We all understand by now that natural resources of all kinds require more efficient, environmentally friendly treatment. We answer this challenge by developing breakthrough technologies which utilize natural resources and raw materials efficiently. They also recycle materials and reduce energy and water consumption, waste, and emissions, while optimizing a plant’s lifetime operating costs.

All this is underpinned by decades of experience as well as constant innovation at our in-house R&D centers. Our people and their expertise, not to mention their commitment and drive, are what make all this possible.

Outotec’s customers in the minerals and metals processing, renewable energy production, and industrial water treatment industries need technologies that allow them to make the best possible use of increasingly limited raw materials.

By making prudent choices today, we can ensure the prosperous growth of businesses and societies worldwide, while preserving the planet for the benefit of future generations. This is our mission: sustainable use of Earth’s natural resources.

This is where we see modern society. Let’s not forget that Outotec’s solutions make all this possible. Our technologies provide the backbone of our customers’ operations, and the full life-cycle support we provide ensures the best return on their investments.

We are a technology partner to the world’s major resources companies. Their facilities are where you’ll find our varied offering at work. They in turn supply the materials that underpin the infrastructure of our lives.

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The planet’s inner layers are the source of the metals and minerals that represent Outotec’s heritage. Our experts now look beyond the use phase of a variety of resources, including water and biomass, to examine their entire life cycles. Deep process knowledge of these raw materials – the building blocks of our lives – is our most important asset.
ENABLING SUSTAINABLE GROWTH

Outotec is founded on unparalleled scientific and operational knowledge. No other technology company can deliver as wide a range of applications for minerals and metals, water, energy, and chemical processing.

INDUSTRIAL INSIGHT AND END-USER KNOWLEDGE
Our extensive experience with a wide range of industries and applications gives us a penetrating view into the use cycles of virtually every metal and mineral. This is a unique advantage when planning entire process chains.

FOSTERING INNOVATION
Our IPRs are the result of our strong culture of open innovation. Outotec has 786 patent families and nearly 6,800 national patents or pending applications.

DELIVERY ON TIME AND ON BUDGET
Whether a project is located in a desert, at high altitude, or in the vicinity of a major population center, we can develop the necessary solutions and deliver them to our customers – frequently on a turnkey basis. Once up and running, our sustainable solutions guarantee resource-efficient performance and lifelong benefits.

UNIQUE EXPERTISE
• Minerals processing
• Metallurgy
• Process engineering
• Project implementation
• Water management
• Renewable energy applications

Globally harmonized QEHS
Outotec uses a harmonized QEHS management system including QEHS policy, procedures, work instructions, and training material. TÜV Rheinland Cert has granted us One Outotec multi-site matrix certification including ISO 9001 (Quality Management), ISO 14001 (Environmental management), BS: OHSAS 18001 (Occupational Health and Safety management), and the Safety Certificate for Contractors (SCC) for all our main locations.

THE BENEFITS OF OUR SOLUTIONS
MORE:
• Efficiency
• Performance
• Profitability
• Reliability
• Safety

LESS:
• Energy consumption
• Water usage
• Waste
• Emissions
• Pollution

ENABLING SUSTAINABLE GROWTH

Outotec facts and figures
- Sales (2016): MEUR 1,058
- Personnel: over 4,200
- Annual R&D expenditure: EUR 55 million
- Offices in 34 countries
- Deliveries to over 80 countries

SALES BY REGION
- EMEA: 52%
- Americas: 30%
- APAC: 18%

SALES BY MATERIALS
- Copper: 26%
- Iron: 11%
- Aluminum: 11%
- Ferroalloys: 3%
- Precious metals: 12%
- Zinc: 4%
- Nickel: 11%
- Energy & environmental solutions: 12%
- Others: 16%

PERSONNEL BY REGION
- EMEA: 2,824
- Americas: 800
- APAC: 567

Enabling our customers’ sustainability
Our most significant contribution to sustainability is made through the solutions we provide, guaranteeing the best return on our customers’ investments with minimized ecological impact. In this way, Outotec’s work enables sustainable development worldwide.

