

INVEST. INNOVATE. INTERNATIONALIZE.

Mechanical Engineering

Industry Clusters in Eastern Germany

The machinery and equipment (M&E) sector is the most innovative and second largest industry sector in Germany. Drawing on 150 years of engineering tradition, Saxony-Anhalt has transformed itself from a heavy mechanical engineering center to a high-tech production hub.

Mechanical Engineering in Germany

German M&E industry strength is driven by a combination of Germany's proven engineering tradition, its position as a technology leader, and its highly diversified industrial base. Industry experts forecast German M&E turnover of EUR 236 billion through to 2020. The German machinery industry moreover accounts for around 40 percent of sector turnover in Europe. In terms of revenue, Germany occupies third position amongst the world's leading mechanical engineering countries.

With global machinery trade share of more than 16 percent, Germany's M&E industry sector remains the world's leading supplier of machinery. Exports account for almost 14 percent of Germany's export sector. German machinery and plant manufacturers are world market leaders in 18 out of 31 M&E sectors. According to the Centre for European Economic Research, the M&E sector recorded an innovation intensity level of 5.9 percent in 2015, with innovation spending of more than EUR 14.5 billion. The 2017 forecast of EUR 15.6 billion is equivalent to an increase of more than seven percent over the period. Significant investment is being made in Germany's Industrie 4.0 landmark project that will usher in a new age of decentralized production.

Mechanical Engineering in Eastern Germany – Saxony-Anhalt

Saxony-Anhalt is a new federal state with a long industrial tradition. Technical innovation and a central location in Europe helped establish the region as an industrial force at the start of the 20th century. Today, mechanical engineering is one of the most important industry sectors in Saxony-Anhalt. It generates more than EUR 4 billion in turnover annually.

High technological standards and innovative potential act to secure system leadership in the fields of fluidized bed processes, conveyor technology, and innovative software solutions. Industry focal points include equipment and mechanical engineering, robotics, smart production, process development, efficient and intelligent manufacturing techniques, and environmental systems as well as resource efficiency and recycling. One in five industrial employees in Saxony-Anhalt works in the sector that is responsible for around 10 percent of the industry's total turnover in the state. The industry is also one of Saxony-Anhalt's top export business sectors, with around 40 percent of turnover generated in overseas markets.

The state boasts an exemplary research landscape with a number of research organizations whose individual institutes include the Fraunhofer Institute for Factory Operation and Automation IFF, the Max Planck Institute for Dynamics of Complex Technical Systems and ifak ("Institute for Automation and Communication").

Machinery and Equipment* in Saxony-Anhalt 2015

Number of Companies**	338
Turnover	EUR 4.1 billion
Export Share of Turnover	30%
Workforce	27,080
Average Company Size	80 employees

* Manufacture of electrical equipment, mechanical engineering, repair and installation of machinery and equipment

** Companies with generally 20 or more employees

Source: State Statistical Office

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SMAB – Special-Purpose Machine and Plant Engineering

The main objective of the Special Purpose Machine and Plant Engineering (SMAB – Sondermaschinen- und Anlagenbau) cluster in Saxony-Anhalt is to improve the domestic and international competitiveness of member companies by promoting cooperation within the network.

More than 10 thousand actors from science and industry play an active role in the dynamic development of the special purpose machine and plant engineering sector and the promotion of Saxony-Anhalt as an investment and technology location.

SMAB supports companies developing interlinked system solutions (aerospace, automotive, energy economy, and medical technology sectors), energy-efficient systems and manufacturing technologies as well as medical technology products and services.

SMAB cluster management supports these activities, establishes contacts, develops projects, promotes national and international partnerships, advises in matters innovation financing related and provides personnel recruitment assistance through its cooperation activities with R&D and educational establishments. Cluster management services are provided by the tti Technologietransfer- und Innovationsförderung Magdeburg GmbH company ("tti Technology Transfer and Innovation Promotion Magdeburg), responsible for promoting the economic development of the Magdeburg region within the framework of European innovation and technology transfer projects carried out in the federal state of Saxony-Anhalt. Product development cooperation and manufacturing partnerships are strengthened and opportunities for education and training with competent partners intensified.

go-cluster

SMAB is a member of the Federal Ministry for Economic Affairs and Energy "go-cluster" cluster excellence program of around 100 innovation clusters across Germany. The program provides financial stimulus – in the form of support for innovative services and funding for novel solutions – to optimize cluster management allowing member clusters to position themselves as highly effective and visible international clusters.

www.clusterplattform.de

Internationalization support activities in the form of introductions to global partnerships and networks play an important role in maintaining the sector's high export profile. The cluster's main objectives in the coming years are the creation and development of industry-oriented technology platforms for the further development of key technologies and the promotion of the federal state's innovation strategy. SMAB enjoys partnerships with a number of complementary industry clusters including the automotive, chemicals/plastics, and renewable energy networks in the region. The cluster also enjoys a close cooperation with the Enterprise Europe Network (EEN) Saxony-Anhalt, a regional consortium that supports small and medium-sized businesses to access business opportunities in the EU Single Market.

go-cluster Activities – "REMAN" Knowledge and Technology Transfer

"REMAN" or "remanufacturing" refers to the rebuilding and upgrading of machinery and equipment to "like-new" or "better-than-new" condition through a process of retrofitting with new components. The sector is growing in importance internationally (with EU market potential of EUR 90 billion forecast for 2030), creating increased demand for businesses to optimize their technical know-how.

