

## European Photonics Industry issues warning: Dependence on overseas markets must be reduced

A recent survey by the European Technology Platform Photonics21 and the European Photonics Industry Consortium EPIC uncovers: The overwhelming majority of European photonics companies call for intervention of policy makers.

The European photonics industry is facing serious supply chain issues that are the direct result of an overdependence on overseas markets, according to a recent survey<sup>\*</sup>. The survey found that over 80 percent of EU-based photonics companies are grappling with supply chain shortages. By their own admission, most of them will not be able to solve these supply chain issues by themselves and call upon national and European policy makers for help. Photonics is a strategic technology sector for the European Union and plays a key enabler technology in most of European key industrial sectors such as high-performance computing and quantum computing, augmented and virtual reality, manufacturing, defence, healthcare, agriculture, mobility, electronics, and digital infrastructure. The importance of photonics on EU strategic autonomy has just been highlighted during the state visit of French President Emmanuel Macron to The Netherlands and the resulting Franco-Dutch Pact for Innovation and Sustainable Growth<sup>1</sup>.

The vulnerability of the European photonics supply chain may lead to serious knock-on impacts on all these key European industrial sectors. Policies like the European Chips Act and the Critical Raw Materials Act show that the European Union aims at more strategic autonomy in existing and future emerging economic sectors.

"There can be no Europe fit for a digital age, no full digital sovereignty and no ultra-secure sovereign quantum computing enabled cyber security without photonics technologies. To achieve EU objectives, Europe urgently needs to strengthen its capacity in photonics", warned Nobel Laureates Professor Gérard A. Mourou, Professor Stefan W. Hell and Professor Theodor W. Hansch in an open letter to the EU Commission already in 2020.

## Call for help: Businesses cannot create sovereignty alone

The lack of sovereignty in the photonics industry is a major concern as businesses are heavily dependent on imports from non-EU-countries, above all from China. Of the survey participants, two thirds stated that critical goods such as microelectronic and photonic semiconductors, optical components and raw materials have a limited availability in Europe, with at least 10 percent being completely unavailable – jeopardizing photonics value

<sup>&</sup>lt;sup>1</sup> Franco-Dutch Pact for Innovation and Sustainable Growth (elysee.fr)





creation in Europe. Respondents are eager to build reliable and viable supply chains within Europe. 90 percent of participants say, given the option, they would commit to buying from European vendors even if this came at a higher price.

The majority of all respondents also make it clear that, in their point of view, the supply chain issues cannot be resolved without the intervention of EU policy makers and national governments respectively. Over 70 percent expect support in the form of new EU policies and national policies, 40 percent of surveyed photonics companies are requesting specific initiatives related to manufacturing capacity building while just under 30 percent expect public support in the form of new standards and regulations.

"The European photonics industry is number two in the world", say Dr. Lutz Aschke, President of Photonics21. "To make sure we maintain and defend this position, national and European policy makers need to prioritise this strategic sector. We need to implement a European strategy on critical materials and components for key industries and technologies to secure a resilient photonics supply chain in Europe. Specifically, research and development activities, as well as the production of those photonic components in Europe that are critical in the industry supply chain should be strengthened. In the context of the chips industry, we have seen that it can become very expensive for all of us if we are not paying attention now."

## Mission critical: The photonics industry powers central European initiatives

The photonics industry, like other industries, expects that supply chain issues cannot be solved in the short term. About 40 percent of survey respondents expect the crisis to continue up to 3 years – leading to potential long-term effects on end-user markets.

Photonics as a critical enabler for a wide range of industries is and will remain important in the future. Example products or components are optical fibers, optical lenses, photonic sensors for advanced driver-assistance and autonomous-driving systems, high-performance AR/VR glasses/headsets for AR/VR applications, high-performance triple/quadruple junction solar cells for satellite technology or acousto-optic elements for advanced microscopy. Photonics components are critical to monitoring production in tomorrow's factories, as well as to control and use even everyday items like computer screens or pacemakers.

Photonics technologies are crucial for Europe's competitiveness in the global market and for ensuring a sustainable and secure future for its citizens. The industry is constantly developing new and innovative solutions, making photonics a key player in shaping Europe's future and has been recognized as a key digital deep technology by the European Investment Bank.





Learn more about the photonics industry here.

## \* Methodology

The survey on EU Photonics Supply Chains was prepared by Photonics21 and EPIC, analysed with the help of Tematys and distributed with the support of Spectaris, Photonics France, PhotonicsNL, Photonics Finland, Photonics Sweden, Photonics Austria, Fotonica21, Hellenic Photonics Cluster, Polska Platforma Technologiczna Fotoniki, Ireland's National Technology Platform for Photonics, Swissphotonics, Photonics Leadership Group UK, Association of Research and Technology Organisations Lithuania, Italian Photonics Platform & PhotonHUB Europe.

The survey was conducted from October 10 to December 20, 2022. Over 112 EU companies responded, with 80 percent being SMEs. The breakdown of the respondent business sectors reflects that of the Photonics Industry in Europe.