

ENVIRONMENTAL DECLARATION 2026



BADISCHE STAHLWERKE GMBH

Graudenzer Str. 45
77694 Kehl
Germany
Telephone +49 (0)7851-83-0
Fax +49 (0)7851-83-586
Internet: <http://www.bsw-kehl.de>

	Page:
1. Preface.....	3
2. Environmental and energy policy.....	4
3. The enterprise	6
4. From scrap to steel.....	7
5. Environmental and energy aspects and key indicators.....	15
6. Environmental and energy management system.....	30
7. Objectives, individual targets and program	31
8. Validation and certificate.....	34
9. Sustainability management	36



1. Preface

Active protection of the environment is a fundamental challenge and one of the most important tasks for safeguarding our future standard of living. This means that from the start in the developmental stage of a product, the manufacturer must consider how it can be recycled or disposed of without harming the environment.

Yearly, world crude steel production amounts to more than 1.8 billion tons (approx. 35 million tons in Germany), one third of this is based on scrap. No other material has a similarly proven and efficient recycling system as steel. Due to its complete recyclability, steel renders closed material circuits possible. According to the statistical report „Steel Scrap Foreign Trade 2022“, approximately 84% of the steel ever produced worldwide is still in use due to longevity and recycling.

The objective of Badische Stahlwerke GmbH (BSW) in publishing this document is to provide information about its environmental activities at its Kehl location and to enter into an open dialogue with the general public. This review furnishes data for an assessment of the environmental issues and describes the company's environmental and energy policy, its targets, and the environmental and energy management system already in place. Proper operation is confirmed by regular on-site inspections by the Regional Council of Freiburg.

A handwritten signature in black ink, appearing to read 'Florian Glück'.

Managing Director
Florian Glück

A handwritten signature in black ink, appearing to read 'Marc Sester'.

Authorized signatory
Marc Sester



2. Environmental and energy policy

Environmental policy

Steel is one of the most important materials in the world. Under ecological aspects, steel is an excellent material, as it may be used almost infinitely without any loss of quality. By-products from the production process, such as electric arc furnace slag (EAF slag), scale and also waste refractory products can be recycled. EAF slag (BEOSALT) for example is used in road construction. The complete process helps to protect natural resources.

In the course of the last few decades steel production in the electric arc furnace has developed into an efficient process. BSW has managed to develop their environmental activities in a sustainable way and will continue on this way in the future as far as possible with regard to technical and environmental aspects. The environmental policy is determined by the environmental guidelines.

The environmental guidelines are:

Management system, program and objectives

Our environmental management system, the environmental program and the objectives defined in this context aim at the safeguarding and sustainable improvement of the environmental protection. The necessary resources are provided.

Integration of the environmental management system

We ensure that the requirements of the environmental management system are firmly integrated into our business processes.

Binding commitments

Compliance with legal regulations (laws, standards and optional commitment) is our minimum standard and is compulsory for us.

Environmentally friendly production

We make sure that our products are manufactured with minimum input of resources and minimized environmental impact. It is our aim to keep the environmental influences related to steel production as low as possible and to improve the associated processes continuously.

Value chain

In implementing and further developing our environmental management system, we place particular emphasis on integrating the upstream and downstream value chains. To this end, we systematically collect the relevant data and make them available to both the upstream and downstream value chains.

Transformation

The promotion and procurement of sustainable energy and technology to secure the energy supply are of great importance to us. We are committed to a gradual transition to climate-neutral steel, taking into account the economic and political framework conditions.

Appearance of the plant

We attach great importance to cleanliness and order in our plants, which contributes to the positive appearance of our facility.

Motivation and qualification of staff

The training and qualification of our staff as well as our information policy aim at enhancing an environmentally conscious behaviour. The ideas management further serves for an active improvement and motivation in the field of environmental protection. The employees are obligated to keep to the legal requirements and the environmental regulations established by BSW.

Public authorities and the public

We participate in various regional task forces and thus enter into an open dialogue with the public. We attach great importance to a good cooperation with residents, associations and public authorities and approach environmental topics conjointly.

Energy policy

The energy management system (EnMS) serves to systematically record all plants and processes with significant energy consumption. It is designed to identify potential savings, to evaluate investments for improvement of energy-related performance and to implement them on this basis. The energy policy forms the basis of the energy management system and is respected in all our activities.

The energy guidelines are:

- Promoting and procuring sustainable energy and technologies to secure the energy supply
- A gradual transition to climate-neutral steel, taking into account the economic and political framework conditions
- Implementing and further developing the energy management system, with particular regard to the upstream and downstream value chains
- Consistent collection of relevant data and its provision to both upstream and downstream value chains
- Compliance with legal requirements and other binding obligations
- Continuous improvement of energy efficiency and the energy management system
- Procurement of energy-efficient products and services wherever possible
- Ensuring that the requirements of the EnMS are integrated into the organisation's business processes
- When redesigning processes, plant and facilities, improvements in energy performance must be promoted and taken into account
- To inform on the status of our energy targets and their achievement, our energy efficiency indicators as well as other relevant details, and to make all relevant information available
- To set targets that are consistent with energy policy and strategic direction
- To optimise the use of resources in relation to energy consumption
- To provide staff training on energy-related topics

3. The enterprise

Location

Badische Stahlwerke (BSW) currently produce approximately 2.4 million tons of rolled products with a staff of approximately 850 employees and thus belong actually to the productivity leaders worldwide. BSW is the only steel plant in Baden-Württemberg. The location in the Rhine harbour of Kehl, on a small headland with a surface of only 395,000 m² between one of the three harbour basins and the river Kinzig is still one of the decisive factors for the success of the



company. Also affiliated companies, e.g. „BSW Stahl-Nebenprodukte GmbH“ (BSN) are active on the factory site. The city of Kehl and the French metropolis Strasbourg are in close vicinity of BSW. The community of Auenheim is their direct neighbour in Eastern direction. The location of BSW between Kinzig and Rhein was classified by the LUBW in a flood area (HQ_{EXTREM}).

Under company law, BSW, with its registered office at 69412 Eberbach, is part of RSE Reinforcing Steel Europe B.V., with its registered office at Almelo, the Netherlands (RSE).

Waste Heat Utilisation

In December 2021,, a contract was signed between representatives of the state government of Baden-Württemberg, the German Federal Government, the „Eurométropole de Strasbourg“, the „Région Grand Est“, the city of Kehl, Caisse des Depots and Badische Stahlwerke GmbH to implement a cross-border waste heat project. The aim of the project is to use the waste heat from BSW. In the meantime, a separate company has been founded for the transport and distribution of the waste heat. (Calorie Kehl-Strasbourg, CKS). The final concept is currently being finalised from both a technical and economic perspective, following which a heat supply contract is to be concluded.

Project Data:

Power: 20 MW

Usable waste heat potential in the first step: 70 GWh/year

Total waste heat potential: 135 GWh/year

Households supplied with heat: > 7,000 households

CO₂ savings in the first step: 20,000 t CO₂/year

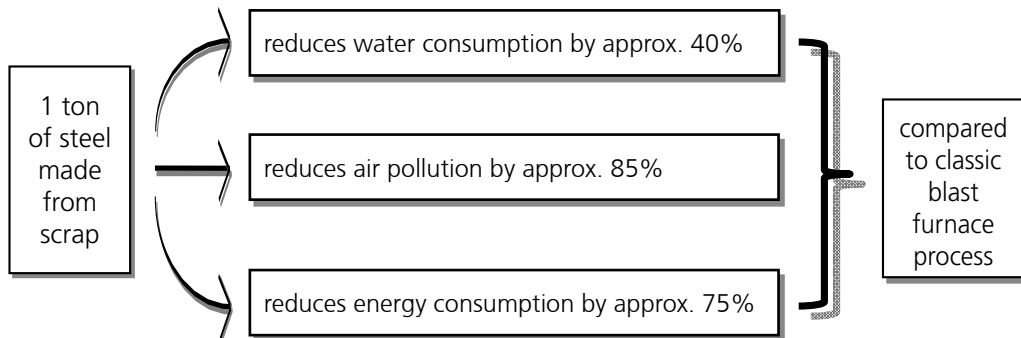
Total possible CO₂ savings: 37,000 t CO₂/year

Length of heat pipeline: 4.5 km from BSW to Strasbourg (2.6 km tunnel)

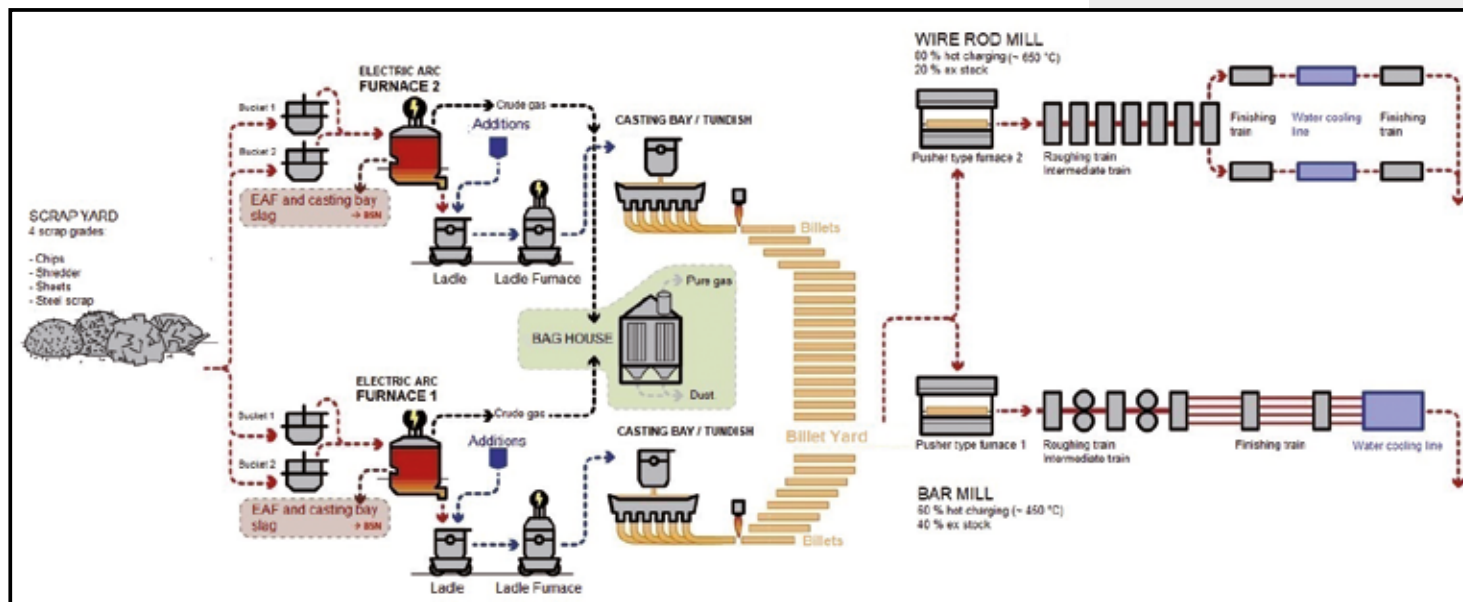
Implementation period: 2029/2030

4. From scrap to steel - the electric steel production as a recycling process -

The use of scrap saves the natural resource of ore as well as the associated auxiliary materials and energies that are necessary for steel production in a blast furnace or a converter process route. At the same time the impact on the environment is reduced.