SMAB provides REMAN knowledge- and technology-transfer services; particularly to companies with limited industrial research potential that need practical knowledge and new product and technology development research results. Interdisciplinary partnerships between companies and researchers allow the former to develop specifications of their own products, thereby contributing to the innovation process within the cluster.

The services offered by the cluster provide intensive support, with companies that receive access to research results enjoy management support in the form of development projects and specific learning and training measures as well as trade fair, workshop and cooperation exchange organization.

The service concept efficiently deploys available resources and systematizes the innovation process by means of a portfolio of instruments that support the long-term integration of the different actors into the process.

Cluster Voices



Reiner Storch

Managing Director, AEM Anhaltische Elektromotorenwerk Dessau

What does your company do?

AEM is a family-owned company with over 60 years of experience in the field of electrical engineering. AEM specializes in the custom development and manufacture of generators for hydro-electric power and shipbuilding as well as motors for mining, materials handling, and construction machines and test stands.

Why is Saxony-Anhalt such an attractive mechanical engineering location?

Specialized know-how in a number of areas – combined with years of experience – at various locations have helped develop as a whole into a highly efficient and innovative competence region for mechanical and plant engineering. One of the major assets is the region's highly qualified and engaged workforce, whose expertise we profit greatly from as well as communication partners in meeting the challenges of daily production business.

What does the future hold for your company?

AEM has been able to follow a continuous product development path since being founded. Our product portfolio, innovation potential and experience mean that we are well placed to meet the changing requirements of customers across the world. Even in cases where markets do not develop continually due to current circumstances, we are still able to develop new ideas – which we introduce in new products, services and business sectors – as well as by implementing projects in partnership with the state's universities. This allows us to develop continually.

Company: AEM Anhaltische Elektromotorenwerk Dessau GmbH

Activity: Three-phase generators; three-phase motors; converter units

Employees: 175

 www.aemdessau.de/en



Marc Kujath

Research and Project Manager, Fraunhofer Institute for Factory Operation and Automation IFF

What does your organization do?

Fraunhofer IFF is an applied research institute with a specific focus on the area of manufacturing engineering. We provide conception and implementation support in matters in-house logistics and factory systems related; with particularly high visibility in the fields of production and service, energy as well as mobility and transportation. All aspects of digitalization for the design of resource-efficient, closed-loop value chain structures (including product, production and infrastructure) present in Industrie 4.0 are taken into consideration. Activities central to this purpose include system and process planning with particular focus on discrete event production operations (e.g. greenfield and brownfield projects).

Why is Saxony-Anhalt such an attractive mechanical engineering location?

Magdeburg enjoys a reputation as one of the cradles of heavy mechanical engineering. Knowledge and technology know-how have successively been gathered, passed on and evaluated here. Saxony-Anhalt has been characterized by large industry structures for decades. A number of reorganizational and consolidation measures after German reunification in 1990 have allowed the state to become a technology center with a dynamic and prestigious university landscape from which local companies are able to secure new talent. Non-university technology and research institutions offer a number of services and cooperation opportunities that allow companies to push ahead in terms of cost and innovation leadership.

Company: Fraunhofer Institute for Factory Operation and Automation IFF

Activity: Applied research institute (factory operation and automation)

Employees: 188

 www.iff.fraunhofer.de/en.html





Tino Lerche

CEO, PHM Industrieanlagen GmbH Burg

What does your company do?

Planning, production and assembly of single components and small series are the core competences of PHM Industrieanlagen GmbH Burg. The company sees itself as an architect in the area of mechanical engineering. The production of individual components and small series – from devices and prototypes as well as damaged parts – is our daily business. As a system supplier, the company provides an all-inclusive package (from planning to production and delivery) thanks to its comprehensive production network. This means that the client can always rely on PHM's quality assurance promise.

What are the advantages of cluster membership?

Cluster membership allows us to network with innovative medium-sized companies in the region. This allows a regional pool of competence to be created. This generates synergy effects at different cooperation levels. Basic research, development, product design, production, and market introduction are carried out hand-in-hand in small and flexible units. The cluster allows new ideas to be quickly, effectively and successfully implemented. The regional economy is strengthened by the cluster and more effectively positioned in the market.

