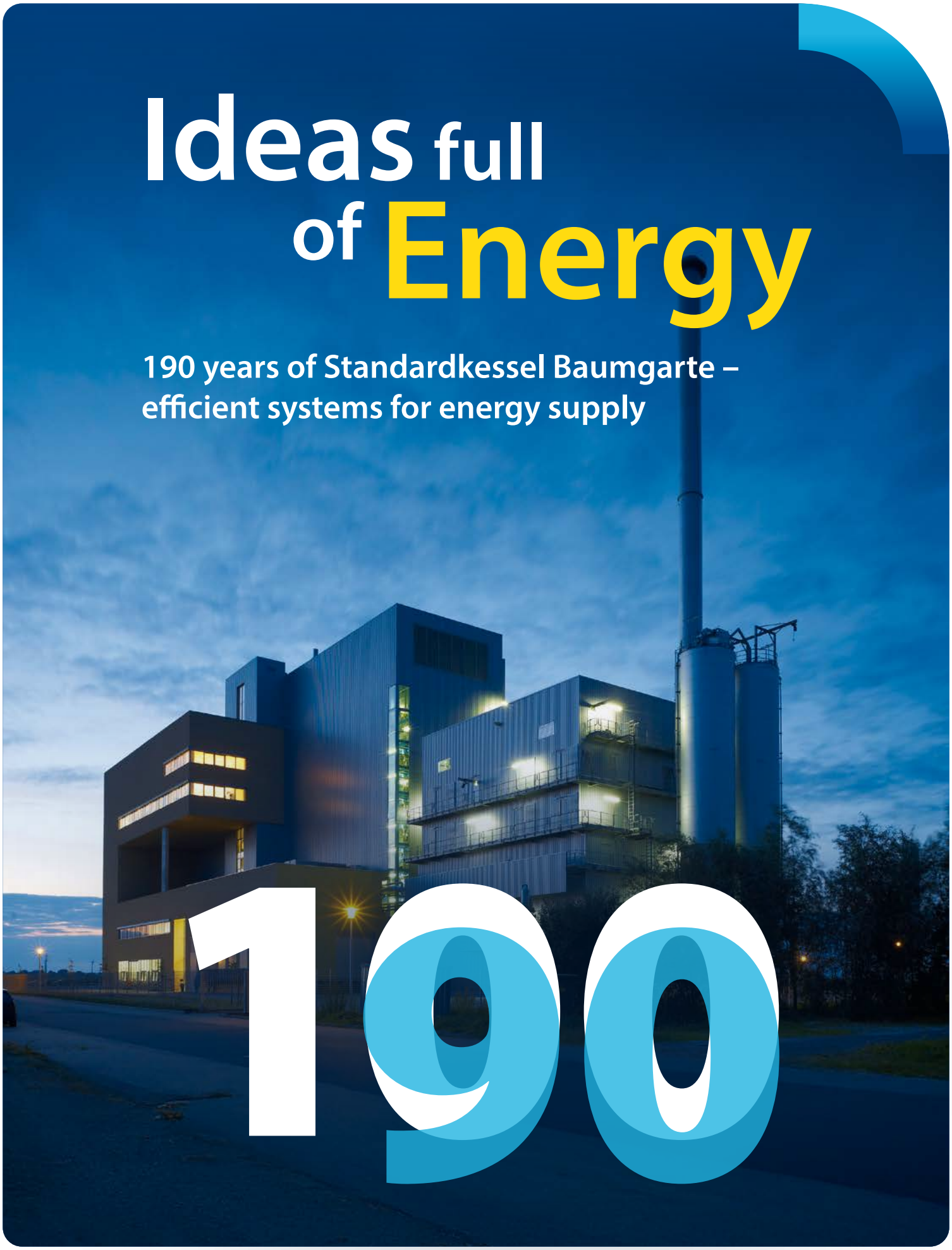
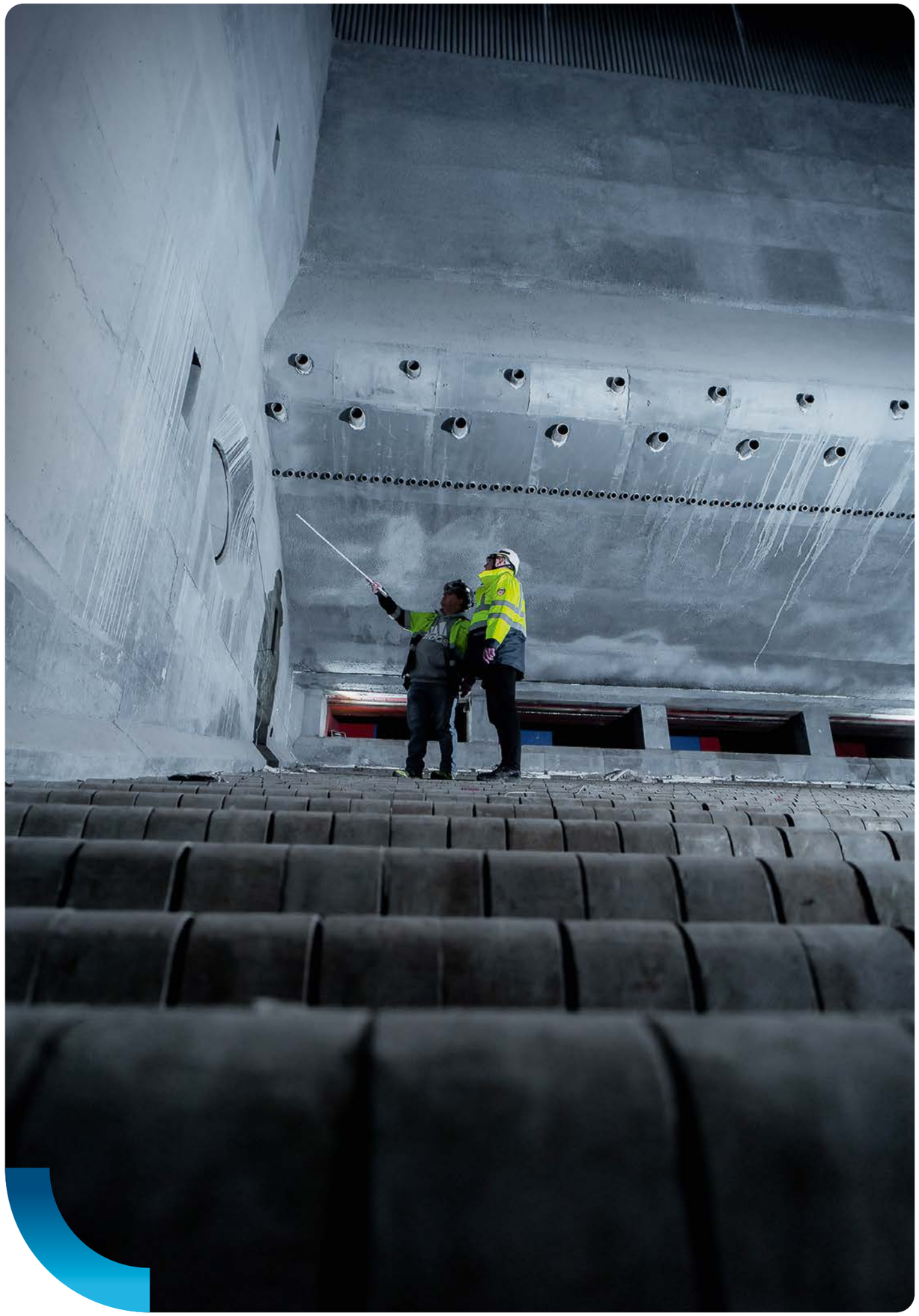
JFE Engineering Group
Standardkessel Baumgarte

