

From **black** coal to **white** tissue

A major coal mining company, Fushun Mining Group, ordered a machine to start producing tissue – a totally new business for them. ANDRITZ delivered a turnkey plant from stock preparation to reel, including automation. Since the tissue business is a new venture for the mining company, support and service were important parts of the delivery.



“We were very satisfied with ANDRITZ’s good cooperation and performance during the project.”
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 General Manager of Hupo Paper



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Han Fang (left) with Michael Pichler, head of ANDRITZ Paper and Nonwovens.



▲ Fushun Mining Group is a state-owned coal and oil shale company with about 40,000 employees engaged in coal mining and shale oil production – and now tissue production.

A chance for new mills

Fushun Mining Group (FMG) is a state-owned coal and oil shale company in China’s Liaoning Province. FMG has nearly 40 companies with about 40,000 employees engaged in coal mining and shale oil production.

The company’s history dates back to the early 1900’s when the South Manchuria Railway Company quickly expanded its system inherited from Russia and developed coal mines at Fushun.

With the demand for tissue products increasing about 10% each year in China, the officials at FMG saw an opportunity. Most of the tissue mills in Northeast China have been decommissioned since they began losing their competitiveness in the late 1990’s due to outdated technology and infrastructure. Now the region is a hot market for papermakers again.

“Since 2009, more than 400 small paper mills have been shut down, or their produc-

tion has been limited, because of energy and environmental issues,” says Han Fang, Vice General Manager of FMG. “There is now a chance for new paper mills which can fulfill modern requirements for economy of scale, energy savings, and environmental safety.”

This is why FMG decided three years ago to step into a totally new business area – tissue production. The 60,000 t/a from the new ANDRITZ machine, which started up at the end of October 2011, is a good beginning for the two million t/a of paper production planned for the future.

The machine supplied by ANDRITZ has a wire width of 5.6 m and a design speed of 2,000 m/min. The furnish is virgin market pulp. Parent rolls from the machine are converted into tissue products at the mill site. A new subsidiary, Hupo Paper Co. Ltd., was established to operate the mill. Hupo Paper now has more than 700 employees.



The PrimeLine™ W8 CrescentFormer machine at Hupo Paper. The 5.6 m wide machine has a PrimeFlow two-layer headbox and a PrimeProFiler F dilution control system. ▼

“For us, the most important factors when selecting a supplier for the stock preparation plant and the machine were the quality of the final product, the operational costs, and the advanced technology,” Han says.

