VDMA

Increase competitiveness, improve location conditions!

Joint economic policy positions of the mechanical and plant engineering industry 2024

Content

Profile of the VDMA

A strong representation of interests for a strong industry

The mechanical and plant engineering sector stands for innovation, export-orientation, and SMEs. It employs around three million people in the EU, more than 1.2 million of them in Germany alone. With a value added of around 280 billion euros (2022), mechanical and plant engineering contributes the highest share of the manufacturing industry to the European gross domestic product of the EU-27. With technology for people, we provide solutions to the many challenges we face.

The VDMA represents around 3,600 German and European mechanical and plant engineering companies, making it the most important industrial association in Europe. As a platform of 36 mechanical engineering associations, it covers the entire value chain of the capital goods industry - from components to complete systems, from system suppliers to service providers, from communicating machines to self-organising logistics.

As a trade association, the VDMA works on behalf of its members at national, European, and international level. It constructively represents the interests of the mechanical engineering industry and is committed to overall economic progress and the common good in Europe. Its economic policy positions are derived from the conviction that competition, individual responsibility, and open markets are the basis for microeconomic and macroeconomic success driven by innovation and investment. Being an entrepreneur in Germany and Europe should remain attractive in the future.

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Increase competitiveness, improve location conditions!

The European and German economies are facing major challenges such as climate change, the restructuring of the energy supply, demographics, and digitisation. And all this with scarce public funds. To master these challenges, we need a strong mechanical and plant engineering sector.

Our times are characterised by climate change, geopolitical upheavals, and wars. Many economic policy measures therefore follow the imperative of acute urgency rather than sustainability. The fact that Europe and Germany have so far been able to respond with such financial strength is largely due to the fact that we have an industrial base that is the foundation for our prosperity and therefore also for fiscal room for manoeuvre. To ensure that this remains the case in the future, we must now focus more on increasing our competitiveness and improving our general location conditions. Prioritisation and efficiency are the order of the day!

The positions are not to be understood as rigid guidelines but rather as suggestions for a constructive dialogue between business, politics, and society. They are intended to help find joint solutions that do justice to the interests of all parties involved. This is the only way for the European and German economy to further develop its strengths and overcome its weaknesses. Only together can we increase the competitiveness of our location in order to sustainably secure growth, employment and prosperity as well as the ability of our community to act.

Karl Haeusgen
VDMA President

International competitiveness

Facts and figures

- Conference Board Measure of CEO Confidence™ for Europe 2023
  - 84% of CEOs see Europe's competitiveness deteriorating
  - Complex, incoherent regulation, high energy prices, and geopolitical tensions as the biggest downside risks
- Deterioration of Germany in the competitiveness ranking[1]
  - Germany in 22nd place out of 64 countries analysed in the IMD World Competitiveness Ranking in 2023
  - Downward trend since 2014 (6th place); 7 places worse in 2023 than in 2022
  - Particularly poor in the area of tax policy (rank 60)
- Urgency of improving location factors (Top 5)[2]: bureaucratic burden, availability of qualified labour, energy prices, labour costs, tax burden
- Little evidence of deindustrialisation in Germany so far
  - Manufacturing's share of value added in GDP has remained constant at around 20% for 30 years[3]
  - Sustained positive trend in the share of medium and high-tech in the value added of the manufacturing sector (mfg.)[3]
  - Strong increase in labour productivity in euros per hour in mfg.[4]
  - Increasing deficit between incoming and outgoing direct investments as a warning sign[5]
- Weak development of production potential[6]
  - Decline in real potential growth from approx. 2 – 3% annually from 1970 to the early 1990s to 1.4% between 1995 and 2018 and an average of 0.6% since 2019
  - Dampening effects due to a shortage of labour, ageing capital stock, and weaker productivity growth
- Internationally, comparatively low German investments in digitalisation technologies (ICT)[3]; restrained use of AI, little investment in AI start-ups[3]

[1] Source: International Institute for Management Development (IMD)
[2] Source: VDMA, 20th flash survey 27th October 2023
[3] Source: OECD
[4] Source: Federal Statistical Office
[5] Source: IW Cologne, 2023
[6] Source: GCEE, Annual Report 2023 / 24

VDMA position: increase competitiveness

Our business location is facing enormous, simultaneous challenges: climate-neutral and digital transformation, securing skilled labour, and geopolitical conflicts. The last few years have been characterised by short-term crisis management. The focus must now shift to securing long-term international competitiveness through structural, broad-based reforms.

