



WATER MANAGEMENT
PROCESS-DRIVEN SOLUTIONS FOR
THE IRON AND STEEL INDUSTRY FOR
METALLURGICAL PLANTS

WATER MANAGEMENT ECOLOGICALLY AND ECONOMICALLY EFFICIENT

THE CHALLENGE

Stricter environmental protection requirements are not only embodied in the general legal framework, but also reflect ever stronger pressure by society in general. However, there are also economic factors in favor of efficient water management. For this reason, flowthrough systems are relicts of the past which need to be replaced by modern, economical and ecological water recirculation systems in order to meet present and future requirements.

Different regional requirements in terms of both legislation and climate play a role here, as does the perfect integration of water management in the entire process at production plants in the iron and steel industry.

OUR SOLUTION

As part of our Primetals Technologies "Balance of Plant" portfolio, we are a total solutions provider as well as a supplier of individual products and services, and can boast decades of experience in the iron and steel sectors. Backed by our unique knowledge about integration of water management systems in the overall process technology, we offer customized and efficient water recycling systems. With our knowledge of regional environmental legislation and climatic requirements and based on our global presence, we can guarantee an optimized process. Our customers also benefit from our extensive consulting expertise throughout the lifecycle, including modernization measures and automation solutions.



GOOD REASONS FOR PRIMETALS TECHNOLOGIES WATER MANAGEMENT

- All systems are optimally integrated into production plants
- Higher plant availability of process plants
- Single-source responsibility for the entire metallurgical process
- High degree of expertise in consulting, planning and implementation
- Customized solutions through global knowledge of general legal frameworks, climatic requirements and close cooperation with the process suppliers
- Compliance with all environment-relevant requirements is guaranteed
- Total solution provider as well as a supplier of individual products and components

RELIABILITY THROUGH IN-DEPTH KNOWLEDGE

UNIQUE EXPERTISE IN WATER

Essentially there are three basic factors crucial for guaranteeing efficient water management:

- makeup water quality
- climatic conditions and
- legal regulations.

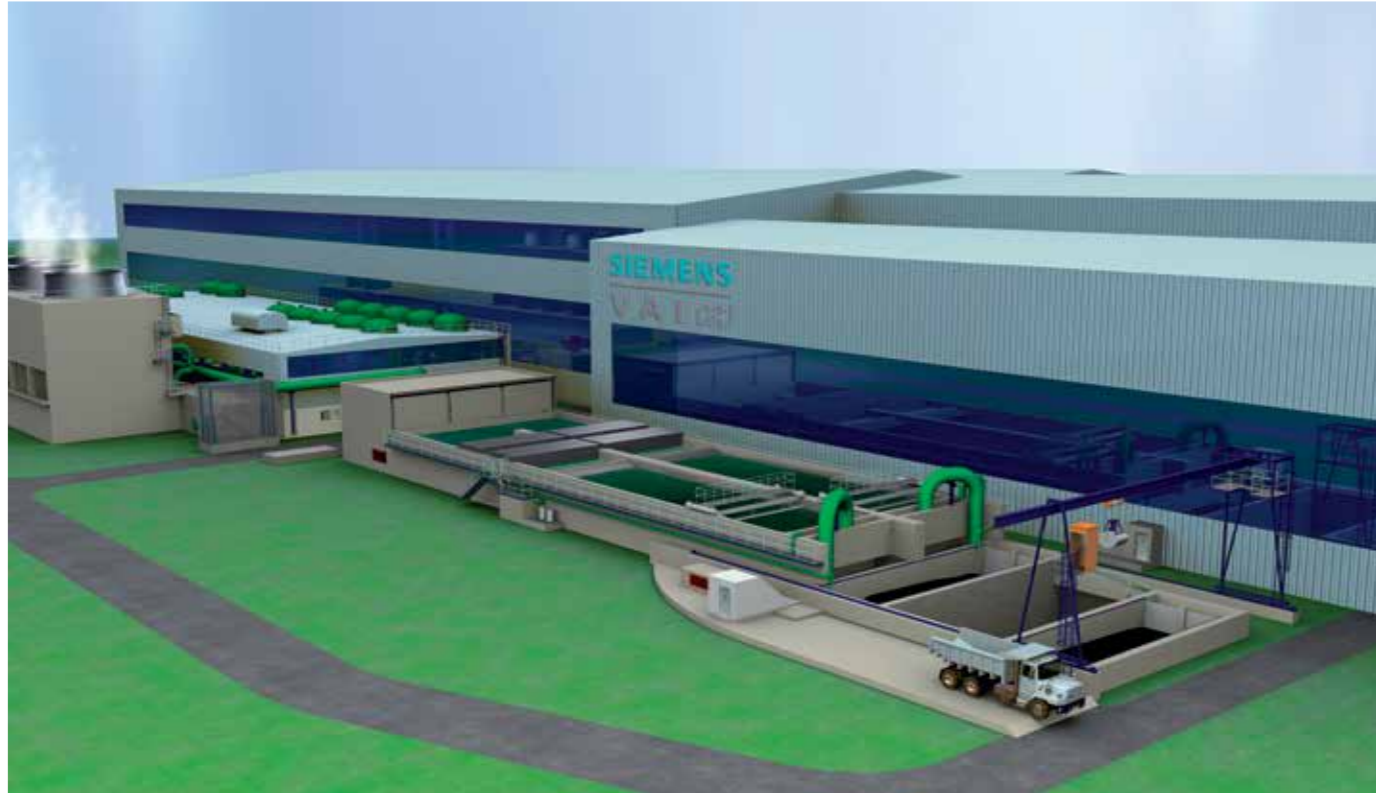
Apart from these factors, which vary from region to region, experience and process know-how naturally also play a key role in project execution.