Ideas full of Energy

190 years of Standardkessel Baumgarte – efficient systems for energy supply





190 years **Future**

Anyone who has been in the industry as long as we have, knows that plant engineering is a volatile business. And only those who overcome one crisis or another can achieve newly set goals.

The challenges have been great in recent years in particular – and will remain so in the near future. Exceptional crises and unprecedented political uncertainties are shaping a new reality in which we must operate. In this situation, our affiliation with the JFE Group proves to be the solution. It gives us the financial strength and resilience we need to realise increasingly complex projects on an international scale.

This goes hand in hand with our joint focus on future markets such as energy from waste, in which JFE is also particularly strong. We are already noticing that the strategic acquisition of Standardkessel Baumgarte is making us part of an international strategy in which we are closely integrated technologically. We see this strategic realignment as a strong position for our path to a stable future. With this collaborative approach, we will assert ourselves on the international market and further expand our position. And we are at the forefront when it comes to decisively driving forward the forward-looking development of the circular economy with new processes – for the next 100 years of Standardkessel Baumgarte.

„Behind everything we have achieved today are the people who make up and support Standardkessel Baumgarte. Many of them have been with us for much longer than it is usual in other companies. We are proud of this and say thank you. Your commitment is our future.“

Anything **but standard**

The standard in Standardkessel has historical origins: from 1925 onwards, we were among the first to manufacture standardised steam boilers for hot water and process heat, thereby introducing what was effectively the first industry standard – Standardkessel. Founded in 1935, Eisenwerk Baumgarte has established itself over the past five decades as a pioneer in the supply of steam generators for plants for the thermal utilisation of waste materials.

Together, as Standardkessel Baumgarte under the umbrella of the Japanese JFE Engineering Corporation, we are now one of the leading players in the thermal utilisation of non-recyclable waste materials. In this way, we make a significant contribution to the sustainable energy supply of municipalities and industrial customers in Europe and a central contribution to the circular economy. Our current standards are the highest demands on safety, quality and engineering for individually designed plants that are anything but off-the-shelf.

over **6,000** t/h
steam production in total for EfW plants

EfW plants in
20 countries

over
3,000
MW_{th} in total for biomass plants

in 16 countries with a total of more than 3,000 t/h steam production

over
7,500 MW_{th}
in total for EfW plants

„When you choose a project with Standardkessel Baumgarte, you are relying on the personal proximity of a medium-sized partner with the strength of an international corporation behind it – one that advises and accompanies you from the first meeting to the pressure test and far beyond. Because the transition to a sustainable world is a team effort.“

At the forefront right from the start

1925 · 1935

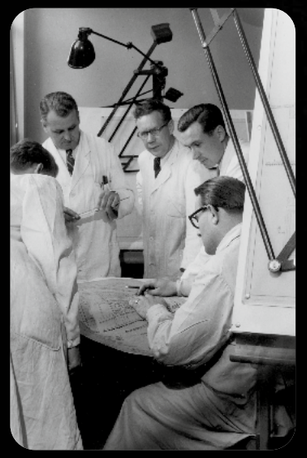
What began in these two years with two small boiler construction companies in Duisburg and Bielefeld is now a leading international technology partner for customised power plants. Although our founders never met, they shared the same conviction: technology must be practical, solve problems and work reliably. This claim – pragmatic, goal-oriented, reliable – shapes every product, every project and every decision. And it remains a guiding principle for our work to this day.


August Fasel


August Baumgarte

August Fasel laid the foundation in 1925 with the aim of developing modular boiler systems that could be adapted to the requirements of the future industries of his time, such as steelworks, chemical plants and energy suppliers, to significantly improve efficiency, reliability and fuel utilisation. He registered his first patents and introduced innovative technologies – for example, welding as an alternative to riveting.

Ten years later, August Baumgarte founded Eisenwerk Baumgarte GmbH in 1935, which focused on apparatus and steam boiler construction. He, too, did the obvious thing and responded to the pressing needs of his time. He ensured the special quality of his products by introducing electric welding and establishing modern testing and laboratory procedures.



Post-war period

After the war, Standardkessel focused on the design and construction of complete boiler systems for industry and developed innovative three-pass fire-tube smoke tube boilers for district heating. In 1951, the innovative "Condor Boiler" revolutionised installation costs as a fully automatic, oil-fired system boiler with pressure vessels and auxiliary equipment available as a preconfigured unit. It was quickly in use in over 60 countries.

From 1954 onwards, the company expanded its portfolio to include its current core business of water tube boilers as a supplement to fire-tube boilers, as well as apparatus engineering and high-vacuum technology for the chemical, metallurgical and related industries.