- Reduce bureaucracy
  - Acceleration of planning and approval procedures
  - Relief from reporting obligations, especially for SMEs
  - Consistently check regulatory requirements for practicability and consistency
- Reform the tax system
  - Lower corporate taxes and improved depreciation conditions
  - Relief of the factor labour
- Secure skilled labour
  - Full utilisation of domestic labour force potential through education, training, childcare, extended weekly and lifetime working hours, and incentive compatibility of social security
  - Using automation to reduce the workload of skilled workers
  - Targeted, qualification-oriented immigration of skilled workers
- Expand infrastructure
  - Accelerated expansion of digital infrastructure
  - Expansion of renewable energies and energy infrastructure
  - Modernisation of transport infrastructure
- Enable free trade
  - Use free trade agreements and international partnerships to diversify supply chains
  - Technology sovereignty through mutual dependencies
- Strengthen market-based competition
  - Do not block structural change; enable market entries and exits as well as job changes
  - Utilising swarm intelligence through entrepreneurial freedom
  - Do not relieve private individuals of liability and responsibility
  - No uncompetitive permanent subsidisation

Drive in transition

Facts and figures

- Global stock of electric vehicles to increase sharply in 2022[1]
  - Increase of 10.8 million to 27.7 million compared to 2021
  - New registrations grow by 61% compared to 2021
- Development of the number of electric vehicles in Germany[2]
  - ca. 50% of new registrations in 2022 with alternative drive
  - In 2022, 470,559 electric cars were newly registered in Germany (+32% compared to the previous year, 17.7% market share)
  - Number of cars in Germany in 2023, electric / hybrid vehicles

Electric	1,013,009 (2.1%)
Hybrid (all types)	2,337,897 (4.8%)

- From 2035, only zero-emission cars and light commercial vehicles may be registered in the EU[3]
- As an intermediate step, from 2030 it is planned that CO_2 emissions from new passenger cars must fall by 55% and from light commercial vehicles by 50% by 2030 compared to 1990[4]
- Market potential for recycling battery cells by 2040[5]
  - €5.5 bn market volume
  - 3,800 new jobs in mechanical and plant engineering
  - Recyclates cover 15–40% of raw material requirements
- 97,500 (partially) public charging points installed in Germany[6]
- Transformation of mobility, Europe with a claim to leadership
  - Around 75% of vehicles sold worldwide in 2040 will be purely electric or fuel cell vehicles[7]
  - Sales forecast for vehicle drives: +41 bn euros for new technologies from 2022 to 2040, but -38 bn euros for conventional technologies in Europe[7]
  - Production of vehicle drives: -580,000 jobs in conventional, +420,000 jobs in new technologies, €11.5 bn investment per year, mechanical engineering remains constant with 55,000 jobs[8]

[1] Source: ZSW
[2] Source: Federal Motor Transport Authority
[3] Source: EU Commission
[4] Source: BMWK
[5] Source: Fraunhofer-ISI, IMPULS study on battery recycling
[6] Source: Federal Network Agency, 19% fast-charging points; as of October 2023
[7] Source: VDW, FEV, Market Update for the Drive in Transition III study
[8] Source: FEV, Study Antrieb im Wandel III

VDMA position: technology neutrality in the drive

Mechanical and plant engineering enables the mobility of tomorrow and is already delivering pioneering innovations today: the best production technologies for conventional and electric drives, for electricity storage, and alternative fuels as part of Power-to-X. In the field of mobile machinery, mechanical engineering itself is user of innovative drive technologies. This makes the mechanical engineering industry a pioneer, technology leader, and shaper of a sustainable, future mobility.

- Technology selection is not a government task; beyond the trend towards electrification, other forms of drive will also be required in the future depending on the application, including and especially for mobile machines
- Efficient use of resources and investments on the way to climate neutrality
- Renewable energy must be the starting point for all areas of mobility
- Environmental impacts of all possible technologies must be taken into account over the entire life cycle
- Expand expertise along the entire value chain of the drive train – from raw material extraction, processing and production to recycling
- Preferably market-based incentives to establish a sustainable circular economy, especially for batteries, motors, and electronic components
- Preferably market-based incentives to expand the infrastructure for electric charging and hydrogen
- Policymakers must set a reliable and transparent framework that is standardised across the EU and incentivises private investments
- Increase pre-competitive research funding (production research, drive technology, battery technology, recycling)
- Transfer of research results from collaborative projects to a wider audience; SMEs in particular are a key lever for supporting industry in accelerating change

Labour market and wage policy

Facts and figures

- Germany one of the most expensive EU mechanical engineering locations
  - Labour costs per hour(2022)[1] €48.80
- Personnel costs as % of gross production value (2020)[2]
  - Mechanical engineering on average 28.7%
  - Mechanical engineering branches from 18.2% to 37.4%

  Average gross annual earnings of full-time employees in mechanical engineering (2022)[2] €64.975
- Long-term unemployed (%) of the labour [3] 2022 2010
  - Germany 1.0% 3.2%
  - EU (27) 2.4% 4.0%
- Importance of permanent staff in mechanical engineering (2022)[2]
  - Proportion of standard employees 88.2%
  - Proportion of marginally employed persons 1.3%
- Temporary work
  - Ca. 90% of mechanical engineering firms use temporary work[4]
  - Temporary employment rate (2022)[2] 4.0%
  - Since 1st January 2018 industry surcharges for the M+E industry, staggered by working time 15 to 65%
- Demographic change[5] 2022 2005
  - Share of employed persons aged 55 or older 24.2% 14.3%
- Short-time workers in mechanical engineering[6]
  - annual average in 2022 15,000
  - annual average in 2021 75,000
  - annual average in 2020 187,000
- Registered vacancies (2022)[6] 13,371
- Collective bargaining coverage of VDMA member companies (2022)[4]
  - Without collective bargaining agreement 59%
  - With collective bargaining agreement 41%

