

Chief Economists Report 2018

ceemet European Tech & Industry Employers

“Our industry is the most fascinating trump card Europe has today. It is not deserving yesterday stereotypes.”

— Diego Andreis, President of Ceemet

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Perception & Skills Gap Go Hand in Hand

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The Only Way is UP

Perception & Skills gap go hand in hand

Adapt the way we teach

While the revolution we are going through is mostly driven by technological progress, the challenges we face are mainly cultural.

Technological development is not linear, but exponential. It seems that Moore's law once limited to computing power, can be applied to a much wider and growing array of technological dimensions. This creates completely new scenarios and complex problems which require new skills, while we are unprepared for this:

- in schools where inappropriate traditional teaching is still in place; both in terms of topics and methods.
- in business environments where most managers and employees are yet not sufficiently prepared for these challenges.
- at an institutional level, too rigid policies are slowing adaptation and development capabilities of our eco-system.

Mechatronics as starting point

The economic indicators are overall positive. Yet, there are uncertainties. The tech industry is hiring massively across Europe and despite the fact that manufacturing pays the highest wages within the industry sector, the skills gap creates huge challenges for the competitiveness of the industry.

The digital transformation is particularly relevant for businesses. Mechanics merges with electronics and informatics; the physical world is converging with the digital one. This makes our industry the place where most of the fascinating innovations of our time are developed.

However, the gap between reality and perception of what our industry is and offers, is that big that we are putting our future at risk with the young generation shifting away. If we want to grant a future to industry, we need to foster change and make our industry attractive to new generations.

For most of the great challenges ahead, it is the metal, engineering and technology-based industries that can produce most of the answers. This should be the starting point to reposition and to rethink industry's narrative and its closer involvement in upgrading education and training systems.

Let's lead that paradigm shift and make our industry the 1st choice for our young people.

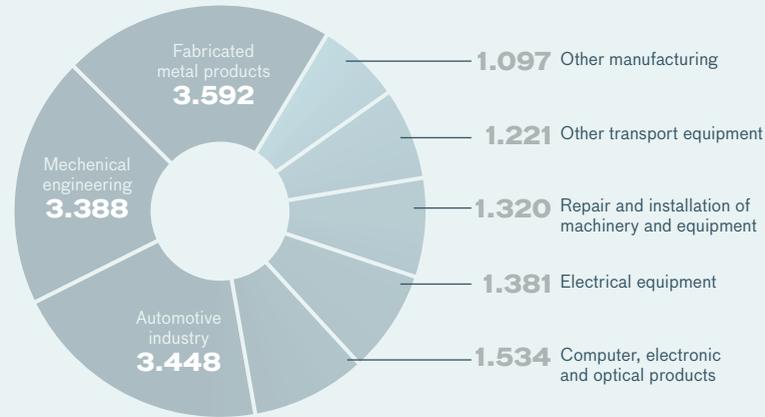
“Robots aren't stealing our jobs, inadequate education is.”

On the other side, technological progress creates opportunities we never had before. It democratizes technology access and social mobility. Anyone with the right skills can participate.



Diego Andreis,
President of Ceemet

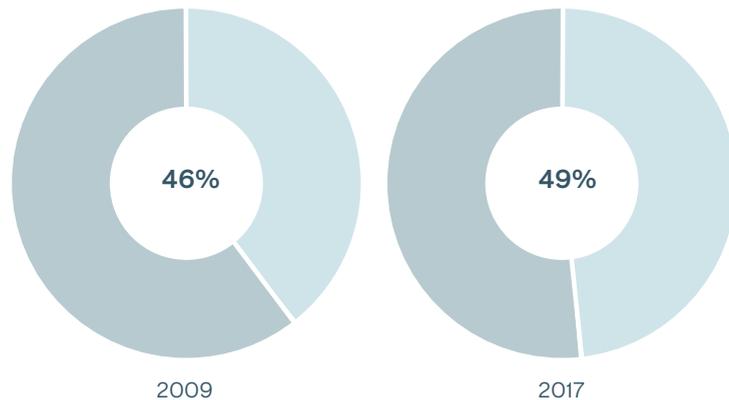
The Metal, Engineering and Technology-based Industries: Jobs per sector



For the 2nd consecutive year 3 sectors represent more than 60% of employment in the Metal, Engineering and Technology based industries (MET). These are Fabricated

