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NEWS
MARCH 2025

DECARBONIZATION IN THE ROLLING MILL
ABP INNOVATION LEVERAGES POTENTIAL

AI AND DIGITALIZATION
THE ABP STRATEGY IN DETAIL

OPPORTUNITIES FOR ALUMINUM
COMBINATION OF „PROVEN TECHNOLOGY“ AND INNOVATIONS

Meet the ABP experts at

CastExpo 2025 (April 12 - April 15)

AISTech 2025 (Mai 5 - Mai 8)

Introduction

As you flip through this issue of ABP News, you'll notice one word that comes up again and again – innovation! This is necessary to meet current and future challenges in the production environment. The focus here is, of course, the topic of decarbonization, a cornerstone of our strategy, which we have been emphasizing since GIFA 2023 with the statement "Your Partner on the Way to Zero Emissions".

We take a holistic approach to CO2 neutrality as you will see when you look at the topics in this issue. We see potential for aluminum processing in the combination of proven technology and innovative approaches, we are developing a pioneering technology in the rolling mill sector with the UHT thermal jet, and we can leverage potential with digitalization and AI, especially in the daily work processes in foundries. To help you apply all this, the range of courses offered by our ABP Academy is also constantly evolving – lifelong learning is becoming more and more important given the pace of technological development.

Best wishes
and Glück auf!
Till Schreiter, CEO

ABP combines innovation and experience in aluminum processing

In this interview, Alexander Keller, Head of System Sales, explains ABP's ideas for the industry of the future

The current megatrends, in particular decarbonization and digitalization, mean that fundamental processes in the metalworking industry need to be considered and changed. The melting process of die casting, semi-finished product production and recycling in the aluminum sector has also come into focus, as high CO2 emissions are generated here, considerable energy consumption is required and there is a considerable loss of material. This calls for innovative solutions – which Alexander Keller, Head of System Sales at ABP Induction, sees in particular in the conversion from traditional natural gas furnaces to induction melting furnaces, as he explains in an interview.

Induction furnace technology in the aluminum environment – where do you see the advantages?
Alexander Keller: The use of induction technology in conjunction with renewable energy sources enables virtually emission-free production. Compared to gas furnaces, our induction technology offers numerous advantages: a considerable reduction in CO2 emissions of up to 94%, significantly higher energy efficiency and much lower material losses. At 440 kWh/t, the energy balance of induction melting furnaces, for example, is significantly more favorable compared to gas furnaces. Heat recovery can further increase the savings effect by up to 20 percent. In addition, the operating costs of using induction technology are already lower in the short to medium term, especially when taking into account the prices for CO2 certificates and energy.
Aluminum processing is still an energy-intensive industry – how do you deal with energy costs and availability?
Alexander Keller: Induction furnaces from ABP not only boast low energy consumption, but can also be used as energy storage units – meaning that furnace operation can be adjusted to the prevailing electricity price. This means that when electricity is cheap, you use the large buffer in the furnace, which can cover up to four hours of production. This production method can be advantageous not only from an economic point of view, but also with regard to the "global footprint of product".
So it's about the carbon footprint of the product in question?
Alexander Keller: Exactly, if you melt down aluminum as scrap, the global carbon footprint of the product improves. A great deal of energy is required in the production of primary aluminum. But if scrap is melted down in an induction plant, the carbon footprint is reduced considerably. A significant example comes from the automotive industry, where parts made from recycled aluminum are processed using an induction furnace as a melting unit. The direction is right if the carbon footprint is close to zero.
How much restructuring is required in foundries, especially when

switching from a gas furnace to an induction furnace?

Alexander Keller: We are in direct dialog with our customers: The operation of ABP induction channel furnaces in aluminium foundries is logistically optimized together with the customer and adapted to existing processes. In practice, you can imagine it like this: containers with the metal to be processed are simply brought to the furnace by forklift and the furnace is loaded directly. This means that no major changes to the material flow, system operation or maintenance are required, which is an important advantage for ABP customers. We provide customers with intensive support throughout the entire journey of switching from one technology to another – be it through process consulting, training or technical support.