    Of which sectoral collective agreement 75%

    Of which company collective agreement 25%

[1] Source: Eurostat; only DK (€52.20) and NL (€50.30) are more expensive
[2] Source: Federal Statistical Office
[3] Source: Eurostat
[4] Source: VDMA
[5] Source: Federal Statistical Office, Microcensus
[6] Source: Federal Employment Agency

VDMA position: modernise labour markets

Competitiveness, growth, and a long-term supply of labour and skilled workers require adaptability, specialisation, and a flexible labour market. Digitalisation also requires modern framework conditions. In future, blanket legal regulations will be even less able to provide the right answers to new challenges. More operational and individual room for manoeuvre is needed.

- Extension of weekly and lifetime working hours with flexible transitions into retirement
- Adapt the Working Hours Act – make rest periods more flexible, weekly instead of daily maximum working hours, maintain trust-based working hours
- Remove barriers and facilitate employment
  - Relaxation of fixed-term employment contracts, abolish ban on pre-employment
  - Extension of the maximum duration of temporary employment
  - Reform of protection against dismissal with optional severance pay
- Working from home, flexitime, trust-based working hours, working time accounts, job sharing or further training – the starting point must be individualised solutions
- Freedom of association – no (in)direct obligation to be bound by collective agreements
- Promote contracts for work and services as the basis for innovation networks based on the division of labour
- No extension of corporate co-determination
- Legalisation of company alliances for work
- Further development of the M+E sectoral collective agreements
  - Greater operational room for manoeuvre
  - Reduction to real minimum conditions
  - Greater wage spread in the low-wage sector
- Pension insurance reform
  - Stabilisation of the statutory pension to a basic level of security
  - More flexible retirement age, strengthening subsidiarity
  - Encourage personal provision and company pension schemes
- Align social benefits with the requirements of the low-wage sector; observe the wage gap principle

Foreign trade and free trade

Facts and figures

- Strong international integration of the German economy

	2022	2005
– Export share of GDP[1]	40.7%	37.3%
– Import share of GDP[1]	38.6%	30.7%
– German direct investment portfolio abroad (2021)	€1,426 bn	

- Total German export volume (2022) €1,577 bn
- Mechanical engineering (2022)[2]:
  - Export volume €194 bn
  - Export ratio[3] 81.6%
  - Machine trade surplus (exports minus imports) €101.5 bn
  - World trade shares (2022)[4]
    China 18%
    Germany 14%
    USA 9%
  - Germany world market leader in 8 of 31 specialised sectors of mechanical and plant engineering, including drive technology, agricultural engineering, machine tools, process engineering machinery and equipment
  - German direct investment portfolio in foreign mechanical engineering (2021) €46.5 bn
- De-globalisation harms everyone[5]
  - GDP decline in D (6.9%), EU without D (4.9%), RoW (6.9%)
  - Decline in mechanical engineering production in Germany 19.5%
- Federal export credit guarantees (2022)[6]
  - Total (exports to 172 countries) €14.9 bn
  - Newly covered export transactions with credit periods from 1 – 5 years (especially small tickets) €700 mil
  - Annual result Euler Hermes €413 mil

[1] Source: Federal Statistical Office, provisional figures
[2] Source: Federal Statistical Office, VDMA
[3] Exports as a percentage of production
[4] Source: National statistical offices, VDMA; share of mechanical engineering in machinery exports of the most important supplier countries
[5] Source: IfW, IMPULS study supply chains after Corona
[6] Source: Euler Hermes, BMWK

VDMA position: boost free trade

Growth and employment are based on open markets and free trade. The foreign involvement of mechanical and plant engineering secures prosperity at home and abroad. Politics and society must constantly defend the advantages of free trade and globalisation and counter the threats posed by increasing protectionism and politically motivated restrictions worldwide.

- Strengthen free trade and combating protectionism
  - Swiftly ratify free trade agreements with MERCOSUR and Mexico, finalise negotiations with India, Indonesia, Australia and Thailand and start negotiations with Malaysia
  - Do not overload free trade agreements with environmental and social policy requirements and objectives; dialogue-based dispute resolution instead of sanctions ("blame and shame")
  - Take consistent action against unfair trade practices from third countries in the EU internal market
- Concretise the German government's China strategy
  - Demand a more consistent level playing field vis-à-vis China
  - Balance between offensive and defensive measures
- Expand transatlantic trade relations
  - Conclude agreements on the mutual recognition of conformity assessments
  - Resolve the ongoing steel and aluminium dispute once and for all
- Make export financing competitive
  - Quickly realise forfaiting guarantee for small tickets
  - Provide climate policy sector guidelines with real incentives
  - Implement modernisation of the OECD Consensus
- Combat extraterritorial sanctions worldwide
  - Secure payment transactions despite sanctions
  - Protect EU companies from the effects in the best possible way
- Facilitate labour assignments in the EU
  - Standardise reporting regulations in the EU member states, significantly reduce excessive bureaucracy
  - Implement standardised eDeclaration in EU member states