Our close cooperation with the steel industry, combined with our inhouse process capability in the improvement and further development of process technologies, is an essential basis that makes it possible to develop innovative and customized solutions. This is the real strength of Primetals Technologies Water Management. Our in-depth knowledge in all these areas allows us to provide advanced consulting in order to achieve an optimum result. Our expertise in water management guarantees optimized processes.



EXPERTISE IN WATER MANAGEMENT

SINGLE-SOURCE RESPONSIBILITY FOR THE ENTIRE METALLURGICAL PROCESS PATH



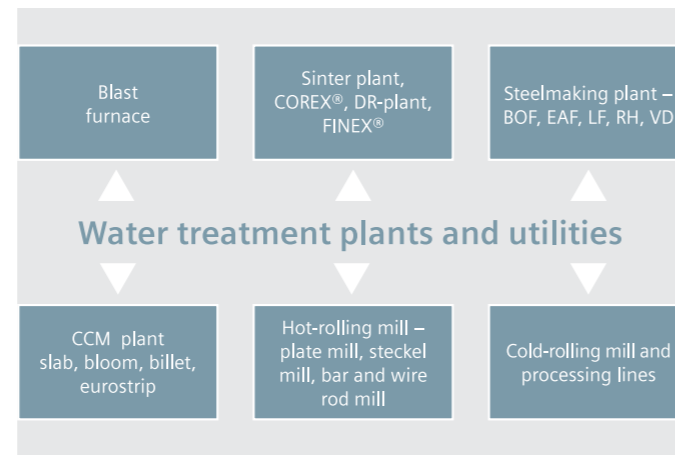
Water treatment, Mittal Steel, Krakow, Poland

