



Mill story

Hebei Yihoucheng,
Baoding TM1, China

Gathering impressions

Hebei province, Baoding city

Baoding is an industrial city in Hebei province near the coast, about 150 kilometers from China's capital Beijing.

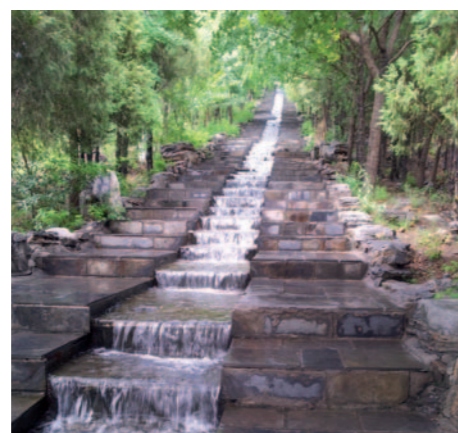
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▲ A part of the Laolongtou Great Wall in Qinhuangdao City in Hebei province.

Hebei province is situated on the North China Plain, north of the lower reaches of the Huanghe (Yellow) River. Washed by Bohai Sea in the east, it has a coastline of some 500 kilometers. The entire province covers 190,000 square kilometers and is inhabited by approximately 71.85 million



▲ The Great Wall white grape wine and Drunken Liuling are famous wines of the province. The picture shows an irrigation system in the mountains of Hebei province.

people of Han, Hui, Manchu, Mongolian, and Korean nationalities. The provincial capital is Shijiazhuang.

The territory of ancient China was divided into nine provinces. Hebei used to belong to Ji and Yan Zhou. During the Spring and Autumn Period (770 B.C.-476 B.C.) and the Warring States Period (475 B.C. - 22 B.C.), it was the fief of the Kingdoms of Yan and Zhao. During the Tang Dynasty (618-907), Hebei belonged to Hebei Dao. Dao was equivalent to today's province. This is how Hebei Province came into being. In the subsequent dynasties, the name and confines of the province changed a great deal. In 1928, it was renamed Hebei province.

Hebei province is one of the main wheat-producing areas in China. Oil-bearing plants, fibre plants, sugar beets, tobacco, and cotton are the five main cash crops of the province.



▲ Baoding city is the home of the Baiyangdian Lake. The lake is, with 366 km², Hebei province's largest fresh water lake and is a cluster of small and large lakes, divided by reed mashes and water channels.

The apples of Changli, pears of Zhaoxian County, honey peaches of Shenzhou, white grapes of Xuanhua, and chestnuts of Zunhua are famous fruits of the province. Prawns and crabs from the Bohai Sea and carp from Baiyangdian Lake are the most popular aquatic products.

Baoding city

Baoding is a medium-sized industrial city in Hebei province near the coast. It is about 150 kilometers from Beijing and lies to the east of the Taihang Mountains.

It is an ancient city with a long history, and there are lots of places of historical interest and natural scenic areas. For example, the Ancient Lotus Lake Garden in the city center used to be an institution of higher education during the reign of Emperor Yongzheng of the Qing Dynasty. It was one of the famous gardens of that time.

Baoding has a history spanning over 2,300 years. In the Yuan Dynasty (1271-1368), when Beijing was named the country's capital, Baoding established its position as the south gate of Beijing. "Baoding" means "to protect the capital" in Chinese, making the city crucial to Beijing's security throughout its history.

Rich in industry

Automobiles, machinery, electronics, textiles, and new energy sources are the pillar industries of Baoding. The automobile industry is Baoding's most dominant. The city is one of the nation's twelve export bases for automobile and auto parts.

Renewable energy

Baoding has also been nicknamed the "Valley of Electricity" in China. An investment of RMB 100 billion has been used to set up a national manufacturing base for new energy and power equipment in Baoding. Presently, there are

Baoding city - key facts:

- Inhabitants: approx. 11,194,379
- Size: 22,185 km²
- Main industries: automobiles, wind turbine generators

over 160 companies engaged in the renewable energy sector.

Hebei Yihoucheng

In tune with a growing market

Hebei Yihoucheng was a pioneer in feminine products in China, starting with the production of sanitary napkins for women in 1998.



▲ Main entry of Hebei Yihoucheng in Baoding.

The first steps

Hebei Yihoucheng was founded by Bai Hongmin, who is the President and CEO. As Ms. Bai describes the company's beginnings, "We started early producing feminine sanitary products because we saw a need and an opportunity. The increased demand for these products by the women of China has met our predictions."