Digitisation

Facts and figures

- Digitisation Index (DESI)[1]
  - Finland (1st place) 89.5
  - Germany (7th place) 77.3
  - France (19th place) 63.5
  - EU average 69.1
- Expected 5G share of all mobile connections in 2030[2]
  - North America (USA and Canada) 91%
  - Europe 87%
  - China 88%
  - Worldwide (average) 40%
- Share of fibre optic connections in total stationary broadband connections[3]
  - Korea 88.0%
  - OECD average 37.7%
  - USA 20.4%
  - Germany 9.2%
- Within the German economy, the mechanical engineering sector has an above-average level of digitalisation[4]
- Lack of IT specialists is seen as the biggest obstacle[5]
- 64% of all mechanical engineering companies surveyed (N=110) see a medium to very strong impact on their own business model from AI-based products and services[6]
  - Across Europe, 47% of the manufacturing industry uses at least one AI technology[7]
  - The availability of qualified personnel poses particular challenges for Germany (76%) compared to the EU (57%)[7]

[1] Source: EU Commission 2023, SMEs with at least a basic level of digital use, share of companies in %
[2] Source: GSMA 2023, The Mobile Economy 2023, shares per region
[3] Source: OECD broadband statistics 2022
[4] Source: IW 2022; digitalisation of the economy in Germany; electrical and mechanical engineering with 142.7 (Ø 105.1)
[5] Source: VDMA study: Leadership and innovation in times of digitalisation, 2018
[6] Source: VDMA report on artificial intelligence in mechanical engineering, 2020
[7] Source: European enterprise survey on the use of technologies based on artificial intelligence, 2020

VDMA position: driving digitisation forward

Digitisation creates potential for intelligent production and new business models. In close cooperation with society and politics, growing demands on research, training and qualification, norms and standards, legal and data security can be realised and digital sovereignty can be strengthened. Europe can position itself as a lead market and provider.

- Think digitisation in European terms, or even better, globally
- Create standardised, innovation- and industry-friendly framework conditions in the EU internal market, including for the data economy, AI, and wireless communication
- Development and establishment of a federative data ecosystem for the manufacturing industry ("Manufacturing-X")
- Secure the European supply of semiconductor components required by the industry; in particular larger chip structures
- Promote further training and new qualifications for digital skills
- Digital immune system: ensure and maintain security
  - Uniform implementation of the NIS2 regulation across Europe
  - De-bureaucratisation of reporting obligations for SMEs
  - Global harmonisation of technical requirements such as Software Bill of Material (SBOM) or Cloud
  - Actively promote and strengthen cyber resilience and cyber defence for SMEs
- Secure the use of machine-related data; adapt the GDPR
- Strengthen research on the digitisation of industry
  - Transfer through broad-based innovation platforms and cross-border test environments
- Expand and secure digital infrastructure (e.g. 5G) nationwide and with high performance for industry
- Promote efficient data access and the use of open and neutral standards (e.g. OPC UA), also strengthening them across Europe
- Norms and standards are the key to implementation
  - Strengthen the successful interplay between consensus-based standardisation and consortial standardisation
  - Check existing norms and standards for practicality and avoid excessive standardisation

Europe

Facts and figures

- German share of mechanical engineering sales in the EU 27[1] 41%
- German mechanical engineering exports to the EU 27[2] €85.9 bn
  - France €13.1 bn
  - Italy €9.7 bn
  - Netherlands €8.7 bn
- German direct investment in mechanical engineering of the EU 27[3] €13.8 bn
- EU reporting obligations on sustainability – SMEs hugely affected
  - European companies now 6 times more affected by CSRD (instead of ca. 6,000, now 35,000)
  - In Germany, 30 times more companies are affected by the CSRD compared to the NFRD (now 15,000 instead of ca. 550)
- Public debt of EU countries (2022 / 2023 estimate)[4]
  - European Union (27) 84.8% / 83.1%
  - Germany 66.1% / 64.8%
  - Italy 141.7% / 139.8%
- Declining inflation in the eurozone (2023 / 2024 / 2025 estimates, changes HICP)[4]
  - Eurozone (20) 5.6% / 3.2% / 2.2%
  - Germany 6.1% / 3.2% / 2.2%
- European mechanical engineering (EU 27) as a guarantor of prosperity[5]
  - Gross value added (2022) €280 bn
  - Employees ca. 3 mil
  - Share of SMEs 97 %
  - Machinery sales in the domestic market (2022)[1] ca. € 720 bn
- Bureaucracy costs for the German mechanical and plant engineering industry due to the EU Posting and Enforcement Directive (205,000 postings per year)[6] €31 mil

[1] 2021; source: Eurostat, VDMA estimate
[2] 2022; source: Federal Statistical Office, VDMA
[3] 2021; source: Deutsche Bundesbank
[4] Share of GDP; source: Autumn forecast 2023 European Commission
[5] Source: Eurostat, estimates, gross value added at factor cost
[6] Source: VDMA

VDMA position: strengthen Europe's industrial base

As a domestic market, a community of values, and a global player, the EU is of great importance to the mechanical engineering industry. The EU elections and the appointment of a new EU Commission offer the opportunity for a reorientation of EU policy that places the industry's competitiveness at the centre again.