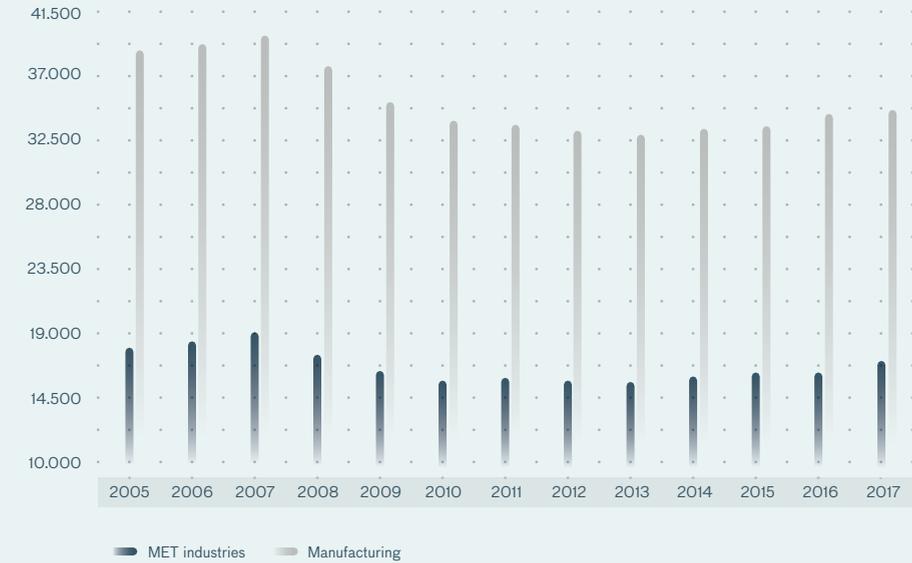
metal products (3,59 million) followed closely by the Automotive industry (3,45 million) and finally Mechanical engineering (3,39 million).

Employment in the MET industries



Source: Eurostat and own calculations

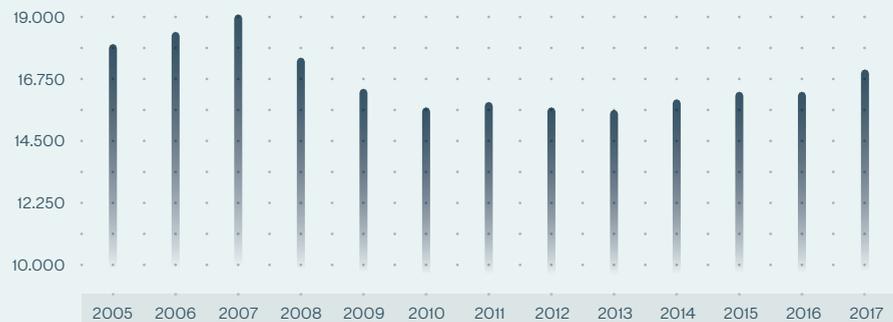
Employment in Manufacturing and MET industries (2005-2017)



- The MET sector's share of EU manufacturing is projected to continue its increase in 2018.
- In total employment in the MET industries equals 16 980 000.
- This means that MET industries are continuing their upward trend in the manufacturing activities of the European Union, comprising nearly 50% of EU manufacturing.

Source: Eurostat and own calculations

II Employment in the MET industries in the EU (2005-2017)

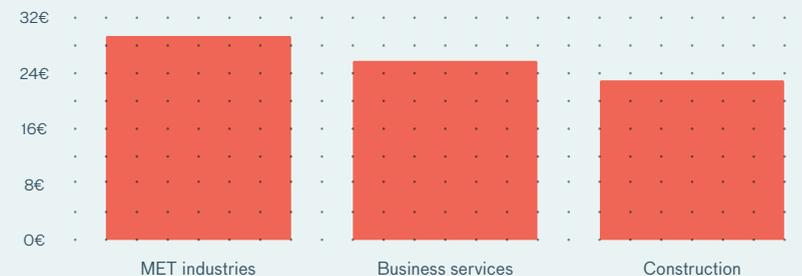


- After having increased employment in the pre-crisis period (2000-2007) the European MET industries were forced to cut 3,36 million jobs during the deep crisis (2007-2010).
- The MET sector's share of employment in total manufacturing increased in recent years and in 2017 stood at 49,1 %, a further increase from the 2016 figure.
- Despite continued growth in terms of employment, the MET industries haven't experienced sufficient growth to return to pre-crisis levels, however due to recent gains it finds itself close to its 2008 figure of 17,4 million jobs.

