



Paper for Tomorrow

APP China Sustainability Report 2020



Message from Chairman



2020 is to be remembered as a year of historic significance. It is the critical year for China to secure a decisive victory in the fight to eradicate absolute poverty and build a moderately prosperous society in all respects and the closing year of the 13th Five-Year Plan. In 2020, people have learned to adjust to the "new normal" imposed by COVID-19 after its catastrophic outbreak and embraced an expanding array of digital transformations in life and work. Also in this year, China has pledged to hit peak carbon emissions by 2030 and attain carbon neutrality by 2060, spurring the low-carbon economic and social transformation to full speed.

Over the past three decades, the courage to face up to and initiate change has been engraved in the operations of APP China. We have introduced the "Integration of Plantation-Pulp-Paper" model since the early days of our foundation, putting us on a path to a sustainable future. We continue to increase investment in environmental protection to minimize the impact of our business operations on the environment and ensure that our environmental performance exceeds the requirements of relevant standards. Through forward-looking planning and implementation of intelligent and digital transformation, we are geared up for the arrival of the digital economy, which is approaching at full speed. With the new Four-Wheel Drive strategy launched in 2020, we aim to further tap our development potential by taking care of the four areas of culture, digital transformation, talent, and innovation. As such, we will fulfill our responsibility in a more innovative and ever-evolving manner to boost economic, social, and environmental sustainability.

Lucid waters and lush mountains are invaluable assets. Ecological protection stands out as a policy priority in the 14th Five-Year Plan, giving new significance to building a greener papermaking industry. We have undertaken a forest carbon sink accounting of all our plantations, recording approximately 42.395 million tons of total carbon sinks. Behind this number are the consistent efforts of our people in managing forest risks, conserving forests, and promoting forest certification since we first began developing plantations back in 1995. As businesses face ever-heightened regulatory scrutiny in reducing and limiting the use of plastic, we make an increasing investment in the research and innovation of "Paper in Place of Plastic" products. Besides continuously making our "zero-

plastic" food packaging more degradable and recyclable, we also strive for greater product diversity. In terms of green manufacturing, we implement strict management in areas of energy conservation and efficiency, water saving, "three wastes" treatment, etc. We continue to improve performance on a variety of environmental indicators while complying with applicable policies and regulations. Gold East Paper, Ningbo Asia, and Guangxi Jingui Pulp & Paper are among the fifth batch of national green manufacturers announced by the Ministry of Industry and Information Technology.

Green development is essential for sustainability, and intelligence is the key to the future. As such, digital transformation is the only path to high-quality development for the traditional manufacturing sector and also a key development strategy at APP China. Our new five-year digital development plan sets out clearer objectives that will catalyze digital transformation across the Group. We have automated and upgraded existing manufacturing equipment and processes and apply cutting-edge technologies, such as 5G, artificial intelligence, and big data analysis, in the design and development of new bases and projects. We have implemented the digital Lean Management System at major mills and sales companies, leading to notable improvements in business efficiency, refined management, and work accuracy.

The very essence of innovation lies in people. A high caliber of talent has been at the heart of the innovations and changes happening at APP China. We push forward the construction of the APP Learning and Development Center and continue to enrich the content and format of employee training so that our employees can all find their strengths and apply what they learn. Living the MBOS (Management by Olympic System) spirit, we continue to build a stronger corporate culture, bring out the highest passion and dedication of our employees, and motivate them to keep growing and excelling at work.

Giving back to and sharing achievements with society have been the founding purpose of APP China. 2020 marks the 10th anniversary of the Huang Yicong Foundation. Small actions can make a big difference. Our programs in education and poverty alleviation, training philanthropy professionals,

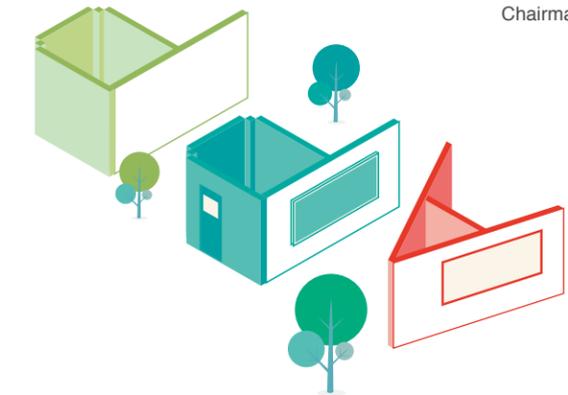
and other areas have all created positive impacts, making us more committed to philanthropic causes. In addition, we play our part in carrying on the papermaking culture with programs to train papermaking professionals and popularize the papermaking culture.

A new chapter is about to begin. Looking forward, 2021 is the beginning year of China's 14th Five-Year Plan and the year for the country to start a new journey toward the second centenary goal. APP China will continue to move with the times, accelerating digital and intelligent transformation and working towards a greener value chain. In this process, we will build on our strengths to optimize and upgrade the industrial structure, address future challenges and opportunities together with industry partners, and be a strong endorser and practitioner of high-quality and sustainable development.

黄志源

Teguh Ganda Widjaja

Chairman and President of Sinar Mas Group



About APP China

Company Profile

With operations dating back to 1938, Sinar Mas Group was officially founded by the prominent Indonesian Chinese Mr. Eka Tjipta Widjaja in 1962. The Group currently has hundreds of legal entities and owns seven main business pillars: Pulp & Paper, Financial Services, Agri-business & Food, Real Estate, Energy & Infrastructure, Telecommunications, and Healthcare.

As a core business sector of Sinar Mas, Asia Pulp & Paper (APP) was set up in 1972 and its line of business ranges from pulp, industrial

paper, cultural paper, and tissues to various types of paper products. APP started investing in China in 1992. With two seedling research centers, 17 forestry companies, 271,100 hectares of plantations, and seven major pulp & paper mills, APP China implements green-cycle development based on the concept of "Integration of Plantation-Pulp-Paper", where forests support paper, the paper industry nurtures forests, and forests and paper are integrated.

As of the end of 2020, APP China has



Products marketed in over **160** countries/regions across six continents

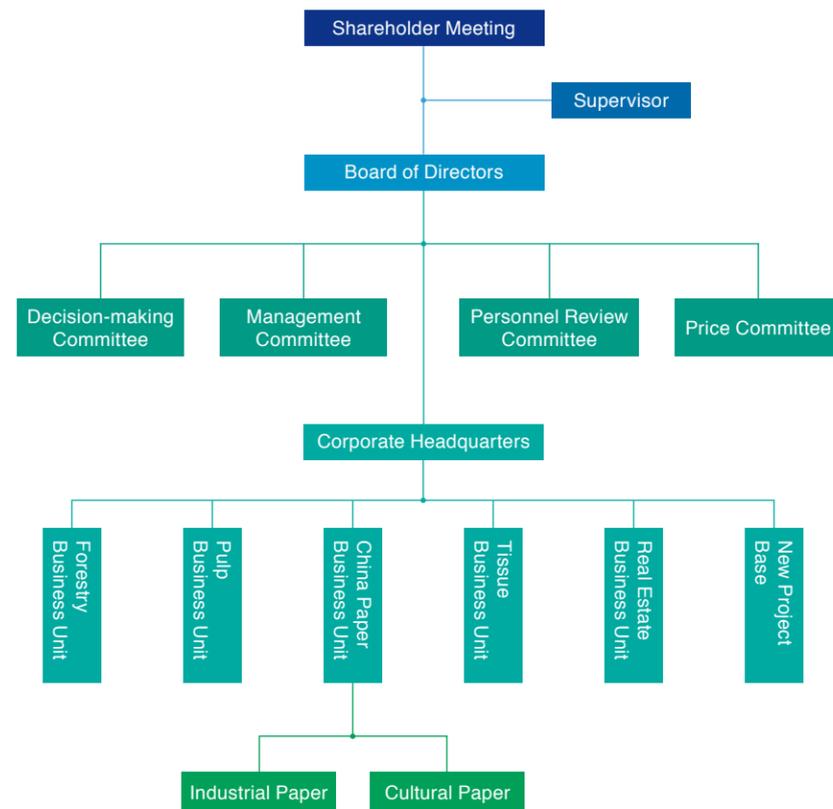


RMB **73.8** billion in annual sales revenue



RMB **248** billion in total assets

Organizational Chart



A Future Built on the Four-Wheel Drive Strategy

Our Four-Wheel Drive strategy, proposed by Chairman and President of Sinar Mas Group Teguh Ganda Wijaya in 2020, is built on the four pillars of Culture & MBOS, Digital Transformation, Organization and Talent, and Technological Innovation. It is designed to help the Company prosper and grow sustainably.



Culture & MBOS

The corporate culture and MBOS benchmarking mechanism serve to motivate our employees and shape a self-driven team.

Organization and Talent

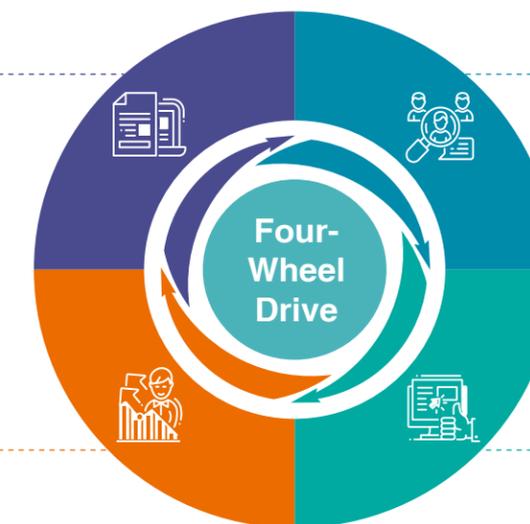
We push for organizational change and use digital means to improve efficiency; we have built a sound system for talent attraction and development.

Digital Transformation

We use digital means to drive customer-centric restructuring of and innovation in the business process, product and service, business model, customer experience, etc.; we engage in new manufacturing, new marketing, and new technologies to meet the needs for business development and improve the efficiency of production and management.

Technological Innovation

Driven by R&D and technological innovation, we promote all-round innovation; we create an atmosphere where "everyone wants to innovate and everything can be innovated".



Milestones

1992

Ningbo Zhonghua was formed through joint investment by APP of Sinar Mas, China Strategic Holdings Limited from Hong Kong, Ningbo Duplex Board Factory, and China Paper and Pulp Import and Export Co., Ltd. and is the first mill invested in and set up by APP in China.

1995

APP started plantations in China, embarking on a progressive journey of modernized papermaking.

1996

Gold Huasheng Paper (Suzhou Industrial Park) Co., Ltd. was established, and has become one of the largest diversified cultural paper product providers in China and Asia.

1997

Gold East Paper was officially established. In the same year, Yalong Paper Products (Kunshan) Co., Ltd. was officially put into production and is now one of the most important paper product fine-processing companies in China.

