

# On your *mettle*

With innovation at its core, metallurgical expert JL Goslar announces exciting plans to expand its product and service lines flowing from its €5 million anode factory. Andy Probert reports.



The foundations of JL Goslar, in Lower Saxony, were laid in 1906 with the opening of a lead works. Today, JL Goslar – born out of the merger of three companies: Bleiindustrie, Metallwerk Goslar and Apparatebau Goslar – is one of the world's leading manufacturers of non-ferrous products, radiation protection components, equipment and systems made of lead, tin and associated alloys.

In addition to making anodes for extractive metallurgy, JL Goslar's range of products and services encompasses two other segments: construction of apparatus in lead/steel and radiation shielding.

From its state-of-the-art Ilsenburg anode plant, JL Goslar is sensing exciting times ahead after announcing a raft of new projects and innovations that will enhance its leadership credentials in an ever-competitive market.

A modern production environment, new automated processes and robotic welding have enabled JL Goslar to increase effi-

ciency and extend its product portfolio to electrolysis operators.

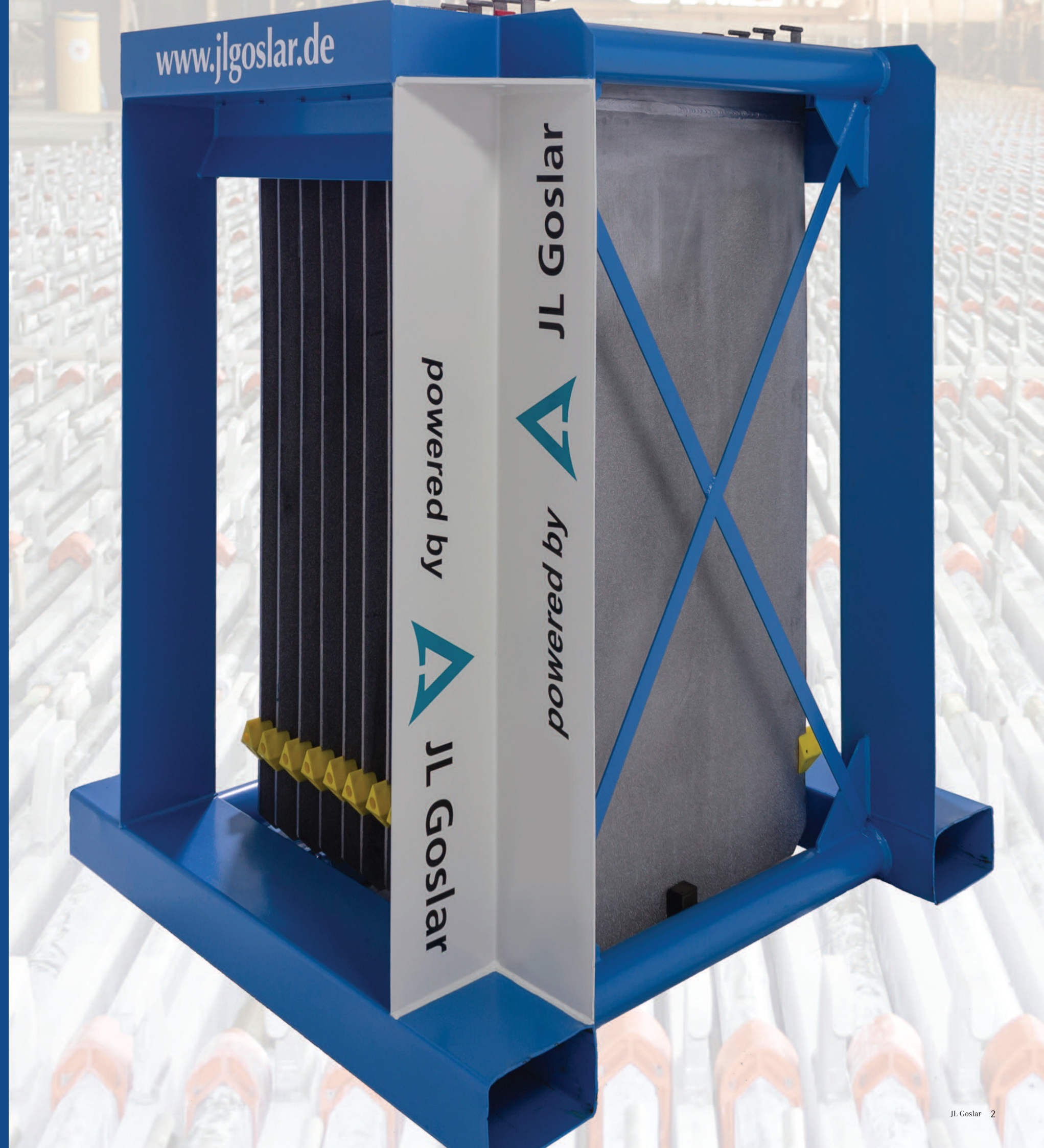
JL Goslar's Senior Vice President, Bernd Boettcher, said that since the plant was inaugurated in late 2014, continuous enhancements of the prototypes, tinning and robot welding, as well as the optimising the process technology, tin and preparation baths, have taken place.

