

SUCCESS STORY

Dewatering coal tailings
at Ukhaa Khudag coal mine,
Mongolia



SEPARATION EXTREME RELIABILITY

AWARD-WINNING DEWATERING PLANT
FOR COAL TAILINGS
IN THE MONGOLIAN GOBI DESERT

Two men in safety gear are shown in the foreground, looking at a set of plans. The man on the left wears a blue hard hat and safety glasses, while the man on the right wears a white hard hat. They are both wearing high-visibility work jackets. The background shows an industrial facility with various pipes and structures under a clear sky.

ANDRITZ

ENGINEERED SUCCESS

The challenge

Conquer the elements, conserve resources

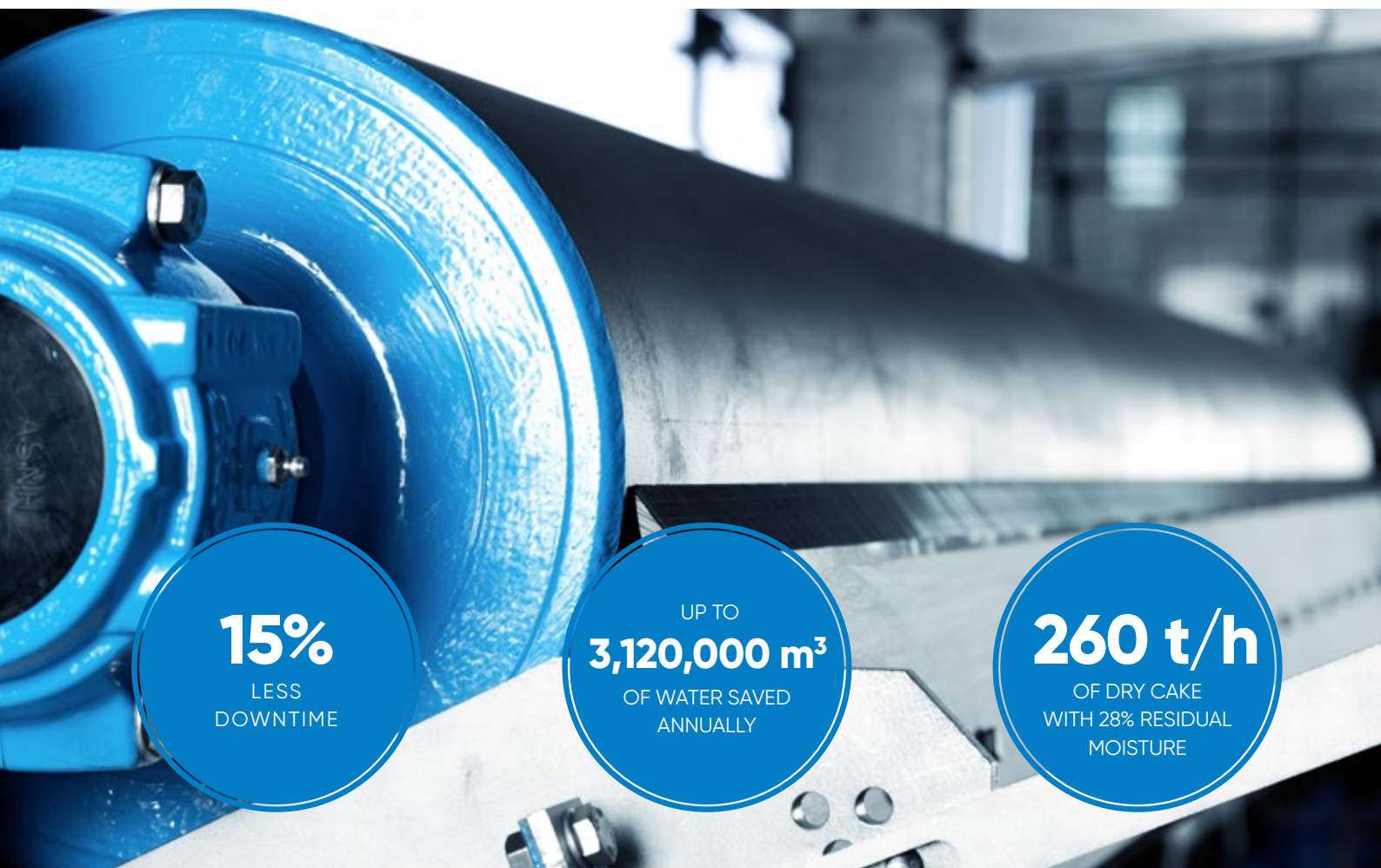
The Ukhaa Khudag coal mine lies in the heart of one of the harshest climate zones on earth: the southern Gobi desert. In the winter, its pipelines and coal tailings dam would freeze. In the summer, much of its water would evaporate. Faced with these extreme conditions, the mine needed the most robust equipment available to separate water from its tailings for reuse in the coal handling process.

