



Outotec in brief

**Outotec**  
More out of ore



A global leader in the development of minerals processing and metallurgical technologies, Outotec has a distinguished history of achievement going back more than a hundred years. Tracing its roots to Outokumpu and Lurgi Metallurgie, Outotec has a long tradition of developing metallurgical processes which are both efficient and environmentally sustainable. Today, it has a wide range of customers within the iron and steel, aluminum and non-ferrous metals industries as well as in industrial minerals and other process industries.

## A global leader in clean technology

Outotec experts design and deliver plants, processes and equipment worldwide, and provide engineering, project and support services on six continents. As a result of being environmentally sound and energy-efficient, dozens of Outotec technologies have become industry standards. This dedication to creating cleaner and more effective solutions has resulted in a number of technologies, which have been rated by the European Union as the greenest economically viable option available.

## At the forefront of innovation

To maintain its position at the forefront of innovation, Outotec has two in-house research centers, eight laboratories and four test plants. In addition to this, the company has a global network of sales and service centers. In 2007, Outotec's over 2,000 professionals working together with a broad network of international subcontractors generated annual sales of EUR 1 billion.

"We work in close partnership with our customers to identify the most profitable solution for their business and help them stay ahead of the competition – to get more out of ore," Tapani Järvinen, President and CEO of Outotec, says.

## More out of ore!

Outotec's philosophy is embodied in the slogan "More out of ore". It is the promise made to Outotec stakeholders - customers, shareholders and employees alike. As well as being a platform from which to communicate Outotec's goals, it helps the company differentiate itself from its competitors. Put simply, Outotec has more technologies, products and services, more experience and expertise. And just as importantly, Outotec employees give more in everything they do.

## Outotec has three business divisions:



### Minerals Processing

The Minerals Processing division provides processes and equipment based on proprietary technologies for mining and related industries. The technologies include grinding, flotation, physical separation, thickening, on-line analyzing, automation and water treatment plants. The division's process, metallurgical and application expertise is invaluable for customers working on projects involving complex ore bodies.



### Base Metals

The Base Metals division provides metallurgical processing technologies for the production of copper, nickel, zinc, precious metals and ferroalloys. Half of the world's primary copper is produced using Outotec's acclaimed flagship technology, Flash Smelting. The division provides studies, basic engineering, technology packages, assistance in construction and commissioning as well as after sales services.



### Metals Processing

The Metals Processing division provides technologies and metallurgical plants for the processing of iron ore, alumina, aluminum, ilmenite and synthetic rutile. It also develops facilities for the production of sulfuric acid and for the roasting of all kinds of non-ferrous concentrates. By creating specific technologies based on the customer's individual needs, the division has become technological and market leader in its field.

#### Grinding

- Autogenous (AG) and semi autogenous (SAG) mills
- Ball mills, rod mills, pebble mills

#### Flotation

- TankCell® and conventional flotation cells, SkimAir®, FloatForce®

#### Thickening and clarifying

- SUPAFLO® high-rate and high-compression thickeners
- Paste thickeners
- Clarifiers
- Lime saturators

#### Physical separation

- Spiral (gravity) separators
- Density, magnetic and electrostatic separators

#### Analyzers and automation

- PSI Particle size analyzers
- On-stream XRF® and COURIER® analyzers
- Slurry and solution sampling
- PROSCON® operator stations
- MillSense® plant automation systems

#### Process solutions

- Full concentrator technology solutions
- Sections of concentrators
- Physical separation process plants
- Paste plants

#### Water treatment plants

#### Services and after sales

#### Copper technologies

- Flash smelting and flash converting
- Fire refining and anode casting
- Leaching
- VSF® solvent extraction
- Electrowinning and electrolytic refining
- HydroCopper® process for sulfide concentrates
- Copper scrap refining

#### Nickel technologies

- Smelting
- Leaching
- Solution purification
- Electrowinning
- Hydrogen reduction

#### Zinc technologies

- Leaching
- Solution purification
- Electrowinning

#### Precious metals technologies

- Anode slime treatment
- Selenium recovery
- Precious metals recovery

#### Ferroalloy technologies

- Pelletizing and sintering
- Smelting

#### Services and after sales

#### Aluminum technologies

- Alumina calcination
- Aluminum smelters
- Processing of spent potliner waste from aluminum smelters

#### Ferrous technologies

- Sintering and pelletizing
- Preheating and prereduction processes
- Direct reduction
- Direct smelting
- Ilmenite upgrading, production of synthetic rutile and titanium slag