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To realize our mission, sustainable use of Earth’s natural resources, our strategy is built upon providing sustainable life-cycle solutions to our customers, guaranteeing the best return on their investments.

**OUR MISSION ADDRESSES TODAY’S CHALLENGES**

Outotec’s commitment to sustainability extends far beyond our own operations, which are relatively minor in terms of emissions. We see our impact in the industries we serve as being of core importance to the efficient use of the planet’s limited resources.

Throughout history, much of the world’s prosperity and development can be attributed to metals and minerals. Even though technology has developed in many areas, a dilemma exists between the growing need for these resources and the environmental impact of processing them.

**RESOURCE EFFICIENCY IS TODAY’S IMPERATIVE**

Reducing our footprint as a global society requires metals from the outset. Outotec technologies enable the sustainable production of metals, which can then be used for green energy applications such as solar and wind power, as well as other energy-conserving solutions.

Our profound engineering, process, and systems integration expertise ensure that the journey of natural resources continues even after they have reached the end of their use phase. We consider discarded products, sludges, and other waste as valuable raw materials that need to be processed again and again in a sustainable manner to serve generations to come via efficient recycling and recovery technologies.

Our technologies contribute to making global society sustainable. With future-proof solutions we strive to help our customers work in a way they can be proud to disclose to their own customers and, ultimately, to the end user.

**TRANSPARENCY BUILDS TRUST**

Outotec has signed the United Nations Global Compact initiative and is committed to its principles on human rights, the environment, labor, and anticorruption. We have set ourselves ambitious sustainability targets, and we report on our progress transparently every year.

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This handprint is a sign of positive impacts on this planet. It means lifting businesses and societies while reducing the environmental impact of processing resources.
EXPERTS THINKING AHEAD

5.9 MILLION TONNES OF CO$_{2}$E AVOIDED THROUGH THE USE OF FIVE OUTOTEC TECHNOLOGIES
Outotec is the sum total of the experts we employ and the cross-scientific and cross-organizational innovation fostered within the company. We house some of the top minds in the industry and ensure that they are given room to do what they do best.

The more talented, knowledgeable, and innovative thinkers we employ, the stronger our solutions portfolio becomes – and the more our customers benefit.

We promote innovation at Outotec by maintaining a strong, open internal innovation culture, encompassing cross-organizational and global knowledge sharing. This means that people concentrating on research, sales, and process engineering – at every level of the organization – participate in the innovation process to develop new technologies.

We have advanced research facilities in Finland and Germany. As well as performing continuous basic research, these centers also house samples from a huge range of sites worldwide. As each ore body and feed material is unique, the range of processes and combinations that can be used to extract raw materials efficiently is enormous. This knowledge base is put to use in each Outotec project, allowing us to make unique guarantees in terms of efficiency and emissions, as well as energy and water usage.

**Sharing our knowledge**

Not only do we enhance collaborative innovation internally, we also regularly participate in R&D projects with our customers, combining our process and engineering knowledge with our partners’ local expertise and industry knowledge to arrive at innovative solutions.

As an advanced provider of solutions covering minerals, metals, water, and energy, we frequently collaborate with governments and regulatory bodies. The aim of this collaboration is to ensure that resources are utilized in a sustainable fashion by encouraging the use of technologies that reduce energy consumption and emissions while enabling significant cost savings.
MINERALS PROCESSING
Outotec provides the mining industry with sustainable minerals processing solutions through a comprehensive offering that makes the efficient and profitable treatment of virtually all ore types possible. We design and deliver state-of-the-art process equipment, optimized processes, intelligent automation and control systems, as well as complete plants. With our service solutions we can support your business performance, helping you achieve and maintain peak performance levels throughout the entire life cycle of your plant.

METALLURGICAL PROCESSING
Outotec possesses over a century of experience in developing technologies at our in-house R&D centers. This has resulted in an extensive range of solutions for processing virtually every ore type and concentrate into refined metals. We have strong expertise in the combustion of elemental sulfur and processing sulfuric acid from metallurgical off-gas. Our services and solutions range from pre-feasibility studies to complete plants, as well as performance solutions to optimize plant productivity.