Electric steel mills play an important role in industrial society's materials cycle, because they produce steel from scrap metal. Charging materials for electric steel mills include scrap from vehicles (shredded scrap), demolition scrap and new scrap like sheets and turnings.



Start of steel production at the scrap yard



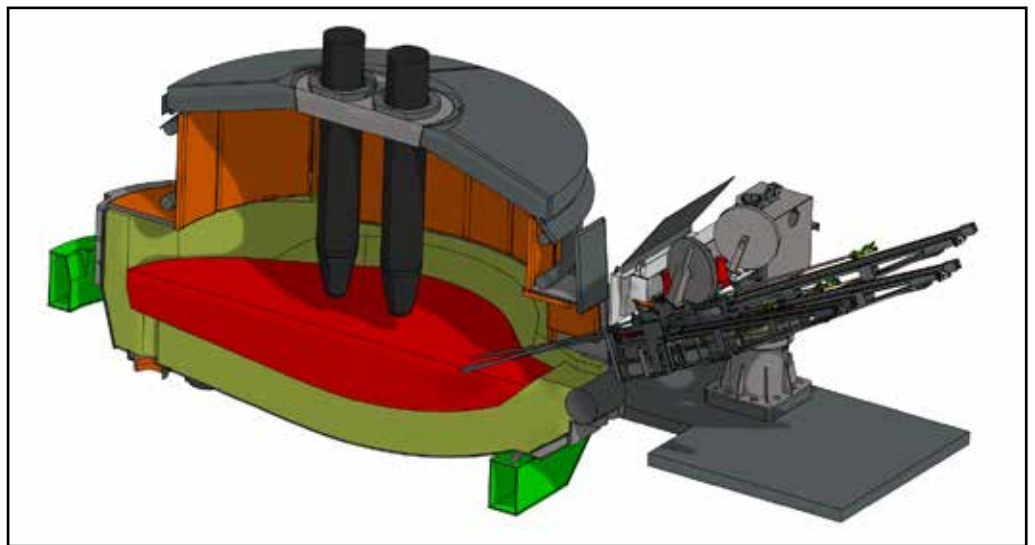
Scrap yard

More than 60 % of the scrap used in steel production is delivered directly by Rhine barges, the remainder coming by rail and a small percentage by truck. The quality of the scrap is continuously monitored. Overhead cranes unload up to 2.6 million tons of scrap delivered each year. The so-called scrap buckets which

are loaded on scrap cars are filled with scrap by means of the gantry cranes and are then transferred to the steel plant through the two furnace bay gateways.

Electric arc furnaces

The steel plant is comprised of two AC-arc furnaces (EAFs) that melt the scrap with an arc, boosted by gas-oxygen burners. Up to 120 tons of scrap are melted per heat and the tapping weight (molten steel) is up to approx. 110 tons. The furnaces are tapped after an average tap-to-tap time of less than 40 minutes. Tapping temperature averages 1,620 °C.



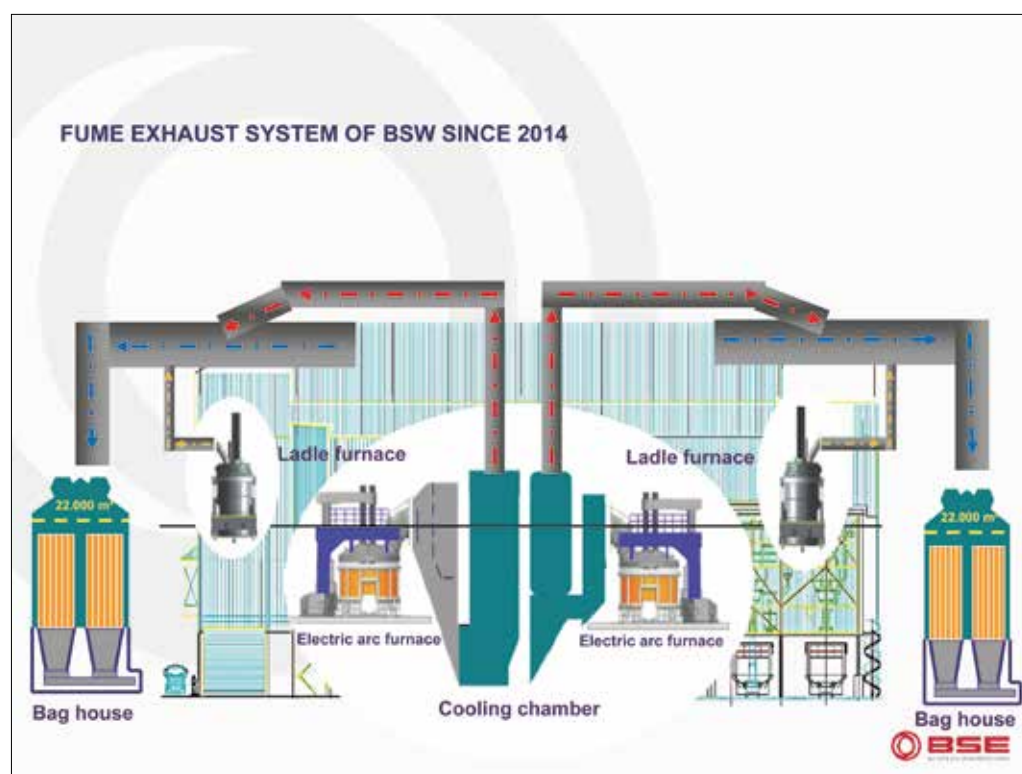
Dust collecting plant

The continuous development of energy-conserving technologies is essential for economic survival for a steel producer based in Germany, because energy costs make up approximately 40 % of controllable costs. Environmental benefits – the reduction of atmospheric, water, and noise emissions – are usually “mere” side-effects. We are nonetheless proud of the environmental protection technology which we market worldwide with our affiliated company Badische Stahl-Engineering GmbH (BSE).

Extension of the dedusting unit

The dedusting unit which has been extended in 2014 serves as an example:

The off-gases generated at the two electric arc furnaces and the ladle furnaces are evacuated by the building exhaust system with a maximum capacity of 1.8 Mio Nm³/h and cleaned in baghouses with a filter surface of about 44,000 m². Dioxins and Furans are reduced before the filter in a post-combustion chamber with a subsequent HTQ system to a value below 0.1 ng TE/Nm³. The off-gases of the ladle preheaters and the gunning stations are fed into the additional dedusting unit and are thus cleaned in a better way. Due to the restructuring of the off-gas streams dioxin-containing and dioxin-free streams are separated.



Explanations

ng: nanogram: 1 ng = 10⁻⁹ g corresponds to one billionth of a gram

TE: Toxicity equivalents: all dioxins and furans are valued with factors ranging from 0.001 to 1, depending on their toxicity, and are represented as a sum

Nm³: Standard cubic meter: to be able to compare gas volumes they are represented in a standard state (0 °C and 1.013 bar)

Central alloying plant

When steel is produced from scrap, fluxes and alloys have to be added to obtain the required grades.

At BSW the fluxes and alloys are delivered to the alloy storing silos unit by truck where they are unloaded through a funnel and transported to a hopper plant on a conveyor system. The materials needed for production are collected from the hopper with the help of weighing equipment and transported to the furnaces via conveyor belts and chutes.

Ladle furnaces

While the electric arc furnaces melt the scrap as quickly as possible, the alloys are added in the ladle furnace based on the chemical analysis of the steel and the temperature is adjusted to the correct level. The steel stays in the ladle furnace for approximately 20 minutes, after which the ladle is traversed by crane to the continuous casters.

Continuous casting plant

At the continuous casting plant, the molten steel is poured from the ladle into a tundish (a tub-like vessel) with six nozzles, through which it runs into a 1,000 mm long copper mold. A lifting table oscillates the molds while the molten steel is water-cooled until billets are formed (14 m in length, various quadratic cross sections). Casting speed depends on the capacity of the cooling system. The billets are then transported to the rolling mills by the means of the crane units.

Pusher-type furnaces

The billets are reheated in pusher-type furnaces fuelled with natural gas which are located upstream of the two rolling mills. This process is computer controlled. Before the billets, produced by the two continuous casters, can be heated to rolling temperature in the pusher furnace, a chemical analysis is performed on them. The results determine how the billets are to be used.

Bar mill (rolling mill I)

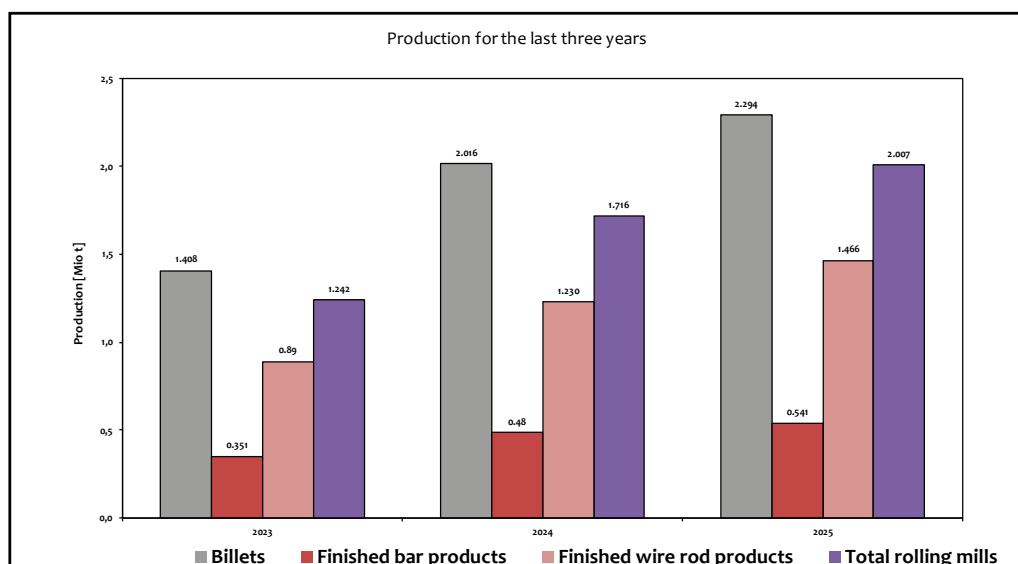
In the bar mill the billets are rolled into a ribbed rebar with different diameter and a customized length. The bars are strapped into bundles weighing around 2.5 tons ready for shipping. The different dimensions are produced by slit rolling, in which a billet is divided into two, three or four final cross-sections simultaneously. An average of 100 tons of finished steel products are rolled per hour.

Wire rod mill (rolling mill II)

The two-strand wire rod mill produces plain wire rod as well as ribbed reinforcing bars in different diameter. The wire rod mill consists of a roughing, intermediate and finishing train. After the finishing train the wire is cooled down in the primary water cooling line and forwarded to the laying head. In the laying head the wire is laid in windings and disposed on a roller table which at the same fulfils the function of a secondary air cooling line. The end of the roller table already belongs to the wire adjustment. The wire drops through an opening and will be gathered as a coil with a total weight of 1.8 t. The wire is then forwarded with a hook conveyer to the coil tying machine.