TANGIBLE CUSTOMER BENEFITS

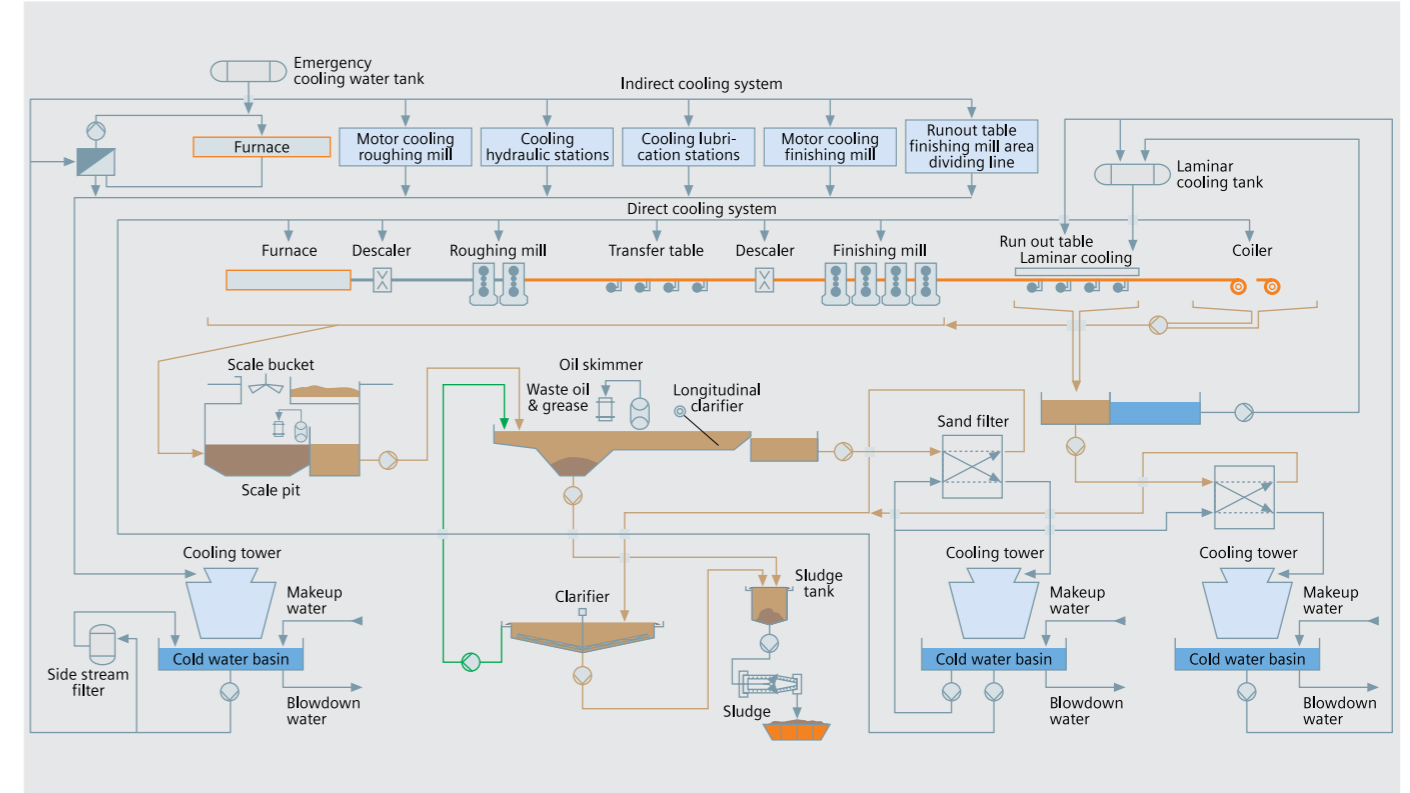
Customers can count on our expertise throughout the entire metallurgical process. With our own water treatment and utility department for the design of water treatment plants, Primetals Technologies offers specialized solutions for the iron and steel industry which are perfectly integrated into the entire process. Our close cooperation with Primetals Technologies process experts ensures high plant performance.

With our knowledge of water management as well as our unique expertise in all processes in the iron and steel industry, we can offer our customers optimized solutions tailored to their specific requirements that provide ecological and economic benefits. This is how Primetals Technologies meets individual needs and requirements for plant improvements and identifies potential for saving costs.

SINGLE SOURCE SOLUTIONS FOR THE ENTIRE METALLURGICAL PROCESS ROUTE ...



Water treatment plant & utilities - our business



Flow sheet hot-rolling mill

... SATISFACTORILY IMPLEMENTED IN MORE THAN 100 REFERENCES IN OVER 30 COUNTRIES WORLDWIDE.



