the Railway Industry Association (VBI) - FEEI's goal is to strengthen the Austrian electrical and electronics industry in the global competition for locations. [www.feei.at](http://www.feei.at)

**Chairman:** Wolfgang Hesoun

**CEO:** Mag. Marion Mitsch

#### **Address any queries to:**

DI Dr. Klaus Bernhardt, MBA

Head of Research & Innovation, Energy & Infrastructure

T +43/1/588 39-32

E [bernhardt@fee.at](mailto:bernhardt@fee.at)

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<sup>7</sup> A Joint Undertaking is a legal entity where multiple EU member states and legal persons can participate.