In 1962, Baumgarte designed its first waste incineration boiler and quickly became the leading manufacturer in Germany and Switzerland. At the end of the 1960s, the company took on a pioneering role in the construction of "Tailend Boilers" for maximum energy absorption and developed mechanical exhaust gas cleaning systems for this purpose. At the same time, it introduced corrosion-resistant materials and coatings for particularly stressed heating surfaces, setting new standards for heating surface service life.

1970s to 2000

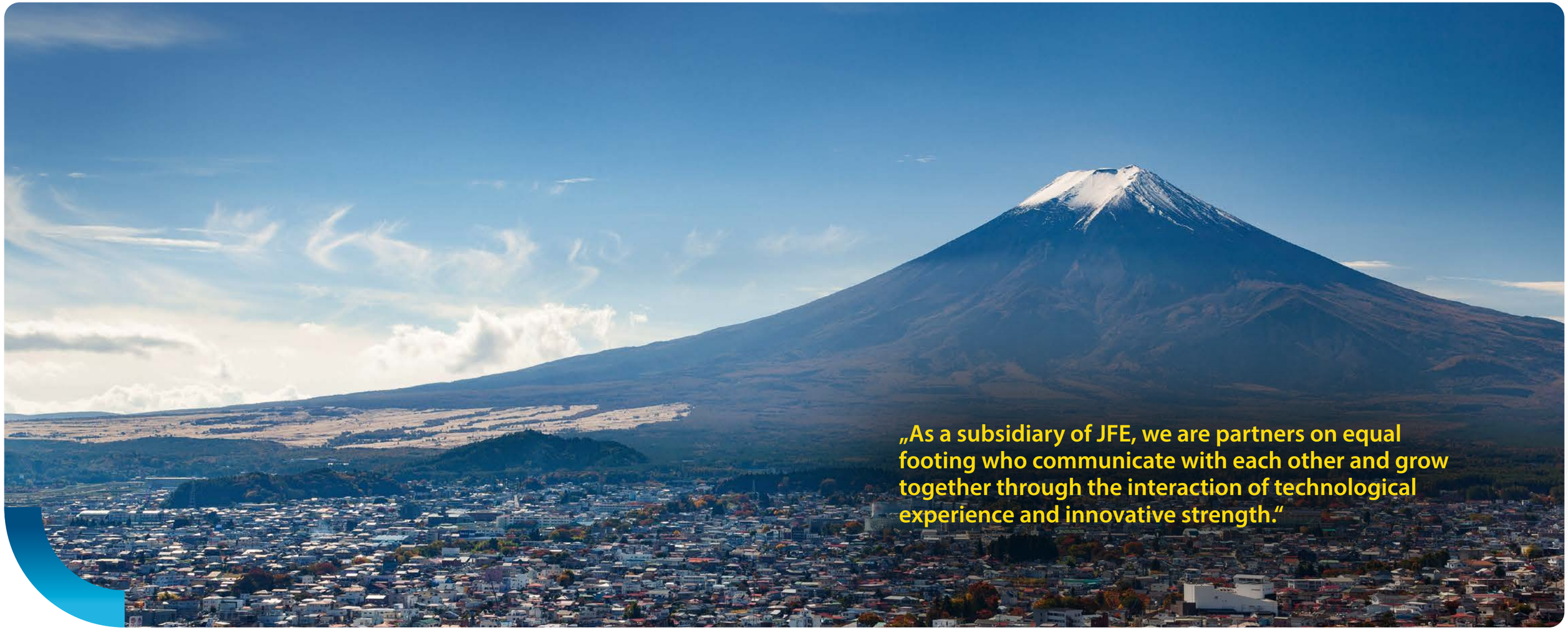
During this period, Standardkessel launched a development offensive and realised ambitious large-scale projects in Germany and abroad. The focus was primarily on boiler technologies for combined cycle power plants and for power plants with stationary fluidised bed combustion. The largest boiler design to date reached 165 t/h. In another large-scale project, two 135 t/h boilers were built, which were operated with turbine exhaust gases, among other fuels, in order to increase the degree of fuel utilisation. During the same period, Baumgarte further expanded its boiler production and, from the 1990s onwards, concentrated on the new field of engineering and systems technology. With success.