- Make strengthening industrial competitiveness an EU policy priority
  - Improve framework conditions for the entire industry
  - Removing regulatory barriers, opening up global markets, and completing the single market must become top priorities
  - Consolidate EU legal framework, eliminate contradictions and ambiguities
  - New regulation only if need is proven by the EU Commission and impact analysis rules out disproportionate burdens
  - Avoid detailed regulation, leave room for innovation
- Fully utilise the potential of the EU internal market
  - Launch political initiative to remove barriers in the internal market
  - Facilitate the secondment of employees in Europe
  - No further erosion of state aid law; avoid intra-European subsidy races
- Strengthen European resilience
  - Facilitate free trade as part of a resilience strategy
  - Allow promotion of "strategic industries" only in narrowly defined exceptional areas
- Make Europe crisis-proof and capable of action
  - Abolish unanimity requirement
  - Clearly define competences and responsibilities, reorganise them according to the principle of subsidiarity and finance them adequately
  - Europeanise defence policy, internal security, and refugee policy; regulate labour market / social policy nationally
- No communitisation of liability risks without a political union with budget and control rights at European level

Securing skilled labour and education

Facts and figures

- Mechanical engineering is one of the largest employers for engineers
  - In total approx. 181,000, of which 11% are female[1]
  - Share of engineers in the total number of employees in mechanical engineering[1] 16%
- High drop-out rates in engineering-oriented Bachelor's degree programmes at German universities (universities of applied sciences)[2]
  - Mechanical engineering 33% (32%)
  - Electrical engineering 44% (44%)
  - Information technology 42% (30%)
- Above-average commitment of the mechanical engineering sector to dual training
  - Mechanical engineering training rate (2022)[3] 5.3%
  - Share of mechanical engineering training companies (2022)[3] 37.0%
  - Companies that want to offer more technical apprenticeships in the coming months[4] 51%
  - Average share trainees retained[4] 91%
- Bottlenecks in the recruitment of skilled labour
  - Vacancy period (days)[5]: mechanical and industrial engineering (170), STEM professions (180), IT (143)
- Unutilised skilled labour potential in Germany and abroad
  - School leavers without a qualification (2022)[6] 7%
  - Around 240,000 young people in measures between school and vocational training[6]
  - 376,000 foreign students in Germany
  - Share of foreign students in engineering sciences in winter semester 2022 / 2023[6] 24.2%
  - Share of companies that were able to recruit new employees through the Skilled Labour Immigration Act[7] 16%

[1] Source: VDMA Engineering Survey 2022
[2] Source: German Centre for Higher Education Research and Science Studies 2020
[3] Source: Federal Employment Agency; BIBB calculations, 31 Dec.
[4] Source: VDMA Surveys 2023
[5] Source: Federal Employment Agency 2022
[6] Source: Federal Statistical Office
[7] Source: VDMA survey September 2023, a further 10% stated "don't know"

VDMA position: Securing and qualifying skilled labour

Qualified employees are a guarantee of success for companies. According to VDMA surveys, the shortage of labour and skilled workers currently poses the greatest risk to competitiveness. It is already threatening to become a brake on growth. More people from Germany and abroad need to be attracted to technical professions, degree programmes and further training. Automation does not make skilled workers superfluous but makes an important contribution to alleviating the labour shortage.

- General school education
  - Strengthen cooperation between schools and companies
  - Introduce technology as a school subject, strengthen ICT skills and career guidance
- Vocational training
  - Strengthen dual training, value skilled labour
  - Reduce bureaucracy, more freedom of decision for schools
  - Better recognition of professionally acquired skills
- Study
  - Improve the quality of teaching, reduce dropout rates without compromising quality
  - Increase ICT skills (e.g. AI, Industry 4.0)
  - Strengthen practical relevance: promote dual study programmes
- Further training
  - Teach lifelong learning skills
  - Teach skills in ICT and new drive technologies
  - Further qualify vocational school teachers and trainers
- Domestic employment potential
  - Lead more young people to the school-leaving certificate
  - More all-day and childcare options
  - Employ qualified older employees for longer
- Foreign potential
  - Increase Germany's attractiveness as employment location
  - Reduce bureaucracy in the immigration of skilled labour; allow temporary work for placement

Research

Facts and figures

- Company share of total expenses for research and development (R&D) in Germany[1] 67.5%
- Internal expenses of the German economy for R&D 2022[1] (share of mechanical engineering) €82 bn (9.2%)
- Increase in R&D personnel in mechanical engineering between 2014 and 2021[1] 18.2%
- Self-financing share of total R&D expenditure in mechanical engineering 2021[1] (state share) 97.3% (2.6%)
- High innovative strength and technical competitiveness of the German mechanical engineering industry
  - Innovation is research, development, and design: 56% of engineers work in this area[2]
  - Innovation expenditure in mechanical engineering (2021)[3] €17 bn (6.1% of sales)
  - Share of companies with innovations (2021)[3] 71%
  - Industry sales with new products (2021)[3] 18%
- 72% of VDMA members are affected by product or brand piracy. The estimated damage to the German mechanical and plant engineering industry amounts to €6.4 bn per year[4]
- Around 600 contractually bound research projects under the supervision of the VDMA research associations[5]
- Country shares of mechanical engineering patent applications at the European Patent Office (2022)[6]
  - Germany 20%
  - USA 17%
  - Japan 14%
- Research allowance in mechanical engineering[7]
  - 85% of companies carry out additional R&D activities
  - 48% of companies hire new R&D staff