How are the processes changing? The technology has proven itself...

Alexander Keller: That's right, we refer to our induction channel furnaces as „proven technology". Our experience with this technology goes back to 1903, to our predecessor companies such as ASEA. And although hardly any new induction furnaces for aluminum have been installed in the last 30 years, the existing systems are still in operation. During this time, many optimizations were carried out together with the customers and development continued. Close cooperation with other industry players such as die casting machine manufacturers and suppliers is important to us, especially with large customers who operate many aluminum foundries, in order to understand their requirements and processes. The result is a combination of decades of experience, proven technology and new innovations.

Can you provide any real-life examples?

Alexander Keller: Of course, this can be seen in the daily production process, for example: normally, aluminum has a melting loss of over 2%, which limits the recycling cycles to around 50. However, the melting loss in efficient ABP systems is well below 1%, which at least doubles the number of recycling cycles. This underlines the fact that ABP is also extremely familiar with induction furnace technology in the aluminum sector – with advantages for users in particular.

But induction furnace systems are more expensive to buy than gas-powered systems, for example...

Alexander Keller: At first glance - yes. But it turns out that induction melting technology is not only more environmentally friendly, but also more cost-efficient. Savings through lower operating costs and an independent energy supply secured by renewable energy sources position induction technology, which has been continuously developed and perfected by our engineers, as a superior alternative in modern die casting and other aluminum foundries. Thanks to the efficiency properties described above, the additional costs of purchasing an induction furnace system pay for themselves within around two years thanks to the lower energy consumption, heat recovery, lower melting loss and the fact that no CO2 certificates are required. As already mentioned, induction furnaces can also be used to store energy - a valuable feature, especially with a view to the future of energy-intensive industry. This highlights how switching to innovative technologies can offer both environmental and economic benefits, making it an important consideration for the future of the manufacturing industry.

Do you also want to start installing new furnaces again?

Alexander Keller: Definitely! Induction furnace technology is perfect for aluminum processing under today's conditions. And our engineers and designers are currently developing a new furnace for large machines, known as GiGA Casting, which can produce half a car with a single press. This development project is well advanced and the furnace is expected to be available in summer 2025. This also shows that ABP can consistently adapt its own systems to new trends and industry requirements.

Alexander Keller, Head of System Sales at ABP Induction, sees the combination of experience and innovation as a great opportunity in the aluminum processing of the future.

ABP Induction sees great potential for reducing CO2 in rolling mills.

Decarbonization in the rolling mill

ABP innovation: saving gas with induction heating technology

The need for decarbonization in the steel industry is undisputed, as it is one of the world's largest industrial emitters of greenhouse gases. With a 25% share of industrial CO2 emissions and around 9% of total global emissions, this sector is at the center of efforts to replace fossil fuels with climate-friendly alternatives. In this context, induction heating technology, such as the technical innovations from ABP Induction, is becoming increasingly important, especially for rolling mills that previously relied on gas-heated systems.

The decarbonization targets that Germany and other leading industrial nations have set themselves are calling for innovative solutions to reduce CO2 emissions. While green hydrogen is much discussed as a long-term alternative, its current availability and the associated conversion costs are an obstacle. The path to green hydrogen inevitably involves the use of renewable electric energy. Induction heating offers a practical solution that can be implemented quickly, which is characterized by its high degree of efficiency, particularly in the area of long products. This means that green electrical energy can also be used directly, saving the high costs associated with converting it to hydrogen.

The advantages of induction heating systems

Induction heating systems have proven to be particularly advantageous in the melting process. They offer a high degree of flexibility and enable a significant reduction in CO2 emissions thanks

to their efficient use of energy. Impressive successes have already been achieved in the melting capacity of more than one million tons per year, as shown by examples of systems with components from ABP Induction in China. This technology, which is traditionally used in foundries and forges, has now also found its way into rolling mills, where it can be used to supplement gas-powered reheating furnaces.