Production data steel plant and rolling mills (all figures in million tons (MT)/year)

Production	2023	2024	2025
Billets (MT)	1.408	2.016	2.293
Finished bar products (MT)	0.351	0.486	0.541
Finished wire rod products (MT)	0.890	1.230	1.466
Total rolling mills (MT)	1.242	1.716	2.007

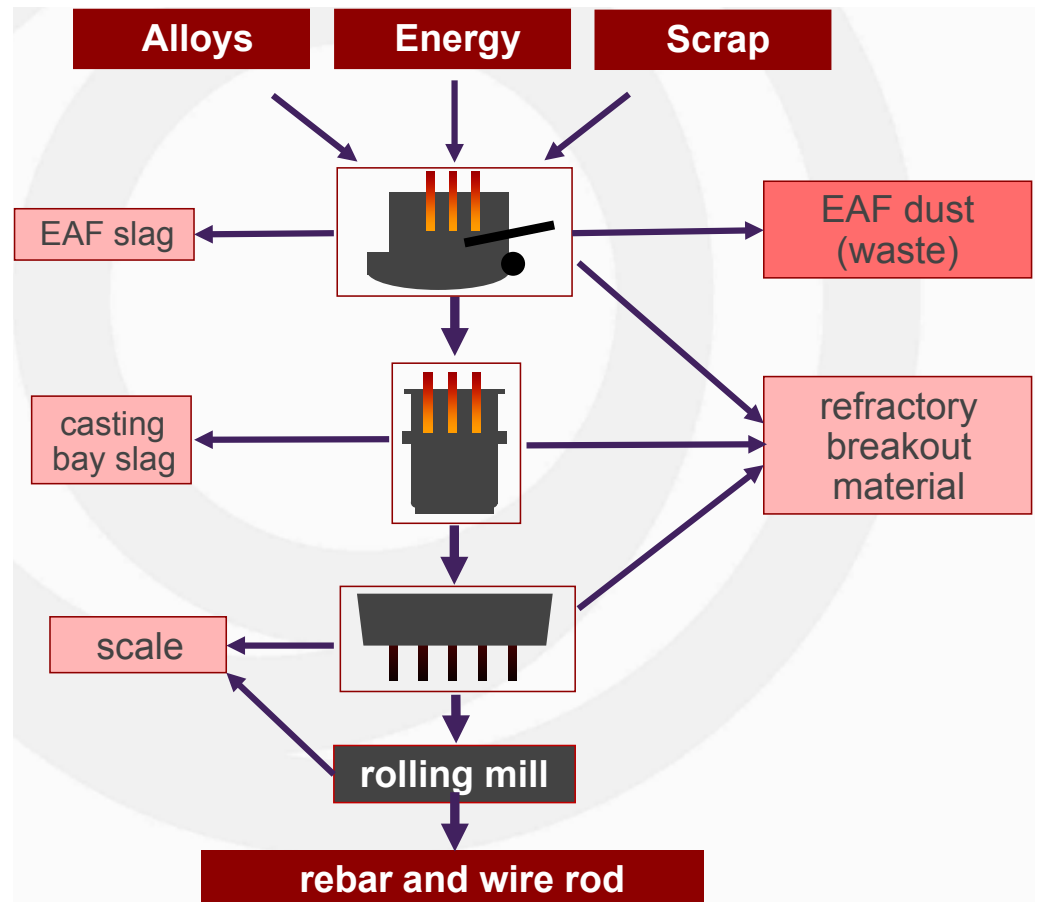


Some of the billets produced are processed into wire in other wire rod mills. In addition, production-related losses in the rolling mill (return scrap from the shearing plants and scale) contribute to the difference between steel mill and rolling mill production.



Recycling at steel and rolling mills

During the steel production process, EAF slag, casting bay slag and scale are generated as by-product. The refractory break out material will be recycled and can be returned again to the production process. In terms of the closed loop recycling management EAF dust is disposed as waste.



Refractory breakout material

The steel vessels of electric arc furnaces, ladles and tundishes are lined with refractory materials to protect them from the molten steel.

The refractory material has to be renewed at regular intervals. The breakout material is processed in a screening plant and some of it is reused by BSW. The remaining material is sold to the producers of refractories who process it into refractories for use in steel mills, completing the recycling process.

Internal scrap

Internal scrap consists of reinforcing steel only. It is generated in the continuous casters as shrink heads, ladle and tundish skulls, and in the rolling mills as shearing waste, cobbles and scrap bundles. Before being charged into the electric arc furnace some of the internal scrap has to be cut into furnace sizes in the torch cutting area.

Electric arc furnace slag (EAF slag)

120 - 150 kg of furnace slag, a fused rock material very similar to natural rock, is generated with each ton of steel produced by BSW. The main components of this slag are natural compounds like iron (as oxide), unhydrated lime, sand and oxides of magnesium, manganese and aluminum.

Mechanical processing into high-standard road construction and hydraulic engineering materials takes place in an external slag treatment plant. The final products, similar to processed gravel, with different granulations which are monitored by an independent scientific institute. Only approved and quality-tested material is delivered to customers.

Depending on its grain size the processed slag named BEOSALT can be used for various purposes:

- Road construction
- Hydraulic engineering
- Construction of parking lots
- Rail construction
- Decorative areas



BEOSALT serves as an alternative construction material to gravel, thus conserving natural resources.



Casting bay slag

The casting bay slag is also processed in an external plant. Under the name BEOSIL it is mainly used for dirt road construction.

- Road construction material
- Bituminous surfacing
- Fillings
- Landfill



Filter dust

In all steelmaking processes, wastes in the form of dust are generated in the de-dusting plants. The dust is extracted by the direct suction and bay suction systems and conducted to the filter baghouse where the dust-loaded crude gas is cleaned via filter bags. The dust load in the crude gas is up to 4 g/Nm³. The clean gas side of the baghouse shows a residue of under 1 mg/Nm³ (limiting value 4 mg/Nm³) on average per year, which is equivalent to a separation degree of over 99.9 %.

Explanation

ASN = waste code number according to waste catalogue directive. That is used as description of waste and the classification for the required special supervision.

The dust contains elements that evaporate at high temperatures during melting and condense again when the gases cool. These include zinc and lead as well as minute quantities of dioxins and furans. The dust (hazardous waste, ASN 100207*) is supplied to authorized plants which recover elements such as zinc. These plants are audited and verified regularly by us.

Principal components of dust:

o Iron oxide (Fe_2O_3)	approx. 30 %
o Zinc (Zn)	approx. 25 %
o Calcium oxide (CaO)	approx. 5 %
o Anorganic chloride compounds (Cl)	approx. 2 %
o Lead (Pb)	approx. 2 %

Mill and continuous casting scale

Scale consists mainly of iron oxide and forms on the hot steel surface. It is severed from the steel by mechanical stress and contact with cooling water. Scale particles fall into the cooling water and are deposited in worm classifiers, laminar separators, hydro cyclones, sedimentation tanks and sand filters. The scale generated in the continuous casters and the rolling mills is processed to briquettes in external plants and used in blast furnaces for pig iron production. Here also, the material flow loop is closed. For protection of resources the scale is used as substitute material for iron ore in the cement industry.



5. Environmental and energy aspects and key indicators



5.1 Environmental aspects

According to EMAS all activities, products and services must be audited from the point of view of their effects on the environment. Based on the results of the audit, it must be decided which effects have the greatest impact on the environment and how they can be controlled or improved.

Direct environmental aspects are related to activities controlled by the company. The aspects considered to be „essential“ are as follows:

1. Energy (energy aspects, see chapter 5.2 and energy efficiency, see chapter 5.3.1)
2. Waste water (sewage disposal and generation, see chapter 5.3.3)
3. Water (well water and public water consumption, see chapter 5.3.3)
4. Generation of waste (industrial waste and hazardous waste, see chapter 5.3.4)
5. Air emissions (dust, NOX, CO, see chapter 5.3.5)
6. Climate relevant gases (CO₂ generation, see chapter 5.3.5)
7. Biological diversity (area shares, see chapter 5.3.6)
8. Noise (generation by equipment, vehicles, monitoring via noise measurement, see chapter 5.4)

Indirect environmental aspects can comprise activities, products and services which the company may possibly not be able to control completely. Indirect environmental aspects are:

Hazardous materials transportation (hazardous waste disposal and supplies)

Hazardous materials transportations are transports of waste material like e.g. waste oil, paint and acids, but it can also mean supplies of diesel fuel and other operating materials. Collection and deliveries are controlled by the risk prevention officer. We only employ special waste management companies or companies with the respective qualification for hazardous material transportation.

Suppliers and contractors

Suppliers and service providers are informed about the energy and environmental management system of BSW. The purchasing guidelines include environmentally and energy relevant topics. Environmental protection is a key criterion for the evaluation of suppliers. Contractors working on the company site apply the same environmental standards as BSW.

Recyclability of products (steel products) and by-products (slag, refractories)

In terms of the closed loop recycling management the steel products manufactured by BSW can be reused by 100 % as starting material for steel production after their use. All by-products generated are recirculated or used as environment-friendly material in the production process.

Traffic volume (external)

Scrap delivery and finished products shipment are mainly realized by barge or railway. As far as possible, the same barges are also used for shipping the finished products.

5.2 Energy aspects

Energy aspects are all activities, products and services having an influence on the energy utilization and energy consumption. The main energy aspects are determined on the basis of current and former data. An energy aspect is regarded to be essential if it has a high portion of the total energy consumption and has a potential regarding

- o more efficient energy utilization
- o increased use of local renewable energies

The main energy aspects (main consumers of the respective energy carrier) are as follows:

Current

Area	Process / activity	Organisational unit
Electric arc furnaces	Melt-down of scrap	Steel plant
Rolling mills	Rolling of billets in the rolling mills	Rolling mill
Ventilation dedusting	Air pollution prevention	Steel plant
Ladle furnaces	Treatment of the molten steel	Steel plant
Compressor units	Generation compressed air	BSW

Natural gas

Area / Unit	Process / activity	Organisational unit
Pusher furnaces	Heating of billets	Rolling mill
EAF burners	Melting of scrap	Steel plant
Refractory shop / relining of refractory material	Drying / Heating / Holding	Steel plant

Carbon

Area	Process / activity	Organisational unit
Steel plant	Melting of scrap	Steel plant

Diesel

Area	Process / activity	Organisational unit
Dispatch	loading and handling at the port onto inland waterway vessels	Dispatch
Steel plant	e.g. internal lorry transport of, for example, slag; slag clearance, wheel loader and forklift operations	Steel plant

5.3 Key indicators

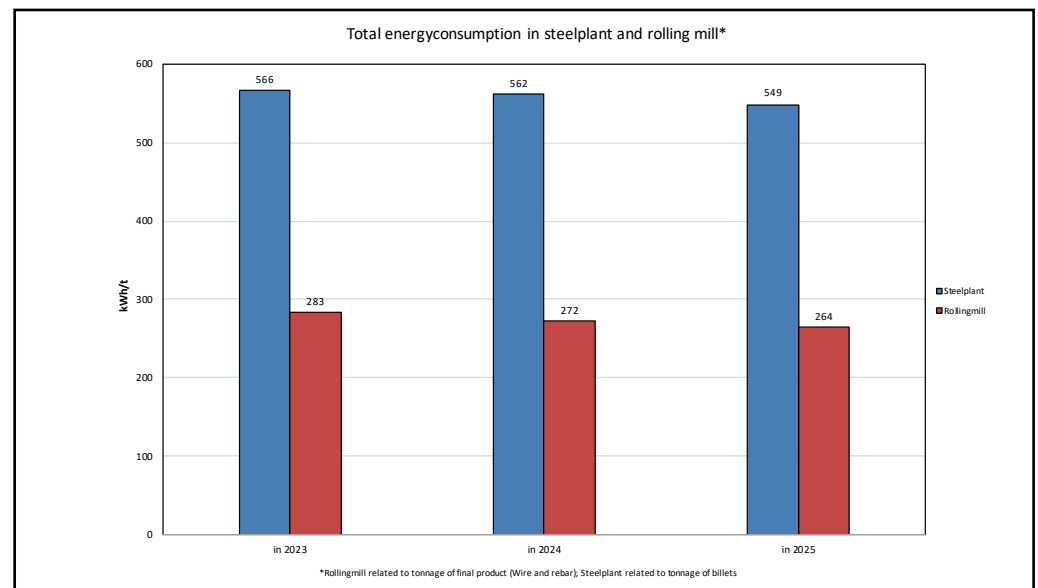
The improvement of the environmental quality is the concern to which BSW direct their environmental management system. This is the reason why in the previous BSW environmental declarations data regarding vital environmental aspects like consumption of energy and resources, waste volume and emissions were presented. Since the implementation of EMAS III these main aspects (key indicators) are made concrete in key performance indicators. This allows a uniform and clear presentation of our environmental performance. Reference parameters (production capacity, billets or finished products in tons) are provided to be able to reasonably compare improvements or trends over a longer period. The key indicators are summarized in the following table and presented and explained in the subsequent chapters. In recent years, sourcing raw materials and energy has proved problematic. The operating conditions were challenging, so the scrap mix and production methods had to be repeatedly adjusted.