2010

With an annual chemi-mechanical pulp (CMP) production of 300,000 tons, the first phase of Guangxi Jingui "Integration of Plantation-Pulp-Paper" project started operations, and its 600,000-ton papermaking production line had a grand opening.

2005

Hainan Jinhai Pulp & Paper, APP China's first pulp mill, was officially put into operation.

2004

Ningbo Asia Pulp & Paper, equipped with one of the world's largest single-machine production capacities and most advanced industrial paperboard production lines, was put into operation.

1998

Gold Hongye Paper Group Co., Ltd. located in Suzhou started operation. Its Breeze™ Tissue (Qingfeng) has become a leading brand in China's tissue market. In the same year, APP China Headquarters was established in Shanghai.

2012

APP announced the Sustainability Roadmap Vision 2020, placing natural resources conservation at the center of its business strategy.

2013

APP published the Forest Conservation Policy (FCP), imposing a moratorium on all-natural forest clearance across its supply chain. For forests that are of high conservation value and high carbon stock, APP would take targeted protective measures based on assessment results.

2014

APP China announced plans to make full use of existing plant buildings for rooftop photovoltaic (PV) power generation with an overall capacity of over 200MW.

2015

APP China moved its headquarters to Shanghai ARCH and in the same year became a global partner of the China Pavilion at the Milan Expo 2015.

2020

Standing united with Wuhan and the whole China, Sinar Mas Group donated RMB100 million and also RMB350,000 worth of Breeze™ hygienic cleansing wipes to the Overseas Chinese Charity Foundation of China to fight against COVID-19. It is thus the first overseas-Chinese-funded enterprise to respond to the call of the All-China Federation of Returned Overseas Chinese to make donations to the affected areas.

2019

The high-grade tissue industrial base of Gold Hongye was officially launched and will be built into a world-leading paper base that is intelligent and environmentally friendly. In the same year, APP China Headquarters settled in the Shanghai Magnolia Square, opening a new era.

2018

APP appeared at the first China International Import Expo with the concept of green-cycle "Integration of Plantation-Pulp-Paper".

2017

APP China responded actively to the Belt and Road Initiative and signed a strategic agreement to build intelligent production and R&D bases by adopting Industry 4.0 and artificial intelligence.

Industrial Layout and Development

From inventing and evolving the papermaking technology to still making advances in modern days, every step forward in China's papermaking industry is inseparable from the dedication, innovation, and perseverance of papermakers. Since introducing the model of "Integration of Plantation-Pulp-Paper" in the 1990s, APP China has striven for continuous industrial upgrades and changes, leading to enhancements in both the quality and efficiency of our development. As China starts to embrace "dual circulation", we move to prioritize two things, namely industrial restructuring and the quality of development, to fulfill our pledge to "serve China". Our efforts fall into two areas: one is digital transformation, where we work to create an intelligent industry chain by using advanced technologies that are efficient and environmentally friendly; the other is integrating ourselves into industrial and social development, seeking opportunities to promote industry transformation and upgrading and regional development.



The ground-breaking ceremony of Sinar Mas Group Yancheng Cellulose Fiber Integration Industrial Base was held on October 31, 2020, marking the official launch of the textile industry transformation and upgrading and intelligent manufacturing strategic development project jointly undertaken by APP China and Jiangsu Province. The base will host a textile industry cluster and provide better-quality cellulose fiber and textile raw materials for upstream and downstream enterprises to boost the transformation and upgrading of local textile industry.

Sinar Mas Group completed the acquisition of Shandong Bohui Paper Industry Co., Ltd. (hereinafter referred to as Bohui Paper) in 2020. APP China and Bohui Paper will leverage product complementarity to fuel further innovation in the white cardboard product line and enhance its diversity.

Sinar Mas Rudong High-Grade Tissue Industrial Base will be able to operate at 50% of its production capacity in 2021. Adopting "Industry 4.0 + Artificial Intelligence", this intelligent base will fully automate everything from storage and transportation to delivery, personnel management, vehicle management, and the material reservation system. This is a landmark project at APP China for integrating the upstream, midstream, and downstream of the industry chain.

Ningbo Asia has launched a chemi-mechanical pulp (CMP) project with an annual capacity of 300,000 tons, which will replace the 306,000-ton waste paper deinking line. The new project is resource efficient, enables cleaner manufacturing, and shows good prospects in product structure, raw material structure, environmental protection, and resource conservation.

Gold East Paper launched the A4 xerographic paper processing line. With an anticipated annual processing capacity of close to 230,000 tons, it serves to meet a growing market demand for xerographic paper.

Guangxi Jingui Pulp & Paper has launched a high-grade paperboard expansion project with an annual output of 1.8 million tons and a hydrogen peroxide (concentration: 27.5%) project with an annual output of 300,000 tons and is currently applying for a CMP expansion project with an annual output of 750,000 tons, with a view to building a world-leading industrial base featuring "Integration of Plantation-Pulp-Paper". The three projects have been listed in the "Double Hundred and Double New" Industrial Projects in Guangxi Province and the "5+2" Major Industrial Projects in Qin Zhou City.

Shared Prosperity with Industry

To achieve high-quality development would require the collective efforts of all sectors. APP China has long been a strong source of support in the pulp and paper industry, collaborating with industry partners to promote its healthy and sustainable development. In 2020, APP China participated in many meetings and seminars organized by the China Paper Association and other industry associations, offering insights on industry integration, innovative development, plastic ban, the 14th Five-Year Plan of the papermaking industry, etc. The Company has signed a strategic cooperation agreement with the China National Pulp and Paper Research Institute to explore new models of industrial development and the digital transformation of traditional sectors.

Ningbo Asia and the China National Pulp and Paper Research Institute also signed a technical service agreement for the national standard-setting project "Basic Terminology for Optical Properties of Paper, Paperboard, and Pulp" hosted by Ningbo Asia.

The year 2020 saw us further explore and apply the nano/micron cellulose technology. This cellulose is a cellulose crystal in the nanometer/micrometer range separated from fiber raw materials by acid, physical, or biological methods. It disperses in aqueous solutions to form stable colloids, which can be used in the papermaking industry, food industry, pharmaceutical industry, etc.



APP China co-hosted the industry salon themed "Focusing on Green Ecology and Building a Beautiful China"



APP China and the China National Pulp and Paper Research Institute entered into a strategic partnership

Participating in Standard Setting to Promote Industry Development

Case

As a key member of the China National Paper Industry Standard Technology Association, Gold Huasheng participated in the national papermaking industry standard meeting held in November 2020, with a focus on drafting a new national standard for thermal paper. Based on prior research that involved testing and analyzing a vast array of global thermal paper performance data, the Technology Department of Gold Huasheng offered insights on the color development performance, preservation performance, and other key physical properties of thermal paper.

The environmental impact of thermal paper is a focus of the discussions. Gold Huasheng's BPA-free thermal products have been commercialized since the end of 2018. Therefore, the company was able to offer strong support for new standards regarding the proposal of "BPA-free thermal products" in terms of concept promotion, technical support, product support, etc.

The primary use of nano/micron cellulose in the papermaking industry

Reducing energy consumption in beating

Increasing the proportion of papermaking fillers as a papermaking enhancer, thus bringing down the production costs and the use of wood

Can be used as an auxiliary agent, sizing agent, or coating for food packaging

Can be used to produce anti-counterfeit paper, anti-counterfeit labels, advanced color-changing anti-counterfeit inks, specialty paper, etc.

Achievements and Honors

APP China

Honors and Awards

2020 Best Practice by Companies on Achieving SDGs

Outstanding Contribution to Epidemic Response in 2020

2020 CSR Model Award

2020 Responsible Enterprise

Ona Award – 2020 Most Influential Brand for Social Responsibility

Love Without Borders

Donating to Yangpu

Award for Overachieving 2019 Energy Conservation Targets

Top 10 Papermaking Enterprises in China's Light Industry

Top 200 Enterprises in China's Light Industry

Ranked 2nd among 2020 Top 100 Private Enterprises in Hainan Province

Top 500 Foreign Trade Companies in China

2020 Top 20 Papermaking Companies in China

Model Enterprise in Hainan Province for Poverty Alleviation Through Technology

Award for Continuous Excellence in Quality Management of Green Raw & Auxiliary Materials

2020 Top 100 Enterprises (10th) in Hainan Province, Top 35 Enterprises of China's Manufacturing Industry

2020 A-Rated Unit for Corporate Labor Security Law Compliance and Integrity

Issuers

Global Compact Network China

The 10th China Charity Festival

The 9th China Finance Summit

China News Service, *China News Weekly*

The 3rd Social Responsibility Conference

CPC Yangpu Economic Development Zone Work Committee, Yangpu Economic Development Zone Management Committee

Yangpu COVID-19 Response Command

Development and Reform Commission of Hainan Province

China National Light Industry Council, China Paper Association

China National Light Industry Council

Federation of Industry and Commerce of Hainan Province

Statistical Society for Foreign Economic Relations and Trade of China

China Pulp & Paper Industry

Hainan Science Technology Enterprise Federation, Technology Industry Federation of Hainan Province, Sina Hainan

China Printing Technology Association

Hainan Enterprise Confederation / Hainan Enterprise Directors Association

Yangpu Economic Development Zone Bureau of Labor

Hainan Jinhai Pulp & Paper

Honors and Awards

Issuers

2019 Golden Mountain Award	CPC Zhenjiang Municipal Committee, Zhenjiang Municipal People' s Government
Model Enterprise for High-Quality Development	CPC Zhenjiang New Area Work Committee, Zhenjiang New Area Management Committee
Top 10 Papermaking Enterprises in China' s Light Industry	China Paper Association
Water Efficiency Leader	Ministry of Industry and Information Technology, Ministry of Water Resources, National Development and Reform Commission, State Administration for Market Regulation
National Green Factory	General Office of the Ministry of Industry and Information Technology
Top 500 Enterprises of China's Manufacturing Industry	China Enterprise Confederation / China Enterprise Directors Association
Key Internationally Renowned Brand for Cultivation and Development in Jiangsu Province (2020-2022): Space Shuttle	Department of Commerce of Jiangsu Province
Green Raw & Auxiliary Material Product	China Printing Technology Association
Advanced Customs-Certified Enterprise	Nanjing Customs of the People's Republic of China
2020 Top 100 Enterprises of Yangtze Delta's Manufacturing Industry (85th)	The Enterprise Confederation of Shanghai, Jiangsu, Zhejiang, and Anhui; the Enterprise Directors Association of Shanghai, Jiangsu, Zhejiang, and Anhui
Unit with Outstanding Charitable Contributions	Zhenjiang New Area Charity Federation
High-Tech Enterprise Certificate	Jiangsu Province Science & Technology Department, Department of Finance of Jiangsu Province, and Jiangsu Provincial Tax Service, State Taxation Administration
2020 Top 100 Jiangsu Enterprises (52nd), 2020 Top 100 Enterprises of Jiangsu's Manufacturing Industry (35th)	Jiangsu Enterprise Confederation
Top 200 Enterprises in China' s Light Industry (34th)	China National Light Industry Council