Blast furnaces



Reduction plants



Steel plants



Continuous casting plants



Rolling mills



Mini mills

OPTIMIZED LAYOUT DESIGN

HIGHER PERFORMANCE THROUGH CUSTOMIZED SOLUTIONS



Competence from the very beginning

DESIGNED WITH FORESIGHT

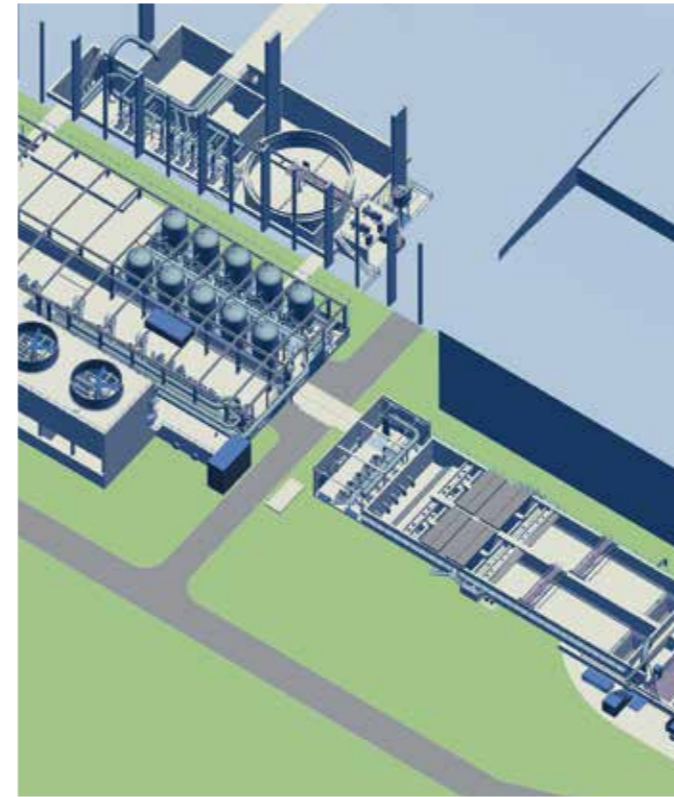
With Primetals Technologies at your side, an individual and specific layout design is guaranteed. Thanks to our 50 years of experience in the planning of brown or greenfield projects, we are in the position to provide customized as well as one-off solutions, including all design aspects, the planning of water treatment systems and the integration of utility systems such as compressor stations, oxygen plants and pressure reducing stations as well as interconnecting piping and distribution systems.

HIGH FLEXIBILITY

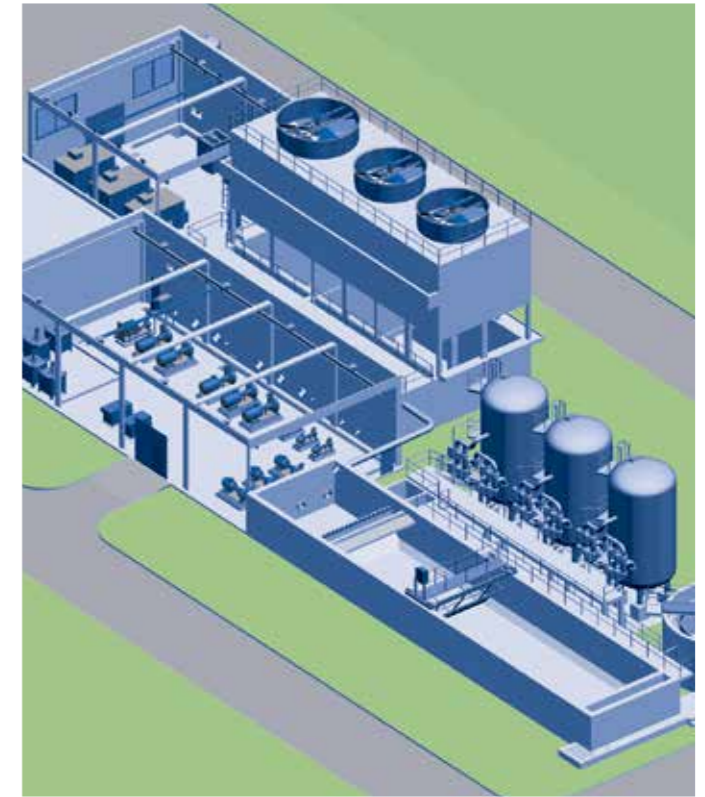
Our customers can rely on a high degree of flexibility during the entire planning period and beyond. Flexibility means that we install the optimal design solution into your plant. Our expertise invariably guarantees the most efficient solution, no matter whether the water systems are to be integrated into an existing plant or a new plant is to be constructed.