Key indicators	Effect
Energy efficiency	Total annual consumption in kWh/t and share of renewable energy
Material efficiency	Total annual consumption of input materials in kg/t
Water/waste water	Annual well and waste water volume in m ³ /t
Waste	Annual waste volume in kg/t (billets) Division into industrial and hazardous waste
Emissions	Total annual volume of greenhouse gas (CO ₂) in kg/t Total annual volume of carbon monoxide in kg/t Total annual volume of dust and NO _x in g/t
Biological diversity	Percentage of semi-natural areas in relation to total area

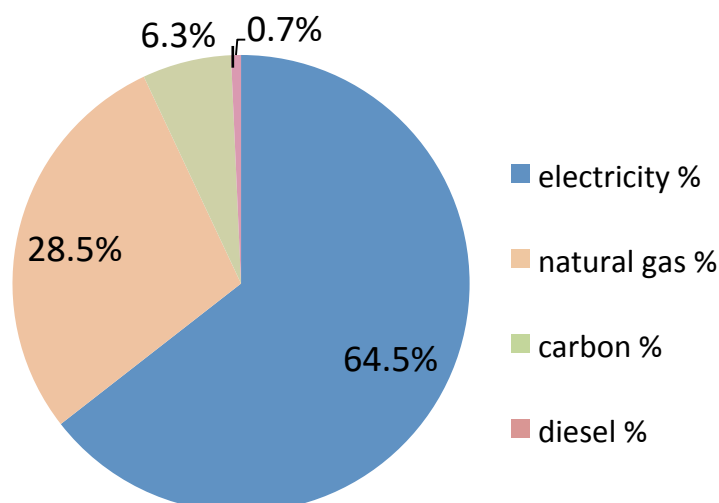
5.3.1 Energy efficiency

BSW has achieved a world class high standard in the steelmaking process from the melt shop to the rolling mill. In the past, several procedural improvements have been implemented which lead to considerable energy savings for example in the field of electric steel making. While the energy saving potentials in the field of steelmaking are rather limited today due to physical basic conditions, there are still further potentials for savings in other steel treatment areas like for example infrastructure, maintenance, supply and disposal as well as administration. At the beginning of 2011 we have therefore implemented an energy management system according to DIN EN ISO 16001 (today DIN EN ISO 50001) for the entire company in order to reveal possible potentials for savings in the different areas.

The method used to calculate the key figures has been adjusted retrospectively with effect from 2023.



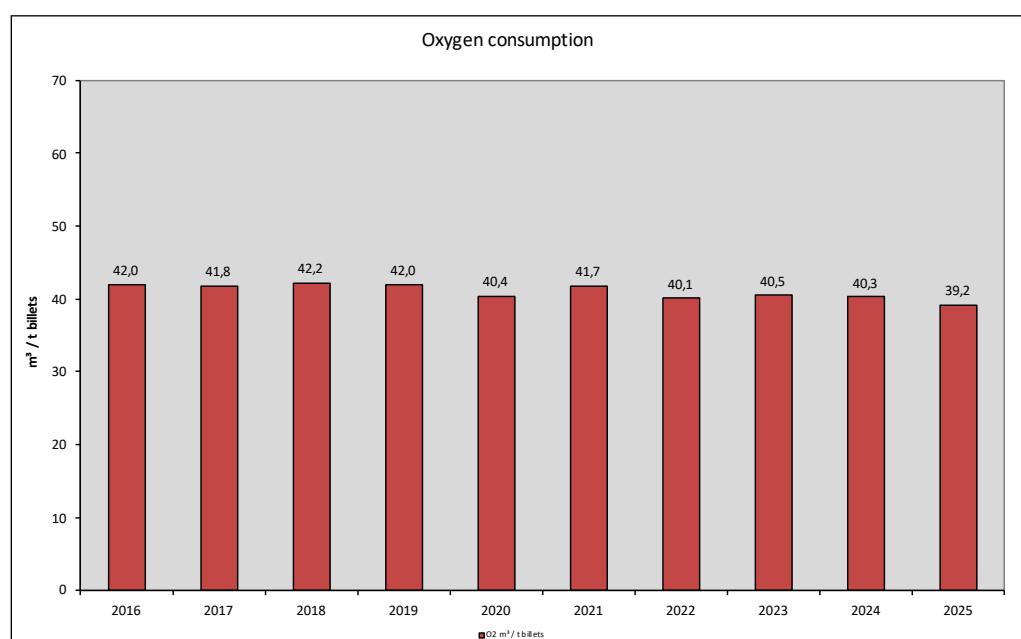
Energy distribution 2025



The energy carriers at BSW are electrical energy, natural gas, coal and diesel fuel. The expiry of EEG (renewable energy) subsidies and the purchase of HKNs (guarantee of origin) have increased the proportion of renewable energies at BSW. Carbon is primarily used to produce foaming slag, but is also included in the energy statistics. Due to the physical limits, BSW is very close to the energetic optimum. Optimisation of individual energy sources can lead to deterioration in other areas.

Oxygen consumption

Oxygen accelerates the meltdown process and CO post-combustion in electric arc furnaces. It is also needed for metallurgical purposes. Thanks to technological enhancements and metallurgical improvements, BSW keeps energy consumption at optimum process engineering levels. The generation of liquid oxygen is very energy-intensive, savings in oxygen consumption mean at the same time energy savings.

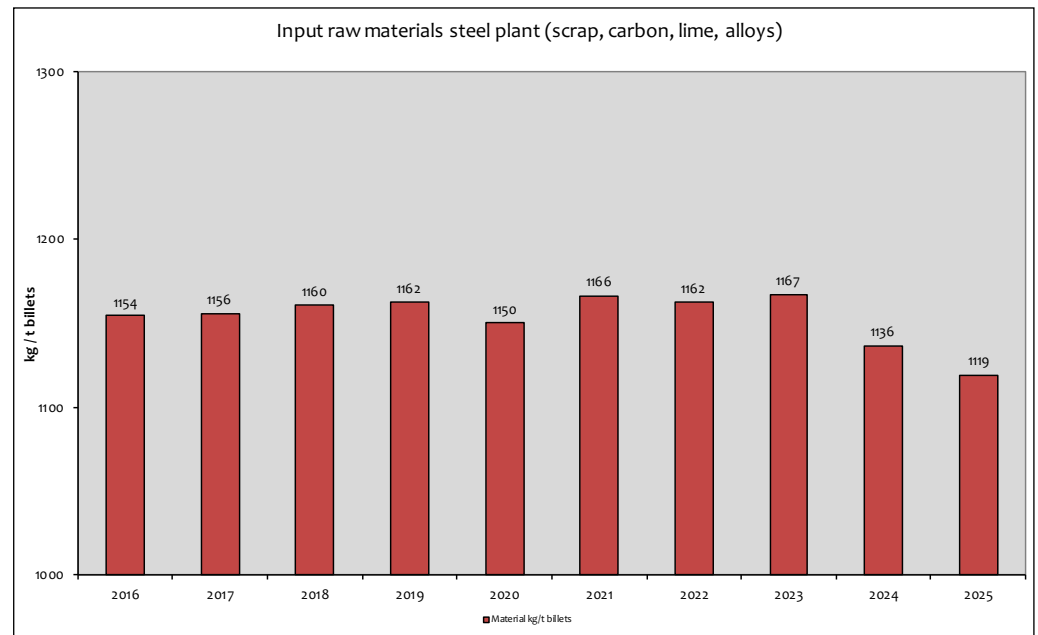


In 2021, oxygen consumption was slightly higher than in the previous year due to changed boundary conditions, a changed scrap mix and the resulting adjustment in operation mode.

5.3.2 Material efficiency

The main raw material required for steel production is scrap and due to the nearly closed raw material cycle precious resources are preserved in this way. In addition, carbon, lime and different alloys are required. When buying raw materials and supplies BSW always makes sure that they conform to its environmental policies. Purchasing guidelines were therefore extended to include certain environmental aspects. Environmental protection is also an important criterion for the evaluation of suppliers and their products. Environmental considerations and safety criteria form part of the evaluation and selection process because materials that can be detrimental to the environment, if improperly used, often require special precautionary measures. The main raw materials required for steel production are scrap, carbon, lime and various alloys.

In 2021, the specific raw material input was slightly higher than in the previous year due to changed boundary conditions, a changed scrap mix and the resulting adjustment in operation mode.



5.3.3 Waste water and well water

During the past years the productivity of the BSW has constantly increased which caused a new production permission of 2.2 million tons/year in 2003.

Under the given constraints of increased production while maintaining the authorized water quantities the water management became more and more difficult. Therefore in the year 2010 a first extension of the water industry was realized in consultation with the Regional Council Freiburg. In parallel with this measure BSW applied for a further increase of production to 2.8 million tons/year. This application was allowed and also referred to the expansion of our wire rod mill.

Expansion wire rod mill (Rolling mill II)

The expansion of the wire rod mill was planned and realized during the years 2010 to 2013. The start-up took place in February 2014. Thanks to this investment BSW has increased the productivity and at the same time has changed the rolling technology in order to produce the required qualities by means of the thermo mechanic rolling process. This rolling process has the advantage that considerably less micro alloys are required for the steel production and therefore the energy consumed for the production process is reduced. For ecological reasons a reduction of micro alloys is advisable, because the extraction of these raw materials is a problematic process.