Gold East Paper

Honors and Awards

Issuers

2nd Batch of Water Efficiency Leaders in Jiangsu Province	The Water Resources Department, Development and Reform Commission, Industry and Information Technology Department, Department of Finance, Department of Housing and Urban-Rural Development, Administration for Market Regulation, Government Affairs Administration, and Office of Water Conservation of Jiangsu Province
2020-2022 Key Brands for Cultivation and Development in Jiangsu Province (Golden Ball, Gold Butterfly, Li Kede)	Department of Commerce of Jiangsu Province
Certificate for China Environmental Labeling (Type II)	China Environmental United Certification Center (CEC)
2020 Outstanding Economic Contribution Award (Top 30 Tax Contributions)	Suzhou Industrial Park Administrative Committee
National Green Design Products	General Office of the Ministry of Industry and Information Technology
Green Factory and Green Design Products in Guangxi Zhuang Autonomous Region	Office of the Ministry of Industry and Information Technology of Guangxi Zhuang Autonomous Region (GZAR)
2019 Industrial Water-Saving Enterprise of Autonomous Region	Office of the Ministry of Industry and Information Technology of GZAR
2018 A-Rated Unit for Corporate Labor Security Law Compliance and Integrity in Port of Qinzhou	Human Resources and Social Security Bureau of Port of Qinzhou Economic and Technical Development Zone
2019 Enterprise for Outstanding Utilization of Foreign Capital	Qinzhou Municipal Commerce Bureau
First batch of pilot enterprises integrating manufacturing and education in Guangxi Zhuang Autonomous Region	Development and Reform Commission of GZAR, Industry and Information Technology Department of GZAR, Department of Education of GZAR, Science and Technology Department of GZAR, Department of Finance of GZAR, Human Resources and Social Security Bureau of GZAR, State-owned Assets Supervision and Administration Commission of the State Council of the People's Government of GZAR; GZAR Tax Service, State Taxation Administration
2019 Publicly Posted Contract Abiding and Trustworthy Enterprise of Guangxi Zhuang Autonomous Region	Administration for Market Regulation of GZAR
Employment Internship Base in Qinzhou Port Area	China (Guangxi) Pilot Trade Zone, Human Resources and Social Security Bureau of Qinzhou Port Area

Gold Huasheng

Guangxi Jingui Pulp & Paper

Honors and Awards

Issuers

2020-2022 Ningbo Foreign Trade Enterprise with Outstanding Strength and Efficiency, 2019 Top 50 Manufacturing Enterprises in Ningbo by Tax Paid	Ningbo Municipal People's Government
Ranked 34th among Top 100 Comprehensive Enterprises in 2020, 21st among Top 100 Manufacturing Enterprises, and 67th among Top 100 Competitive Companies in Ningbo	Ningbo Enterprises Confederation / Ningbo Enterprise Directors Association, Ningbo Federation of Industrial Economics
National Green Factory	General Office of the Ministry of Industry and Information Technology
Outstanding Member of Ningbo Association of Enterprises with Foreign Investment in 2020	Ningbo Association of Enterprises with Foreign Investment
Among the 6th batch of Charity Models in Beilun District, Ningbo	Ningbo Beilun Charity Federation
Award for Environmental Friendliness	Ningbo Association of Enterprises with Foreign Investment
2019 Unit for Blood Donation	Ningbo Office of the Leading Group for Blood Donation
2020 "Star" Vibrant Grassroots Trade Union	Ningbo Industry and Information Industrial Unions
Water-saving Enterprise of Zhejiang Province	Economy and Information Technology Department of Zhejiang
Top 10 Papermaking Enterprises in China's Light Industry	China National Light Industry Council, China Paper Association
2020 Outstanding Economic Contribution Award – Top 30 Tax Contributions, Top 30 Headquarters Economy	CPC Suzhou Industrial Park Work Committee, Suzhou Industrial Park Management Committee
2020 Advanced Unit of Statistical Work in Suzhou Industrial Park	Suzhou Industrial Park Office of Statistics
Pioneer Company in Epidemic Response	CPC Shanghai Hongqiao Linkong Economic Zone Committee
2020 Award for Industry-Leading Tissue Brand of Influential Brand List	Committee of the 7th China Industry Influence Brand Summit
Trusted Brand in Jiangsu Province	Jiangsu Brand Promotion Association, Quality Inspection Center of Jiangsu Province, Rights Protection, Complaint Supervision, and Follow-up Investigation Office of Jiangsu Province

Ningbo Asia

Suzhou Gold Hongye

Honors and Awards

Issuers

Hainan Gold Hongye	2020 Top 100 Enterprises and Top 35 Enterprises of Hainan's Manufacturing Industry	Hainan Enterprise Confederation / Hainan Enterprise Directors Association
	2020 Top 100 Private Enterprises in Haikou	Haikou Federation of Industry and Commerce
Hainan Jinhua Forestry	Outstanding Enterprise for Technological Innovation in Hainan Province	Hainan Science Technology Enterprise Federation, Technology Industry Federation of Hainan Province, Sina Hainan
	AAAAA Credit Enterprise in China's Forestry and Grassland Industry, Award for "Outstanding Topic" of Films and Videos for China's Forestry and Grassland Industry Caring for Health	China Forestry Industry Association, National Innovation Alliance for Forestry and Grassland Health Industry



Post-Epidemic Era: Proactively Creating Opportunities

The outbreak of COVID-19 makes 2020 an unforgettable year. Amidst the battle against COVID-19, we are hearing moving stories of help and support. Donations are made by companies, as well as huge efforts to ensure early resumption of work and production and help restore normal economic and social order.

- On January 26, 2020, Sinar Mas Group announced RMB100 million in monetary relief and RMB350,000 worth of Breeze™ hygienic cleansing wipes to the Overseas Chinese Charity Foundation of China. It is thus the first overseas-Chinese-funded enterprise to respond to the call of the All-China Federation of Returned Overseas Chinese to donate to affected areas.
- Of the RMB100 million donation, RMB10 million was earmarked for the care and development of COVID-19 response personnel and the public health emergency response enhancement project at Huashan Hospital.
- APP China mills all promptly set up a COVID-19 response working group, taking measures to ensure employee safety, timely communication, material supplies, coordination with the government, etc. With the health and safety of our employees protected, we resumed nearly 100% of work and production within two months.
- APP China was awarded for Outstanding Contribution to Epidemic Response in 2020 at the 10th China Charity Festival.



For more information on our COVID-19 response efforts, please see pages 12-15 of the APP China Sustainability Report 2019.



Turning Risks into Opportunities

The impact of COVID-19 was felt across all sectors in 2020. The biggest impact for the papermaking industry is on the supply chain and logistics, putting to the test a company's ability to mobilize resources during an emergency. On the whole, the papermaking industry has more "opportunities" than "risks".

COVID-19 has created a greater demand for paper products, such as tissues, wipes, and wrapping paper, as well as a heightened public awareness of health and hygiene. This prompted us to speed up the resumption of production and start developing more functional products.

Following the outbreak of COVID-19, Gold Huasheng quickly began developing medical dialysis paper. While it was a brand-new medical area for the company, the R&D team managed to complete the laboratory tests within three days drawing on extensive research on product standards, patents, and literature, based on which it developed a production plan together with the production team. To go from an idea to fruition, it took the team less than a month. Once COVID-19 eased slightly in April, Gold Huasheng began communicating with the customers, adjusting and optimizing product quality based on their needs. In 2020, its dialysis paper passed relevant safety inspections and were put into mass production to be used for the packaging of masks and medical devices, etc.

To meet the rapidly growing demand for protective products, Suzhou Gold Hongye has launched a series of antibacterial tissues, which eliminates over 99% of bacteria. The Ultra-Mini Royal Herbal Antibacterial Wipes, Ultra-Mini Children's Antibacterial Wipes, and Ultra-Mini Toilet Wipes are very popular for they can kill 99.9% of bacteria and are convenient for use on the go. Suzhou Gold Hongye also quickly began producing medical masks following COVID-19 and obtained the registration certificate and production license for disposable medical masks issued by the Jiangsu Medical Products Administration at the end of 2020.



Breeze™ ultra-mini antibacterial tissue product series



Breeze™ mask

Focusing on Sustainability to Find Opportunities in Challenges

COVID-19 has spotlighted sustainability more than ever around the globe. Addressing climate change, tackling plastic pollution, protecting biodiversity, encouraging responsible consumption... a long list of sustainability issues is being increasingly incorporated into government agendas, corporate responsibility, and grassroots initiatives. Companies are bound to experience short-term pains as the economic model undergoes a transformation, but they also have immense opportunities.

APP China thinks over changes to be made to the business model after COVID-19 and prioritizes digital transformation as an important development strategy. Going digital allows a company to respond more quickly to market changes and the challenges brought about by uncertainties like COVID-19. For the traditional

manufacturing sector, digitization will enable significant improvements in effectiveness and efficiency as well as reductions in carbon emissions, and is therefore an important way to achieve carbon neutrality. Therefore, we are pushing for Group-wide digitization so that we can move the entire industry chain online and deliver end-to-end operations to achieve lean development. Innovation is another focus area. We have made major breakthroughs in environmentally friendly technologies and products, delivering resource-efficient and "Paper in Place of Plastic" solutions.

We will continue to embed sustainability deeply into our operations. Together with industry partners, we will make further innovations and explore ways of high-quality development for the papermaking industry.



R&D investment in 2020: RMB 1.919 billion

102 patent applications, including 40 invention patents, 42 utility model patents, and 20 design patents

Green and Eco-Friendly Papermaking

Green development has become a common currency around the globe. As China establishes goals of "carbon peak" and "carbon neutrality", green, low-carbon, and circular development is taken as a national strategy. In this context, it has become an important and urgent task for papermaking companies to optimize sustainability management systems and speed up green transformation. Having proposed and started to implement the green cycle model of "Integration of Plantation-Pulp-Paper" back in the 1990s, APP China is firmly committed to green and sustainable development. We have established a development model where "forests support paper, the paper industry nurtures forests, and forests and paper are integrated", and push for green transformation across the wider industry.

In 2020, APP China continued to strive for a greener industry chain. We continued with the CFCC/PEFC sustainable forest certification to improve forestry management; we made the forward-looking move of conducting a carbon sink accounting; we strengthened comprehensive environmental management of our mills and further enhanced carbon emissions management in step with the construction of the national carbon trading market; we extensively explored "Paper in Place of Plastic" products to continue to bring high-quality and diversified innovative products to the market.



