



**PULP & PAPER**

# **SETTING THE SCENE FOR PROFITABLE GROWTH**

**HUATAI PAPER'S MILL, SHANDONG PROVINCE, CHINA**

**ANDRITZ**

**ENGINEERED SUCCESS**





# Setting the scene for profitable growth

Following an ANDRITZ rebuild in 2023, Huatai Paper's mill in Dongying, Shandong Province, China, has the world's largest mechanical pulping line for printing and writing paper production.

ANDRITZ worked in partnership with Shandong Huatai to achieve several goals through a number of unique solutions on this landmark project. The numbers tell a powerful story: The BCTMP line rebuild increased the 20 year-old line's capacity from 100,000 t/a to 300,000 t/a while at the same time reducing the line's energy consumption per ton of pulp by a substantial 20 percent. Pulp yield and quality also increased significantly, with shive content down from 0.3% before the upgrading to below 0.03%, with the lowest recorded being 0.01%, and brightness up from around 73% to more than 78%. Freeness, bulk and tensile index have all been beyond expectations. The rebuild is part of Huatai Group's 14th five-year plan to develop ecological forestry alongside profitable, environmentally friendly pulp- and papermaking. This includes raising pulp production

by one million tons per year within a new pulp and paper industrial park, to which the Shandong Huatai rebuild is a strong contributor. The rebuild project has been synchronized with the upgrade of the original newsprint line and supporting wastewater treatment plant. "Since the startup of the rebuilt BCTMP line, the quality of the pulp has been quite outstanding, which has significantly reduced the proportion of imported chemi-mechanical pulp (CMP). This, in turn, has contributed strongly to reducing raw material costs and improving paper quality," said Mr Li Jianqiang, General Manager, Dongying mill, Shandong Huatai Paper.



**"Since the startup of the rebuilt BCTMP line, the quality of the pulp has been quite outstanding."**

**LI JIANQIANG**  
General Manager, Dongying mill,  
Shandong Huatai Paper

**HUATAI  
DONGYING** Bird view of  
Huatai Dongying mill



# Understanding the customer's needs

## PRODUCTION DEMAND

Vice Project Manager, Huatai Holding Ltd., Mr Zheng Xingshan, adds: "The ANDRITZ on-site team understood our actual production needs very well, by having the newly configured systems and equipment installed and commissioned before the shutdown, and then concentrating on the renovating and updating of equipment and systems after the shutdown."

## SWIFT PROJECT TURNAROUND

Mr Zheng elaborates on the project execution itself: "During the scheduled shutdown for upgrading, initially

planned to last for three months, the actual project duration was only 69 days, from the shutdown of the old line to the startup of the upgraded line, including the dismantling of old equipment, reconstruction of foundations, installation, and commissioning of new equipment. ANDRITZ's on-site supervision and commissioning experts worked proactively alongside our Huatai staff day and night, showing full commitment to the project. All were united in a shared goal of ensuring safety and quality, and achieving production efficiency as soon as possible. The celebration on completion was loud!"

COLLABORATIVE  
EFFORTS

ANDRITZ and Huatai project members  
working closely in the mill







Operation results after rebuild

	Capacity	Energy use	Shive content
Before	100k t/a	1,100kw/admt	0.3%
After	300k t/a	Down to 800kwh/admt	Down to 0.01%

PrimeMSD  
IMPRESSAFINER

Optimal removal of moisture,  
maximized impregnation for  
energy savings, removal of  
extractives and much more





# Let's get technical: The scope in detail



The scope of supply included the rebuild of two high-consistency (HC) refiners, plus screw presses, disc filters and screens, along with new equipment for other process stages.



Key new equipment and benefits comprise:

## **PrimeMSD IMPRESSAFINER**

- Optimal removal of moisture – better subsequent absorption of chemicals
- Maximized impregnation for energy savings in the high-consistency grinding stage
- Removal of extractives
- Maceration, partial delamination and homogenization
- Shive reduction after refining

## **TwinFlo LC REFINER**

- High operational reliability due to simple and robust mechanical design
- Low maintenance costs
- Easy and quick replacement of refiner discs

## **PrimeSCREEN X**

- Top-feed stock inlet to minimize wear on rotor and basket

## **PrimeROTOR AND FOILS**

- For increased efficiency and lower power consumption Easier maintenance thanks to streamlined design
- Optimized screen basket height-to-diameter ratios



"One of the highlights of this entire line's upgrading is the refurbishment of the existing HC refiner, which is at the heart of the line, and the upgrading of the control system for the HC refining system," according to Mr. Wang Yuwei, ANDRITZ Paper Service Division Manager. The latest QUANTUM refiner plates have ensured a more even distribution of pulp in the refining zone, improving the refining efficiency. QUANTUM refiner plates feature a patented graduated geometry that perfectly models the changes to the fiber as refining energy is applied – coarse at the inlet and fine at the periphery. This pattern results in stable and consistent refining without pinch points, lower energy consumption for a desired fiber strength, and reduced shives.