"We have had a successful start-up which we have improved upon in the last two years, meaning higher capacity, faster production, shorter lead times and enhanced product quality."

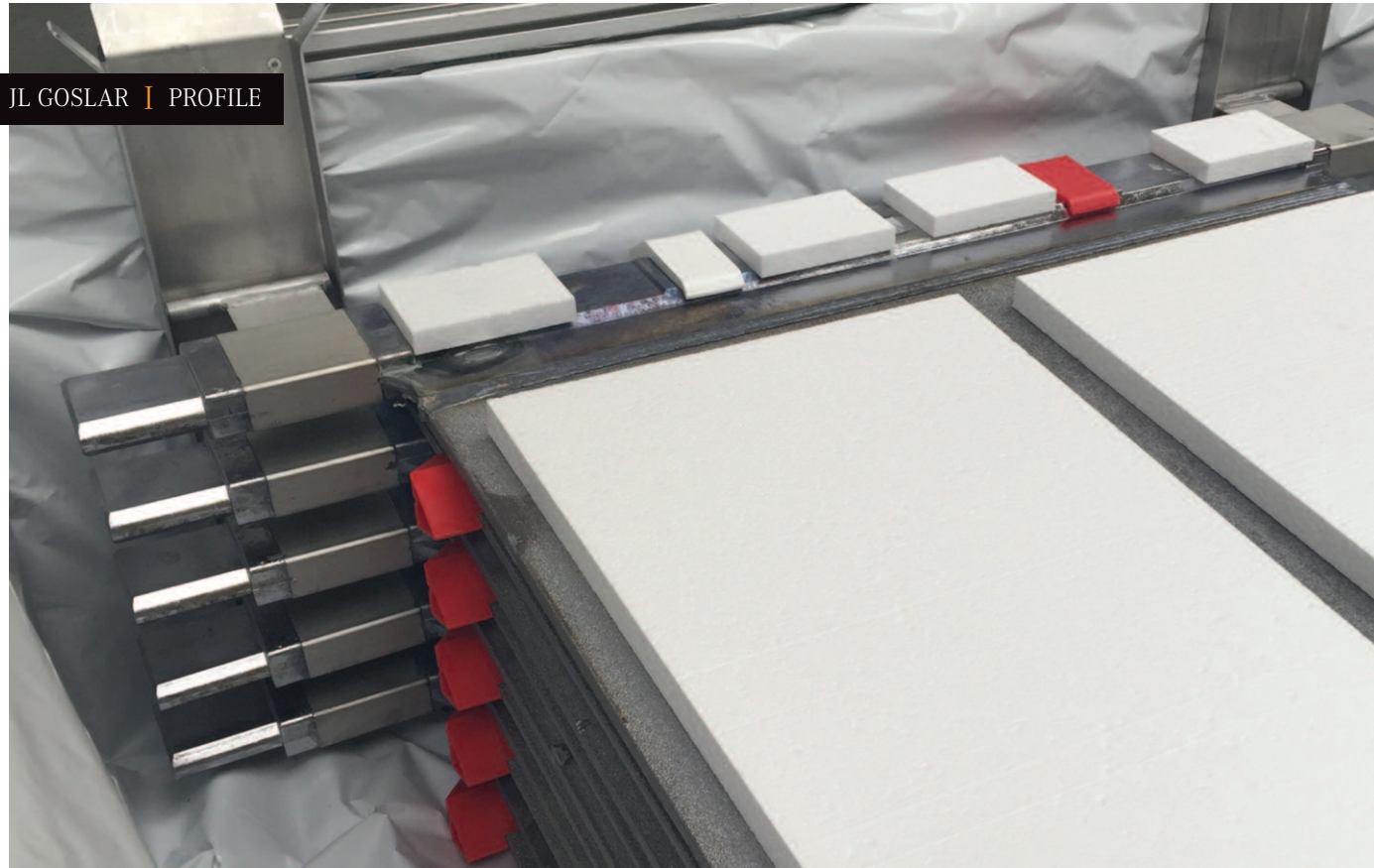
## Expanding global reach

With improved internal infrastructure, outwardly JL Goslar is now consolidating its market position in the chemical and non-ferrous industries, and expanding its international sales activities across North and South America, Africa and parts of Asia.

The company has slightly diversified from its anode production by stepping up its reach







“Innovation and close co-operation with customers ensures that we constantly achieve high quality standards”

with new products, including cathodes, thermosensor, a patented anode, and accessories and tools for anode care, such as a panel beating spoon and beater.