The use of induction in rolling mills offers clear advantages over purely gas-powered systems. In particular, the ability to react dynamically to temperature fluctuations and enable rapid heating makes the technology attractive. A hybrid approach, in which induction furnaces are used to supplement existing gas furnaces, could significantly improve the carbon footprint. Induction furnaces achieve electrical efficiencies of up to 90%, which enables the efficient use of electrical energy and at the same time keeps investment costs low, as they can be integrated into existing process chains.

Further potential of hybrid heating, where induction can be used either before or after the gas furnace, lies in increasing throughput and improving quality. Flexible power regulation and precise temperature control enable an optimum heating pattern to be achieved. This makes it possible to compensate for temperature fluctuations within the material and increase production quality. The ability to achieve high temperature increases with comparatively short system lengths also reduces the space required and offers dynamic process control that meets the requirements of modern production processes.

UHT Thermo-Jet as a pioneering technology

The decarbonization of the steel industry is being accelerated by increasing political and economic pressure, but also by the expectations of employees and the public. Induction heating systems offer a low-emission alternative to fossil fuels by efficiently converting electrical energy into heat. These systems, especially in hybrid combination with gas-fired furnaces, allow a significant reduction in CO2 emissions without major changes to the existing infrastructure. The integration of induction into existing process chains minimizes investment costs and at the same time improves efficiency and flexibility.

The use of alternative fuels will also play a central role in the future of decarbonization. While hydrogen is not available in sufficient quantities, inductive heating offers a technological approach that can already be used today to reduce emissions. In the long term, alternative burners that rely on emission-neutral technologies will replace conventional gas burners. The use of the innovative UHT Thermo-Jet can be of decisive importance here.

The UHT Thermo-Jet is a pioneering technology that heats process gases by induction. This process not only offers high energy efficiency, but also the option of operating in a closed cycle by recirculating furnace gases. This cycle avoids exhaust gas losses and significantly increases efficiency. The aim of this technology is to enable emission-free production in the rolling mill and thus make a significant contribution to achieving global climate targets.

By combining induction heating and innovative technologies such as the UHT Thermo-Jet, the steel industry can take an important and necessary step towards climate neutrality. These technologies not only offer ecological benefits, but also economic efficiency by optimizing energy consumption and improving the carbon footprint. They are therefore an essential part of the transition towards a climate-friendly industry.

A hybrid approach, in which induction furnaces are used to supplement existing gas furnaces, could significantly improve the carbon footprint.

Digitalization and AI offer great potential for the foundry industry. Albert Miller, Global Head of Digital Solutions at ABP Induction, and his team develop tailor-made solutions for industrial applications.

AI as a driver for change

Albert Miller, Global Head of Digital Solutions, on the potential of digitalization and AI solutions from ABP Induction for the foundry industry

Digitalization and the use of Artificial Intelligence (AI) are revolutionizing the industrial production worldwide. Albert Miller, Global Head of Digital Solutions at ABP Induction, discusses the opportunities and challenges of this change. In the interview he explains how ABP optimizes production processes through smart solutions, makes expertise accessible, and paves the way for a more efficient and sustainable future.

Digitalization and the use of AI are central topics at ABP Induction. What role do these technologies play in your strategy?

Albert Miller: Digitalization and AI are not just buzzwords at ABP; they are central components of our innovation strategy. We focus on addressing current challenges such as the lack of skilled employees, demographic change, and decarbonization with digital technologies. A key target is to increase the quality and efficiency of the casting processes while simultaneously reducing complexity for users.

Can you provide a specific example of how AI is used in practice?

Albert Miller: A good example is the use of self-learning algorithms in our cooling water systems.

Instead of acting reactively, we can now analyse trends with self-learning algorithms and act proactively. Furthermore, we see potential in monitoring melting processes to ensure the perfect energy supply and to minimize scrap. AI can also assist in quality assurance by recognizing patterns in production data that indicate potential errors. These versatile applications demonstrate how we continuously improve our solutions to enhance efficiency and reliability for our customers. For example, if a problem in the cooling water is detected, maintenance can be planned before a production failure occurs. This ensures the smooth operation for our customers.

