

PRESS RELEASE

Aachen, March, 15, 2022

Laboratory for Machine Tools and
Production Engineering (WZL) of RWTH
Aachen University

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Sustainable Productivity

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A New Understanding of Production for a Sustainable Production Turnaround

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The achievements of the industrial revolutions have led to enormous efficiency in production: Everyday products in the fields of electronics, consumption and transport are produced so cheaply that they can be made available to everybody. At the same time, this prosperity makes it possible to afford a sometimes shockingly low level of utilization of the items used. For example, the average utilization rate of a car is just four percent. A large proportion of consumer and electronic goods are disposed of after a short period of use - efficient production makes this possible.

The continuous pursuit of cost optimization and increased efficiency has led to a capital- and resource-intensive productivity mindset. This can be seen in the increased CO2 emissions, which have almost doubled since 1990. The social and ecological effects of this development have become increasingly apparent in recent years. In particular, the worsening climate crisis has led to a shift in capital- and resource-intensive productivity thinking away from the future image of a more ecologically aware society. As one of the polluters, the manufacturing industry bears a great responsibility in this regard. German-speaking industry must initiate a sustainable production turnaround - and do so immediately!

The Production Turnaround Is Both a Necessity and an Opportunity

In the course of this, the concept of productivity must be fundamentally rethought to include a holistic view of sustainability. This is where the study "Sustainable Productivity" by the Chair of Production Engineering at the Laboratory for Machine Tools and Production Engineering (WZL) at RWTH Aachen University comes in. The aim of the study was to develop the new understanding of the concept of productivity that is needed to initiate the production turnaround.

Whereas financial targets have been the main focus so far, these have to be complemented by environmental, social and regulatory targets. These new types of goals have an impact on the design of products in the phases of product development, production and use. This new type of design is made possible by digitization and, in particular, by the "Internet of Production," which provides the transparency needed to holistically increase sustainability.

In addition to the necessity associated with responsibility, the production turnaround also represents an enormous opportunity for a sustainable orientation of German-speaking industry. On the one hand, this includes the socially perceived as well as the real shaping of the holistic change by the German-speaking manufacturing industry. On the other hand, it creates a clear competitive advantage over competing locations. In the interaction of these two factors, a monetizable added value is achieved.

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This study provides companies with concrete recommendations on how to shape their production in the direction of sustainable production. In addition to key figures for evaluating the current situation and progress, existing success stories of manufacturing companies are presented.

Photo



The German-speaking industry must initiate a sustainable production turnaround © iStock

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Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University

The Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University promotes the innovation drive and competitiveness of industry with trend-setting basic research, applied research and with resulting consulting and implementation projects in the field of production engineering. In the research fields of manufacturing technology, machine tools, gear technology, production engineering as well as production metrology and quality management, practical solutions for resource-efficient production are developed with industrial partners from a wide range of sectors. Industry 4.0 topics such as digitalization, individualization, automation, robotics, data monetization, sustainability, artificial intelligence and 5G are addressed alongside the classic problems of manufacturing companies.