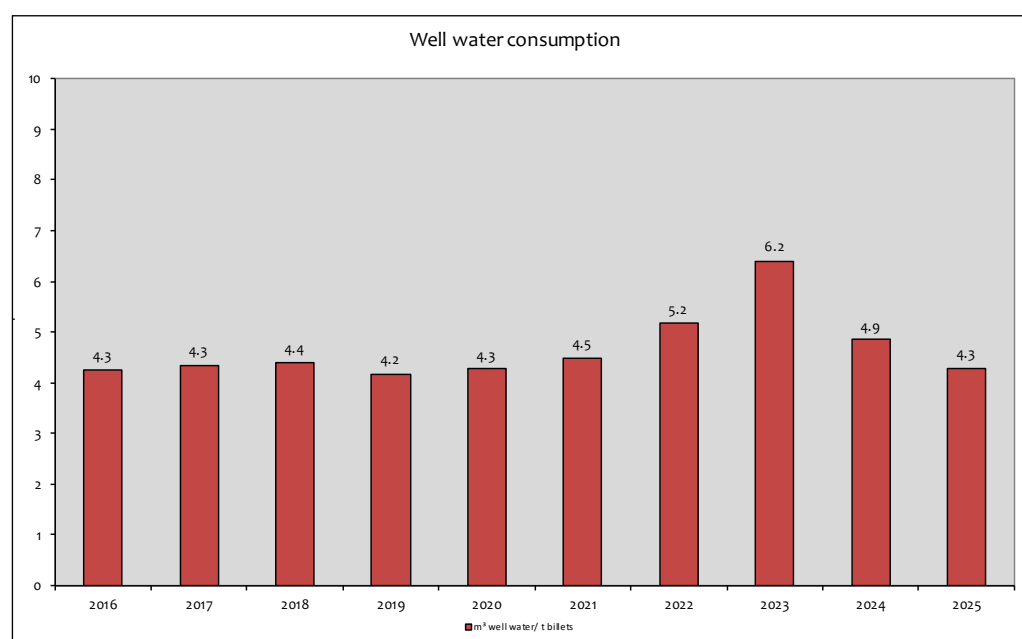
The thermo mechanic rolling, however, requires significantly larger cooling circuits. The cooling water requirement for this technology is approximately 2.5 times higher. In accordance with the Regional Council we endeavored to consider the allowed fresh and waste water quantities in regard to this reconstruction. Since the start-up of the reconstructed rolling mill the rate of used well water to required cooling water has increased from a factor of 1:11 in 2010 to a factor of 1:28 in 2014.

Economical use

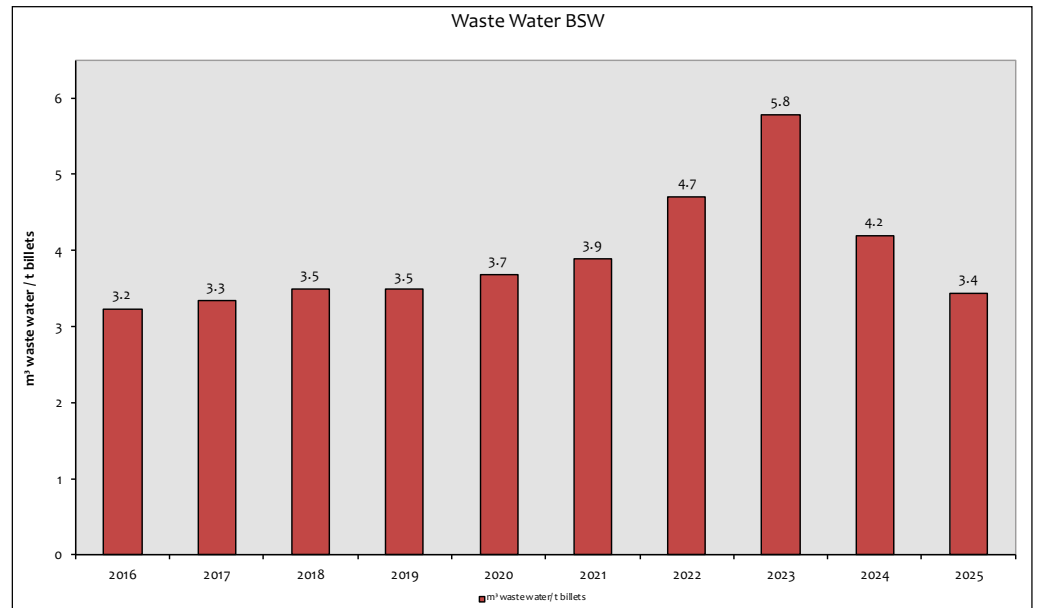
As mentioned above it was necessary to change the water management concept of BSW fundamentally. The present concept agreed upon with the Regional Council Freiburg is based on a very economical and efficient use of the ground water. Currently ground water is mainly to compensate evaporation losses and to avoid excessive concentration and salting of the circuits.

With this solution which required investments in the double digit millions also in the water management, we have a process perfectly adapting to the new production-related requirements and ensuring an economical and efficient use of the ground water.

The used ground water is taken from deep wells on the factory premises and serves for various cooling purposes.



Production and rain water are collected in one collection system at BSW. The waste water quantity depends on the rain water quantity and is thus subject to annual deviations. In 2025, the specific fresh water requirement improved again due to better product utilization.



In 2025, the specific waste water volume was lower than in the previous year. The amount of fresh water was lower.

To meet the legal requirements we continuously take the following action:

- o Obtain license to operate as a specialized plant as per, Water Resources Law
- o Provide training in handling water-contaminating substances
- o Establish a working committee for water protection
- o List all potentially water-contaminating equipment
- o Permanent supervision of the drain trays
- o Ensure that contractors working on site observe regulations

We are direct discharger and we meet all approved limit values.

5.3.4 Waste

BSW commit to returning the waste materials generated during production to the production process in terms of the five step principle of the German Closed Substance Cycle Waste Management. Waste like packaging material is collected and separated on site before being passed on for recycling. Non-recyclable components are passed on to the district authorities in accordance with the waste handling by-laws. Waste requiring special monitoring is handed over for recycling or disposal after obtaining the necessary approval.

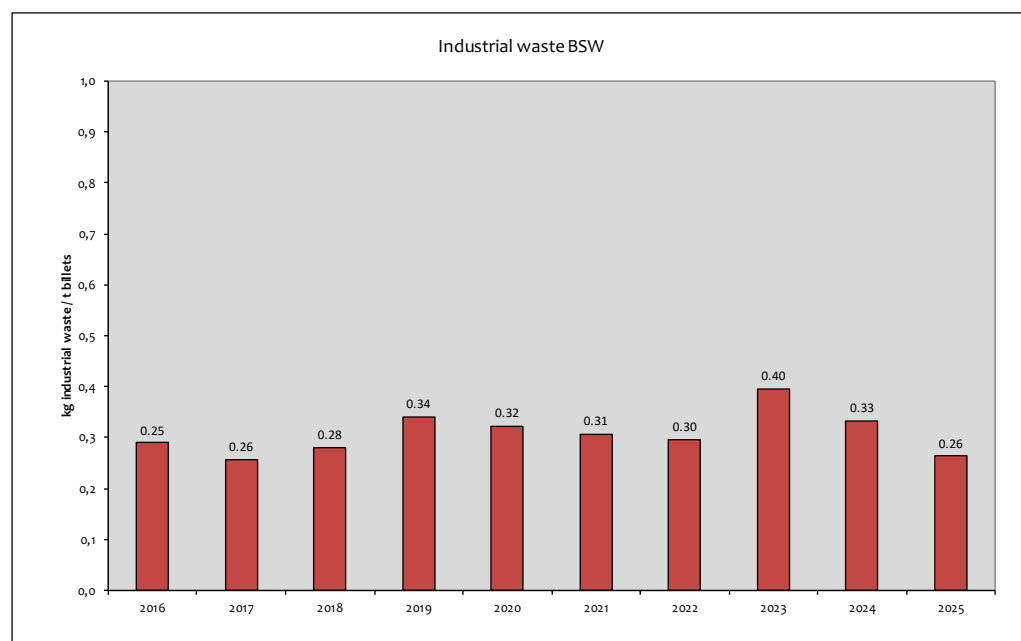


Metals for recycling

Metals accruing for reutilization at BSW are for example copper cables, old motors and brass.

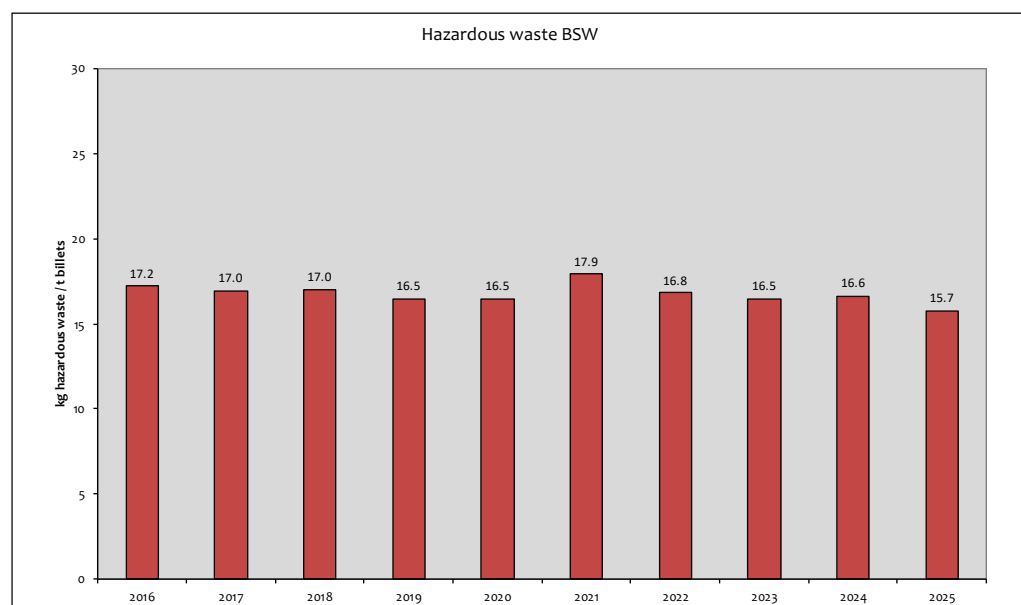
Industrial waste

Basically mixed waste, foil, wood, paper, plastics and packaging waste accrue at BSW. BSW assigns the required waste disposal only to specialized waste management facilities or EMAS certified companies; this is also valid for hazardous waste. Small companies without any certification are audited and verified by us.



Hazardous waste

The above mentioned dusts accruing in the de-dusting system represent the largest part of the hazardous wastes. The other hazardous wastes arising at BSW are mostly non-chlorinated, PCB free hydraulic and machine oils, washing water and old cleaning rags. They are used for material recycling or energy recovery by the waste management enterprises. Small quantities of hazardous waste like for example acids or bases are disposed of.