• Increasing capacity utilization will force companies in all sectors to invest in the products of the MET industries, which is the provider of investment goods. Therefore, MET production and MET employment will continue growing in 2018 and presumably in 2019.

II Source: Eurostat (lfsq_egan22d); *2005 – 2007: NACE REV 1.1; 2017: average value of Q1–Q3 and own calculations

II Labor cost in the EU (2016)
(wages + employer's social contributions + employers taxes - subsidies)



- Labour cost within the EU MET sector increased until 2016, but at a slower pace than before the financial crisis of 2008, owing to reduced inflation.
- Margins recovered gradually thanks to a decrease in oil prices and the Euro to Dollar exchange rate between 2014 and 2016.
- Wages are heterogeneous in the MET industries. For instance, they are around 40% higher in transport equipment than in the manufacture of fabricated metal products.
- The cost of labour is a crucial factor in analysing competitiveness. Other factors such as productivity, price-quality ratio and innovation are also important benchmarks.
- Belgium had the highest cost of labour at nearly €45 per hour in the MET industries, followed closely by Denmark, Sweden and Germany. The lowest was in Romania and Bulgaria with close to €5 per hour. The average per hour cost in the EU was about €29.
- In the EU, MET wages exceed business services by about 10% and construction by 23%.

II Source: Eurostat and own calculations

FOCUS

Hours worked per capita in manufacturing in 15 countries of the EU (2008-2016)



Average annual hours worked per capita in manufacturing in 15 countries of the EU (2015)



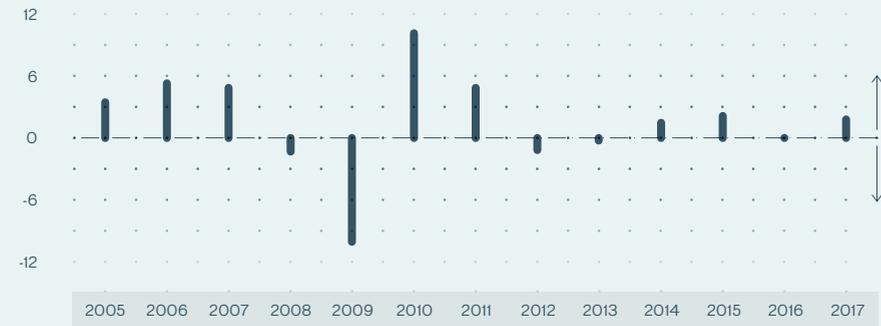
- In most member countries of Ceemet the annual average hours worked per capita in the Manufacturing industry was reduced in comparison with the pre-crisis period.
- The extent of the reduction differs from country to country.

- In the MET industries, the annual average hours worked per capita show a significant variability between countries, with Germany at 1,450 and UK at 1,908
- Few countries are positioned around the EU28 average.

Source: Eurostat and own calculations

FOCUS

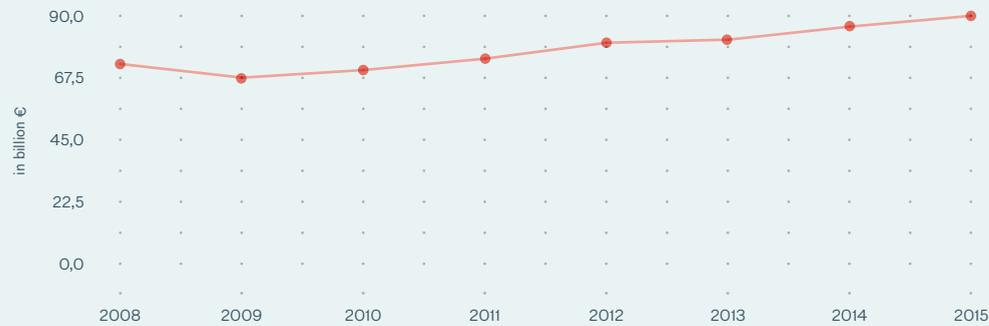
Changes of productivity of the MET-industries in the EU (2005-2017)



- In the current decade, the development of (labour) productivity in the European MET industries is much lower than in the pre-crisis era.
- The latest figures seem to indicate that MET production is growing and that this will result in higher productivity in the future.
- This is essential for the competitiveness of the EU's MET industries in the global markets, due to often higher labour cost and more burdensome legislation in the EU.
- In order to enhance productivity growth, public and private investment in the EU must be increased.
- Since 2010, with three notable exceptions (2012, 2013 and 2016), productivity growth has been above 1.5% in the EU MET industries.