"Lady Star" brand in the North China region where its manufacturing facility is located. Hebei Province is home to 72 million people and this does not include the cities of Beijing and Tianjin (32 million additional people) which are surrounded by the Province.

The company's products are sold through a wide distribution chain (700 distributors) to major retail stores.

Thanks to its early start, Hebei Yihoucheng has carved out an admirable niche for its



"Today, supermarkets dominate, offering a selection of tissue and hygiene products," says Tian Yuwei, General Manager. "However, internet retailing is seeing the most dynamic growth."

High-tech zone

At one time, this area of China was home to hundreds of small tissue mills. In an effort to get control of energy consumption and environmental impact, the Chinese government is effecting the closure of many small mills. The goal is to produce the tonnage on larger, more modern, and more efficient machines.

◀ Wastewater treatment plant

Baoding, where Hebei Yihoucheng is located, is designated a High-Tech Industry Development Zone. The mill certainly fits the profile with its modern production, converting, and warehousing facilities. In addition to feminine sanitary products, the plant now produces wet wipes, pet pads (nursing pads), and tissue products. "We have invested in top-notch folding and packaging machines," Ms. Bai says. "We have become one of the largest wet wipe manufacturers in North China."

Up until 2013, when you walked through the workshop, you would see converting lines processing parent rolls purchased from

Chinese tissue producers. All that changed in August 2013, when the company signed a contract with ANDRITZ to deliver two new tissue machines, with all the auxiliaries. TM1 has been started-up successfully in May 2014.

The "LADY STAR"

Hebei Yihoucheng's tissue is marketed under the "Lady Star" brand. While the Chinese market is strong by global standards (mainly aided by rising income levels and growing acceptance) the number of producers serving this market has increased considerably. The plan had always been to add parent roll production to his company's capabilities. It was just a matter of timing.

"We produced hygiene products for a long time. Even though the tissue segment is much more competitive today, we felt it was the right time to add our own tissue production, which will secure our future by controlling costs and quality."

Bai Hongmin
President and CEO
Hebei Yihoucheng



PrimeLineCOMPACT tissue machine

The first of its kind in China

Hebei Yihoucheng has now taken a bold step: producing its own tissue with a PrimeLineCOMPACT tissue machine from ANDRITZ — the first in China. Erection of a “twin” second machine is underway with start-up slated for 2015.

Carefully considered

The selection of the right supplier, with the right technology, for this first tissue machine was a big and important step for Hebei Yihoucheng.

All of the major machine suppliers were, of course, evaluated. “I knew of ANDRITZ, but was not that familiar with their specific technologies,” Mr. Tian says. “Their experience base in China was a key influence for us. We visited several locations in China with Bai Bingchen (ANDRITZ China’s General Manager Sales for Tissue China) to check references. Mr. Bai was able to demonstrate that ANDRITZ has the most advanced machine technology, the best

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Tian Yuwei
General Manager
Hebei Yihoucheng

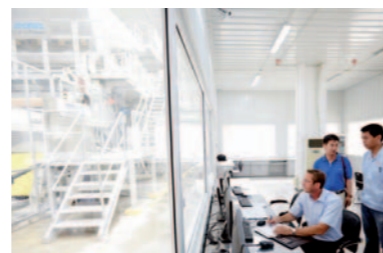
energy-saving solutions, and the best automation package.” Overall site design will accommodate four machines. “The first two machines will be 2.85 m wide CrescentFormers, operating at 1,600 m/min,” Mr. Tian says. “The next two are planned to be 5.6 m wide, 2,100 m/min machines.”



▼ PrimeLineCOMPACT tissue machine with tissue on the reel.