Waste statistic 2016 - 2025

	Industrial waste (t)
2016	687
2017	574
2018	596
2019	679
2020	692
2021	644
2022	557
2023	557
2024	670
2025	604

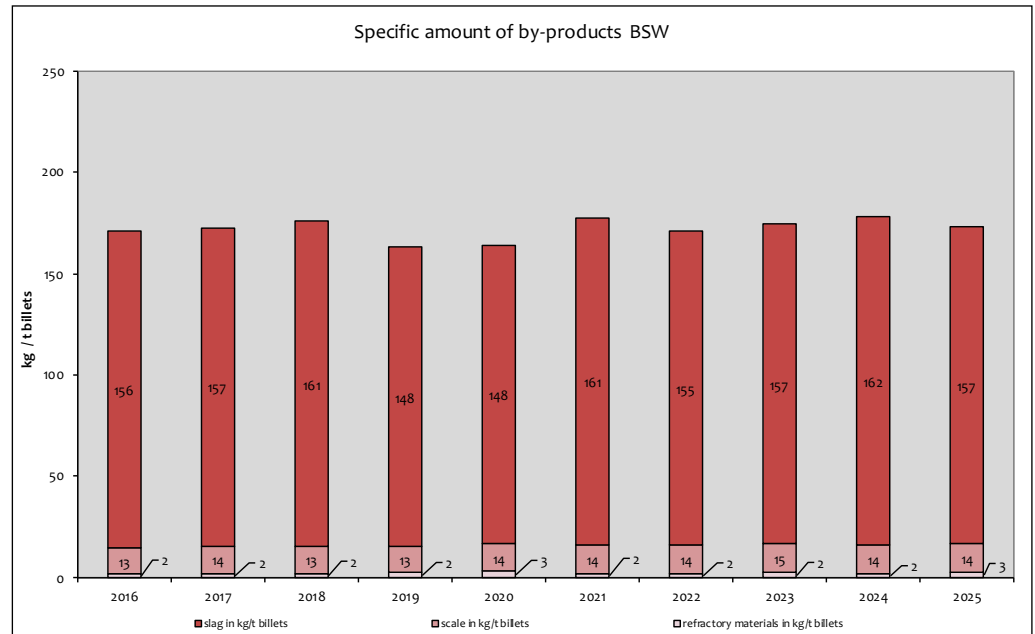
	Hazardous waste (t)*
2016	40,818
2017	37,991
2018	36,211
2019	32,807
2020	35,395
2021	37,721
2022	31,562
2023	23,201
2024	33,533
2025	31,562

* The largest percentage is filter dust (ASN 100207*, recycling of Zinc)

Filter dust and steel plant production are in direct causal dependence on each other.

By-Products

BSW has developed certain procedures and quality requirements and has thus created the possibility to market some by-products. Those by-products are slags, scale and refractory materials. The specific electric arc furnace slag amount depends on the available scrap quality and climatic influences and is thus subject to fluctuations.



5.3.5 Emissions

Dioxin and furan emissions

The 2013 BREF document already cites the BSW as a benchmark for the for state-of-the art technology (BREF = Best Available Techniques Reference Document on the Production of Iron and Steel).

The development and installation of technology that significantly reduces the generation of dioxins and furans during scrap melting is one of BSW's prime achievements.

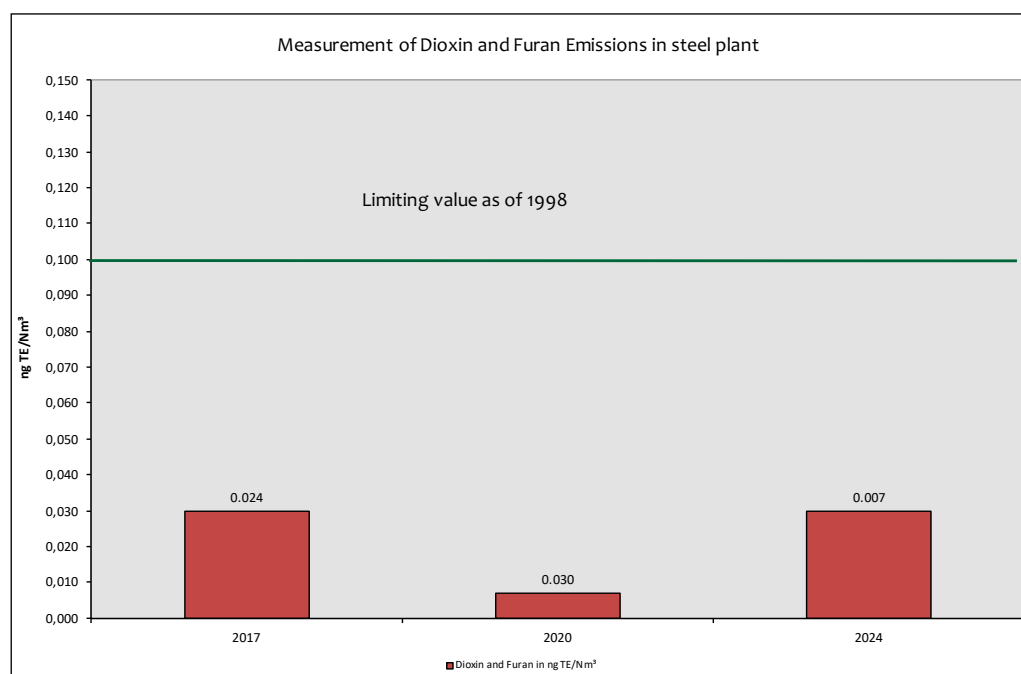
During the melt down process in the electric arc furnace, gases and dust containing dioxins are generated. Dioxins and furans disintegrate at temperatures of more than 700 °C. As the melt has a temperature of more than 1,600 °C all dioxins and furans have disintegrated. In order to avoid regeneration during normal cooling down (de novo synthesis) the off-gases are shock-cooled by quenching.

A major problem with dust removing plants is burn holes in filter bags. BSW has taken threefold precautions to ensure that its dust collecting facility operates safely and effectively:

1. The gas is moist after being quenched with a mixture of air and water, so sparks rarely fly right up to the filter bags.
2. The filter tubes are made of spark-restraining material, thus avoiding or at least reducing the risk of burn holes caused by sparks.
3. The dust removing plant is continuously monitored so any problems, even smallest holes in a filter bag, are immediately detected and the filter section affected is closed off. This does not adversely impact the plant's dust extraction performance because the system has around 15 % surplus capacity (a filter section corresponds to about 3 % of the area).

In the field of electric steel plants BSW complies with the „Best Available Techniques (BAT)“ and is mentioned several times in the so-called BREF-Papers Best Available Techniques (BAT) Reference Document for Iron and Steel Production (Status 2013). In other words we have our processes under control and produce steel with a minimum of emissions, especially dioxins.

The following graphic illustrates the success of our efforts:



Explanations

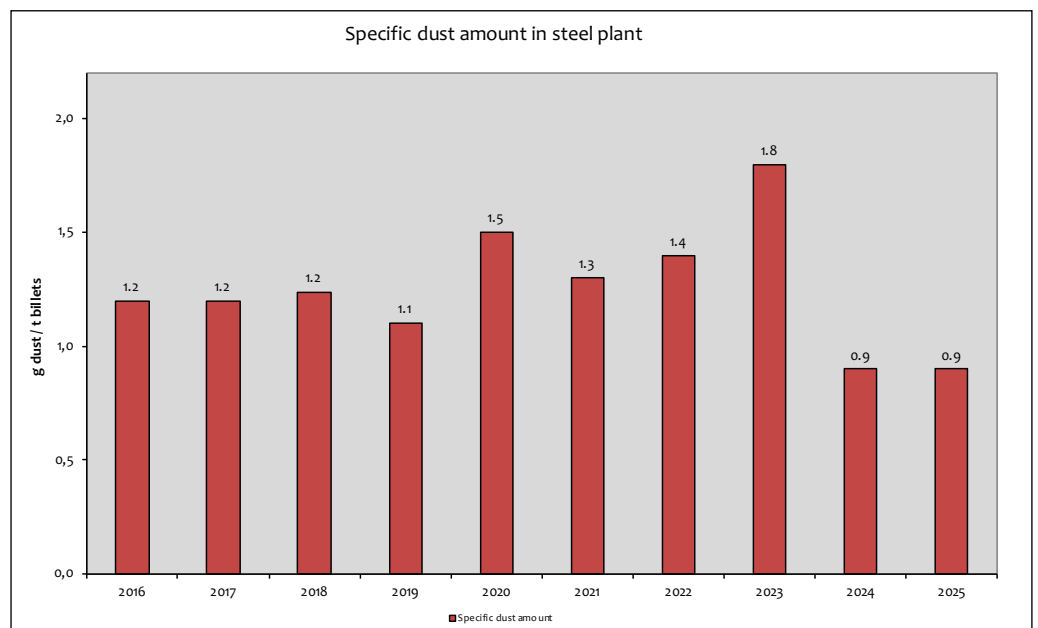
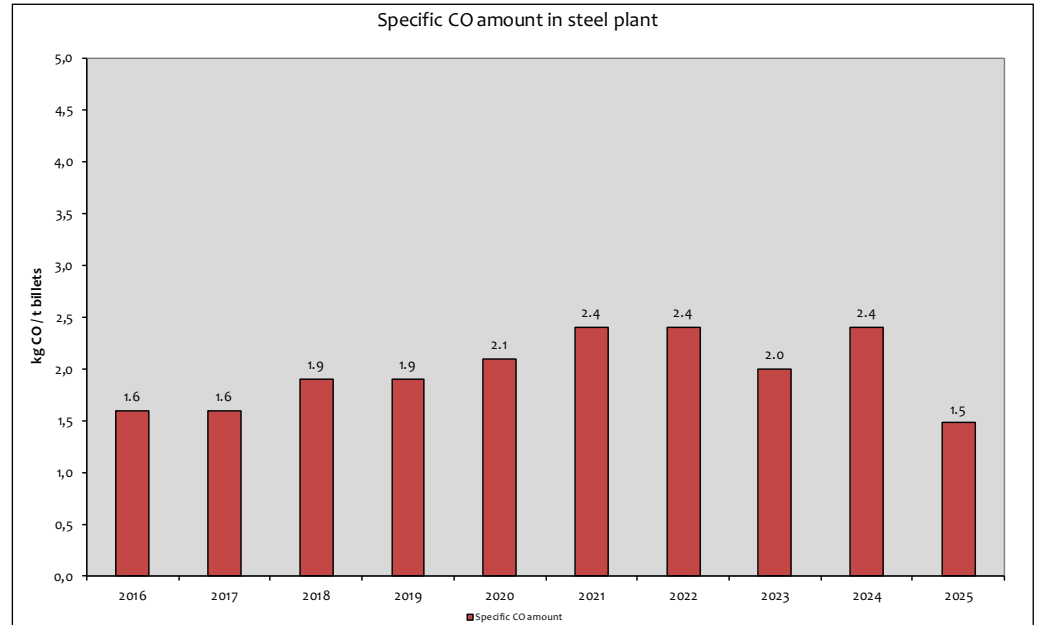
ng: nanogram: 1 ng = 10⁻⁹ g corresponds to one billionth of a gram

TE: Toxicity equivalents: all dioxins and furans are valued with factors ranging from 0.001 to 1, depending on their toxicity, and are represented as a sum

Nm³: Standard cubic meter: to be able to compare gas volumes they are represented in a standard state (0 °C and 1.013 bar)

Carbon monoxide and dust emission in the steel plant

The limit value for carbon monoxide in the steel plant is 600 mg/standard cubic meter, which we undercut by about 50 %. The limit value for dust emissions in the steel plant is 4 mg/standard cubic meter, and we have been well below 1 mg/standard cubic meter for years. The specific values fluctuate depending on production.