Source: Eurostat (short term business statistics) and own calculations

Business Enterprise R&D-expenditure in the MET-industries in the EU (2008-2015)

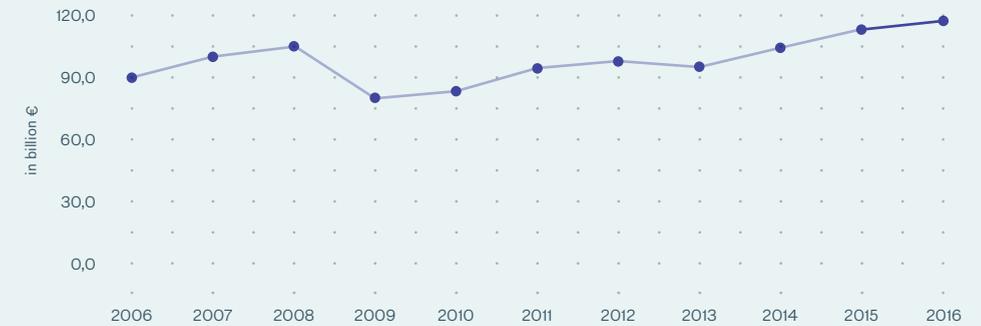


The MET industries in the European Union spent almost €90 billion in research and investment in 2015. R&D spend has never been so high, in the MET industries we are looking for sustainable solutions to a broad range of societal problems: environment, energy supply, mobility, security, safety of the food supply chain and an aging population, to name a few.

The automotive sector is the largest R&D performer within the MET industries. This sector spent €31,4 billion in 2015. It is closely followed by the computer, electronics and optronics (NACE 26), representing €20,4 billion of R&D-expenditure, and the machinery and equipment (NACE 28) spending €13,9 billion.

Germany is the single most important R&D performer in the European MET industries (€41,4 billion). They are followed by France (€12,0 billion), United Kingdom (€9,4 billion) and Italy (€6,6 billion).

Gross Investment in tangible goods of the MET industries in the EU (2006-2016)



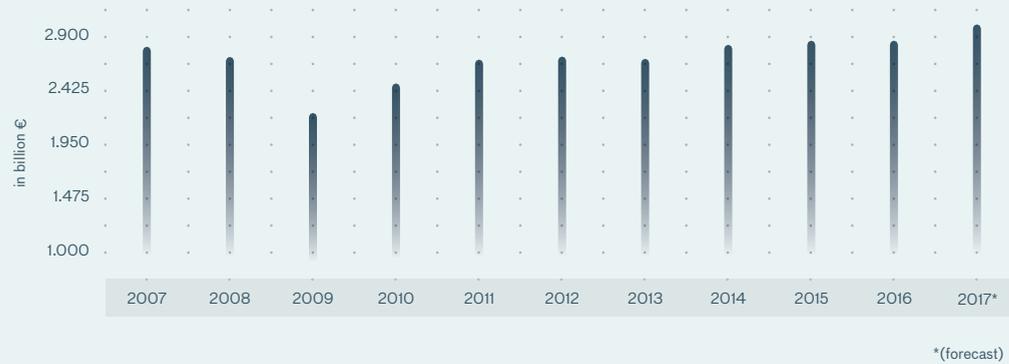
In 2009 the investment of the EU MET industries decreased dramatically, by approximately 20%. In 2010, the investment in tangible goods more or less stabilized and in the following years the investment level increased slowly but steadily.

In 2016, the investment level of the MET industries was €119 billion, which was higher than eight years before when €105 billion was invested.

It is therefore clear that there has been a long period of underinvestment. This investment gap is slowly coming to an end. Capacity utilization rates are going up, the need for renewal of the machine equipment has increased and the necessity for innovation in the strategic product portfolio is high. Last but not least, MET companies want to evolve towards digital transformation, industry 4.0 and circular economics and will therefore need to invest heavily in the coming years.