View of the control room. ANDRITZ delivered the complete automation system. ▼

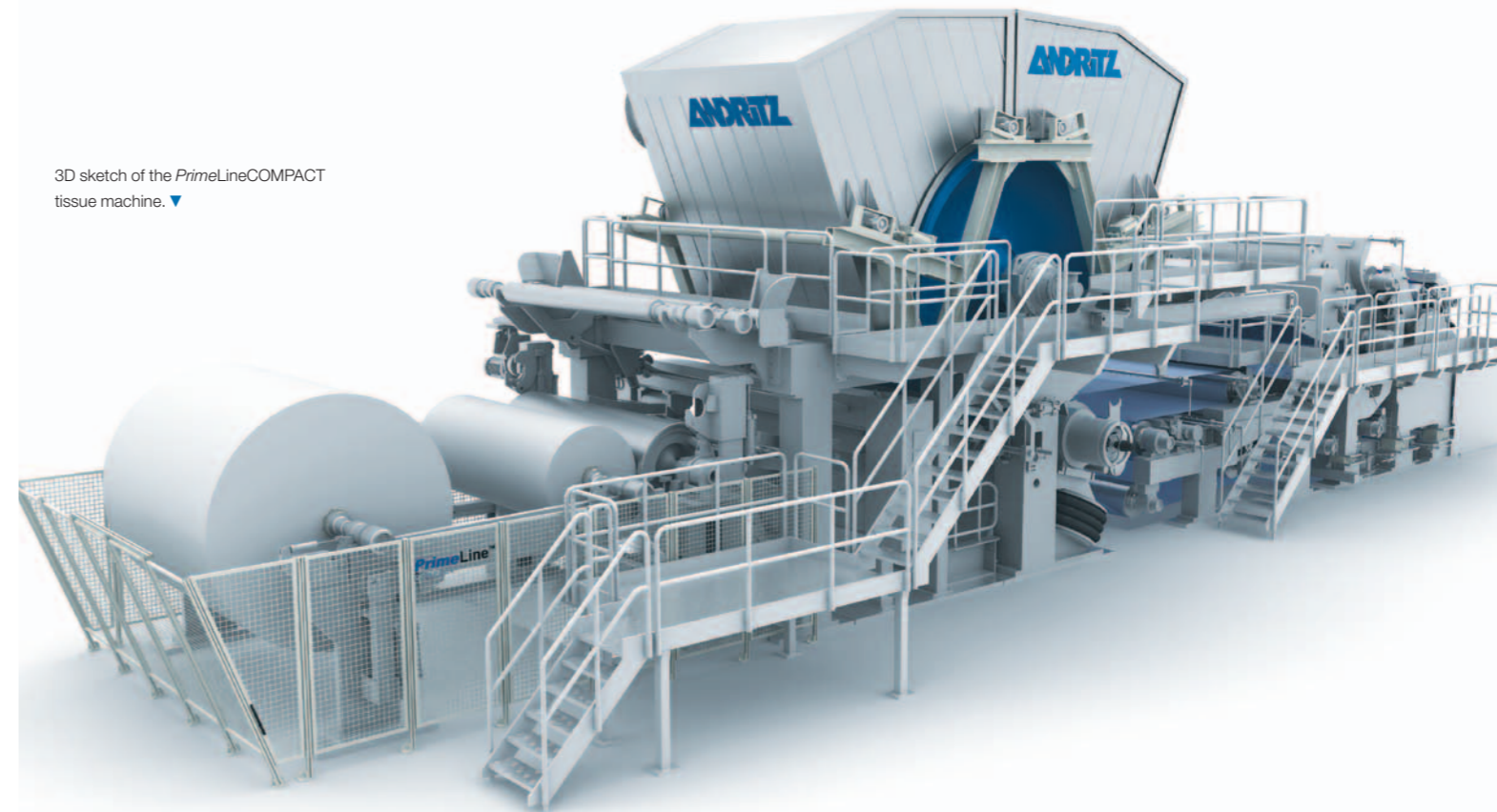


COMPACT steps to reach higher goals

A modularized concept for a fast ROI

Ready, set, go: Standardized and easy-to-scale modules that deliver an attractive return on investment. Customers can choose their line based upon their capacity requirements.

3D sketch of the PrimeLineCOMPACT tissue machine. ▼



A COMPACT mill

The tissue industry is a dynamic industry. New producers enter the market as others consolidate their positions. Entrepreneurial tissue converters are discovering the economic benefits of producing their own parent rolls. In response to these new demands, ANDRITZ has expanded its product family to create a COMPACT tissue mill: complete with stock preparation plant and modern CrescentFormer tissue machine.

The idea behind

The idea behind COMPACT is to combine cost efficiency with proven quality. The key to COMPACT’s cost efficiency is the level of standardization — which reduces engineering hours, manufacturing hours, installation time, and even transport costs.

The PrimeLineCOMPACT tissue plant design consists of standardized and easy-to-scale modules that deliver an attractive return on investment. Customers can choose one of five COMPACT tissue production lines based upon their capacity re-

quirements. With the PrimeLineCOMPACT tissue plant concept ANDRITZ can, from the stock preparation to the parent roll, including automation, deliver a full tissue making system.