Green Forestry and Forest Conservation

Plantation is the starting point of APP China's "Integration of Plantation-Pulp-Paper" green cycle. We manage our plantations in a lawful, technology-based, eco-friendly, and harmonious manner and promote sustainable forest management to contribute to balanced economic, social, and environmental growth. We started building forestry bases back in 1995. Against the backdrop of China's "carbon

peak and neutrality" goals, we conducted a carbon sink accounting and assessment of our forestry bases, setting the groundwork for pushing ahead with climate-related initiatives. We also continued to undertake sustainable forest certification and product sustainable labeling to promote the conservation and sustainable development of forest resources across the value chain.



On-site inspection and verification of forestland



Summary meeting for carbon sink inspections



Forest Carbon Sink Accounting

Forests absorb carbon dioxide from the atmosphere and fixate it in vegetation or soil, making them the largest "carbon reservoir" in the terrestrial ecosystem. Thus, forests as carbon sinks have become a key component of global climate change mitigation and adaptation actions and will also play a significant role in helping China realize the carbon neutrality goal.

Since 1995, APP China has been investing heavily in plantations in Guangdong, Hainan, Guangxi, and Yunnan, pioneering the concept of "Integration of Plantation-Pulp-Paper" in China. By the end of 2020, APP China owned 271,100 hectares of plantations. APP China Forestry launched the forest carbon sink project in November 2019 under the leadership of the Group headquarters and set up a dedicated

Forest Carbon Sink Project Team in September 2020. We commissioned a professional third party to conduct an aggregate carbon sink accounting of our forestlands in accordance with the Carbon Sequestration Afforestation Project Methodology. The results showed that APP China plantations had absorbed approximately 42.395 million tons of carbon dioxide by the end of 2020, including 4.624 million tons absorbed in 2020. The accounting allowed us to fully appreciate the value of APP China's "green DNA" and provided an opportunity for the project team to gain an in-depth knowledge of forest carbon sinks, which would facilitate further implementation and innovations of climate-related practices in the future.

Consolidating Foundation of Carbon Sinks Through Sustainable Forest Management

Case

Lancang Sub-BU of APP China Forestry has planted 540,000 mu of forestry bases since 2003 in three frontier counties of Yunnan Province in Southwestern China, namely Lancang, Menglian, and Ximeng County. The forests are mainly eucalyptus and also include some Betula alnoides Buch.-Ham. ex D.Don, alnus nepalensis D.Don and a green reservation area of about 77,000 mu. None of them have experienced large-scale logging. According to the forest coverage survey conducted by local forestry authorities, the total forest area and forest coverage rate under the jurisdiction of the three counties have increased by 6.46 percentage points and 3.5 percentage points respectively since we started that plantation operation in those areas.

As part of our forest carbon sink accounting, we contracted a third-party institution to conduct an on-site inspection and assessment of the carbon sink contributions of our forestry bases in the Lancang Sub-BU in December 2020. It showed that as of the end of 2020, those forestry bases had absorbed 21.647 million tons of carbon dioxide in total, accounting for about 51.01% of APP China's total forest carbon sinks.



Promoting Forest Certification

Forest certification is a globally recognized way to effectively promote sustainable forest management and ensure the market access for forest products. The Forest Management (FM) certification process helps forest managers identify and solve problems; the Chain of Custody (CoC) certification is an effective way to prove the legality and traceability of the raw materials for forest products. Both

are instrumental in promoting forest conservation and responsible consumption. For years, APP China has been actively carrying out CFCC/PEFC-FM and -CoC certifications and forest-certified product labeling to continuously improve sustainable forest management in the value chain, while working with industry partners and consumers to protect forests.

Tip

The Programme for the Endorsement of Forest Certification (PEFC) is one of the world's leading forest certification systems, and the China Forest Certification Council (CFCC) is the highest governing body of forest certification systems in China, representing leading international and domestic sustainable forest certification systems respectively. CFCC and PEFC reached mutual recognition in 2014, signifying that China's own forest certification was officially aligned with international standards.

APP China Forestry undertakes audits for the CFCC/PEFC forest certification and the ISO 14001 Environmental Management Systems (EMS) certification every year. Combining external and internal audits, it facilitates progress in sustainable forestry through a repeated "audit-improvement-audit" process. In the first half of 2020, the Sustainability Team at APP China Forestry

conducted a comprehensive internal audit on all the departments, forest farms, and nurseries in Hainan, Guangdong, Guangxi, and Yunnan forest areas in accordance with the CFCC/PEFC-FM and ISO 14001 standards as well as policies, international conventions, and national laws and regulations relating to forestry, and addressed the identified problems in time.

Yunnan forest area underwent the CFCC audit in the second quarter of 2020 and Guangxi, Guangdong, and Hainan forest areas underwent the CFCC audit in Q3. Experts from the third-party certification agency carefully inspected the forest areas in terms of logging, afforestation, tending, management and protection, storage, etc. Thanks to thorough

preparation and thoughtful daily work, the forest areas set the best audit record in APP China Forestry's history in 2020. APP China Forestry reported performance highlights and expert suggestions to the management team and quickly replicated and promoted best practices across the organization.



Forestland on-site audit

To better communicate the idea and importance of sustainable forest management to consumers, we strongly endorse forest certification labeling, printing the CFCC/PEFC joint logo on our product packaging and continuing to enrich our lineup of labeled products. Following the Breeze™ Touchcare

tissue and several products under our high-end tissue brand EMPORIA, we continued to promote CFCC/PEFC labeling to gradually cover more products in 2020. As of the end of 2020, the CFCC/PEFC joint logo had been applied to over 100 APP China product categories, including all of our tissue products.



All APP China tissue products carry the CFCC/PEFC joint logo



Area of CFCC/PEFC-FM-certified plantations: **244,382** hectares

Percentage of CFCC/PEFC-FM-certified plantations: **90.12%**

Number of CFCC/PEFC-CoC-certified subsidiaries: **15**

Note: For more detailed information, please refer to the *Sustainability Certification* section.

Green Mill Management

APP China aspires to be a modern and green papermaking company, and increasingly invests in building high-efficiency and low-emission production bases. In response to China's green development goals and government requirements in recent years, such as "fully implementing green manufacturing", "winning the battle against pollution", and

"carbon peak and neutrality", APP China mills have been actively implementing government requirements, intensifying investment in technological upgrading and clean production and accelerating the deployment of carbon management, aiming at going green and low-carbon at full force.

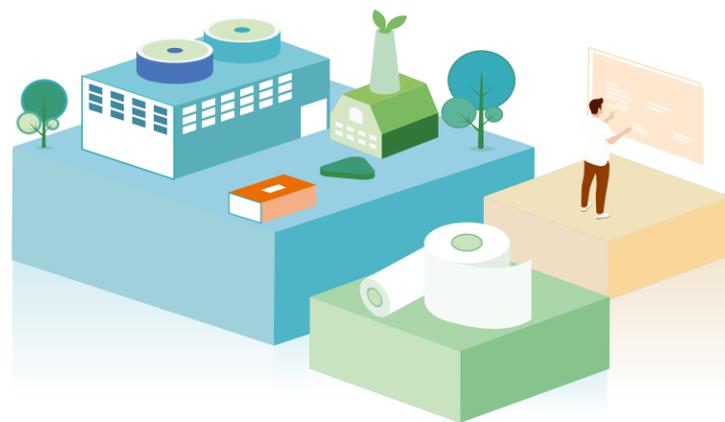
Improving Environmental Management

Environmental protection takes a front seat in manufacturing and operations at our mills. They have all established an environmental management system based on the ISO 14001 standard and continue to strengthen regulations and measures in this regard. They ensure that all the environmental indicators meet the requirements of the latest national policies and standards and keep moving forward. With years of hard work and progress, the mills have been highly recognized for their environmental performance by national and local governments and industry associations.

Our mills continue to strengthen environmental risk management to address environmental hazards at the source. Guangxi Jingui Pulp & Paper developed the *Environmental Hazard Inspection and Management Measures* in

2020, checking for and addressing potential environmental hazards in the rainwater system, wastewater pipe networks, solid waste management, etc. to prevent environmental incidents from occurring. At Hainan Jinhai Pulp & Paper, 19 environmental emergency plans are put in place together with regular drills and training to improve employees' preparedness in the event of environmental emergencies.

In 2020, we continued to increase investment in environmental protection, with APP China mills within the reporting scope investing a total of **RMB 731 million**.



Building Green Mills

Green manufacturing is one of the five major tasks of the *Made in China 2025* strategy. Green manufacturing means green development across the industry chain and throughout the product life cycle. Green mills feature intensive land use, clean production, waste recycling, and low-carbon energy, and they are where green manufacturing takes place. In 2020, Ningbo Asia and Gold East Paper were both named "National Green Factory", and Guangxi Jingui Pulp & Paper was named "Green Factory" in Guangxi Zhuang Autonomous Region, representing new levels of green manufacturing at APP China.

Digital transformation has enabled the mills to track the environmental indicators of production and operations in real time, further streamlining our environmental management. Moreover, more advanced green manufacturing technologies and equipment are being adopted in new bases and projects under construction, such as the Yancheng Cellulose Fiber Integration Industrial Base and the Ningbo Asia 1.5-million-ton high-grade eco-friendly cardboard project. Our goal is to set an example for the industry for balancing ecological and economic benefits.

Comprehensive Management of Carbon Emissions

The "carbon peak and neutrality" goals have brought China's green development to a new level, and this unprecedented wave of low-carbon, green transformation is set to sweep across all sectors. As an energy-intensive industry, the manufacturing industry should proactively shoulder the responsibility of reducing greenhouse gas (GHG) emissions. Over the years, APP China mills have been working with relevant government authorities to conduct carbon accounting and auditing, and have established the management mechanism for carbon emissions monitoring, reporting, and verification. As one of the first eight major sectors included in China's national carbon trading market, the papermaking sector has a particularly significant role to play in energy conservation and consumption reduction during the 14th Five-Year Plan period. As such, we

have been systematically planning our future carbon management efforts at the Group level.

In 2020, our mills initiated a phased elemental carbon measurement program, independently testing the calorific value of energy used and the carbon content per unit of calorific value, with the intention of improving the quality of the carbon emissions data and laying the groundwork for future participation in carbon trading. Besides transforming and upgrading existing production equipment, they also adopted more advanced eco-friendly equipment and technologies in new projects and actively explored energy structure transformation. Ningbo Asia launched a photovoltaic power plant to gradually increase the use of renewable energy.

Building an Eco-Friendly Cellulose Fiber Integration Industrial Base

We started building the Yancheng Cellulose Fiber Integration Industrial Base (hereinafter referred to as the "Yancheng Industrial Base") in October 2020 as an important step of our "cellulose fiber integration" upgrading strategy. Viscose fiber is one of the main products produced at the base. It uses natural cellulose pulp as the basic raw material and is a green renewable alternative to polyester and cotton. Once put into production, the base will be one of the largest cellulose fiber production and R&D bases in China. It will integrate technology, advanced manufacturing, circular economy, and the shared prosperity of the industry chain, effectively driving the transformation and upgrading of local textile industry.