FOCUS

Value of annual production in the EU (2007-2017)



*(forecast)

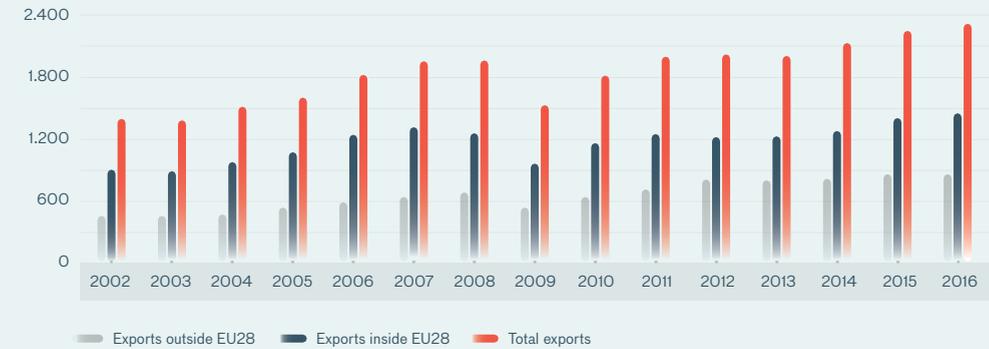
When it comes to investment goods, demand over the past years has been sluggish due to consolidation after the financial crisis. However, last year showed a considerable pick-up in activity for investment goods. Investment goods will, at least in the period 2017-2019, count for a slightly bigger share of the MET industries and EU manufacturing industry, due temporary higher demand.

In relation to the automotive sector, since 2010, sales of passenger cars in the EU have increased from 13,3 million to 15,1 million last year, thereby almost reaching the previous all-time high of 15,5 million from 2007. However, sales for motor cars both in the EU and globally have reached a mature stage and will grow moderately at best in the next few years.

The MET sector's overall share of total EU manufacturing production will not change greatly in the coming years, however we could see a slight decline.

FOCUS

Exports of the MET industries in the EU (2002-2016)



About two thirds of the sales of the MET industries are realized thanks to the exports. The exports of MET products increased by approximately 65% over the past 14 years. This underlines the importance of EU-competitiveness vis-à-vis the other industrial regions and also of the fact that a new round protectionist trade measures would be very disadvantageous for Europe's MET industries.

Compared to pre-crisis levels (2007-2008) the exports of MET products were already slightly higher since 2011, particularly due to exports outside EU. Between 2010 and 2012 there was a boost in exports towards Brazil, Russia, India and China.

The exports outside the EU have become relatively more important over the last 14 years. In 2002, about one third of the exports went outside the EU. In 2016 it was almost 39%.

Conclusions

	 Statistical Facts	 Policy Recommendations	 Statistical Facts	 Policy Recommendations		 Statistical Facts	 Policy Recommendations
Employment	<p>The MET sector's share of employment in total manufacturing increased in recent years and in 2017 stood at 49,1%, a further increase from our 2016 figure. Due to recent gains, employment in the MET industries is close to our 2008 figure of 17,4 million jobs. Yet, employment is still 2 million jobs lower than the figure from 2007.</p>	<p>Employment development in the European MET industries is positive. Our industries currently employ about 17 million people; this is about half of the employment of the whole manufacturing sector. In order to regain the pre-crisis level of close to 19 million people, the MET industries require open markets, common rules and standards and the right conditions to seize the opportunities of digitalisation. Our companies require better regulation in general and flexibility on national labour markets to improve competitiveness, and by extension job opportunities, including for the lower skilled.</p>	<p>In the current decade, the development of (labour) productivity in the European MET industries is much lower than in the pre-crisis period.</p>	<p>Our industries' productivity continues to increase, though at a slower pace than in the pre-crisis period. To unlock the potential of productivity growth, policy makers, at EU and national level, must provide the regulatory framework conditions which foster productivity. This can be done through e.g. public investment in infrastructure as well as in education systems and right-skilling measures, especially in SMEs.</p>	Productivity	<p>The MET sector's overall share of total EU manufacturing production will not change greatly in the coming years, in fact we could see a slight decline.</p>	<p>Production is volatile and cyclical in some of our industries. Companies from those sectors need stability. Before putting more burdensome legislation on companies, legislators must be conscious of the existing production challenges and structural changes in our industries.</p>
	Labour cost	<p>In the EU, MET wages exceed business services by about 10% and construction by 23%</p>	<p>On average the MET industries pay at least 10% higher wages than comparable sectors. As MET companies are exposed to international competition, control of, and where possible reduction of, additional labour cost is crucial to remain in a position to provide quality jobs and continue to pay these high wages.</p>	<p>The MET industries in the European Union spent almost €90 billion in research and development in 2015. This represents about 75% in private spending on R&D.</p>		<p>Pre-requisites to keeping companies' investments at high levels are a stable and enticing business environment and reliable investment conditions. The EU's post 2020 Multiannual Financial Framework (MFF) must ensure equivalent, if not increased spending on R&D. The level of market relevant innovation stemming from R&D should be bolstered.</p>	R&D
Working hours		<p>In most member countries of Ceemet the annual average hours worked per capita in the MET industry was reduced in comparison with the pre-crisis period.</p>	<p>The number of hours worked in the MET sector varies widely from country to country. When compared internationally, several European countries have a very low level of working hours. The less hours worked in a country, the more flexibility is needed in the labour market, including in the organisation of work in order to defend its competitive advantage.</p>	<p>MET companies want to evolve towards digital transformation, industry 4.0 and the circular economy and will therefore need to invest heavily in the coming years. In 2016, the investment level of the MET industries was €119 billion, which was higher than eight years previously when €105 billion was invested.</p>	<p>MET industries have underinvested in the period between 2007 and 2016. Hence, they are primed to make massive investments in the coming years, a large part of this will be to digitalise our industries. These investments are often made with long time horizons, therefore, we must ensure stable framework conditions. Such investments presuppose less red tape and the full application of better regulation principles, alongside competitiveness checks. Europe must support digital convergence, leading to increased industrial competitiveness and eventually to greater social convergence.</p>	Investment	