Stride by stride into the new millennium

Since the turn of the millennium, understanding of sustainable energy supply has continued to grow. Above all, optimising fuel efficiency is playing an increasingly important role. In this context, Standardkessel is refocusing on complete plant construction and has achieved a peak output of 2 x 400 MWel at a power plant in France. Since 2007, the company has once again been run by its owners. This established, owner-managed corporate culture remains evident even after the takeover by the Japanese JFE Group in 2014. For JFE, Standardkessel Baumgarte is not only an economic acquisition, but also a strategic step towards expanding plant construction for the thermal utilisation of waste materials. From 2008, a dedicated service division for modernisation and conversions expanded the business field.

The next major step came in 2017, when Standardkessel and Baumgarte merged to form Standardkessel Baumgarte GmbH. Since then, they have been working together on large-scale international projects in the fields of biomass, energy from waste and sewage sludge utilisation. The company is investing in the further development of grate and fluidised bed combustion systems and is expanding its portfolio to include DeNOx systems. A patent for the NoCorr process for thick-film nickel plating ensures even more durable boiler heating surfaces. A new focus is on decarbonisation and climate-friendly energy supply: more and more plants are replacing lignite and gas with biomass and waste materials s fuel.

Today, Standardkessel Baumgarte looks back with pride on its long and successful history. Supported by people who continue to carry forward the ideas of our founders. Together with JFE, we are now embarking on the next chapter.



German „Mittelstand“ (SME) under Japanese ownership

Today, excellent engineering requires outstanding financial strength in order to compete in the market for large-scale projects. Partnership is the right way forward here.

At the beginning of the 2000s, the market developed rapidly: larger projects increased the technological and financial demands on plant manufacturers – qualifications for large-scale projects worth hundreds of millions were becoming increasingly difficult to obtain. It quickly became clear that we needed a strong partner for large international projects.

This phase creates a fortunate situation: at exactly the same time, the Japanese Fortune 500 company JFE, which itself operates numerous EfW plants in Japan, was looking for a strategic, technological partnership for the European market and, in future, for more. This win-win situation led to the integration of Standardkessel Baumgarte into JFE Engineering Corporation under the umbrella of the JFE Group in 2014.

Belonging to the JFE Group opens up completely new dimensions. Our cooperation forms a perfect symbiosis.

Within the JFE Group, we can now offer complete EfW and biomass plants internationally on a scale that was not previously possible. This creates close synergies that benefit all partners involved.

In addition to JFE Engineering Corporation in Japan, this also includes JFE Engineering India. This location primarily contributes a high level of construction and design expertise – especially when it comes to future-oriented areas such as automation and AI. In addition to monetary strength, we benefit from Japan's decades of experience in operating its own plants, which complements our practical technical know-how. And as Standardkessel Baumgarte, we contribute everything that has grown over 190 years of joint technological boiler construction and plant knowledge – and has proven itself in the face of strong European competition.

The partnership between Standardkessel Baumgarte and the JFE Group, combined with strategic foresight and cultural openness, should lead us to sustainable success in the future.

All three closely cooperating companies have optimally combined their strengths, thus creating the basis for further developments in a dynamically evolving market.

From the outset, the constellation between a large international corporation on the one hand and a traditional German medium-sized company on the other has developed into a partnership of equals in which both corporate cultures enrich each other.

Technical performance **at the highest level**

At Standardkessel Baumgarte, curious young engineers meet experienced power plant professionals. This is the ideal combination for developing efficient plants that operate economically for a long time – while continuously optimising our performance. On this basis, we implement EfW, biomass and sewage sludge plants for energy suppliers, municipalities and industrial companies. We know that the key to success lies in partnership-based cooperation. And we have proven this in over 600 projects.

We know the key cornerstones for the successful implementation of our customers' energy projects and tailor our activities precisely to these: maximum reliability, maximum economic efficiency, consistent environmental protection and compliance with future legal requirements. Our sophisticated combustion systems with efficient air flow in the primary and secondary areas, steam generators with patented corrosion protection developed in-house, increase plant availability and reduce operating costs.