The Yancheng Industrial Base will uphold standards beyond the *Specifications for Viscose Fiber Industry (2017 Edition)*, which is the most stringent regulation in China. Leveraging a reasonable combination of electricity and steam use, energy-efficient equipment, and increased recycling of energy and resources, it is set to realize sustainable manufacturing that produces more with less.



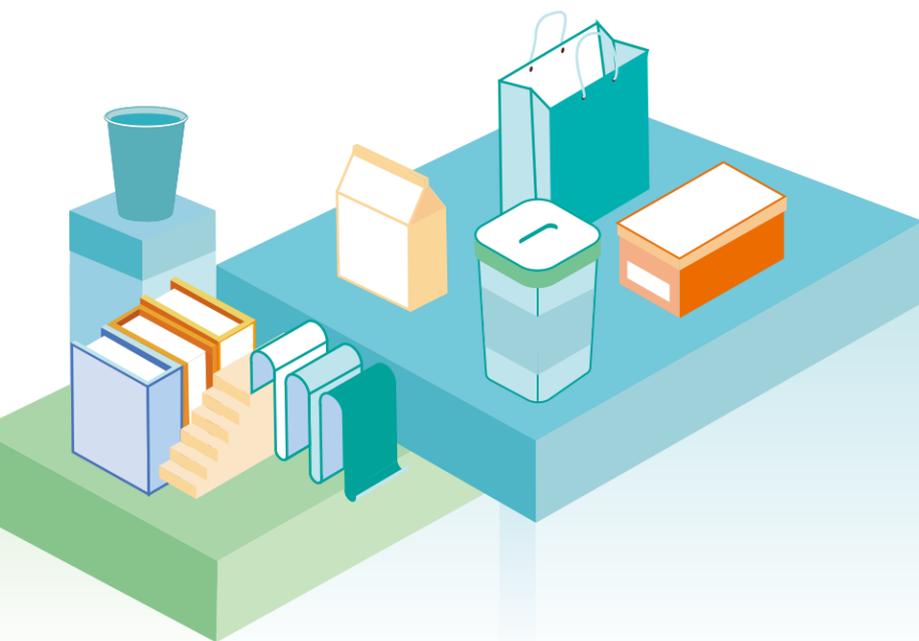
Setting Up Carbon Emissions Management Committee

Hainan Jinhai Pulp & Paper has set up a Pulp & Paper Carbon Emissions Management Committee led by its general manager and with representatives from multiple departments, including technical, production, maintenance, energy, alkali recovery, logistics, accounting, etc., with specified responsibilities and accountabilities. The committee is responsible for coordinating the development of goals and policies relating to carbon emissions management, the collection, sorting, verification, and analysis of energy consumption data, reviewing carbon emissions management, etc.

Green Product Innovation

The deteriorating environment and improving living standards together have increased the environmental awareness of Chinese consumers and their demands for green products. Exploring innovations and upgrades in green products is the right thing to do for papermaking companies in order to ride this

megatrend. APP China puts the needs of consumers and customers first and invests heavily in technological innovation and R&D to keep supplying the market with better-quality and more environmentally friendly products and make our industrial paper, cultural paper, and tissue products greener.



Pushing Forward "Paper in Place of Plastic"

The National Development and Reform Commission and the Ministry of Ecology and Environment issued the *Opinions on Further Strengthening the Control of Plastic Pollution* in January 2020, introducing a phased ban on plastic. Paper products play a crucial role in the replacement of plastic. In 2020, APP China

pumped up R&D in food packaging, such as straw base paper, grease-resistant paperboard, and white kraft paper, and developed more "Paper in Place of Plastic" solutions based on market research and communication with industry partners, such as degradable food packaging paper.

Championing "Plastic-Free" Labeling

In 2020, APP China Paper Business Unit attended the Labelexpo South China 2020 as an exhibitor for the first time, where it displayed a series of paper label materials of superior quality and performance. They included single-sided coated paper, thermal paper, wood-free printed paper, white kraft paper, etc., which could all be widely used in label substrate and liner as alternatives to plastic, helping customers in the label industry achieve "plastic-free" development.

Single-sided coated paper

Suitable as substrate and liner for self-adhesive paper; the non-fluorescent single-sided coated paper, which does not contain fluorescent agent, makes for more eco-friendly label products.

White kraft paper

Suitable as liner for lamination.

Thermal paper

Suitable as supermarket labels, logistics labels, medical labels, industrial labels, etc.

Wood-free printed paper

Suitable as single- and double-sided lamination.

Case

Upgraded "Zero-Plastic" Food Packaging

The food and beverage industry is a major consumer of disposable plastic packaging. The eco-friendly "zero-plastic" food packaging technology will help reduce the use of plastic in the packaging for takeaways, fast food, beverages, etc.

The Foopak Bio Natura biodegradable food paperboard released by Sinar Mas Group at the first China International Import Expo (CIIE) in 2018 has water-based plastic-free laminate inside and is compostable, repulpable, and resistant to high temperatures up to 220°C. The product has been widely recognized by our customers, securing several potential orders at the first and second CIIE. With two years of optimization, the Foopak products have acquired much higher degradability and recyclability and can fully biodegrade in household soil within 24 weeks. They have been certified as home-compostable by TÜV Austria.



"Zero-plastic" product series independently developed by Ningbo Asia

Ningbo Asia launched the "zero-plastic" cup paper in 2020. A water-based barrier coating is added on the surface of the paper cups to prevent liquid from soaking through the base paper, with an extra layer of heat-seal coating to make the cups heat resistant. Free of plastic, the product is repulpable, recyclable, industrially degradable, and compostable.

The product can be reused about six times before it can be completely recycled at the end of its service life. About 0.9 tons of high-quality paper fiber can be recovered from each ton of cup paper, equivalent to saving fifteen 12-meter-tall trees. The product can completely degrade basically within eight weeks and about 100 days if mixed with compost. It has been certified by TÜV DIN CERTCO and European Bioplastics (EUBP) for industrial composting. In terms of food safety, the product uses 100% virgin pulp without any fluorescent whitening agent, which is fully compliant with national requirements on food safety.

The cup paper is among APP China's wide selection of "zero-plastic" food packaging products that facilitates a green and low-carbon life. Others include the OPB greaseproof food paperboard, OPBs antibacterial wrapping paper for fresh foods, WXS straw paper, etc.



Foopak Bio Natura biodegradable food paperboard product lineup

Case

Product R&D and Innovation

As people go after a more premium consumption experience, their demands for paper products have also diversified. Our response is a continuously optimized and enriched product lineup achieved through technological R&D and innovation.

Aiming for our tissue products to meet consumers' needs for health, portability, and quality, we have launched a range of multi-functional paper products and intensified the R&D of antibacterial products. For cultural and industrial paper products, we adjust our product structure in step with the latest demands of our customers, launching white kraft paper with a better printing performance, more environment- and eye-friendly paper for printing learning materials, and white cardboard better suited for high-grade color-printed corrugated boxes, among other products.

Unsize Composite Embossed Products

Paper towel embossing can be not only decorative but property-enhancing as well. With increased thickness, toughness, absorbency, etc., embossed towels have better functionality, appearance, and touch. Suzhou Gold Hongye launched unsize composite embossed products in 2020. Without chemical compound glue as a laminating agent, they are greener and less prone to mildew while boasting enhanced feel and functionality.



Breeze™ Primary Wood Black-Gold Embossed Soft Tissue Series

Improving Surface Properties of White Kraft Paper

Gold East Paper has optimized the surface properties of its kraft paper through refined processes like pulp grinding and calendering, making it smoother for better prints, and also stronger, stiffer, and more burst-resistant. Compared with the traditional coated paper with plastic coating, this new white kraft paper is easily degradable and free of fluorescent agents. It is therefore suitable for producing food packaging products such as paper bags for food and takeaways, tray paper, and bread bags.

Natural-Whiteness Paper for Printing Learning Materials

Fluorescent agents are often added in the papermaking process to make the paper "whiter", but it may also cause health issues and eye fatigue. The natural-whiteness paper for printing learning materials developed by Gold East Paper has a warmer color for it does not contain fluorescent agents. It is good for easing eye fatigue and discomfort after long-time reading and therefore can be widely used for printing teaching materials, test papers, books, and magazines.

Paper for High-Grade Color-Printed Corrugated Boxes

Based on in-depth market research, Guangxi Jingui Pulp & Paper developed "DV1", namely the Jinbei coated white kraft, a paper product specifically for high-grade corrugated boxes, to echo customers' growing demand for high-grade color-printed corrugated boxes. To fully assess whether "DV1" met the requirements of different customers, we conducted trial tests covering the main processes at several manufacturers. The results show that it well meets customer requirements in terms of printing, laminating, gluing, box folding, and bursting, among other aspects.

Eco-Friendly Bio-Latex

Latex is needed in the production of coated paper to improve its strength, gloss, printability, and other properties, and the commonly used styrene-butadiene latex is mainly made from petrochemicals. To make the product healthier, safer, and greener, Hainan Jinhai Pulp & Paper developed the eco-friendly starch-based bio-latex and a digitally connected continuous supporting bio-latex preparation system. As the performance of the bio-latex continues to improve, the company is gradually using it to replace more styrene-butadiene latex. At present, 20,000 tons of styrene-butadiene latex is replaced every year.

Our Story

"Zero-Plastic" – From Zero to One



APP China officially launched the "zero-plastic" cup paper in 2020. Being 100% free of plastic, this eco-friendly product is recyclable, industrially degradable, and compostable. Outstanding waterproofing and impermeability also make it a good alternative to traditional plastic-coated paper cups.

Behind this small paper cup are numerous innovations and breakthroughs. How to ensure the safety of food contact? How to choose the right coating materials? How to improve the recyclability of the paper cups? The "zero-plastic" paper cup has been the result of unremitting efforts of the R&D team and the hard work of internal and external stakeholders. Those valuable experiences lay a solid foundation for the future development and application of "Paper in Place of Plastic" technologies and products at APP China.



Achieving Technological Breakthroughs

"Paper in Place of Plastic" is an emerging trend in China, so there is not yet much mature technical experience to learn from. The R&D Team at Ningbo Asia met numerous technical challenges when developing the "zero-plastic" products, and the biggest one was finding the right coating. The coating must have good liquid (hot water, coffee, milk tea, etc.) resistance, as well as degradability and recyclability. Together with professional coating material suppliers, the team repeatedly tested the performance of the coatings and optimized the formulations accordingly. Given the differences in the lab equipment and the coating machines at the mills, they undertook multiple processing adaptability tests. The efforts paid off, and they successfully developed a water-based coating with good resistance, sealing, printability, and recyclability properties.