HIGH SAVINGS POTENTIAL

Primetals Technologies offers tailored layout plans and engineering services for the complete water management in the iron and steel industry. Our know-how and expertise with the complete metallurgical process ensure our customers minimum production losses, reduced maintenance costs and optimum support throughout the entire planning and construction phase and the plant's lifecycle.



Typical layout design of water treatment for a hot strip mill



Typical layout design of water treatment for a mini mill

... SATISFACTORILY IMPLEMENTED IN MORE THAN 100 REFERENCES IN OVER 30 COUNTRIES WORLDWIDE.



RH plant, CST, Vittoria, Brazil



Bar mill, USIC, Bahrain



Steel plant, Krakatau, Cilegon, Indonesia



Water treatment, Posco, Pohang, South Korea

EXPERTISE IN COMPONENTS

SPECIFIC PRODUCTS FOR INDIVIDUAL REQUIREMENTS



Converter steel plant, Cosipa, Cubatao, Brazil

MEETING SPECIAL DEMANDS

Primetals Technologies is not only a specialist for turnkey projects, but also specializes in single components – ranging from standardized to individual, purpose-built components – to meet the special requirements of plant owners. Naturally, the components installed are designed to operate reliably under the harsh conditions in a metallurgical plant.

A WIDE RANGE OF POSSIBILITIES

The wide range of components includes equipment for compression systems, cooling systems, treatment systems for removal of suspended solids and hydrocarbons, treatment systems for removal of dissolved solids as well as treatment systems with chemicals. And all customized components are synchronized with the production units to ensure that the process runs smoothly.

SUPERIOR PERFORMANCE INCLUDED

In addition to the professional implementation of the components, integrated process automation from Primetals Technologies guarantees optimized processes. Our worldwide knowledge and experience in environmental legislation ensure that Primetals Technologies customers safely comply with all legal regulations. Moreover, our solutions allow for significant water savings and, of course, a general reduction of process costs.



Pump room



High-pressure pumps



Cooling tower



Decanter



Control room



Screw classifier



Heat exchanger



Filter station



Sedimentation basins



Clarifier



Sand filter



Chiller units

VALUE ADDED THROUGH SELECTIVE TREATMENT WATER IS OUR BUSINESS



Filter press

MAKEUP WATER TREATMENT

Makeup water treatment is adjusted to the specific requirements of each plant. All components and systems for filtration, softening, desalination and disinfection are developed to provide makeup water as well as potable water of appropriate quality and quantity for the various users. The systems are individually treated with chemicals in order to achieve optimized process flows.