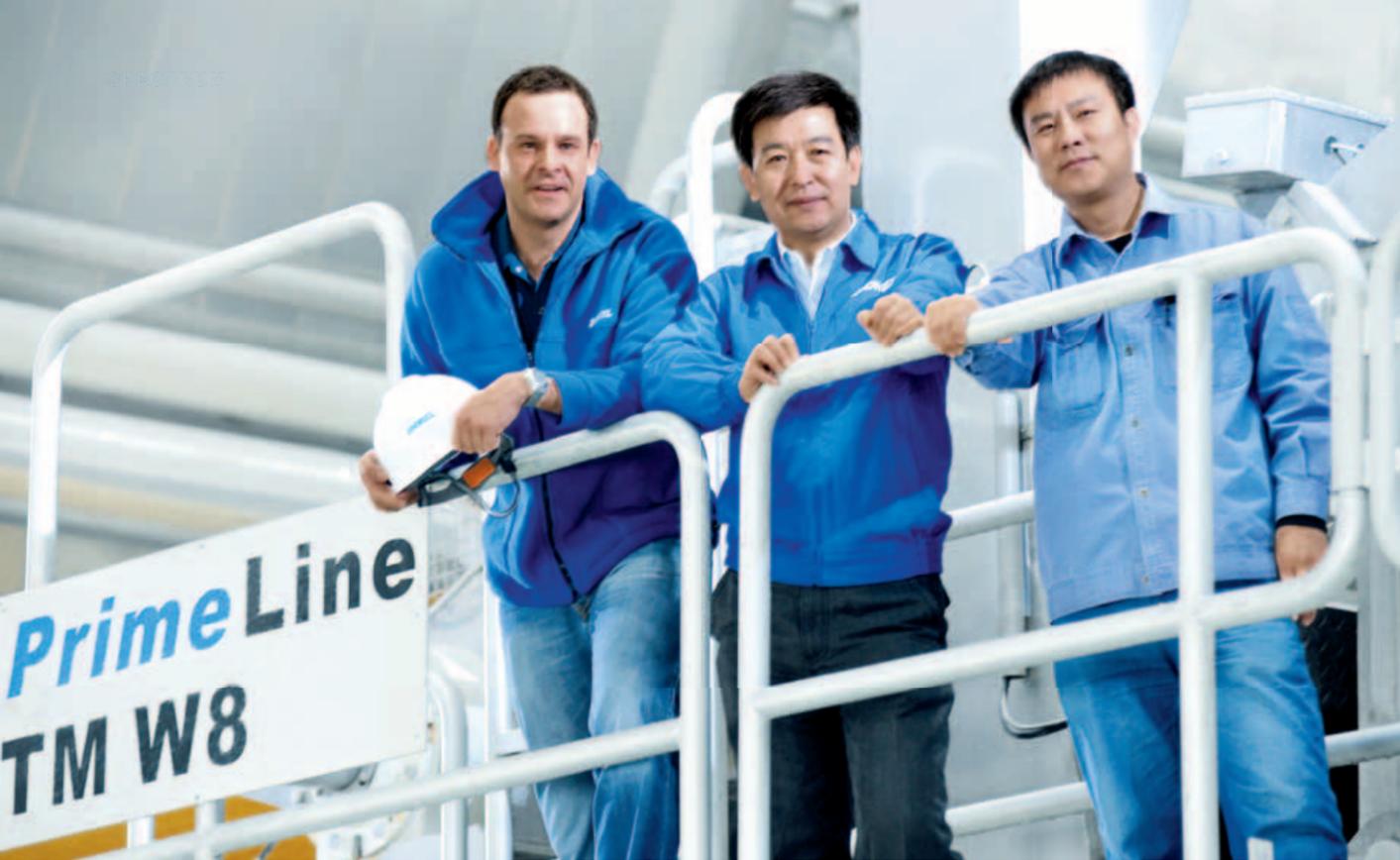
He notes that ANDRITZ has many references in China with good performance. “During the investigation phase of our project, we had discussions with all suppliers,” Han says. “We also visited several mills (Hengan and APP Suzhou among them) where the technology was delivered by ANDRITZ. We were impressed with the proven and reliable technologies and the good and stable paper quality.”

Wang Xicai, Chief Engineer at Hupo Paper, was also impressed. “The technical documentation that we received from ANDRITZ was very impressive,” he says. “It was very professional and comprehensive, especially the machine layout. This contributed to a smooth erection and start-up.”

“During the erection and start-up, ANDRITZ professionals really showed us compassion and patience in getting to know the new tissue machine,” Han says. “This helped us to develop our skills in producing high-quality tissue products. The equipment and cooperation with ANDRITZ was perfect.”

Yan Tinggang, General Manager of Hupo Paper, feels comfortable about the mill’s future. He is satisfied with the low operating costs, the environmental capabilities, and the fact that the stock preparation system was manufactured by ANDRITZ in China.

“Even with some small initial delays due to design changes and manufacturing schedules,” Yan says, “we were very satisfied with ANDRITZ’s good cooperation and performance during the whole project.”



“The output of the new machine is the best quality I have experienced in my career,” remarks Han Biao, Vice General Manager of Hupo Paper. “The start-up went perfectly. With rare exceptions, the equipment was delivered on time, and the delays were mostly due to modifications.”

Han notes that his company’s plans include an additional machine within the next two years “depending upon market demand.” Hupo Paper’s products are being sold exclusively in Liaoning and the neighboring provinces.

ANDRITZ is local in China

“Fushun is adding to its mining business by moving into paper production,” says Michael Pichler, head of ANDRITZ’s Paper and Nonwovens, “and they do not have a long tradition of tissue making. They elected to buy equipment from an industry leader, and one with a strong base in China. ANDRITZ has an excellent record helping tissue newcomers like Hengan, Guitang, Hwagain, Chenming, and Nanning Phoenix start and operate their production units. Even the huge APP started in China with two machines from ANDRITZ in 1998.”