Innovative projects such as No-Corr reduce unplanned downtime and extend the service life of boiler heating surfaces. Our flue gas condensation with low-temperature heat utilisation increases fuel utilisation and thus the efficiency of the plant. The Condless process we have developed for sewage sludge incineration enables, for example, the complete thermal utilisation of sewage sludge vapours without an external heat sink. To name just a few examples.

Energy from Waste

Turn your waste materials, from household waste to industrial waste such as paper, into valuable energy with our systems. With thermal outputs of up to 130 MW and steam generation of up to 150 t/h at 500 °C and 100 bar. Our modular grate system with separately controllable air zones ensures reliable, stable combustion – even with fluctuating fuel quality. The fluidised bed combustion system utilises low-impurity fuels with low emissions. This includes vertical and horizontal steam generators with high availability and a long service life. The exhaust gas cleaning system – dry, semi-dry or wet – plus SNCR/SCR meets the highest environmental standards.

Biomass power plants

Our plants flexibly process natural wood, waste wood, production and residual wood or wood dust, as well as other biogenic residues. We achieve firing heat outputs of up to 140 MW with steam generation of up to 160 t/h and steam parameters of up to 500 °C at 140 bar.

The combustion technologies used are grate systems up to 140 MW, fluidised bed combustion systems up to 100 MW or dust combustion systems for wood dust. The steam generators are designed as multi-pass boilers for high steam outputs and variable loads. Customised exhaust gas cleaning systems ensure compliance with all environmental standards.

Sewage sludge plants

We build mono-incineration plants for municipal sewage sludge disposal with thermal outputs of up to 40 MW, steam outputs of up to 50 t/h and steam parameters of 450°C and 65 bar. They process both mechanically dewatered and thermally pre-dried sewage sludge and meet the strict requirements of the 17th BImSchV. A stationary fluidised bed combustion system is used as the combustion system.

The steam generator is designed as a multi-pass boiler, which is designed for high start-up and load changes. Exhaust gas cleaning systems ensure compliance with all environmental standards. Ready for phosphorus recovery.

Looking **ahead**

With our strategic realignment, we have laid the foundation for a successful future. We are ready to take on projects with the highest level of responsibility and consolidate our position as a reliable partner in the international waste management industry.

Standardkessel Baumgarte is currently implementing international projects and is capable of achieving capacities of over 1,500 tonnes of waste per day. We are thus consistently adapting our products to the requirements of the global market, which is increasingly relying on very large incineration plants. This integration into international projects strengthens our market position in the long term.

For the near future, we are pursuing the clear goal of working together as part of the JFE Group to implement international plants economically and successfully to the full satisfaction of our customers. In doing so, we rely on innovative technologies such as Waste-to-X to actively shape the transformation of the entire waste management industry towards a circular economy.