Latest innovation

The energy-saving PrimeDry Steel Yankee and the PrimeDry ReEvaporation system are available in the COMPACT package.



PrimeLineCOMPACT

Compact tissue machine with 2.8 m width

A COMPACT beginning

Hebei Yihoucheng chose the design “PrimeLineCOMPACT” for its first two machines. COMPACT machines are primarily narrow width with optimized stock preparation and a tailored automation system.

“Since we are new to tissue production,” Mr. Tian says, “we wanted to start simply. We need to see what the market will accept before we make our next investments.”

Fast economic pay-back

“Newcomers or mills who do not buy machines frequently appreciate the standardized, modular approach of the COMPACT line,” says Günter Offenbacher, ANDRITZ Director of Sales for Tissue and Drying.

“Our whole-plant solution from stock prep to parent roll shortens the start-up curve and has our customers making marketable tissue products in the shortest amount of time. This accelerates the economic pay-back.”

All out of one hand

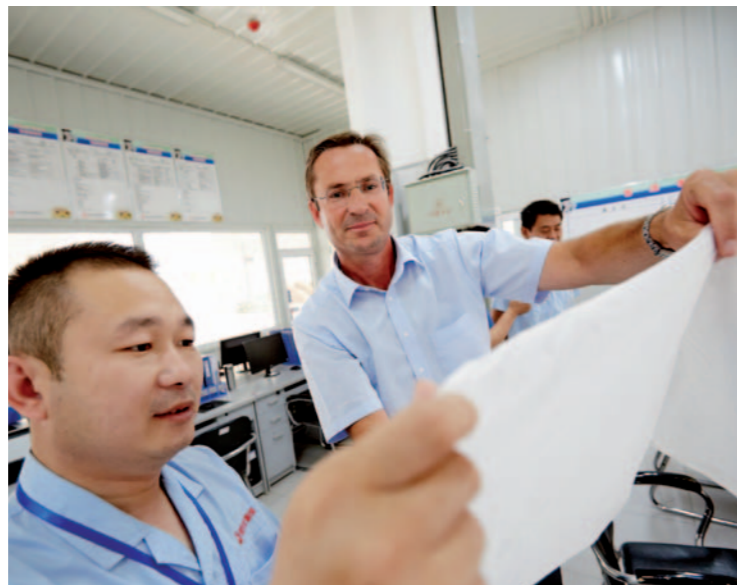
“As a business owner, I was attracted to the COMPACT approach,” Ms. Bai says. “It ensures us a certain production quantity and quality. The delivery of the complete line from one supplier — stock preparation, machine approach, pumps, the machine, drives, and automation — was a big plus.”

The twins

The company placed orders for “twin” COMPACT machines. The first started up in May of this year, the next follows in 2015. Work has begun on delivery of the second machine.



◀ TM1 on the right and the erection location for its twin, TM2, on the left. TM2 will start-up in 2015.



◀ Tian Yuwei, Hebei Yihoucheng General Manager (left), and Günter Offenbacher, ANDRITZ Director of Sales for Tissue and Drying, in the tissue quality laboratory in Baoding.

“For buyers who want proven quality in a streamlined, cost-effective package, the COMPACT system is something to consider.”

Günter Offenbacher
Director of Sales for Tissue and Drying
ANDRITZ



◀ Stock preparation plant delivered by ANDRITZ (pulper in the foreground).



▲ The first one of the twins: PrimeLineCOMPACT TM1 at Hebei Yihoucheng, Baoding.

Water and energy: critical factors

The facility is the only tissue mill in China using natural gas boilers to create process steam. “While our energy production is clean, it is also considerably more expensive than coal-fired steam production,” Mr. Tian says. “Energy savings are extremely important to us, and the ANDRITZ technology is helping us here.”

A heart of steel

Mr. Tian cites one example in the PrimeDry Steel Yankee delivered with his COMPACT machine. “The performance of the steel Yankee exceeds the performance of cast iron,” he says. “It has a much higher evaporation rate, improving drying with less energy consumption. The energy savings are quite noticeable.”

Yankee head insulation

In addition, the machine is equipped with a PrimeDry head insulation package. Offenbacher explains, “Tissue machine Yankees often show significant heat losses

at the head. The savings in steam using FibreSolve pulpers for incoming kraft pulp bales, refining, deflaking, disc filter, screens, and fan pump. The mill location is not near a river, so the conservation and re-use of water is critical. “The ANDRITZ stock prep system, including the disc filter, has helped us save fresh water,” Mr. Tian says. Hebei Yihoucheng also invested a considerable amount of money to install modern effluent treatment systems. The effluent meets the most stringent Class A national standards.