How do you manage to increase the acceptance of such technologies among users?

Albert Miller: Acceptance is crucial. It is important that our employees recognize the added value of these technologies internally and in their application at our customers. We do not see digitalization as a monitoring tool, but as an assistance system that makes work easier. Through targeted training and involving employees in the development process, we create trust.

What role does AI play in internal processes at ABP?

Albert Miller: AI plays an important role in our internal processes. Our service engineers and technicians have a wide range of competencies but are often involved in projects and therefore not always directly available. Here, AI can be used to capture, organize, and make their knowledge accessible to everyone. Our ticketing system, which we revised this year, allows us to document experiences and solutions and make them quickly retrievable thanks to AI. It is successfully used not only at ABP but also within the group, for example at Primetals.

Additionally, we face the challenge of preparing our extensive documentation material, which ranges from handwritten notes to modern ERP and CRM systems. With AI, we analyse these data to train models that assist our employees and customers. The target is to shorten onboarding times and enable quicker access to relevant information.

Another step was the introduction of an AI assistant that simplifies the completion of specific tasks. The implementation was not easy, as we had to protect our know-how while also complying with the General Data Protection Regulation. However, we have overcome these challenges and now provide all employees with secure and productive access to this technology. Looking ahead, we plan to further develop AI solutions that interact directly with our employees and are continuously optimized through user data.

Digitalization and sustainability are often considered together. How does ABP implement this approach?

Albert Miller: Sustainability and digitalization go hand in hand. Our technologies help to minimize energy losses by analysing energy consumption in real-time and avoiding unnecessary losses. For example, production steps can be coordinated so that energy is only consumed when all subsequent processes are ready. In addition, we rely on smart control systems that not only optimize consumption but also reduce CO2 emissions. In the long term, we aim to increase resource efficiency throughout the entire value chain. For example, our systems analyse when the optimal time for the next production step is to save energy while also increasing efficiency.

You have also mentioned the cultural challenges of digitalization. What do you mean by that?

Albert Miller: Digitalization is not only a technical transformation, but also a cultural one. Especially in a rather conservative industry like foundry, there are reservations. Companies can actively promote this cultural change by offering training programs where employees can get to know and understand the new technologies in a practical way. Pilot projects can also help make initial successes visible and strengthen trust in digital solutions. Furthermore, it is important to promote open communication where questions and concerns are taken seriously. By involving employees in the development processes of new technologies, they feel like part of the change rather than being affected by it. We are working to alleviate these fears by providing simple, user-friendly solutions and promoting open discussion. It is crucial for companies to actively create a safe environment where employees can try out new technologies.

How do you see the future of digitalization and AI in the industry?

Albert Miller: The development is highly dynamic, and we must continuously adapt. I believe we are only at the beginning of this transformation. At ABP, we manage this dynamism through an iterative approach: we start with pilot projects, continuously evaluate them, and scale proven approaches. For instance, we have introduced AI-supported assistance systems in selected areas to gain initial experiences and to incorporate feedback from practice directly into further development. We also focus on close collaboration with our customers to address specific needs and to develop innovative solutions together. It is important that we do not isolate ourselves but rather engage critically and thoughtfully with new technologies. Only in this way can we fully realize their benefits and secure long-term competitive advantages.

Getting in the mood for the Year of the Snake

Chinese New Year: Great mix of team challenge and festive event

ABP Shanghai kicked off the year 2025 with an impressive and colorful celebration, combining tradition and team spirit in a special way. ABP CEO Till Schreiter also took part in the ceremony.