#### Sulfuric acid and off-gas technologies

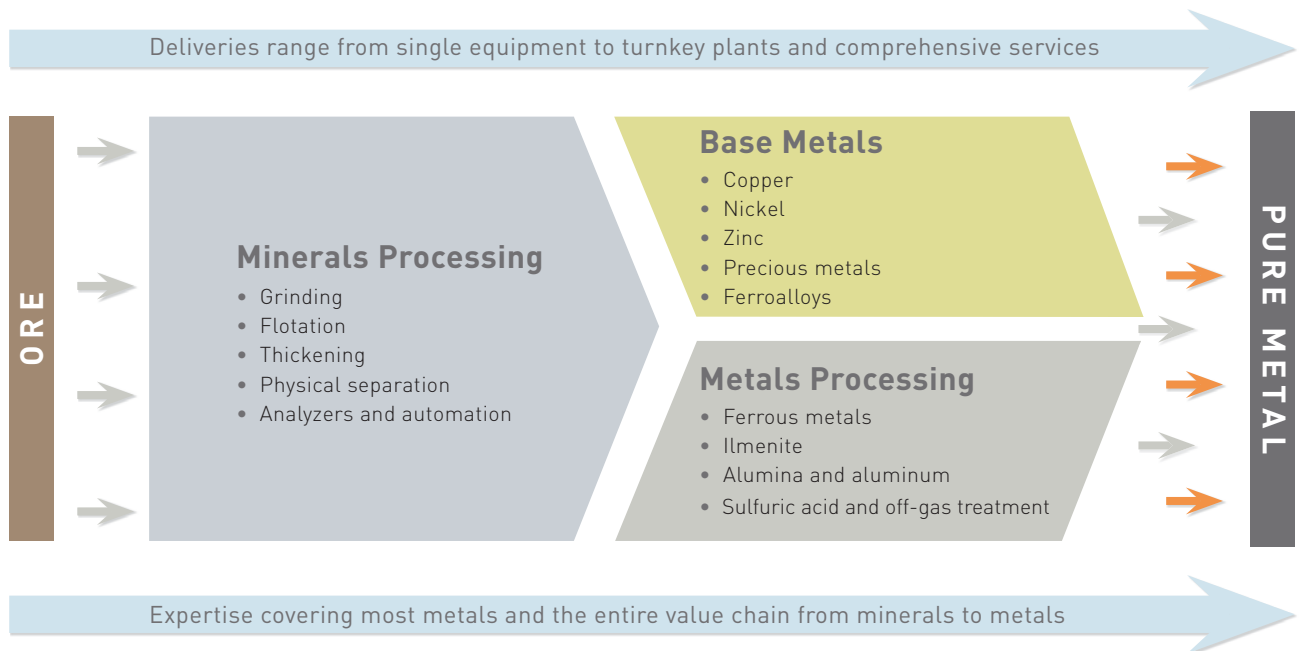
- Sulfuric acid processes
- Metallurgical feedstock
- Sulfur handling and combustion
- Spent acid regeneration
- Liquid oleum and liquid sulfur dioxide and trioxide

#### Roasting technologies

- Gold roaster, pyrite roaster, zinc roaster

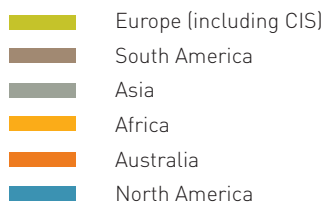
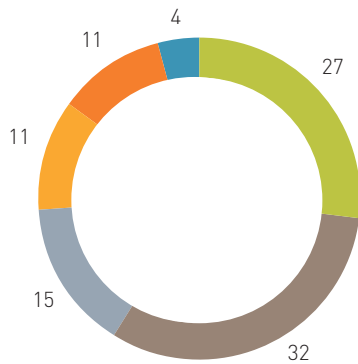
#### Services and after sales

# Expertise covering the entire process chain from mine to metal



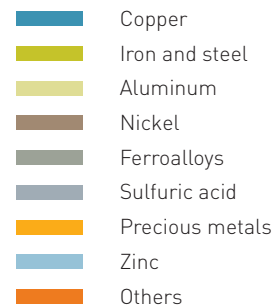
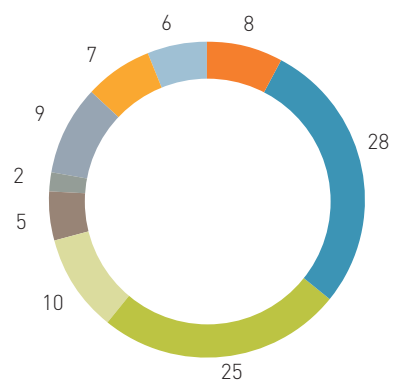
### Sales by destination 2007

%



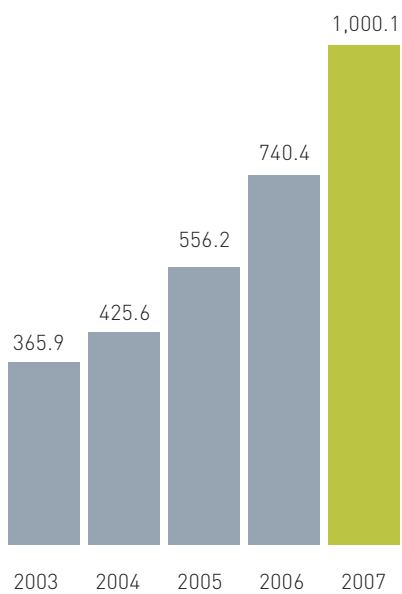
### Technology sales by metal 2007

%



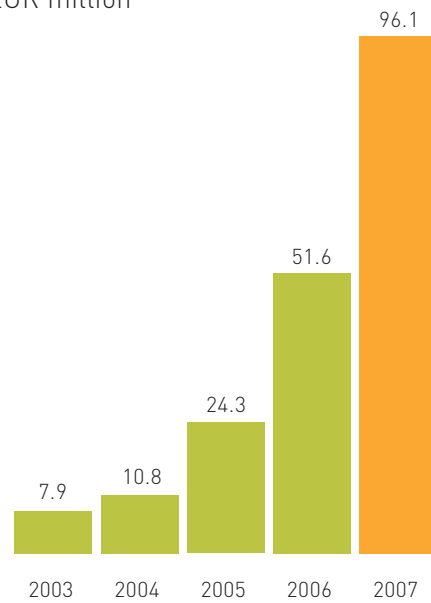
### Sales by 2003-2007

EUR million



### Operating profit by 2003-2007

EUR million



## Outotec's global presence

- Outotec office



*Outotec is a worldwide technology leader in minerals and metals processing, providing innovative and environmentally sound solutions for a wide variety of customers in minerals processing, iron and steel, aluminum and non-ferrous metals industries. Outotec Oyj is listed on the OMX Nordic Exchange Helsinki.*

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# Outotec

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