What does the future hold for your company?

We see ourselves in the future as a small, medium-sized company that – through its flexibility, quick reaction times and wide production range – is a reliable partner for our customers at home and abroad.

Company: PHM Industrieanlagen GmbH Burg

Activity: Planning, manufacture and assembly of industrial equipment

Employees: 7

 www.phm-burg.de



Wilfried Probian

Board of Management, MTU Reman Technologies GmbH

What does your company do?

MTU Reman Technologies GmbH, a Rolls-Royce Power Systems AG company, is the global remanufacturing control unit for the reprocessing of diesel and gas engines and systems made by MTU and MTU Onsite Energy. Procedures and processes for the reprocessing of components and engines are developed and implemented at the site in Magdeburg. These are then applied at the other Rolls-Royce Power Systems remanufacturing sites. As well as this, the Magdeburg factory also boasts a state-of-the-art large engine development test lab. It's here that our staff research and develop the diesel and gas engines of tomorrow and beyond.

What are the advantages of cluster membership?

The network, which arises from the cluster, allows us targeted access to highly diversified know-how that we are then able to use for our own production. The different platforms that form the cluster allow companies to place very specific technical questions and problems – and quickly receive concrete answers that take the company forward.

How important is internationalization to your activities?

Being part of a globally active group, internationalization plays a very important role for MTU Reman Technologies. We are the group's global technology center and accordingly follow the logic of Rolls-Royce Power Systems which is active at three international hubs: Germany for Europe, North America, and Singapore for Asia. Here we drive on our remanufacturing activities. The remanufacturing products are integrated into MTU's service portfolio and are distributed there.

Company: MTU Reman Technologies GmbH

Activity: Overhaul of MTU original parts, engines, systems, and power packs within remanufacturing context

Employees: 320

 www.mturemantechologies.mtu-online.com

Germany Trade & Invest Cluster Marketing Activities

Industry clusters – in which companies, research institutions and universities come together to join a particular industry in a geographical region – provide numerous partnership opportunities and synergy effects for their members. Member companies and organizations also benefit from the cluster umbrella brand when venturing into international markets.

Germany Trade & Invest's (GTAI) cluster marketing activities strengthen the internationalization of the Eastern German economy, and the global visibility of both Eastern Germany as an investment location and the cluster in the region. To this end, GTAI has already published the "INVEST. INNOVATE. INTERNATIONALIZE. Industry Clusters in Eastern Germany" booklet highlighting the innovative capacity and attractiveness of the new federal states as an investment location based on the example of a selection of industry clusters in Eastern Germany.

As part of GTAI's 2017/2018 activities, these clusters are now being individually presented in selected international target markets. GTAI provides the accompanying cluster representatives – companies, research institutions and cluster management – with the opportunity to learn more about their target markets and to expand and intensify their network of contacts.

GTAI Cooperation Forums allow cluster delegation members to enter into "matchmaking" discussions with local companies and institutions about potential partnership. Investor events at the selected locations allow Eastern Germany to be presented to foreign companies in order to generate cluster settlement interest. GTAI works closely with the respective federal state economic development agencies and cluster management.

Powerhouse Eastern Germany

GTAI activities that market Eastern Germany as a business location to the world are bundled together under the "Powerhouse Eastern Germany" umbrella brand. Prospective international investors are advised about market opportunities available in the new federal states.

GTAI's Powerhouse Eastern Germany division promotes the benefits of doing business in the new federal states to international investors as well as seeking to increase the opportunities of Eastern German businesses in the international marketplace. International business delegation and exchange trips play a central role in achieving this dual objective.

Powerhouse Eastern Germany branded conferences and trade fair visits and special events help communicate the message that the regenerated region has established itself as one of Europe's most attractive and innovative production and service locations.

Particular focus is attached to the region's strong and dynamic industry sectors including the renewable energies, chemical, mechanical engineering, automotive, biotechnology, and service sectors. All international companies interested in locating in Eastern Germany are supported by GTAI and the responsible economic development agencies of the respective new federal states.



OUR SERVICES

About Us

Germany Trade & Invest (GTAI) is the economic development agency of the Federal Republic of Germany. The company helps create and secure extra employment opportunities, strengthening Germany as a business location. With more than 50 offices in Germany and abroad and its network of partners throughout the world, GTAI supports German companies setting up in foreign markets, promotes Germany as a business location and assists foreign companies setting up in Germany. All investment services and related publications are free of charge.

Investment Location Services

- Market and industry reports
- Market entry analyses
- Business and tax law information
- Business and labor law information
- Funding and financing information

Business Location Services

- Legal and tax-related project support
- Funding and financing advisory services
- Site visit organization
- Local partner and network matchmaking
- Public and private partner coordination

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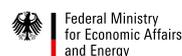
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Notes

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