To succeed, the customer demanded:

- Tailings dewatering technology with proven reliability in the toughest conditions
- Efficient removal of tailings water for reuse in the coal washing plant

- A trustworthy partner with the capabilities to test and install equipment and train and consult staff in some of the most remote environments and severe weather conditions imaginable

The reference plant in this case was located several thousand miles away in Kuzbas, Russia. It was here that the customer saw a series of ANDRITZ belt presses, still running strong after nearly a decade in operation, with an annual capacity of some 7 million tons. Convinced by the machine's performance, the customer's staff were ready to begin planning for a rapid installation of their own.



15%
LESS
DOWNTIME

UP TO
3,120,000 m³
OF WATER SAVED
ANNUALLY

260 t/h
OF DRY CAKE
WITH 28% RESIDUAL
MOISTURE

ANDRITZ heavy duty belt press



Our solution

A continuously operating and efficient series of large belt presses

Eight ANDRITZ CPF 3000 SMX belt presses, including peripheral equipment from flocculant preparation to belt conveyors, were commissioned to solve the mine's challenges with coal tailings. This choice was motivated in part by the machines' superior performance in water recovery along with their continuous thickening and filtration capabilities, which enable 40% lower CAPEX and 10% lower OPEX costs, compared with conventional technologies. The logistic obstacles to delivery and installation were monumental: paved roads were scarce, safety hazards

nearly constant, and additional supplies sometimes weeks, if not months, away. To fulfill the order according to the customer's fast-tracked schedule, extensive planning and contingency scenarios were put in place. Despite these extreme demands, ANDRITZ was able to execute all deliveries on schedule – from mechanical, electrical, and automation installation to system testing, adjustments, and on-site training. Today, Ukhaa Khudag's tailings dewatering plant is in continuous operation, fully protected from the elements by a compact, weather-proof enclosure.

Results

Better products with far lower water consumption

Thanks to its increased process water recovery, the new plant now achieves water savings of up to 3.12 million cubic meters per year. In a remote desert, this is a critical resource for the mine's coal washing process. The plant has also seen a 15% reduction in downtime, amounting to at least 1,000 additional hours of operation per year. The resulting product, some 260 tons per hour of dry cake with 28% residual moisture, is now sold more profitably to a nearby power plant, where local fuel supplies are relatively scarce.

Ultimately, it all came down to choosing the most economical solution with the best technical performance – an achievement confirmed when the project was awarded the prize for Best Technology of 2013 in the Mining Journal Awards. But only a close customer relationship, backed by our experienced on-site technicians, could make it all possible under such demanding logistical constraints.

“To save and reuse as much water as possible, we needed both the right technology and a close collaboration partner. ANDRITZ gave us both, working as one team with our engineers to install a superior solution on time and on budget.”

BAASANDORJ TSOGOO

Senior Vice President, Energy Resources, Mongolia



WHAT'S YOUR SEPARATION CHALLENGE?

ANDRITZ Separation is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals. As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge. **Ask your separation specialist!**

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