Continuing to Innovate and Excel

During product development, the team always thinks creatively and looks to innovate. For example, working with biodegradability experts, they had developed a new technology combining base coating and top coating that balances a product's resistance properties with recyclability, heat seal, and anti-stickiness. The newly developed chemical additives are a breakthrough in the application of corn starch, an environmentally friendly material, in paper sizing, increasing the proportion of corn starch used in latex from 20% to 50%. The team will work to further enhance the safety and environmental friendliness of the cup paper by exploring the possibility of using vegetable oil as a coating material.

Becoming an Industry Benchmark

As a brand-new product, when the "zero-plastic" cup paper was launched, there was not yet an industry standard or a unified performance assessment in China. As such, Ningbo Asia joined hands with industry colleagues and initiated the China Paper Association Group Standards for "Plastic-Free Cup Paper and Finished Cups". It thus led the industry in standardization by creating the first set of assessments and having dialogues with standard-setting organizations and government authorities. Over 50 tons of the "zero-plastic" cup paper were ordered within two months of its release.

By launching the "zero-plastic" cup paper, we went from zero to one. It is only the starting point of our exploration of "Paper in Place of Plastic" products. We will continue to live the spirit of craftsmanship and further explore the possibilities of paper products to contribute to building an ecological civilization.



A Harmonious Future Driven by Digital Innovation

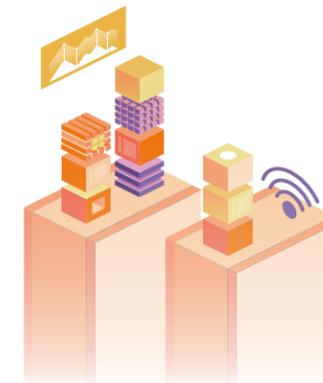
China places a heightened focus on the digital economy in recent years, pushing for its deep integration with the real economy. While the outbreak of COVID-19 in 2020 has dealt a heavy blow to the global economy, it also presents new opportunities for profound digital transformation of the economy and society. The digital economy especially requires manufacturing companies to break away from the old development pattern that focuses on the mere growth of production and scale and to leverage digital tools to create new models, new values, and new business opportunities.

APP China was an early adopter of digital and intelligent transformation. From introducing such concepts as Industry 4.0, automation, and intelligence, to automating equipment, redesigning processes, and building big data platforms, and to creating the pathway from production to consumption using digital means, we have worked out a path of digital transformation suited to our development. We incorporate digital transformation into the Group's Four-Wheel Drive strategy and have formulated the Group-wide digital transformation strategy for 2025. We believe that the digitization trend will bring many important changes to the traditional manufacturing sector and that acting proactively will help the industry realize high-quality development in a much shorter time span.

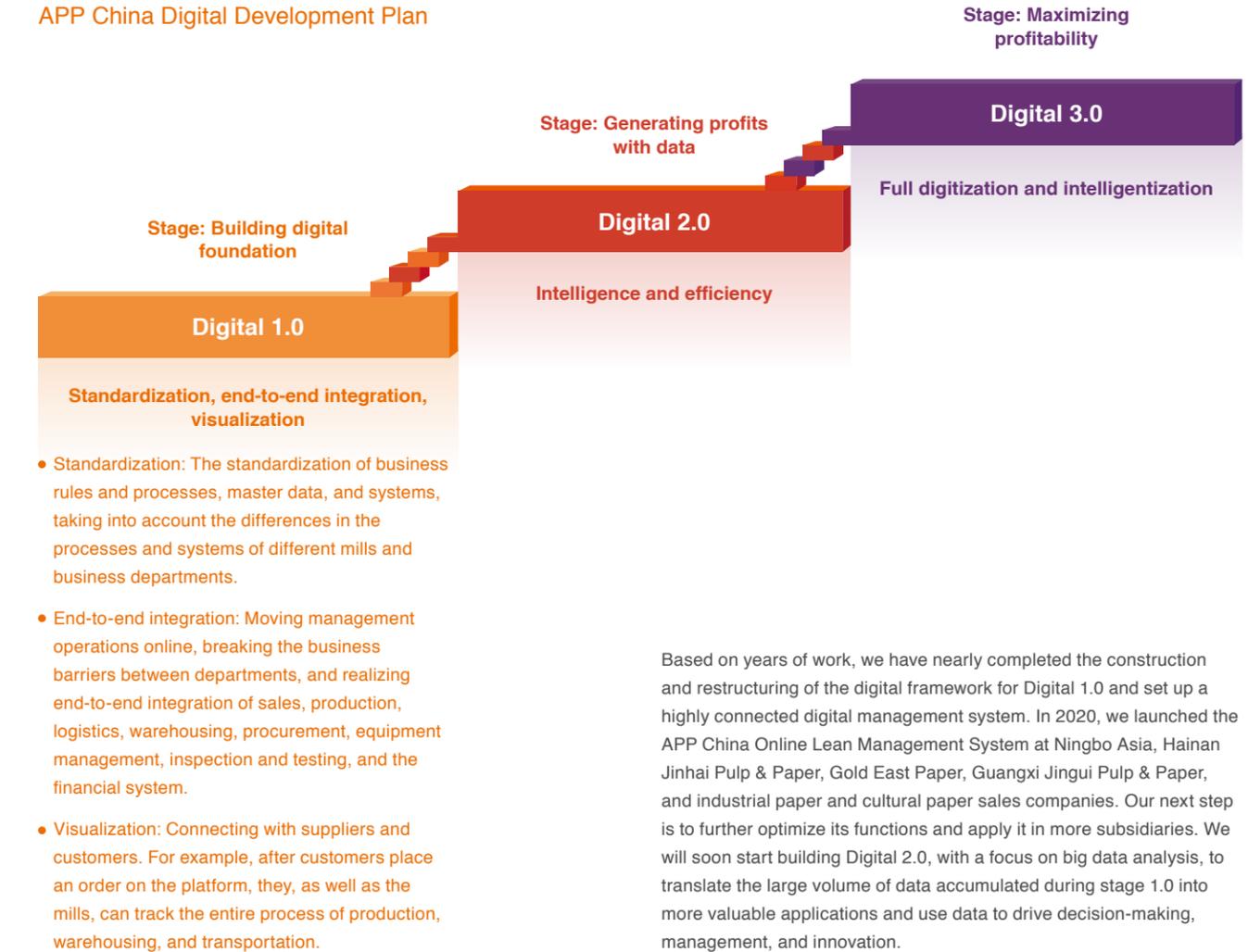


Developing a Digital Transformation Strategy

Digital transformation is a key strategy at APP China, having been prioritized since 2017. Such a forward-looking move has helped us achieve rich innovations and hands-on experience in implementing automated and information-based processes, systems, and manufacturing. We launched a new digital development plan in 2020, aiming to leap from Digital 1.0 to 3.0 within five years and fully ramp up the efficiency of the value chain and management through restructuring and innovating our business processes, products and services, business models, customer experience, intelligent manufacturing, and intelligent management. The Group Digital Office is newly set up to coordinate the overall planning and design of the digital strategy, system reconstruction, business process design, data asset management, and digital intelligence, ensuring that our digital strategy is successfully delivered.

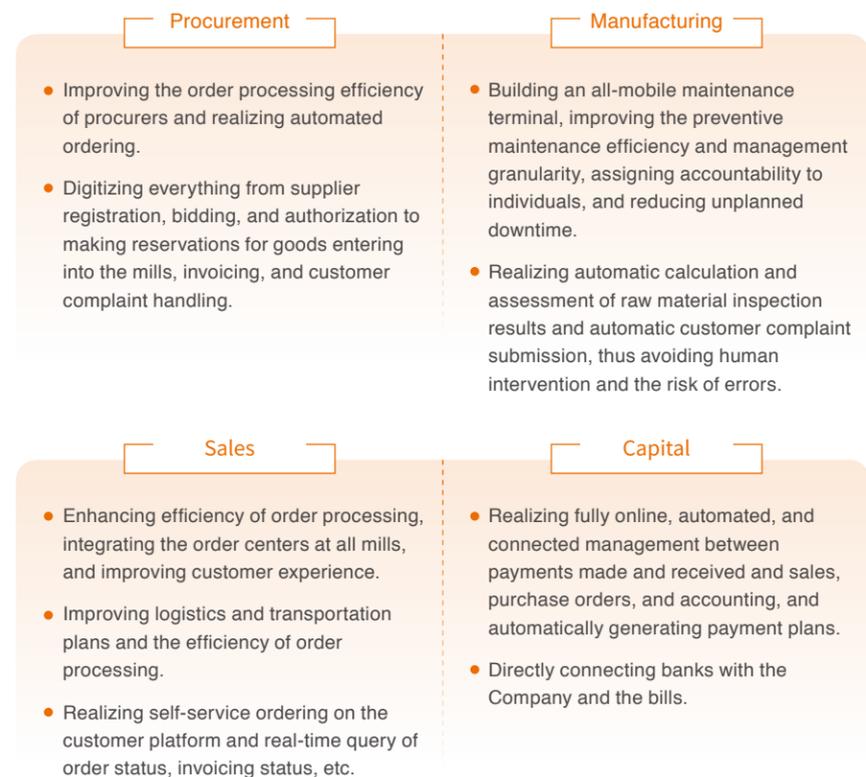


APP China Digital Development Plan



Based on years of work, we have nearly completed the construction and restructuring of the digital framework for Digital 1.0 and set up a highly connected digital management system. In 2020, we launched the APP China Online Lean Management System at Ningbo Asia, Hainan Jinhai Pulp & Paper, Gold East Paper, Guangxi Jingui Pulp & Paper, and industrial paper and cultural paper sales companies. Our next step is to further optimize its functions and apply it in more subsidiaries. We will soon start building Digital 2.0, with a focus on big data analysis, to translate the large volume of data accumulated during stage 1.0 into more valuable applications and use data to drive decision-making, management, and innovation.

Current Achievements of the Online Lean Management System



People are the key in implementing the digital transformation strategy. The year 2020 saw us place a heightened focus on the training and capacity building of digital talent in two main ways. First, we combine talent attraction with development to form a strong pipeline of digital talent; second, we have all of our subsidiaries provide training on management system operations and application under the leadership of the Group, including special training on digital skills that match the characteristics of different positions, thus building stronger digital awareness and abilities across the organization.

Building Intelligent Production Workshops

Case

By applying the Online Lean Management System in its A4 electrostatic copying paper production line, Gold East Paper enabled information exchange and data transfer between the production system and the equipment system, thus improving the production efficiency and environmental benefits at the same time.

Lean management of production

The Lean Management System automatically analyzes the inventory and makes optimal production plans based on the sales orders; during paper roll slitting, the system conducts data analysis of the date and quantity, etc. of order delivery and automatically calculates the slitting amount based on the paper roll information obtained by scanning the bar code.