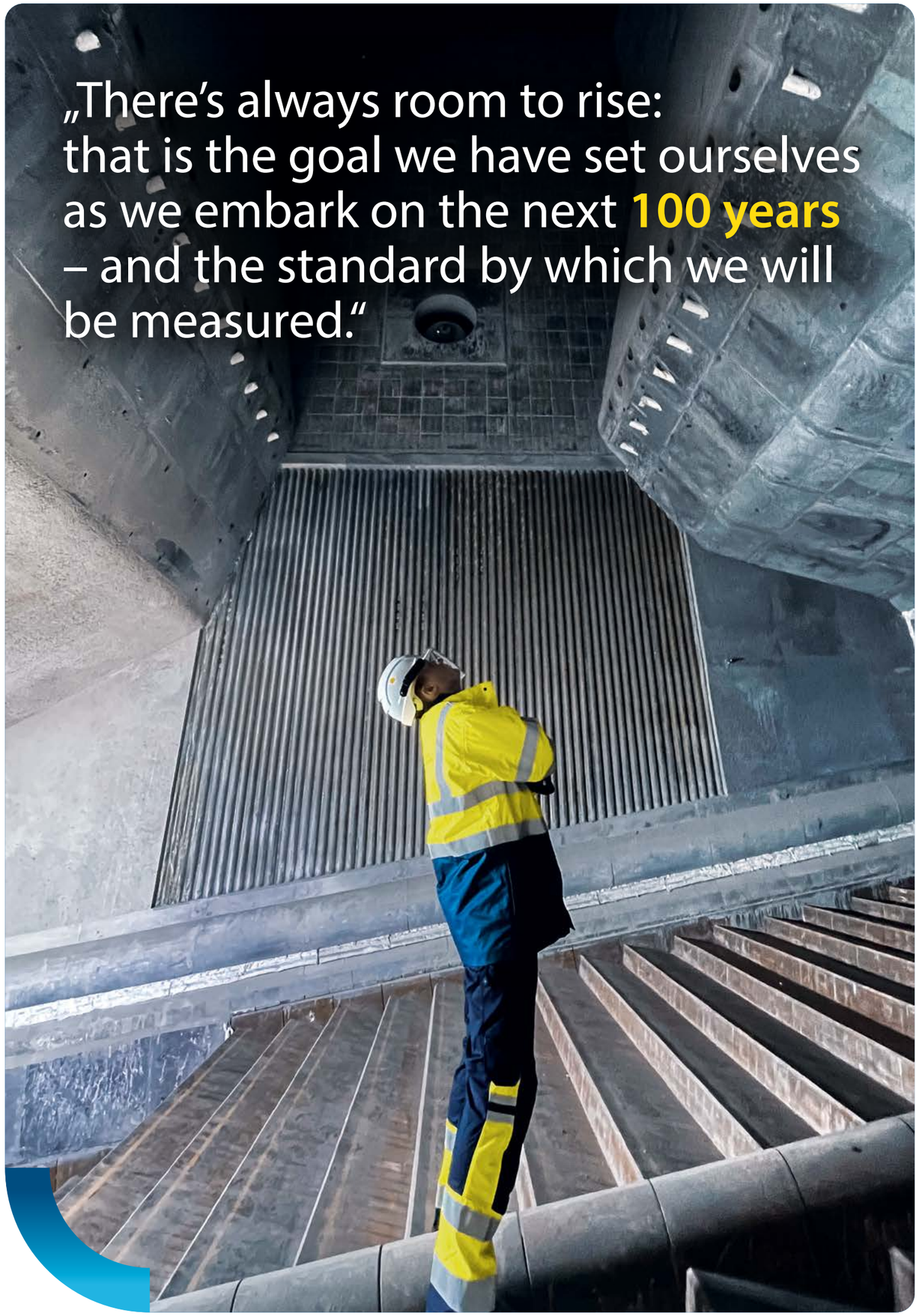
One of the central challenges of our time lies in the realisation that humanity will continue to produce waste and residual materials. There is a growing demand to no longer simply dispose of these materials, but to utilise them almost 100%. To this end, sorting and recycling options are being continuously improved so that more recyclable materials can be recovered.