[1] Source: Stifterverband Wissenschaftsstatistik
[2] Source: VDMA Engineering Survey 2022
[3] Source: Centre for European Economic Research (ZEW)
[4] Source: VDMA Product Piracy Study 2022
[5] Source: VDMA estimate
[6] Source: European Patent Office
[7] Source: ZEW, VDMA 2022

VDMA position: secure the future with research funding

Research and innovation are essential for the future of Europe as an industrial centre. This is the only way to secure value creation and jobs in the long term. Mechanical and plant engineering provides solutions for the global challenges of our time. For this, companies need innovation-friendly framework conditions. This includes open-topic and broad-based research funding, as well as securing the skilled labour base for research and innovation.

- Avoid overlaps and duplication in funding instruments – better interaction between instruments instead of a funding jungle
- Practical implementation, promotion, and expansion ("no cap") of tax incentives for research
- Future-proof further development and sustainable financial expansion of the pre-competitive and broadly effective Industrial Collective Research (IGF) to 300 million euros
- Improve midrange companies' access to funding measures in Germany and the EU, involve industry more closely in programme planning and prioritisation
- Strengthen German involvement in the development of the coming 10th EU Research Framework Programme
- Business-friendly design of European funding instruments, especially through swift, streamlined application procedures and appropriate theming
- Adaptation of funding procedures to the current requirements of agile and shortened R&D processes through open-topic and accelerated calls for proposals
- Efficient transfer of results that gives all companies access to new knowledge; as multipliers, associations guarantee success in this regard
- Strengthening of industrial property rights through improved administrative and legal framework conditions (staffing, speed of proceedings, etc.), combat product piracy and industrial espionage

Climate and energy

Facts and figures

- Share of costs due to energy consumption of gross production value in Germany (2020)[1]
  - Mechanical engineering 0.9%
  - Motor vehicles and motor vehicle parts 0.6%
  - Manufacture of chemical products 3.3%
- Shares of energy sources in gross electricity generation (549 TWh; -19 TWh YoY) in Germany (2022)[2]
  - Wind energy 22%
  - Lignite 20%
  - Natural gas 14%
  - Photovoltaics 11%
  - Hard coal 11%
  - Biomass 8%
  - Nuclear energy 6%
  - Hydropower 3%
  - Other[3] 4%
- Share of renewable energies in gross electricity generation in Germany (2022)[2] 44% (+9 percentage points YoY)
- Electricity prices / gas prices (kW / h) for industry, 1st half of 2023[4]
  - Finland €0,11 / €0,14
  - Germany €0,27 / €0,09
  - Italy €0,28 / €0,1
  - France €0,3 / €0,1
- Emission prices (tCO_2e)[5]
  - Finland (CO_2 tax) €77 (transport) / €53 (other fossil fuels)
  - France (CO_2 tax) €45
  - Germany (ETS) €30
- Up to 86% of global emissions can be avoided with state-of-the-art climate protection technologies from mechanical engineering[6]

[1] Source: Federal Statistical Office
[2] Source: AGEB
[3] Geothermal energy, domestic waste, pumped storage, industrial waste, oil
[4] Source: Eurostat, monthly gross electricity costs of industrial companies with an annual consumption of 500 - 2,000 MWh
[5] Source: World Bank
[6] BCG&VDMA "For Machinery Makers, Green Tech Creates Green Business", 2020

VDMA position: "energy crisis" as an opportunity for transformation

Sustainably changing cost structures are a clear signal to accelerate the transformation away from fossil fuels. The mechanical engineering industry is on an ambitious target path, both as a provider of solutions and as a consumer. Global CO_2 pricing is and remains the most efficient guiding instrument for achieving climate targets, even if a "climate club" is currently a long way off and politicians need to find an answer here.

- From electricity transition to energy transition – technology-neutral, energy-efficient, cross-sectoral, and digital
  - Separate crisis instruments from medium-term goals
  - Energy efficiency is a central component of the energy transition
  - Reform energy market design for transformation and security of supply
  - Internalise external costs according to the polluter-pays principle
  - More speed in planning and approval procedures
- Expand the competitiveness of the mechanical engineering industry through the EU's pioneering role in climate protection in the European domestic market; new solutions must nevertheless have a global market perspective
- EU must advocate a serious, effective offsetting mechanism for global emissions reductions in the UN climate protection negotiations
- Comprehensively evaluate and swiftly implement the EU energy tax directive and emissions trading reform; organise the transition from national fuel emissions trading to the EU ETSII for heating and transport in the short term
- Drive forward the permanent reduction of energy costs by lowering the energy tax and reforming grid fees
- Give equal weight to environmental compatibility, security of supply, and economic efficiency
- Classify energy transition technologies as strategically important; secure the supply of raw materials, stabilise value chains
- Role model function of the public sector for investments