Production

Export

The way is up - job creation as indicator

Export is fuelling the job engine

The Metal, Engineering and Technology-based industries (MET) in the European Union experienced very high growth rates from 2005 to 2007, however there have been some very difficult years in 2008 and 2009. Our industries experienced a fast recovery in 2010 and 2011, followed by stagnation in 2012 and 2013.

Between 2014 and 2017 MET companies were recovering slowly and experienced four years of output growth and the creation of 1,25 million new jobs. During that 4-year period the output-related economic indicators again reached the level they had reached in 2007 and 2008: e.g. production, exports and sales.

“1,25 million. This is the number of new jobs created between 2013 and 2017. It is a very clear and easy way to explain the added value of our companies.”

The MET industries are highly dependent on exports, which increasingly occur outside the European Union. Two thirds of our sales figures are realised thanks to exports, 39% of MET exports go outside the European Union.

Although the MET industries created 1,25 million new jobs between 2013 and 2017, the employment in the MET industries was still 2 million persons lower

than in 2007. However, we continue to see a positive development in this figure.

Furthermore, the investment gap seems to have been closed in 2016. There was a structural underinvestment within the MET industries, and most of the manufacturing industries, in the last decade. Since 2016, investments are slightly higher than in 2008.

Crisis has different faces

Also, we observe that our industries have changed as a consequence of the different crisis, the financial crisis, the Euro crisis, and also budget policy restrictions. There have been almost no business cycles since 2013, we have experienced slow growth, almost no price increases, and most importantly of all, very low productivity growth compared to the long run historical average. In 2016 for example, productivity growth was equal to 0,0%. The low productivity growth is of course related to the lower investment levels between 2008 and 2016.

Finally, we want to emphasize that the MET industries are a sector of high-skilled and quality jobs, with high wages. The shortage of STEM (Science, Technology, Engineering and Mathematics) workers and digital skills could become a barrier to growth in the different MET industries.



Patrick Slaets,
Chair of the Chief Economists' Group

The Metal, Engineering and Technology-based (MET) industries are the aggregation of 8 subsectors:

- NACE 25 - Fabricated Metal Products
- NACE 26 - Computer, electronic and optical products
- NACE 27 - Electrical equipment
- NACE 28 - Mechanical Engineering
- NACE 29 - Automotive industry
- NACE 30 - Other transport equipment
- NACE 32 - Other manufacturing
- NACE 33 - Repair and installation of machinery and equipment

Ceemet represents the Metal, Engineering and Technology-based industries (MET) **employers** in Europe, covering sectors such as metal good, mechanical engineering, electronics, ICT, vehicle and transport manufacturing.

Our members represent **200,000 companies** in Europe providing nearly **17 million direct jobs and 35 million indirect jobs.**

Ceemet is a recognised **social partner**. Our vocation is promoting global competitiveness for European industries.



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