The renewal of the HC refiner control system Hydraulic Commander, ANDRITZ's state-of-the-art control system, has also allowed the mill to have a more flexible and diversified selection of refining plates without limitations. The upgrade has reduced the need for special gap sensors, thereby lowering the cost of using refining plates. Moreover, the operation is simpler and more flexible, which minimizes downtime.



**"The ANDRITZ on-site team understood our actual production needs very well."**

**ZHENG XINGSHAN**

Vice Project Manager, Huatai Holding Ltd.



# A Partnership of Innovation and Trust

With a shared commitment to efficiency, innovation, and customer-first service, the collaboration between ANDRITZ and Shandong Huatai Paper continues to grow, paving the way for future advancements in chemical pulp production and sustainability.



## MORE THAN 60 PROJECTS

ANDRITZ has the experience of more than 60 chemical/mechanical pulp projects, which has included previous collaborations with Huatai. "What impressed me deeply was the ANDRITZ team's customer-first service and fearless and exploratory spirit. They put the customer first, maximize use of resources, and have saved us a significant amount of commissioning time," says Mr Wei Lijun, Director and Deputy General Manager, Shandong Huatai Paper.

So what is next for Shandong Huatai? Mr Wei hints at the future: "Under our integrated strategy of forest, pulp, and paper, I believe that there will be more and more opportunities for cooperation with ANDRITZ. For instance, the 700,000-ton chemical pulp project we are currently promoting includes ANDRITZ technology. ANDRITZ's continuous innovation in energy saving, consumption reduction and digital technology will undoubtedly create more opportunities for cooperation between us."

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**WEI LIJUN**

General Manager, Huatai Holding Ltd.



**PULP QUALITY DELIGHTS**

The exceptional quality of pulp delighted both parties.





# ANDRITZ and Huatai: Accelerating Innovation in Pulp Production

A final word from ANDRITZ Project Manager Ji Haihong: "ANDRITZ is honored to contribute its globally accumulated expertise in CMP technology to this project. We have provided Huatai with the optimal upgrade solution, encompassing a state-of-the-art process from chip washing to final pulp production, including significant new equipment for profitable production.

"When they faced problems, Huatai always proceeded with the principle of 'results first' to drive the project forward. This spirit greatly inspired the ANDRITZ team members, who, as always, followed the principle of 'customer first', and by timely increases in personnel allocation, adding shifts for commissioning staff, working overtime, optimizing the commissioning process management, actively engaging in feedback and communication, and quickly resolving unexpected issues, we significantly shortened the project timeline and secured precious time for Huatai."



BTMP  
LINE / The modernized workshop of  
the BTMP line



# 造最好的纸，做最好的书



THE FINAL  
PRODUCT

Final paper in  
outstanding quality





## DISCOVER OUR FULL-RANGE PORTFOLIO FROM FIBER PROCESSING TO PAPERMAKING

An outstanding paper product requires outstanding production – matched with the particular needs of raw material and final product. Discover the full-range portfolio from ANDRITZ: Excellent stock preparation that allows best fiber development according to furnish and with economical use of resources. PrimeLine paper machines that are a synonym for producing top-quality tissue, paper, and board grades. Complete lines or single units, upgrades, and modernizations. Contact us and benefit from your individual package in papermaking technology.

### AUSTRIA

ANDRITZ AG, Graz  
p: +43 316 6902 0

ANDRITZ AG, Vienna  
p: +43 508 055

ANDRITZ AG, St.Pölten  
p: +43 508 052 1754

### GERMANY

ANDRITZ Küsters GmbH  
p: +49 2151 340

### ITALY

ANDRITZ Como S.r.L.  
p: +39 031 396332

ANDRITZ Novimpianti S.r.L.  
p: +39 0583 30219

### FINLAND

ANDRITZ OY  
p: +358 0 20 450 5555

### RUSSIA

LCC ANDRITZ  
p: +7 812 315 0863

### CHINA

ANDRITZ (CHINA) Ltd., Foshan  
p: +86 757 8250 2636  
ANDRITZ (CHINA) Ltd., Beijing  
p: +86 10 8526 2720

### JAPAN

ANDRITZ K.K.  
p: +81 3 3536 9700

### INDIA

ANDRITZ Technologies PVT Ltd.  
p: +91 11 4937 2900

### BRAZIL

ANDRITZ Brasil Ltda.  
p: +55 41 2103 7601

### CANADA

ANDRITZ Ltd.  
p: +1 514 631 7700

### USA

ANDRITZ Inc., Beloit  
p: +1 815 389 8200

ANDRITZ Inc., Glens Falls  
p: +1 518 683 5793

ANDRITZ Inc., Springfield  
p: +1 413 733 6603

**MECH.PULP@ANDRITZ.COM**  
**ANDRITZ.COM**

# ANDRITZ

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