Taxes

Facts and figures

	2023[1]	2008	1998
• State expenditure ratio[2]	48.3%	43.7%	48.3%
• Tax ratio[2]	39.7%	39.6%	42.3%
• Tax rate[2]	23.7%	24.3%	23.1%
• Debt ratio[2]	64.4%	65.9%	59.4%
• Interest tax rate[3]	3.7%	11.3%	15.5%

- The net return on sales (annual result in % of total operating performance) in mechanical engineering was 4.5% in 2021[4]
- Trade tax[5]
  - Anti-investment taxation of corporate substance
  - Less than 10% of companies account for over 90% of trade tax revenue
- Income tax: the main burden falls on a few shoulders[5] – For income of €100,325 or more, 10% of taxpayers bear approx. 57% of the income tax revenue
- Income tax burden of a corporation in 2022[6]
  - Germany 29.8%
  - OECD average 23.6%
- Change in nominal tax rates from 2008 to 2022[7]
  - Germany 0.4%
  - Italy -3.6%
  - France -8.6%
  - Great Britain -9.0%
  - Japan -9.8%
  - USA -13.4%
- Significant acceleration of depreciation has many advantages:[8]
  - Positive effects on investment, employment, and payroll, private household consumption, and GDP
  - Leads to greater tax revenue in the long term

[1] Forecasts by the GCEE and financial planning (debt level)
[2] Source: GCEE; in relation to GDP at current prices
[3] Source: GCEE, interest in relation to tax revenue
[4] Source: Deutsche Bundesbank, provisional figures
[5] Source: Federal Statistical Office, Federal Ministry of Finance
[6] Source: OECD
[7] Source: IW
[8] Source: ifo Institute

VDMA position: secure competitiveness

Only with a strong, internationally competitive industry will Germany lead the way to a more climate-friendly future. To achieve this, the tax burden must be reduced to an international standard level and corporate tax law must be modernised and made less bureaucratic. Tax increases are the wrong approach in general and even more so in times of crisis!

- Boost growth through innovation and investment incentives
  - Permanent retention of declining balance depreciation
  - Stabilise the investment premium for climate protection investments; extension to digital innovation goods
  - Expansion of tax incentives for research to include material costs; no cap on eligible expenses
- Restore efficiency in a timely manner by significantly extending the carry-back period for tax losses and permanently mitigating minimum taxation
- No capital-based taxation motivated by distribution policy (assets, inheritances); generate revenue through growth
- Reduction of the profit tax burden to an internationally competitive level of max. 25% through, among other things
  - Complete abolition of the solidarity surcharge
  - Fundamental trade tax reform; deduction of trade tax as a business expense / crediting and reduction of non-income-related add-backs
  - Reduction of the retention rate under Section 34a EStG and SME-friendly structure
- Modernisation of corporate tax law
  - Reducing tax bureaucracy through more digitisation and flat-rate taxation
  - Low-bureaucracy and practicable implementation of global minimum taxation (Pillar II)
  - Greater transparency in the negotiation of double taxation agreements and alignment with the exemption method
  - Market-based interest on pension provisions

Technology policy, environment and sustainability

Facts and figures

- Domestic market
  - Over 30 regulations on CE labelling are the basis for the success of the internal market through uniform requirements
  - Further strengthen market surveillance: 2,142 validated notifications of unsafe products in 2021 (RAPEX)
  - 9 out of 10 companies see IT security as a top issue[1]
  - Over 800 standards reflect the state of the art
- Removal of technical barriers to trade
  - Every delivery to countries outside the European Economic Area (EEA) is affected
  - Market volume of €106 bn[1,2] in Germany alone
- Environmental technology[2]
  - Environmental protection-related sales in the manufacturing industry (2021): €70.4 bn, thereof mechanical engineering €21.4 bn; largest item is climate protection: manufacturing industry €22.7 bn, mechanical engineering €5.9 bn
  - 8% increase in entities with environmental protection-related sales from 8,449 (2020) to 9,125 (2021)
  - 341,211 employees worked in environmental protection in 2021, including 22% in mechanical engineering
- Rulemaking
  - 17 country-specific chemical regulations worldwide (2022)
  - 19 country-specific regulations on substance restrictions in electrical appliances (2022)[3]
  - 235 substances of very high concern on the SVHC-Candidate list, with an upward trend[4]
  - Increase in national registration obligations (batteries, electrical appliances, packaging, etc.) and non-financial reporting obligations (CSR-D, EU taxonomy)
  - Supply Chain Due Diligence Act (LkSG and EU proposal CS3D)

[1] Source: VDMA
[2] Source: Federal Statistical Office
[3] Source: European Parliament
[4] Source: ECHA

VDMA position: standardise regulations – keep quality high

Mechanical engineering is an important building block for shaping the future: sustainable products and digitisation continue to gain in importance. To remain internationally competitive, companies must not be overburdened with bureaucracy and need reliable, harmonised regulations with a strong market surveillance. It is therefore important to develop regulations in a transparent, careful, differentiated, harmonised and consistent manner with the involvement of affected stakeholders.