WASTE WATER TREATMENT

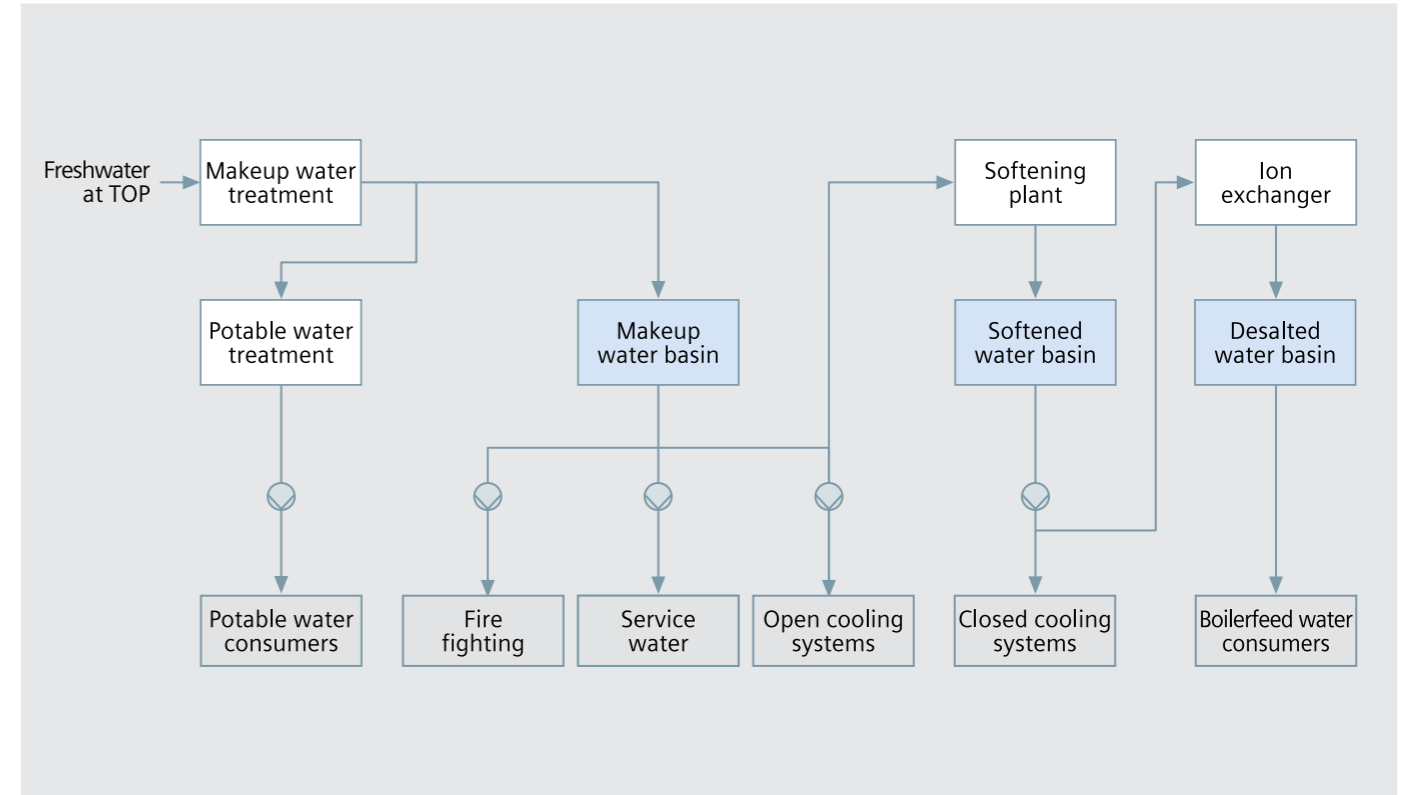
An efficient waste water treatment system is essential for compliance with legal requirements with regards to environmental protection. Suspended and dissolved solids as well as hydrocarbons must be removed in order to keep within the legal limits. Treatment includes all processes for solids and oil removal, precipitation of heavy metals and zero liquid discharge solutions (ZLD). ZLD is a multiply integrated technology which allows the complete re-use of waste water.

SLUDGE TREATMENT

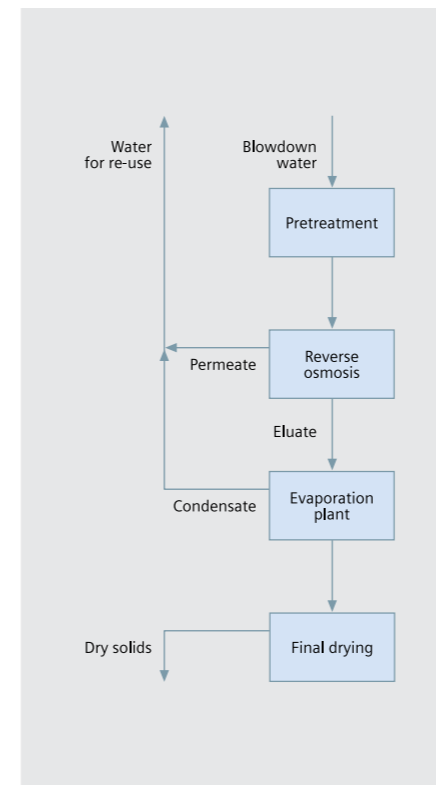
For efficient and environmentally friendly sludge treatment, we offer our customers optimized solutions for handling, dewatering, deoiling and recycling of process sludge. The main components for the sludge treatment process are sludge thickeners, filter presses and centrifuges.