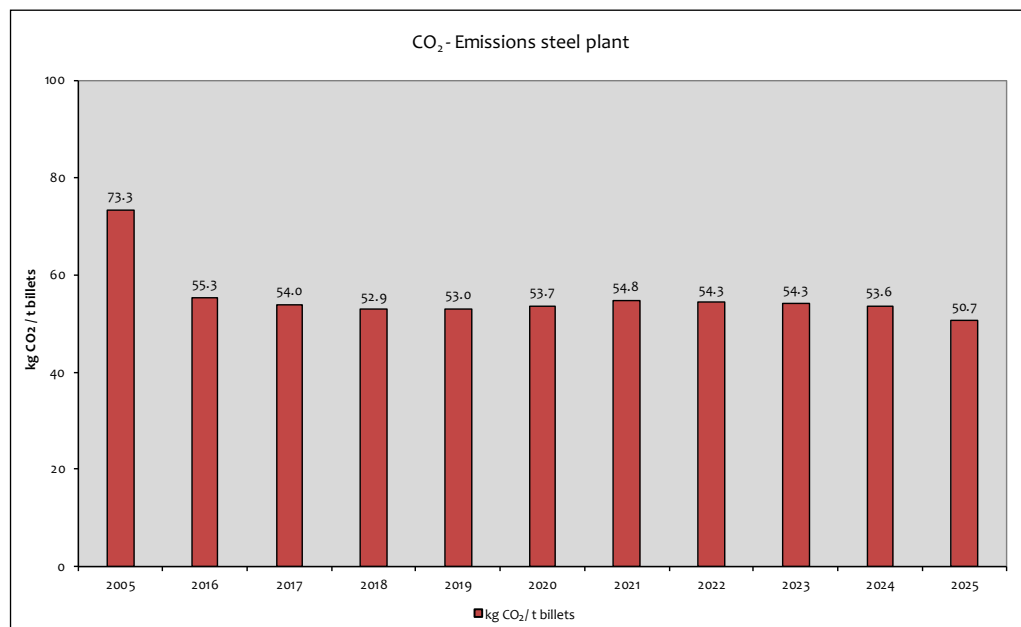


Emissions as per the greenhouse gas emission trading act

BSW is liable to emission trading. The CO₂ emissions are calculated on the basis of a balancing of the in- and output of carbonic materials, i.e. only directly generated emissions (electric current is not considered in this context).

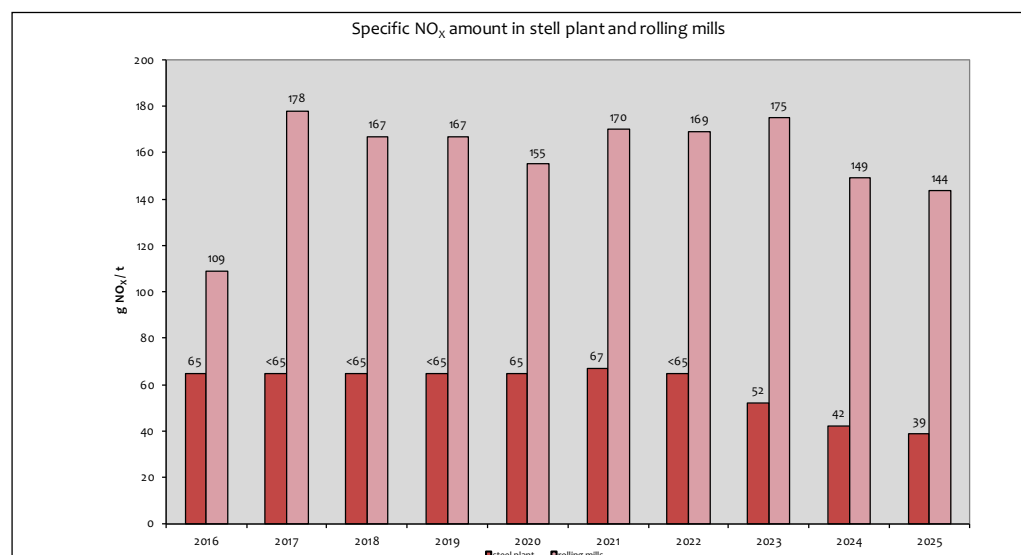
In the first trading period of the emission trading system (CO₂ trading) from 2005 to 2007 BSW in Kehl was defined as a benchmark for electric steel plants, i.e. we have the lowest CO₂ emission for comparable plants. This was approved by an independent expert and was also verified in the third trading period by Société Générale de Surveillance Holding Deutschland GmbH (SGS), a subsidiary of the German TÜV on behalf of EUROFER (trade association of the European iron and steel industry).

This means that even in the third trading period BSW describes the benchmark of electric steel plants. Since 2013, the rolling mill also participates in the emission trading. In the rolling mill the CO₂ emissions are exclusively produced by combustion of natural gas in the pusher furnace. We are currently in the 4th trading period.



NO_x-Emissions from pusher-type furnaces and steel plant

NO_x emissions occur during steel production and pusher furnace firing in the rolling mill.



In the steel plant, the determination limit of the NO_x concentration is 0.01 g/Nm₃ (limit value 0.05 g/Nm₃). The values measured in 2017-2019 and in 2022 were below the determination limit, and therefore the specific values are given there as < 65 g NO_x/t. In the rolling mills (pusher furnaces 1 and 2), we are about two and three times below the prescribed limit values (limit value 400 mg/Nm₃). Pusher furnace 1 is measured every three years (measuring point according to § 29 BImSchG), pusher furnace 2 is measured continuously.

Pusher-type furnaces at the rolling mill

Two pusher-type furnaces - one in each rolling mill - reheat the billets produced in the meltshop and continuous casting plant to the required rolling temperature of approximately 1,150 °C. The natural gas serves as fuel.

The waste gases generated during pusher-type furnace operation are evacuated through recuperators to preheat the combustion air and thus save energy. BSW makes a special effort to charge billets into the pusher furnaces at a temperature as high as possible to minimize fuel consumption. At pusher furnace 2, nitrogen oxides (NO_x) are measured continuously and the parameters dust and carbon monoxide are measured every 3 years by an accredited measuring institute. At pusher furnace 1, nitrogen oxides (NO_x), dust and carbon monoxide are measured every three years by an accredited measuring institute.

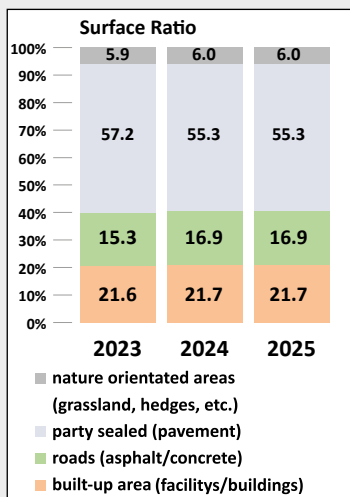
5.3.6 Biological Diversity

Biological diversity includes the variety of ecosystems, of species, as well as the genetic variety within the species. Biological diversity is the basis of our existence. The listed core indicator is intended to serve a company as a starting point for dealing with the issue of biodiversity, to define appropriate measures out of it and to close the knowledge gaps existing in the first step. The next step is to use the information obtained to formulate appropriate measures and objectives.

In 2021 already, a pilot project for the redesign of a certain area was carried out. Further measures, such as the installation of insect hotels and bird boxes, have been carried out. Further projects relating to biodiversity will be implemented in the future.

5.4 Noise

Since many years we have been devoting special attention to noise protection and have achieved an important reduction of noise pollution by taking extensive measures: completion of noise barrier in 1983, noise barriers scrap and billet yards in 1990, noise barrier at the front of the steel plant building in 1992, noise barrier rolling mill wall in 1993, noise protection at furnace and casting bay in 2002 and noise protection park in 2014. Besides that many small-scale measures are implemented continuously, in order to improve the noise protection. In the legal immission protection license of 2009 we have obtained approval for noise emission standards (please see the following table).



This means that the noise emitted at the measuring points of our plant must not exceed the mentioned values.

A digital display shows him his current operation mode, thus allowing him to take immediate action. Furthermore the values are recorded and can also serve as evidence (in case of complaints). For residents BSW has installed a telephone where messages are regularly picked up every working day

BSW is aiming at threshold values which are below the maximum permissible values. In order to reliably comply with these threshold values, any exceedance, measured during the night at the measuring point in Auenheim (a) is recorded in a protocol. Thanks to the parallel measurements at the scrap yard and the cranes (b), the reason for the exceedance of the threshold values can be determined by calculation. For continuous improvement these protocols are subject in the daily morning meeting of the steel plant.



With respect to our permission we repeat the measurement every three years, in order to prove the compliance with the immission values at all of our officially required measuring points and the effectiveness of our noise protection measures. Thus, for instance, in 2024 we measured the noise immission for a period of one month during day and night.

When constructing new facilities noise protection is already considered accordingly in the planning phase, thus achieving continuous improvement. An example of forward-looking noise protection is the rolling mill 2, which expanded in 2013/2014. With the overall expansion, a reduction in noise emissions in this area could be achieved. In 2024, all noise emission limits were met.

The noise measurement in 2024 confirmed the safe compliance of BSW with the noise immission values. Despite the results, the plant of Badische Stahlwerke will always be audible in Auenheim. In 2022, additional measurements were carried out with an acoustic camera in order to identify any weak points in the sound insulation of the steelworks building.

In 2024, the noise register was updated.

6. Environmental and energy management system

Objectives of environmental and energy management system

The environmental management system introduced in 1997 shall help to lead the employees' efforts for the environmental protection to a success and enhance the continuous improvement of the internal environmental protection. The responsibilities and the ways of written reporting are fixed. The environmental management system is geared to the existing systems EMAS III (modifications in 2017 and 2018) and DIN EN ISO 14001:2015. The energy management system as per DIN EN ISO 50001:2018 was integrated in the existing environmental management system with the objective to produce steel in an energy-efficient way, to minimize greenhouse gas emissions and to reduce energy costs.

Organization of internal environmental protection

The managing director and the Operation Managers are responsible for environmental protection and energy management at BSW. The company management provides the resources required for establishing, implementation, maintenance and improvement of the environmental and energy management.

The resources include the assignment of qualified employees and the provision of financial means. The company management determines the environmental and energy policies and checks them for their realization. An environmental management officer and an energy management officer have been appointed for the realization and maintenance of the environmental and energy management system. The operation managers are responsible for environment- and energy-relevant issues in their plant.

The tasks of the Authorized Representatives (e.g. waste, immission protection, water protection) depend on the legal requirements.

Due to internal environmental auditing we ensure an enhancement of the environmental performance. Similarly, we are evaluating continuously our energetic performance to increase the efficiency as our target.

We respond to emergencies in accordance with the context of our emergency management system and take preventive measures in advance to avoid them.

7. Objectives, individual targets and program



The objectives related to environment and energy are in compliance with the environmental and energy policy, take into account legal and other requirements and are also measurable as far as practicable. Objectives must not lead to any environmental pollution or deterioration of the energy situation. The realization of the environmental and energy objectives also incorporates the technical possibilities, the financial, operational and business requirements as well as the points of view of other interest groups.

The objectives are mainly based on

- o Legal requirements
- o Analysis of third-party requirements and expectations
- o Annual auditing of the management system
- o Result of the management review
- o Site inspections
- o Environmental and energy audits
- o Evaluation of environmentally and energy relevant data
- o Need for action due to environmental and energy aspects
- o Proposals for improvement by employees

The total of all objectives make up the environmental and energy program.

The management of the company is responsible for the check-up and the adjustment of the environmental and energy objectives. The current objectives and the respective program are printed in the Environmental Declaration. The financial means and the time frame are fixed by the company management.