The event kicked off with an annual seminar in the so-called "wedding chapel". Here, colleagues exchanged views on relevant topics in interactive workshops and deepened their knowledge through exciting discussions and team challenges. "The workshops provided a platform for creative thinking and joint strategy development - a valuable experience that strengthened the sense of togetherness," explains Linda Dong, who helped organize the event for ABP Shanghai.
This informative part was followed by a lively evening. A special moment awaited the guests at the entrance to the party location: a lottery promised exciting prizes. But anyone who thought that luck alone would decide was proven wrong - because the winners first had to earn their prize by playing entertaining games. This playful competition provided plenty of laughs and encouraged a dynamic within the team.
The celebration was complemented by show interludes: a saxophonist and a magician (both ABP employees) delighted the audience. Between music, magic and conversation, there was of course also a toast to the new year: "a celebratory moment that acknowledged the successes of the past year and enabled a positive view of the future," said Linda Dong. The event concluded with a dinner featuring culinary specialties.
"The celebrations were a complete success and once again underlined the strong team spirit and valuable collaboration within the ABP family," said ABP CEO Till Schreiter. "With these positive memories in our luggage, we look forward with confidence to the challenges and opportunities in the Year of the Snake," he added.

A life for induction and innovation

Farewell to Jürgen Schmidt: A look back at 36 years at ABP Induction

After 36 years at ABP Induction, Jürgen Schmidt is entering the passive phase of semi-retirement. Originally hired as a short-term substitute for an ill employee, he quickly became a mainstay of the company. In a personal interview, he looks back on his time at ABP – with pride, gratitude and a smile.

When Jürgen Schmidt had his first day at work in Dortmund, it was actually only intended as a temporary job for six weeks. „It turned out to be a bit more," he says today with a laugh. In fact, this turned into an impressive career of 36 years, during which he played a key role in shaping layout planning and cooling water systems.

The topic of cooling water was particularly close to his heart: „Water is often underestimated, but for me it is the third essential component, alongside the furnace and the electrical system. If the cooling water doesn't work, then the entire system doesn't work." This realization shaped his work for decades. His tasks were not only of a technical nature. Rather, it was the combination of office work, customer contact and assignments in the foundries that particularly appealed to him. „You get to see everything, from the electrical systems to the dust extraction systems to the composition. That's what makes the work so exciting."

At the same time, this versatility also challenged him, but that gave him additional motivation: „You always had to be flexible, adapt to new circumstances and find solutions. That appealed to me."

The promotion of young talent was also particularly close to his heart. „I was lucky enough to be able to help choose my successor, and I know that my two young colleagues are just as enthusiastic about their work as I am." He was well aware of the importance of intensive on-the-job training: „I myself had a mentor who accompanied me for four years – to customers, construction sites and on business trips. This allowed me to experience practical work first hand and learn a lot. I wish the same for my new colleagues."

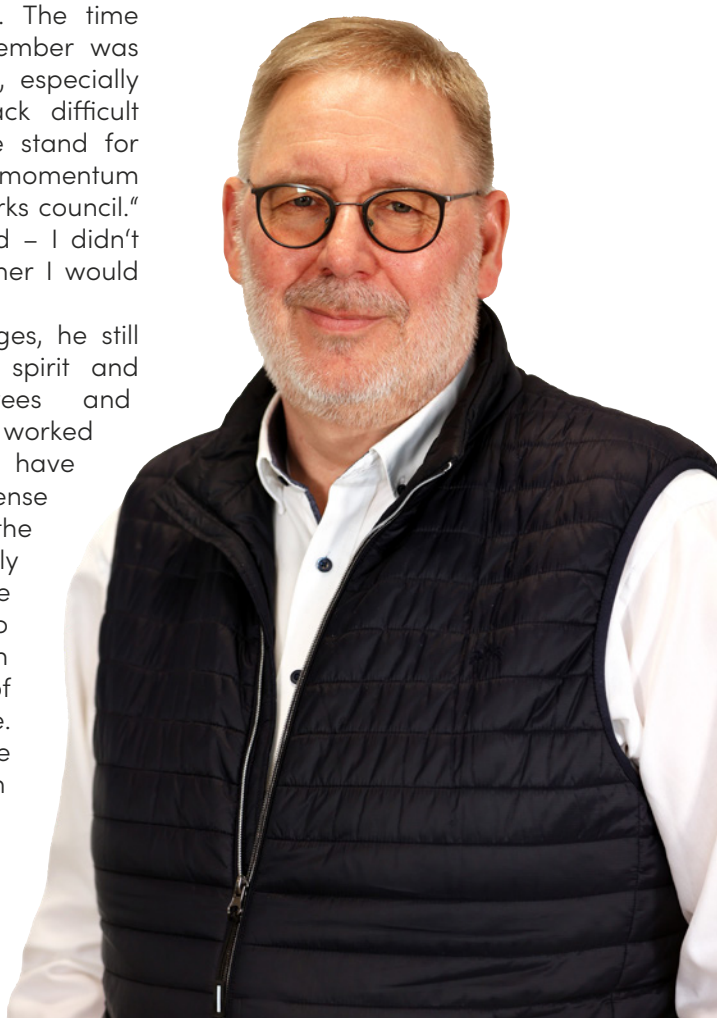
He particularly appreciated the fact that ABP always gave him the freedom to develop his own ideas: „I was able to develop new ideas and my suggestions were implemented. That was a real sign of appreciation."