ENERGY PRODUCTION
Our solutions for renewable and conventional energy production include bubbling fluidized bed and circulating fluidized bed combustion and gasification technologies that utilize various fuels, including renewable (biomass) and conventional fuels, sludge, agricultural and industrial by-products, as well as sorted waste. In addition, we offer solutions for extracting oil from oil shale and recycling phosphorus sustainably from sewage sludge ashes.

WATER MANAGEMENT
Outotec has a long tradition of applying water-treatment technologies to mines and metallurgical plants. We also offer efficient and sustainable solutions for the treatment of industrial process water and wastewater. Our solutions maximize water recycling, reduce water and energy consumption, and produce water that meets environmental discharge standards.

PERFORMANCE SOLUTIONS
Our comprehensive service offering and customized solutions help improve your business performance throughout the entire life cycle of your plant. We collaborate closely with you to develop a safe, sustainable, and reliable performance solution based on our world-class technologies and process, operation, and maintenance expertise.
Our role is to design, build, maintain, and even run entire operations literally from the ground up. Our customers benefit from our strong portfolio of services and technologies for the entire value chain, from ore to metals, as well as energy and industrial water treatment.

OUR OFFERING

MINERALS PROCESSING
- Comminution
- Concentration
- Dewatering
- Process automation and analyzers
- Tailings and water management

NON-FERROUS METALS PRODUCTION
- Roasting
- Smelting, refining, and anode casting
- Slag cleaning and fuming
- Leaching
- Solution purification
- Metals extraction
- Recycling and residues processing

FERROUS METALS AND FERROALLOYS PRODUCTION
- Pelletizing
- Sintering
- Direct reduction and smelting reduction
- Smelting

LIGHT METALS PRODUCTION
- Alumina refining
- Calcination

ALUMINUM SMELTING AND CASTING
- Green anode plants
- Carbon crushing
- Rodding shops
- Bath processing plants
- Casting process equipment
- Spent potlining processing

SULFURIC ACID PLANTS
- Metallurgical feedstock-based plants
- Elemental sulfur recovery plants
- Sulfuric acid regeneration plants

ENERGY PRODUCTION
- Power plants and CHP plants
- Gasification of renewable (biomass) and conventional fuels, as well as industrial by-products
- Waste-to-energy plants
- Sludge incineration plants
- Ash treatment
- Oil winning from shale and oil sands

WATER MANAGEMENT
- Comprehensive water treatment technologies and services for minerals and metals production
- Optimizing water usage, minimizing fresh water consumption and waste generation, as well as implementing water reuse and recycling practices

SERVICES
- Advisory Services
- Maintenance Services
- Operations Services
- Remote Services
- Spare and Wear Parts
- Training Services
- Upgrades
Outotec’s strong market position and technology leadership are based on the knowledge and experience derived from the operations of two major mining and metals companies: the Outokumpu Group and Lurgi Metallurgie GmbH, originating from Metallgesellschaft AG. We have continuously developed our technologies and complemented our portfolio through acquisitions. These patents, trademarks, and brands are now part of the Outotec offering.
Today, several Outotec technologies are industry benchmarks thanks to their energy and water efficiency, as well as their low emissions.
Our flexible global operating model brings Outotec to wherever our customers are. Our global presence and local operations enable world-class engineering, project delivery, and service for our customers. Our experts form a worldwide network of extensive technical, engineering, and operational capabilities. Additionally, we operate with our partners in order to deliver fast and reliable ramp-up, and guarantee the best performance for our customers’ investments.
SUSTAINABLE USE OF EARTH’S NATURAL RESOURCES
Outotec provides leading technologies and services for the sustainable use of Earth’s natural resources. As the global leader in minerals and metals processing technology, we have developed many breakthrough technologies over the decades for our customers in the metals and mining industry. We also provide innovative solutions for industrial water treatment, the utilization of alternative energy sources, and the chemical industry. Outotec shares are listed on Nasdaq Helsinki. www.outotec.com