The improvement measures are completed with responsibilities and dates and integrated in the environmental and energy program. The figures stated in the Environmental Declaration show that we already have a very high environmental standard. Now we have set new objectives which will have to be put into effect.

The following targets and programmes are planned for the next validation phase from 2024 to 2027

Topic	Description	Measure	Dead-line	Status
Electricity	Purchase of a new compressor in the compressed air station.	A compressor in the compressed air station is to be replaced with a more efficient model.	2024/2025	This will save up to 62,000 kWh per year.
Electricity	Optimisation of lighting.	In various areas, the lighting is to be converted from HQL lights to LED.	2024	This will save 98,618 kWh per year.
Gas/CO ₂	Modernisation of ladle fires	Ladle fires have been adapted to the latest state of the art	2024	Implemented. This will save up to 860,000 kWh per year.
Environment	De-dusting system grinding machine	Optimization of filter system and extraction.	2024	Implemented.
Electricity/gas	Inspection camera furnace 1.	A camera for automated monitoring of the furnace.	2024	Implemented. Saving of wasting time: up to 10 seconds/heat.
Waste	Cleaning rag leasing.	Multiple use of cleaning rags instead of disposal. Pilot project planned in a selected area.	2024	Up to 8 tonnes/year of oil-contaminated operating material can be saved.
CO ₂	Certificates of origin for renewable energies.	Certificates of origin for approx. 7,400 MWh of renewable energies are purchased.	2024	Savings of approx. 5,000 tonnes of CO ₂ in electricity generation.
CO ₂	Bicycle leasing for employees	Bicycle leasing via leasing partner	2024	Implemented, non-quantifiable
Electricity	Compressed air leakage	The compressed air network is regularly checked for leaks	2025	Permanent monitoring
Electricity	Optimisation of lighting	In various areas the lighting is to be converted from HQL lights to LED	2025	Implemented. This will save 5,950 kWh per year.
Electricity/Gas	Software for energy recording	A new software for the survey and control of energy flow	2025	Completed
CO ₂	Feasibility study for wind power	Study on the construction and use of wind turbines in the port of Kehl	2025	Started
Sustainability	Sustainability management	A working group is formed to implement the CSRD guidelines	2025	Implemented
Paper	Reduction of environmental declaration in printed format	The number of printed environmental declaration brochures is reduced	2025	Implemented. This will save approx. 70 kg of paper per year.
CO ₂	Green energy	Purchase of PPA for a pv-park with 5 MW in order to increase the proportion of green electricity	2025	Implemented 43,800 MWh of green electricity was used
CO ₂	Use of bio-carbon (pilot project)	Part of the carbon used in process is replaced by bio-carbon	2025	This pilot project has saved approximately 39 tonnes of CO ₂
Electricity/Gas	Inspection camera furnace 2	A camera for automated monitoring of the furnace	2025	Implemented. Saving of waiting time up to 10 seconds/heat.
Electricity/Gas	Increase in Coil Weight	By optimizing the process and modifying the shear, the amount of head and tail scrap is reduced.	2025	Implemented. The improved yield results in annual savings of approximately 4,200,000 kWh of electricity and 1,800,000 kWh of natural gas.

Topic	Description	Measure	Deadline	Status
CO ₂	Renewable energies.	An energy band for 10 MW of renewable energy is purchased.	2026	An additional 87,604 MWh of green electricity is to be used
Gas	Optimisation of the rolling cycle	Longer rolling times result in more stable production with fewer disruptions and less downtime	2026	The aim is to save up to 24,200,000 kWh of gas per year
Electricity/ Gas	Optimisation of the rolling cycle	Entry bundles are checked for further use.	2026	By reusing approximately 1,890 tonnes of finished product, up to 973,350 kWh of electricity and 413,910 kWh of gas can be saved.
Electricity	Various improvements to the lighting	In various areas, the lighting is being converted from HQL luminaires to LEDs.	2026	Implementation phase
Diesel	Upgrading of warehouse 3	In Warehouse 3, the transport routes and process flows are to be optimised.	2026	Planning phase. The aim is to save up to 2,800 litres of Diesel
Noise	Noise study on potential improvements to the cooling towers	A study is to be carried out to reduce noise emissions from the cooling towers operated for water management purposes	2026	Planning phase. The findings regarding a potential reduction in noise levels in Auenheim are expected to be available later this year
Heat	Heat recovery and extraction with the aim to utilise 70 GWh of heat per year. This should save up to 20,000 tonnes of CO ₂ .	The waste heat from the steelworks is to be decoupled and fed into a district heating network. Phases from 2023 to 2025: Planning, engineering and preparatory work (including foundations for the heating plant). In 2025 and 2026: Development of a final concept that is technically and economically viable, which will form the basis for the heat supply contract	2029/ 2030	Necessary planning steps initiated by CKS; route for heat pipeline agreed between CKS and harbour authority. The necessary authorisations can now be applied for and the contracts with BSW can be drawn up. Due to the changed framework conditions, the financing of the overall project has become difficult.

GÜLTIGKEITS-
ERKLÄRUNG

validiert durch

MÜLLER-BBM
CERT GMBH



**ERKLÄRUNG DES UMWELTGUTACHTERS
ZU DEN BEGUTACHTUNGS- UND VALIDIERUNGSTÄTIGKEITEN**



BSW – Badische Stahlwerke GmbH
Graudenzner Straße 45
77649 Kehl

Der Unterzeichnende, Dr. Stefan Bräker, EMAS-Umweltgutachter mit der Registrierungsnummer DE-V-0272, akkreditiert oder zugelassen für den Bereich NACE-Code 24.1, NACE-Code 24.3 Herstellung von Stahl aus Schrott und die Weiterverarbeitung zu Stahlstab und Draht bestätigt, begutachtet zu haben, ob der Standort, wie in der Umwelterklärung 2026 mit der Registrierungsnummer DE-126-00007 angegeben, alle Anforderungen der Verordnung (EG) Nr. 1221/2009 des Europäischen Parlaments und des Rates vom 25. November 2009 über die freiwillige Teilnahme von Organisationen an einem Gemeinschaftssystem für Umweltmanagement und Umweltbetriebsprüfung (EMAS) i.d.F. VO EU 2017/1505 erfüllt.

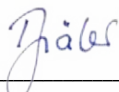
Mit der Unterzeichnung dieser Erklärung wird bestätigt, dass

- die Begutachtung und Validierung in voller Übereinstimmung mit den Anforderungen der Verordnung (EG) Nr. 1221/2009 i.d.F. VO EU 2017/1505 und VO EU 2018/2026 durchgeführt wurden,
- das Ergebnis der Begutachtung und Validierung bestätigt, dass keine Belege für die Nichteinhaltung der geltenden Umweltvorschriften vorliegen,
- die Daten und Angaben der Umwelterklärung des Standorts ein verlässliches, glaubhaftes und wahrheitsgetreues Bild sämtlicher Tätigkeiten des Standorts innerhalb des in der Umwelterklärung angegebenen Bereichs geben.

Diese Erklärung kann nicht mit einer EMAS-Registrierung gleichgesetzt werden. Die EMAS-Registrierung kann nur durch eine zuständige Stelle gemäß der Verordnung (EG) Nr. 1221/2009 in der Fassung EU-VO 2017/1505 sowie EU-VO 2018/2026 erfolgen. Diese Erklärung darf nicht als eigenständige Erklärung für die Unterrichtung der Öffentlichkeit verwendet werden.

Kerpen, den 26.05.2026

Müller-BBM Cert
Umweltgutachter GmbH
Heinrich-Hertz-Straße 13
50170 Kerpen
Tel. +49 2273 566 79 - 0
Mail info@mbbm-cert.com
www.muellerbbm-cert.de



Dr. rer. nat. Stefan Bräker
zugelassener Umweltgutachter
DE-V-0272

URKUNDE



Badische Stahlwerke GmbH

Graudenzner Straße 45

77694 Kehl

Registrierungsnummer: DE-126-00007

Ersteintragung am 08. Mai 1997

Diese Urkunde ist gültig bis 31. Mai 2027

Diese Organisation wendet zur kontinuierlichen Verbesserung der Umwelleistung ein Umweltmanagementsystem nach der Verordnung (EG) Nr. 1221/2009 und EN ISO 14001:2015 (Abschnitt 4 bis 10) an, veröffentlicht regelmäßig eine Umwelterklärung, lässt das Umweltmanagementsystem und die Umwelterklärung von einem zugelassenen, unabhängigen Umweltgutachter begutachten, ist eingetragen im EMAS-Register (www.emas-register.de) und deshalb berechtigt das EMAS-Logo zu verwenden.



Freiburg, den 23. Mai 2024



Dr. Dieter Salomon
Hauptgeschäftsführer

9. Sustainability management

According to the „Duden“ (German dictionary) the ecological significance of the word sustainability is described as a principle saying that the quantity consumed must not exceed the quantity which can be renewed, regenerated or provided again in future.

BSW has two systems for this, the „WIN-Charta“ and „SustSteel“. The „WIN-Charta“ is applied in Baden-Württemberg and mainly is supposed to take effect within the region. In Europe the system applied in the steel branch is „SustSteel“ (seal of approval for sustainable steel). This is meant for example to respect and strengthen the good working conditions and environmental performances in Europe.

9.1 SustSteel



For EUROFER (European steel union) the subject of sustainability is an important part of the development and a future „label“ for steel. In Europe, tendering and contracting will be subject to sustainability requirements in regard to the quality of the produced steel. This will be realized by awarding a seal of quality for sustainable steel (SustSteel) by means of a certification. BSW has successfully finished the first certification in 2014 and confirmed successfully in 2019. This certification also comprised subjects coming from the economical, ecological and social ranges.



Bureau Veritas Certification

Certification

Awarded to

BADISCHE STAHLWERKE GMBH

GRAUDENZER STRAÙE, 45 - D 77694 - KEHL - BADEN-WÜRTTEMBERG - GERMANY

Bureau Veritas Certification certifies that the Sustainability Management and KPIs System have been audited and found in accordance with SustSteel Regulations and its requirements

STANDARD / REGULATIONS*



**SUSTAINABILITY
FOR STEEL CONSTRUCTION PRODUCTS MARK**

Scope of Certification:

HOT ROLLED STEEL PRODUCTION.

NUMBER OF OVENS: 2 / NUMBER OF ROLLING MILLS: 2

Certificate Number:	ES150037 - 1
Original Approval Date:	24-10-2014
Effective Date:	24-10-2024
Certificate Expiration Date:	23-10-2029

This certificate is valid, subject to the genera and specific terms and conditions of certification services.

*Sustainability for Steel Construction Products Mark — General Regulations; Specific Regulations for Requesting and Verification; Technical Requirements of the Sustainability Management System; Definition of the KPI System.



Bureau Veritas Iberia S.L.
C/ Valportillo Primera 22-24, 28108 Alcobendas - Madrid, España
1/1

55 years BSW - 550 trees for the native forest: Badische Stahlwerke plant 550 trees in Rheinau



Our people stand for success.

Impressum

Published by:

Badische Stahlwerke GmbH

Contacts, text and graphics:

Dipl.-Ing. Torsten Doninger

Dipl.-Ing. Oliver Petrovic

B.Sc. Tobias Feucht



Printed by:

Roland Felder Offsetdruck GmbH, Rheinau-Honau

Printed on Circlesilk Premium White, 100 % recycled paper.