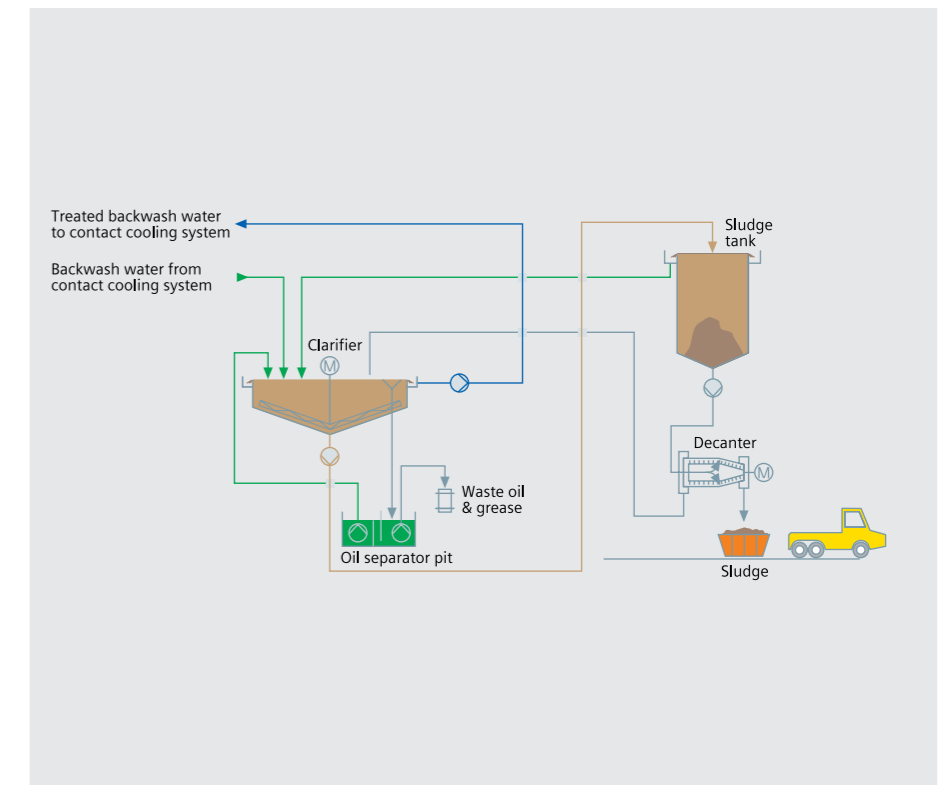
voestalpine, Linz, Austria



Flow sheet sludge treatment



Zero liquid discharge solution



Flow sheet sludge treatment

WE TAKE RESPONSIBILITY THE PARTNER AT YOUR SIDE



CONSULTING AND SERVICE

Our unique service and support are an additional guarantee for the productivity and process reliability of your plant. We support you over the entire lifecycle of your plant with individualized consulting, instruction and training programs. Aftersales service and fast delivery of spare parts round off the list of benefits for customers, ensuring successful allround performance and productivity of your plant.

Our pool of knowledge is the source of our in-depth know-how on every aspect of water, an issue which is playing an increasingly important role. Here our knowledge and expertise result in clear advantages for our customers.



AUTOMATION AND INSTRUMENTATION

Apart from engineering and technological expertise, Primetals Technologies also provides a complete range of automation solutions, ranging from process automation to sophisticated optimization packages and expert systems. From single products to individualized system solutions, we offer a complete range of state-of-the-art process instrumentation. This is your guarantee for high-performance plant operation at low cost.

SAFETY AND ECOLOGY

A reliable and perfectly functioning sequence of processes is based on individualized solutions. Ultramodern technologies from Primetals Technologies not only lay the foundation for optimized productivity, but also guarantee the highest possible level of process safety and ecology, firstly through maximum environmental protection and secondly through the use of next generation technologies that guarantee successful production.



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