Of course, when making an investment decision, price is an important factor. By standardizing machine modules and add-

ing manufacturing capabilities in China, ANDRITZ has been able to reduce the cost of its PrimeLine tissue machines in China significantly. “Only companies with a high local content have been able to reduce their costs to be able to offer these savings,” Pichler says.

ANDRITZ has a facility in Foshan, Guangdong Province (see article about ANDRITZ in China in Spectrum Issue 16) with more than 1,200 employees focused on manufacturing, sourcing, engineering, and automation. The Foshan workshop offers Chinese customers fast response and is familiar with local customs and requirements.

“The ability to offer extended services is very attractive to newcomers to the paper industry,” Pichler notes. “In addition, we are developing our Chinese operations to become a manufacturing base for global sales, which requires European quality and precision.”

ANDRITZ delivered its first tissue machine to China in 1998, and has since sold an additional 20. “With our experience in managing projects in China, our experts know how to work with a newcomer to make sure that everything is seamless,” says Bai Bingchen, Vice General Manager of

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Martin Schratter, Start-up Engineer from ANDRITZ (left); Bai Bingchen, Vice General Manager for ANDRITZ China’s tissue business (center); and Han Biao, Vice General Manager Hupo Paper.

ANDRITZ’s tissue business in China. “We know how to provide sufficient training to support.”

According to Bai, the turnkey ANDRITZ plant was appreciated because everything from the stock preparation to the reel came from one company. “This makes it easier to start-up and operate, and enables us to provide fast and well-targeted services,” he says.

“Sad to leave the project”

“We supplied Hupo Paper not only with the tissue machine, but also the stock preparation, including two virgin fiber lines and a broke line,” says Martin Schratter, ANDRITZ Start-up Engineer. “We also delivered the approach flow and fiber recovery

system for the machine, and auxiliaries like the lubrication and hydraulic systems.”

The tissue machine is a PrimeLine™ W8 CrescentFormer with a PrimeFlow two-layer headbox and a PrimeProFiler F dilution control system. “The machine has a single PrimePress, a PrimeDry Cast Yankee, and a PrimeDry EquiDryF hood system with zone control,” Schratter continues. “The reel is a hydraulically controlled PrimeReel equipped with the PrimeTurnUp system for fully automatic reel changes.”

Schratter says that from contract to start-up, everything went smoothly and according to the plan. “We were able to run the tissue machine from the first day with saleable paper quality,” he says. “We are now in the optimization phase for reaching 2,000 m/min. This takes time, of course, but the progress has been excellent. Cooperating with the people at FMG was an amazingly positive experience. I became friends with many FMG people and it was a sad feeling to leave the project when it was over.”

Proven technology with fast learners

ANDRITZ delivered well-proven technology in all areas of the plant. “There are some unique highlights at this mill, specifically the LC refiner which helps in optimizing the fibers to improve paper quality,” says Schratter. Another highlight is the PrimeProFiler F dilution control system that improves basis weight cross profiles. The third area that Schratter mentioned is the heat recovery in the hood system, which reduces energy consumption significantly.

Hupo Paper did a great job in preparing everything for a smooth start-up, not only the fibers, but also all other resources and tools needed. The newcomers to tissue are learning fast. “One big challenge was that some of the operators had never seen a paper machine before,” Schratter says. “It was really impressive to see how quickly they climbed up the learning curve. Within a few weeks, the operators were able to run the new machine independently.”

“The technical documentation that we received from ANDRITZ was very impressive. This contributed to efficient erection and a smooth start-up.”

Wang Xicai, Chief Engineer at Hupo Paper



▲ ANDRITZ supplied the stock preparation (two virgin fiber lines and a broke line), approach flow, and fiber recovery systems. Shown is the LC refiner which helps optimize the virgin fibers to improve paper quality.

The PrimeProFiler F dilution control device improves CD basis weight profiles. ▼



ANDRITZ delivered the production line – from stock preparation to the reel – turnkey. Parent rolls from the PrimeLine machine are converted into tissue products at the mill site. ▶

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