Optimized quality control

The production process inspection is down to each process and part; the inspection equipment automatically collects inspection data, which is helpful for comprehensive quality risk control; customer complaint handling is traceable throughout the process.

Automatic warehousing

An automatic scanner is installed on the packaging line to enable automatic entry and upload of product information; the finished products are loaded directly into vehicles and automatically shelved and scanned.

Resource and environmental management

The Lean Management System has substantially reduced all kinds of waste generated in production, such as paper roll loss during slitting; all the trimmings and waste paper generated in production are returned to the pulp-making process in a timely manner; laser coding, which is a green and non-polluting technology, is used for packaging barcoding; the digital dashboards provide environmental data, such as changes in energy consumption, and inform timely analysis.

Accelerating Digitization of Practices

Guided by strategies around intelligent and digital transformation, APP China's new bases, mills, and forestry BUs have implemented a series of digital innovation projects and achieved remarkable results.

Logistics Automation at the New Base

Case

Automated warehousing is a key feature of the Rudong Base. The automated finished product warehouse automates everything from product labeling and scanning, palletizing, and warehousing to exit and face sheet labeling; the automated e-commerce warehouse automates day-to-day sorting and shipment and can expand to a shipment volume of 150,000 boxes per day during sales promotions. The application of 5G technology and Automated Guided Vehicles (AGVs) enables automated and unmanned material-carrying such as inventory storage and retrieval, assembly line feeding, and empty stack recycling. Technologies like Radio-Frequency Identification (RFID), unattended weighing system, and parts barcode scanning have enabled automatic tracking of the entire logistics process at the Base from the transportation of materials into the mill to production, and to the transportation of finished products out of the mill. We will continue to explore innovations such as unmanned trucks and automatic finished product loading systems to make the logistics at the Rudong Base increasingly automated.



Automated e-commerce warehouse at Rudong Base

Intelligent Automated Weighing System

Case

Hainan Jinhai Pulp & Paper launched the intelligent automated weighing system in October 2020. It has multiple functions, such as vehicle entry/exit management, access control material checking, automatic weighing and error rectification, data collection and sharing, and remote monitoring and management. With technologies such as RFID and automation, the system can accurately track the loading and transportation of materials, thus avoiding mixing or misloading. Besides preventing non-compliance and cheating, it also enhances the work efficiency and level of automation.

Gold East Paper has applied the intelligent weighing system in ten weighbridges following the launch of the Lean Management System. With the old weighing system, the operator had to identify the name of the goods, the license plate number, the driver's name, etc. and manually log everything into the system, which was time-consuming and prone to mistakes. The new intelligent weighing system has shortened the average weighing time from 2 minutes and 15 seconds to 1 minute and 30 seconds, improving the efficiency by 33%. While the number of weighbridges has increased from four to ten, the number of operators has dropped from seven to four, equivalent to a 42.8% reduction in labor.

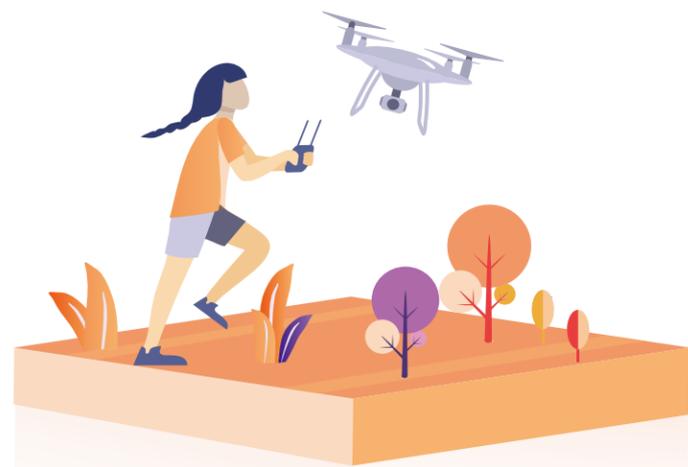


Remote monitoring room for the intelligent weighing system

Automatic Cleaning Device at the Dock

Case

The loading and unloading of bulk cargoes such as coal and ore at the docks can easily cause dust. Usually, someone is assigned to apply on-site water sprays throughout the process so that dust does not build up. This inflicts labor costs and may also cause safety hazards. Gold East Paper designed an automatic linked intelligent cleaning device that can be directly superimposed on the existing bridge crane equipment. The PLC (Programmable Logic Controller) system on the bridge crane links the operational signals with the water inlet solenoid valve of the device and automatically sets the mode and angle of spraying water based on the actual needs. This has led to enhanced safety and less use of materials such as protective equipment and water hoses. The device has passed the preliminary review for utility model patent by the State Patent Office.



Developing Smart Forestry

Case

APP China Forestry has set up information systems such as the Forestry Information Platform more than ten years ago, which it continues to update and optimize. In 2020, it officially launched a system integration program based on the APP China digital transformation strategy. The program is intended to highly integrate the information involved in the various processes of forestry management and radically boost its efficiency.

Another important aspect of APP China Forestry's development of smart forestry is the application of the UAV (Unmanned Aerial Vehicle) aerial photography technology. The technology can be used in a wide spectrum of scenarios such as forestland area measurement, forestry quality review, and monitoring of disasters or illegal logging. It provides a more straight-forward and comprehensive reference for forestland management decision-making. For example, foresters can identify and map out forested land, thinly forested land, and non-forested land before logging based on the aerial images taken by the UAV, which serves as a more accurate reference for the logging operations. In 2020, the aerial photography team from APP China Forestry completed aerial photography of approximately 1.254 million *mu* of forestland using 13 UAVs, at more than three times the efficiency of the traditional approach with handheld manual GPS measurement.

APP China Forestry is also introducing all types of mechanized equipment to promote the automation of seedling tending, planting, fertilization, weeding, logging, etc.



The use of UAV aerial photography in forestland survey

Our Story

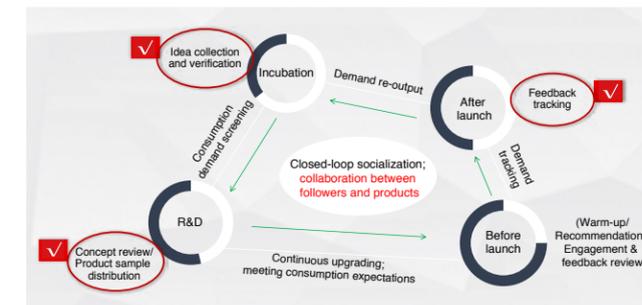
Improving Consumption Experience Through Digital Means



The outbreak of COVID-19 has boosted the demand for digital products and services. APP China responds by actively exploring opportunities for digital consumption and continuing to innovate in products and online marketing.

Accommodating Consumer Demand and Using Data to Drive Product Innovation

Suzhou Gold Hongye has built an online shopping mall called the Breeze™ Picks, which can be easily accessed on the WeChat Mini-Program. Besides the various tissue products, the platform also hosts the Social Customer Relationship Management (SCRM) system that Suzhou Gold Hongye develops for product evaluation. The company uses the system to collect and track consumers' needs and feedback throughout the four stages of product idea generation, product development, before launch, and after launch. The SCRM system thus supports a closed-loop product development process involving consumer engagement, where the company takes ideas from consumers and turns them into finished products that then go back to consumers. By constantly repeating this process, the company brings its products increasingly closer to consumers' real needs and becomes truly "consumer-centric". In 2020, the company evaluated the development of six new products in the SCRM system and developed some of them based on the results of the evaluation.



SCRM Evaluation Model

Live Streaming + Short Videos: Exploring New Ways of Consumer Engagement

Livestreaming e-commerce and short videos, which represent the latest trend of online sales, give consumers a more intuitive and vivid shopping experience. We see livestreaming as not only an emerging marketing tool but also an important move for companies in order to keep pace with the changing market trends, fulfill customers' needs, and fundamentally transform their business models and mindsets.

Suzhou Gold Hongye set up the Livestream Team in early 2020 and has gradually expanded it into a team of 60, to try its hands at digital marketing. Ms. Zhai Jingli, Vice President of APP China, appeared in the livestream on June 4, 2020, where she explained to the viewers APP China's green development concept of "Integration of Plantation-Pulp-Paper" and the features of our tissue products. With over 600,000 views, the live broadcast on that day won the first place in the Jingdong Aces Competition – Paper Product Category.

The Office Paper Team of APP China Paper Business Unit has also delivered outstanding achievements in short-video marketing. Since joining the Douyin platform in 2019, the team has continued to create and post short videos, with elaborately designed storylines, pictures, and lines. The videos are intended to communicate the features of every office paper product to the public in a clear and interesting way and have garnered a large number of likes and followers.



Douyin account of the Office Paper Team of the Paper BU

Fulfilling Responsibility from Forest to Paper

Paper products come from trees, and this process in between is where sustainability is put into action. Today, stakeholders are more concerned than ever about a company's environmental and social impacts. To proactively manage the environmental and social risks and create positive impacts has become the key for companies to set their brands apart in the marketplace today. From forestland management, procurement, and manufacturing to customer service, we continue to strengthen responsibility management and explore opportunities of innovation across the value chain as we work relentlessly to build a sustainable industry chain.



Sustainable Forest Management

APP China operates over 270,000 hectares of plantations in Guangdong, Guangxi, Hainan, Yunnan, and other places. It is our responsibility to keep an eye on and manage the impact of forestland operations on the environment and surrounding communities. We continue to promote sustainable forestry and be a catalyst for positive change in our industry and the community. We do so by strengthening forest risk management, promoting sustainable innovation in the eucalyptus industry, identifying and protecting high conservation value (HCV) forests, and participating in community dialogues and development.

The new *Forest Law of the People's Republic of China* was officially enacted on July 1, 2020. The new law lays out regulations on forest resources protection and management, and for the first time, "Forest Certification" is written into the law. In response, the Sustainability Team at APP China Forestry compiled learning materials analyzing changes in the new law and assessing the associated opportunities and risks. Training and study sessions around the learning materials were carried out at all of our forest areas to ensure that relevant requirements were implemented in the employees' day-to-day work and that the forestlands were managed in a lawful and sustainable manner.



APP China Forestry conducted joint patrols, fire prevention, and training with forest police



Forest Risk Management

Fire hazards and wind hazards are the main threats facing APP China in forest management, and the increasingly frequent occurrence of extreme weather events, such as high temperatures, droughts, typhoons, and heavy rains, has also increased the safety hazards for the forests. With forest safety risk management as a key priority, APP China Forestry continues to conduct risk monitoring and dynamic risk factor analysis. It actively manages risks through multiple measures and works to ensure the safety of forest resources.

Forest Fire Prevention and Control

Preventing forest fires is a top priority in forest management. APP China Forestry has designated a command for forest fire prevention, classified its forest areas according to different risk levels, and set up a fire control team; and its Asset Management Team has prepared a number of guiding documents including the *Guidebook to Establishing Firebreaks*.