He has experienced the development of the company first hand – from restructuring in the 90s to the current challenges facing the industry. „I changed jobs several times, from ABB to CMI and finally to Primetals and MHI. The time as a works council member was particularly challenging, especially when you had to back difficult decisions." Why did he stand for election? „I felt that new momentum should be set in the works council. So I put myself forward – I didn't know at the time whether I would be elected."

Despite all the challenges, he still remembers the team spirit and cooperation: „Employees and production have always worked closely together. You have to strengthen this sense of community." Over the years, he has particularly appreciated the people he has been able to work with: „I've met an incredible number of great colleagues here. Some of them have long been more than just colleagues to me – they have become real friends."

His travels were also a special experience: „I traveled almost all over Europe, from Norway to Portugal. Of course, there was little time for sightseeing, but at least we were there." He won't be missing the countless kilometers he covered on the highways, though. „The A42 and the A40 – no, I won't be needing them anymore!" I'm going to switch to my bike now."

His plans for the future? „I'm taking it easy. I got myself an old desk to restore, I want to continue exploring the Ruhr region and, of course, spend time with my five grandchildren." With a twinkle in his eye, he mentions his wish for ABP: „I would be delighted to see the Dortmund site celebrate its 150th anniversary. That's really important to me!"



New online training and in-person sessions at the ABP Academy

The program for the first half of 2025 is available – individual training courses possible

Continuous training and professional development of personnel are of immense importance, especially in view of the ongoing effects of the shortage of skilled workers, in order to maintain and increase productivity and efficiency in your company. Join the ABP Academy and benefit from the knowledge and experience of the ABP experts – in training courses tailored to your needs and knowledge. You decide whether you want to learn in person or conveniently online – or even combine both approaches. Our training courses are mainly held in German and English. If required, we can also check and, if necessary, implement other languages for you with external support. Hereis a quick view of all the dates.:

Mechanis Basics
German: 13th May 2025 - 10:00 - 12:00 h
English: 13th May 2025 - 14:00 - 16:00 h

Refractory materials for coreless induction and channel furnaces
German: 15th May 2025 - 10:00 to 12:00 h
English: 15th May 2025 - 14:00 to 16:00 h

ABP Cooling Systems (Basics)
German: 19th May 2025 - 10:00 to 12:00 h
English: 19th May 2025 - 14:00 to 16:00 h

ABP Cooling Systems (Advanced)
German: 20th May 2025 - 10:00 to 12:00 h
English: 20th May 2025 - 14:00 to 16:00 h

Operator training
German: 21st May 2025 - 09:00 to 13:00 h
English: 22nd May 2025 - 14:00 to 18:00 h

Basic maintenance and servicing work on the thyristor inverter and its basic function
German: 12th June 2025 - 9:00 to 13:00 h
English: 13th June 2025 - 14:00 to 18:00 h

Registration and all further information, including on the classroom training courses, can be found at abpinduction.com/abp-academy/

Imprint

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