



## New Circular Economy Action Plan

### CECIMO detailed response to the Consultation

CECIMO and the machine tool industry have been committed to sustainability, which is an essential part of the competitiveness of our sector.

In April 2019 we released a detailed [circular economy report](#) which includes specific Recommendations for industry and policy makers. We therefore welcome the new Circular Economy Action Plan to increase recycling and reuse of products in the EU and we wish to put forward the following considerations:

#### 1. Sustainable products policy and design for circularity

Energy consumption during the use phase of machine tools has the most significant environmental impact over their life cycle. Machine tool builders have been increasingly focusing on environmental aspects such as energy efficiency of the machine tools during the design phase as well as providing a wide range of services to the customer – machine tool user - during the use phase such as application engineering, maintenance and repair etc. to increase the sustainability of the production processes.

#### 2. Reliable, verifiable and comparable information on products' sustainability features

The machine tool sector is a B2B sector and supplier of many European and international manufacturing industries. Machine tools are rarely mass-produced, and, in most situations, modifications to their basic designs are needed to match customers' specific requirements in terms of workpiece geometry or production performances. Digital technologies are pivotal in bringing a change towards a more sustainable sector. This trend towards greater digitization enabled the machine tools to collect, exchange and analyze the real-world data, thus enhancing transparency in the production process and with regard to their sustainability features, while at the same time maximizing energy and resource efficiency.

#### 3. Prioritize reuse and repair before recycling

The circular economy goes beyond the recycling of materials. An important element is the long life, reuse and remanufacturing of products, to keep them in the economy for as long as possible. Data provided to CECIMO by some machine tool manufacturers shows that, on average, 80% of machines are still in service ten years after installation, while 65% are still in service after 20 years.

Given the relatively high value of machine tools, their refurbishment and remanufacturing are very common after a certain amount of time in use. This ranges from small improvements to full rebuilds, which incorporate full automation and control systems.

#### 4. Reduce waste generation

The sector provides advanced manufacturing technologies allowing for better control of the manufacturing process and traceability, which results in less waste, more efficiency and better



management of resources. Moreover, machine tools use metals, which are extremely recyclable materials (e.g. steel and aluminum, with more than 90% recycling volumes). Metal components are also valuable and therefore there is an incentive to recover material during the disposal of machine tools at the end of their lifetime - either by the manufacturer or by scrappers.

## **5. Building skills and capacity for circular business models**

Switching from the current linear model of the economy to a circular one would significantly reduce the negative impact on the environment. CECIMO recognizes that user behavior plays a major role in the actual energy consumption and performance of equipment over its lifetime. Therefore, machine tool builders provide on-site training of operators to ensure optimum performance of their equipment as well as instruction manuals with specific recommendations for the correct maintenance and avoiding overloads etc.

## **6. Additive Manufacturing and Circular Economy**

CECIMO represents the conventional machine tools and the Additive Manufacturing (AM) industry, commonly known as 3D printing. While all the above-mentioned considerations are valid for both technologies, AM technologies provide an excellent example of an enabling technology which has embraced circularity in practice and has turned it into a business model.

Subtractive manufacturing methods (conventional machine tools) start from a solid block of material and then remove the excess to create a finished part. AM is a technology that based on a 3D digital model, builds up parts by adding material layer by layer; therefore they reduce waste in the production process, since they only use the material that is needed to produce a part. During the use phase, AM has minimal shape and geometric constraints, allowing the production of alternative optimised complex parts which have a lighter weight, enhanced durability and improved functionality and as a result reduced energy and resources consumption. Current industrial applications of AM are designed to enable a closed-loop circulation of materials facilitating a more sustainable production system. In metal AM, more than 95% of the unused powder can be locally filtered and reused directly while the remaining 5% can be used to produce virgin powder. Similarly, the use of recycled plastics in 3DP is steadily increasing as different EU projects show (e.g. Repair3D, The One Project or BARBARA). Finally, AM makes repairs and remanufacturing easier and more cost-effective. AM allows spare parts to be printed on demand and closer to where they are needed. This helps to reduce inventory waste and customer waiting time, while extending the lifetimes of machine tools needing spare parts that would otherwise be difficult to obtain.

## **7. Innovation and investment opportunities for enabling technologies**

We strongly believe that innovation and investment opportunities and/or tax incentives and financial advantages can support a more rapid transition to the circular economy. The slowdown in demand for new equipment hampers the ability to deploy more efficient and cleaner production technologies and to speed the digitization of European industry. Some countries, such as France and more recently Italy as part of their National Industry 4.0 plans, adopted incentives for investment into digital and interconnected machinery and systems. Similar approaches could also be adopted by other EU member states to encourage investments in digital and more energy efficient products and systems.



# cecimo

European Association of the Machine Tool Industries  
and related Manufacturing Technologies

## **8. EU initiatives along the life-cycle of products**

CECIMO supports self-regulatory measures and industry driven initiatives in the form of a stewardship program to reduce waste and increase recycling of products. Industry engagement in the development of sustainable business practices is key for a successful Circular economy action plan.