“We are developing a strategy that enables a customer, who presently has to source and find different products and services for their differing needs, under one roof. Our ability to offer ourselves as a complete supplier for all their electrolysis products will be a major advantage for them,” added Mr Boettcher.

The products include special anodes and cathodes, provisions for the cell house, as well as maintenance services to clean and flatten the anodes.

JL Goslar has also developed a new thermosensor, a heat sensing element attached to a lead anode that informs the user of the state of the anode and the heating of the anode.

Due to the close arrangement of the anode to the cathode sheets of aluminum or stainless steel can cause a range of mechanisms to short circuit. In an electrolyte, this naturally leads to increased current flow to further elevated temperatures and results in the anode overheating or its destruction.

To combat this eventuality, thermal imaging cameras have been used to monitor the anode, but can only offer appropriate evaluations over several hours, during which

time overheating can cause more damage and may remain undetected.

JL Goslar’s new heat detection element can now read the exact temperature of a section of the lead anode plate, or at least exceed a certain predetermined temperature value.

### Widening the product base

This is via a coating of thermochromic colour which changes colour with temperature. A very garish yellow shows that the power supply and the temperature of the concrete lead anode plate are too high.

The company has also just patented a completely new anode: this is made not only from lead but a composite material which is derived from recycled and smelted anodes. Testing is set to get underway, but it could pave the way in terms of reducing customers’ costs and offer the potential for anodes to be repaired on site.

Mr Boettcher said: “While we are trying to widen our product base, the factory’s employees are also willing to learn and be engaged in the work. We have ensured that every one of them is trained and can operate each machine.

“It means we are very flexible, with increased advantages and our operators are prepared to carry out the necessary maintenance.

It means greater efficiencies of scale and greater viability for us.”

He added: “Innovation and close co-operation with customers ensures that we constantly achieve high quality standards and short reaction times. Whether it’s improving the design of the anode or enhancing service requirements, we will do it.

### Innovation and close client cooperation

“If they have problems with a cell house, we can have a huge amount of damaged anodes. The trouble is that they can’t reduce the power to zero or to 10 or 20% in the cell house, you have a small range to reduce capacity. You then have to stop production and our response time to deliver new anodes can be two weeks or more.

“So we closely liaise with clients, have meetings in gathering information anode behaviour or any change in their production to enable us to offer solutions and offer them the right anode for the right process.”

JL Goslar is currently involved in a number of high profile projects, including providing equipment for a new build electrolysis hall in Central America and in the planning of a European electrolysis operator.

As part of its commitment to the environment, JL Goslar has recently become



a member of the Environmental Alliance of Sachsen-Anhalt, Germany.

These activities include an environmental management system according to DIN EN ISO 14001; the exclusive use of green electricity, lighting of the factory building by LED technology and use of energy-saving PCs in the workplace as well as a fuel-efficient server infrastructure.

It is also heavily involved in partnerships and co-operations with a number of German-based universities in research

assignments for anode and metallurgy developments.

These projects are in association with RWTH Aachen University’s IME Process Metallurgy and Metal Recycling; Technische Universität Bergakademie Freiberg Institute for Nonferrous Metallurgy and Purest Materials and the Bergische Universität Wuppertal, Chair of Reliability Engineering and Risk Analytics.

“All the research projects advance our understandings and knowledge base,” said

Mr Boettcher. “For example, one investigates extending the life of the anode and cathode from the standard five to seven years lifecycle.”

He said the company was actively moving towards being a broad-based supplier, having progressed from anode production to recycling and life extension of the anode, to accessories/tools provision for anode care, and the production of cathodes.

### Single source supplier

“We believe there is enormous potential in the ability to recycle the anodes and re-use them. Our aim is to close the loop so that we are completely in control and have the ability to become a single-source supplier.

“With analysis in our in-house metal laboratory, and the manufacturing on our modern production lines with automatic tinning systems, semi-automatic head casting machines and robot welding cells, there are no limits to what we can achieve. The anodes can be produced in any alloy and any size required – precisely to our customers’ specifications.

“However, there is an understanding that we have to be more international in our reach to offer anodes to clients. There are lots of projects in South America and Indonesia which offer potential, while we must also find ways to deliver new products that will help smelters in Europe save money.”

He added: “JL Goslar is a medium sized company so we face a number of challenges from the price trend of non-ferrous metals and their availability to the migration of electrolysis close to the mines and away from Europe.

“There is a need for more support of electrolysis operators, in cost reduction, the advance of patented anodes and reduction of material use and an increase in effectiveness.

“In our industry, there are a lot of medium-sized enterprises that complement each other. As we are working with base metals, some of our customers are also our key suppliers. There must be cooperation with suppliers of other components for electrolysis operators.”

Mr Boettcher concluded: “JL Goslar is constantly striving for solutions for its clients that are even safer, more efficient, better value and better for the environment.

“With our commitment to innovation and new approaches, we can continue to grow as a business and as a partner, both domestically and abroad.”