Perfectly matched fiber preparation

Other than cost, there are also some measurable advantages of the COMPACT concept: ability to select capacity according to need and plant-optimized stock preparation in terms of sizing and layout. Stock preparation for either virgin or recycled fibers can be selected. Hebei Yihoucheng uses purchased imported virgin fiber for its furnish. ANDRITZ delivered the complete stock prep and machine approach system, including pulping, thickening, pumps, and agitators. The process includes two

FibreSolve pulpers for incoming kraft pulp bales, refining, deflaking, disc filter, screens, and fan pump.

Absolutely the right decision

“The COMPACT design has a modular design that is suitable for virtually every tissue producer,” Offenbacher says. “It is part of a complete portfolio of technologies we offer. For buyers who want proven quality in a streamlined, cost-effective package, the COMPACT system is something to consider.”

The COMPACT approach reduced the time it took for to install and bring the machine along the start-up curve. “Even though our people are not veteran operators, they were able to start-up and ramp-up very fast with ANDRITZ’s training and guidance,” says Mr. Tian. “Within days we were producing excellent paper. We started in the 15 to 17.5 grammage range and, based on early success, our operators are quite confident to produce other grades.”

ANDRITZ in China: a success story

The local tissue partner

It pays to have a proven technology and service partner on your side when making important decisions about how to increase the efficiency and profitability of your mill. Equally important is whether that partner has a local presence to give you support before, during, and after completion of your project. As part of the ANDRITZ Group, the ANDRITZ China location in Foshan is well-positioned to be your technology and service partner.



▲ Headquarter of ANDRITZ China in Foshan.

ANDRITZ's first steps into China were in the traditional export mode. In 1997, ANDRITZ formed the joint venture ANDRITZ-Kenflo Foshan Pump Co., Ltd. and began the transfer of technology required to manufacture stock pumps in China. With ANDRITZ as the sole owner, the company has achieved good success in the recent past. The total number of pumps sold into the pulp & paper industry now stands at more than 11,000.

Another strategic move in the pump area has been to consolidate manufacture of the ANDRITZ Vertical Line Shaft Pump (VLSP) in China. The move to standardize

the VLSP has allowed ANDRITZ to be more cost-competitive and to shorten the delivery times. More than 40 such pumps have been sold in China and Southeast Asia to date.

From these beginnings, the company has dramatically increased sales every year such that the installed pump base in China and Southeast Asia exceeds 30,000 units. In 2002 ANDRITZ Technologies Ltd. (now ANDRITZ China Ltd.), a wholly-owned subsidiary was established. All of the functions, including design engineering, sales, procurement, manufacturing and assembly, are handled in-house. In addition to

manufacturing, ANDRITZ China provides after-sales services, project management, engineering, procurement, supplier quality control, and expediting services.

In July 2013, ANDRITZ China opened its first pulp & paper laboratory. The lab has the capability for conducting professional and accurate tests on stock and paper properties, which will be a big help to ANDRITZ engineers doing tests at the many installations sold in China and Southeast Asia.

These tests are often critical for proving performance guarantees or optimizing stock preparation lines successfully and efficient-

ly. The new laboratory has instruments for measuring stickies, shives, etc. as well as equipment for testing formation, ash content, beating degree, and consistency.

More than 40 references and record installations in Asia confirm that ANDRITZ is one of the leading suppliers of tissue machines, components, and local services for this key market.

“Our decision to move into tissue production is based on market demand and is a natural evolution for our company. We did not consider it a risk, but a matter of good economics. We absolutely made the right decisions — to begin producing our own parent rolls and to partner with ANDRITZ.”

Bai Hongmin
President and CEO
Hebei Yihoucheng



Great on-site support

Having specialized tools and equipment is important for any technology supplier. But having the experienced people to provide service is even more important. Our people are skilled at raising the production efficiency of your mill or plant. We work closely with you to monitor, maintain, repair, and upgrade your assets. ANDRITZ is by your side with years of experience and proven results.



Perfect results

With PrimeLine tissue technology, it is easy to configure your production to achieve perfect results. Customized solutions are possible or even new developments together with our experts. Fast and smooth start-ups reflect our success.



Own workshop

ANDRITZ China in Foshan has its own workshop, where tissue components are manufactured and pre-assembled according to stringent European quality standards and controls.

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