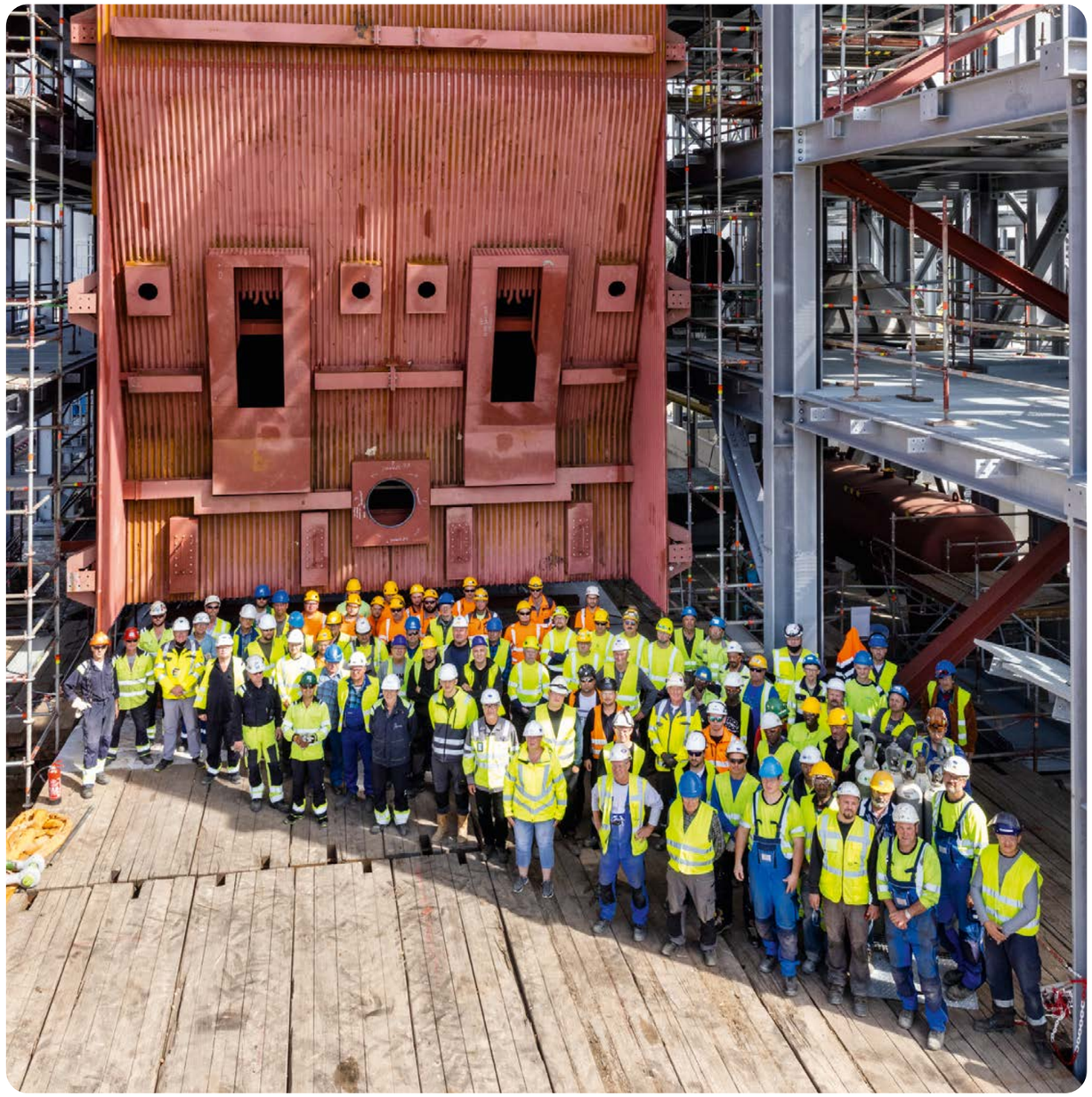
Paradoxically, these measures to return as much material as possible to usability result in the remaining waste material becoming increasingly poor in quality. This is where we come in – with the aim of making full use of even these last remaining materials. Developing the appropriate technologies is our mission for the future.

In this context, traditional incineration as an established technology cannot remain the only and best option – because although it provides valuable energy, it also produces residual material in the form of CO_2, for example.

Against this backdrop, after 100 years we are now on the threshold of a new revolution. The central question is: How can we shape the waste disposal of the future?

This vision drives us – with the same degree of strength, flexibility and courage to try new approaches that our predecessors have exemplified over decades. Our direction is clear: we will help shape the future of waste management, and we will not take a back seat.





Biomass.
Energy from Waste.
Sewage sludge.

**Let's talk
about your plant.**

info@SB-Group.com
www.standardkessel-baumgarte.com

Standardkessel Baumgarte Holding GmbH
Wissollstr. 19
45478 Mülheim a. d. Ruhr
Phone: +49 208 20768 0
info@SB-Group.com
www.standardkessel-baumgarte.com

Standardkessel Baumgarte GmbH - Mülheim
Wissollstr. 19
45478 Mülheim a. d. Ruhr
Phone: +49 208 20768 0
info@SB-Group.com
www.standardkessel-baumgarte.com

Standardkessel Baumgarte GmbH - Bielefeld
Senner Str. 115
33647 Bielefeld
Phone: +49 521 9406 0
info@SB-Group.com
www.standardkessel-baumgarte.com

Standardkessel Baumgarte Service GmbH
Wissollstr. 19
45478 Mülheim a. d. Ruhr
Phone: +49 208 20768 0
info@SB-Group.com
www.standardkessel-baumgarte.com