- Standardised horizontal basis for the digital product passport (DPP) but implement the passports on a product-specific basis
- Further strengthen market surveillance: more enforcement for an effective contribution to safety and fair competition; no third-party certification as a substitute
- European and international standards as the basis for global market access conditions
  - Content of standards must foster innovation
  - Product-specific design of DPP using harmonised standards
- Relieve SMEs for more innovative strength
  - Maintain risk-based approach to substance regulation (REACH); no blanket ban on PFAS
  - "Material compliance": standardisation of the growing global requirements; administratively practicable instruments for reporting along the supply chain
  - A sense of proportion when creating additional documentation and reporting obligations (e.g. CSRD, Ecodesign Regulation, DPP)
  - Data collection only with demonstrable benefit
  - Question third-party certification of data in the DPP
  - Limit EU due diligence law to direct suppliers and create an international level playing field
  - Sustainable EU product initiative that rewards companies for circular innovations

Future-proof state

State

Facts and figures

- Strong selectivity of increasing federal financial aid[1]
  - Subsidy volume 2023 (estimated) €362 bn
  - Federal financial aid has been expanding since 2014
  - Over 39% of all financial aid to the corporate sector favours certain sectors or industries
  - 79% of these sector-specific subsidies are attributable to just three sectors[2], 63% to transport alone
  - 40% of financial aid is cross-sectoral; recent sharp rise due to increased environmental subsidies as part of the German government's package for the future
  - With €34.9 bn, environmental financial aid exceeds transport subsidies (€26.2 bn) for the first time
- Bureaucracy costs for the economy
  - Bureaucracy cost index (Sept 2023, base 2012 = 100)[3] 95.8
  - Stress barometer index (2023, base 2012 = 100)[3] 95.0
  - Increase in ongoing compliance costs 2022 / 23[4] €9.3 bn
- State expenditure ratio (2023)[5] 48.3%
- Redistributive state[6]
  - Social benefits per capita (2022) ca. €14,000
  - Social benefit ratio of GDP (2022) 30.5%
- Public debt (2023)[7] around €2.41 tn (66% GDP)
  - Federal Government around €1.67 tn (+3.0%)
  - Federal states around €598 bn (-1.5%)
  - Municipalities / associations of municipalities around €150 bn (+6.4%)
  - Interest expenditure in relation to taxes (2023)[7] 3.7%
  - Share of public gross fixed capital formation in GDP (2022)[8] 2.6% (€100.8 bn)

[1] Source: Kiel Institute for the World Economy, Subsidies as defined by the Institute
[2] Agriculture and forestry / fishing, transport, renting of dwellings
[3] Source: Federal Government, Federal Statistical Office
[4] Source: Standards Control Council
[5] Source: GCEE, expenditure as % of GDP
[6] Source: BMAS, Federal Statistical Office, estimated values
[7] Source: German Council of Economic Experts, Federal Statistical Office, as at 30th June 2023, changes as at 31st December 2022
[8] Source: Federal Statistical Office, provisional figures

VDMA position: trust market forces

The state must know its competences but also their limits. Good economic policy relies on the creation of favourable general conditions and a growth-friendly environment in which companies compete for the best solutions on their own responsibility. The EU, federal government, federal states, and local authorities must operate efficiently.

- Setting a regulatory framework instead of vertical industrial policy
  - State should set rules and be the arbitrator
  - Technology-neutral competition for innovations
  - Strengthen SMEs as the backbone of industry
  - Exit strategies for state investments from the outset
- Germany needs a masterplan for subsidy reduction
  - Cut subsidies that cannot be justified from a regulatory perspective, particularly those that are harmful to the climate
  - Subsidies (CAPEX and OPEX) only in justified exceptional cases, limited in time, degressive, transparent, with ongoing performance monitoring, with appropriate co-payment
- Remove the brakes on growth by a moratorium of burdens, cutting red tape, e-government, and company ID
- Ambitious reduction in planning and approval times
- Putting public finances on a sustainable footing
  - Comply with the debt brake in line with the constitution
  - Cap the state expenditure ratio to a maximum of 40% of GDP in the future
  - Do not overstretch the KfW mandate
  - Social spending as a share of GDP must not increase any further
- Forward-looking reorganisation of government spending
  - Less consumption spending, more investment spending
  - Maintain and expand public infrastructure (energy, transport routes, digitisation, education)
- Strict adherence to the principle of subsidiarity – limit state-imposed social security to covering the basic risks of poverty in old age, illness, long-term care, and unemployment
- Scientific evaluation of the success of policy measures

Further information

The joint economic policy positions of the German mechanical and plant engineering industry and other detailed position papers can be **downloaded from the** Internet at
https://vdma.org/economic-social-policy

The VDMA has a broad network of representative offices in Germany and abroad. The VDMA capital city office represents **political interests** vis-à-vis federal politicians in Berlin, while the VDMA European office in Brussels represents political interests vis-à-vis EU politicians.

The Competence Centre Economic Principles in Frankfurt am Main is available to answer **questions on content:**

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