In 2020, our forest areas planned and deployed fire prevention and control tasks based on previous experience and organized fire drills and training together with local governments; participated in the firefighting missions of local forestry systems; organized

teams to conduct random patrols and shared fire information with local governments and the forestry systems to minimize fire risks; strengthened the fire prevention mechanism with the "five-network" system, including the observation and monitoring network, the communication network, the joint patrol and prevention network, the forest fire blocking network, and the prediction and forecasting network. Our forest areas also worked with local forestry authorities to educate people from surrounding villages about fire safety through publicity vehicles, boards, banners, posted or sprayed slogans, notices, etc. to raise their safety awareness.



Fire prevention banner

Case

Forest Fire Prevention Education in Communities

In 2020, the Guangxi Forest Area of APP China Forestry visited surrounding villages and communities, educating people about fire prevention and anti-theft, recording 6,221 participations. They also distributed 29,452 leaflets, put up 1,118 banners, and posted 1,341 slogans on fire prevention.



Forest fire prevention publicity in communities

Addressing Natural Disasters

Natural threats to forests mainly include winds, frosts, droughts, etc. The major risk facing APP China's plantations in 2020 was typhoon, which affected 16,424 *mu* of plantations, accounting for 84.44% of the total area, followed by frost, which affected 2,284 *mu*, or 11.8%, of our plantations. Our forest areas have formulated and implemented the

Natural Disaster Emergency Plan, carrying out timely relief efforts as suited to the particular disasters experienced. They also summed up the experience afterwards to inform a risk management plan for the next stage, continuing to consolidate forest safety measures.

Key Measures to Address Wind Hazards

- Developing typhoon-resistant varieties
- Avoiding planting during typhoon seasons to ensure the survival rate of sprout forests
- Enhancing forests' wind resistance by increasing plant density and implementing deep planting in affected areas
- Placing a heightened focus on protecting young therophytes, which are more prone to damage
- Pruning in advance according to early warnings of incoming typhoons to mitigate wind damage and carrying out immediate forest patrols right after
- Maintaining sound records of wind damages, including the progress of disaster relief efforts and forest growth after disasters

Promoting Innovation and Upgrading

A long-standing commitment to the R&D and innovation of quality seedling varieties and to working with research institutes and universities allows APP China Forestry to evolve with cutting-edge research and deliver more innovations.

In 2020, its Sustainability Team and R&D Team jointly initiated a project on the region-based deployment and management of high-productivity, high-resistance, and high-pulp-yield varieties. With several months of surveys, analyses, and measurements, the project team developed a scientific and standardized variety management

system with the release of the *APP China Forestry Optimal Asexual Eucalyptus Variety Management Measures* in August 2020 and the replacement of several old varieties with new ones. The project takes into consideration both the production factors of forestry, such as resistance to wind, pest, and frost, and an in-depth research and analysis of their pulping pulp yields, conducted in close collaboration with our pulp and paper mills. The selection of seedling varieties through this process results in not only high pulp yields, but also more efficient utilization of forest resources.



In May 2020, APP China Forestry had an exchange with the Eucalyptus Center of National Forestry and Grassland Administration and the Leizhou Forestry Bureau, and introduced 22 and three new varieties from the China Eucalypt Industrial Technology Innovation Strategic Alliance and the Leizhou Forestry Bureau respectively for experimental cultivation. It also signed a strategic cooperation framework agreement with the Eucalyptus Center on forest breeding, pest monitoring and treatment, soil testing and fertilization, improvement of soil fertility, etc. to deliver both research results and product

industrialization. The APP China Forestry Sustainability Team also pushed for industry-university-research integration, initiating the cooperation together with Hainan Jinhai Pulp & Paper and the Eucalyptus Center, signing the cooperation agreement on the *Systematic Evaluation of New Eucalyptus Varieties on Pulping and Papermaking Performance*, to select new eucalyptus varieties with high pulp yield. This is also the first time that APP China Forestry has collaborated with a research institute in the area of the "Integration of Plantation-Pulp-Paper".



APP China Forestry actively pushes for industry-university-research integration



In October 2020, APP China Forestry established its Technology Center and formed a think tank composed of internal and external experts to strengthen innovative research in the areas of genetic breeding, forest culture, forest protection, etc.

Collaborating with College to Combine Teaching with Production

Case

Founded in 1953, Guangdong Eco-Engineering Polytechnic is the cradle of forestry talent in south China and has over the years supplied APP China Forestry Guangdong BU with over 100 forestry professionals. APP China Forestry Guangdong BU met with leaders of the college on September 15, 2020. They discussed opportunities for in-depth collaboration in areas such as industry-university-research practice bases, order class talent training, forestry resource investigation, and ecological monitoring, and signed a cooperation framework agreement. Mr. Li Chen, the general manager of Guangdong BU, delivered an engaging speech titled *Embracing Digital Economy and Building Intelligent Forestry* to over 80 teachers and students on that day. Guangdong BU also set up the Sinar Mas Group APP China Forestry Scholarship in the college to reward high-achieving students. The two sides will each play to their strengths to further the integration between industry and education.



Guangdong BU and Guangdong Eco-Engineering Polytechnic entered into partnership

Ecological Impact Monitoring

In managing forestry, APP China closely scrutinizes its impact on surrounding environment. Self-inspections are combined with commissioned third-party monitoring to keep track of the ecological impact of our plantations and prompt timely changes to the management measures.

APP China Forestry has been carrying out joint ecological monitoring with research institutes since 2007. Monitoring points are set up in areas with different climatic and ecological characteristics to collect and record data on biodiversity, soil erosion, plant growth, water quality, soil and climate, among other areas, and

produce monitoring reports. The results of past ecological monitoring show that the biodiversity of APP China's eucalyptus plantations is second only to natural forests but better than secondary forests and non-wood forests. In 2020, APP China Forestry signed a five-year partnership program with Hainan University and Guangxi Academy of Sciences respectively to monitor the plantations' ecological and environmental impact. They will continuously monitor and make improvements in areas ranging from biodiversity, soil fertility, forest growth, and soil erosion to water quality.



Ecologic monitoring of plantations



In respect of biodiversity, APP China Forestry has produced learning materials such as photo albums and wallcharts of wild animals and plants that need to be protected and regularly trains foresters to improve their biodiversity knowledge and ability to identify

species. Every small class at the forest farms carries out a biodiversity survey at least once a year, based on which the biodiversity database is continuously updated to keep track of and protect the animals and plants in those areas.

High Conservation Value Management

Tip

High conservation value (HCV) forests are forests that are important because of their high environmental, social, economic, biodiversity, or landscape values. HCV forests have six attributes, namely biodiversity, landscape-level ecosystems and ecosystem mosaics, ecosystems and habitats, basic ecosystem services, necessities of local communities, and cultural significance. Responsible forest managers need to determine the high conservation values that exist within the boundaries of the forests under their management, monitor the effectiveness of management, and make corresponding behavioral improvements so that those values are better conserved.

APP China Forestry has formulated the *High Conservation Value Management Measures* and the *Determination and Protection of HCV Forests and Traditional Rights* and set up an HCV working team. Based on data collection and analysis, on-site forest surveys, and stakeholder engagement, the team assesses the HCVs of forests and implements protective measures. The small classes all make sure that their operational activities are

always preceded by research, monitoring, and recording of the animal and plant diversity and HCVs and that protection is in place. After the protected plant *Alsophila spinulosa* was discovered in the Huimin Forest Farm and Nuozhadu Forest Farm in 2020, staff members made markings and set up buffer zones to provide protection and made plans for follow-up monitoring and protection.



Community communication



Providing villagers with household supplies



Donating masks during COVID-19

Building Harmonious Community Relations

In 2020, the forestry companies under APP China Forestry conducted a social impact survey in local counties and towns to learn about the feedback and suggestions of local stakeholders on them. The survey covered a wide range of topics, including the impact of forestry activities on the livelihoods of local communities and residents, the safety of contractors and workers, the level of local income, etc. The results showed that the companies were all recognized by local stakeholders for creating positive impacts in terms of guaranteeing employee welfare, driving community harmony, boosting local employment, and ensuring operational safety, among other aspects.

We respect and have been actively protecting the traditional rights of communities directly or indirectly affected by our forestry activities and solicit their opinions on our activities in an open and transparent manner. For

example, the small classes are required to engage with local resident committees or resident representatives before logging so that markings can be made in places involving traditional rights or of special cultural, ecological, economic, religious, or spiritual significance, together with a 2-meter buffer zone. The protection of those places will be monitored and evaluated on a continual basis during subsequent forestry activities.

APP China Forestry also hires local villagers as forest rangers responsible for protecting the forests from fires, theft, or encroachment, providing them also with household supplies such as oil, rice, and tissues. The forestry areas actively seek to understand local needs, making donations to aid local children's education and improve infrastructure and donating masks to nearby partners during COVID-19 to contribute to a harmonious community.

Sustainable Procurement Management

Our suppliers mainly provide the raw materials, energy, technical services, equipment manufacturing, engineering construction, etc. We start to expressly communicate our anti-corruption regulations when we select suppliers to work with. Our supplier contracting also includes signing the *Anti-Corruption and Code of Business Integrity* and the *CSR Statement and Pledge*, requiring suppliers to make commitments in respect of upholding business ethics, protecting environment, respecting human rights, and positively impacting the community.

We have three lines of risk control in place to ensure that supplier risks are managed fully, namely quality, compliance, and audit. We evaluate all the suppliers on measures of authenticity and legality and put high-risk suppliers identified under a further compliance audit. We also have a supplier blacklist and watchlist to reinforce timely identification and monitoring of risks. We subject our timber suppliers to a complete due diligence process, ensuring that the sources of raw materials are legal, compliant, and traceable through research, risk assessment, etc. and requiring suppliers to commit to only non-controversial sources of raw materials.



Proportion of certified wood pulp procured

In 2020, we strengthened the monitoring of supplier risks, conducting due diligence and continuous risk monitoring of new suppliers and randomly reviewing the due diligence assessments of our major suppliers. We set up the Supplier Development Team to promote the management of supplier performance evaluation and the development of new suppliers in a more targeted manner. We also further evolved the supplier management system, connecting it with the basic information on external information inquiry platforms; we further digitized the procurement system to facilitate a more transparent procurement process.

We continued to increase the procurement of internationally certified wood fiber and wood pulp. In 2020, APP China procured approximately 2.357 million tons of certified wood fiber and approximately 1.516 million tons of PEFC-certified wood pulp, accounting for 26.9% and 24.2% of total wood fiber and wood pulp procurements respectively.



Proportion of certified wood fiber procured

Strictly Inspecting Raw Materials from Suppliers

Case

In 2020, Gold East Paper revised a number of policy documents, including the *Incoming Material Control Procedures*, the *Raw Material Inspection Rules*, and the *Incoming Material Inspection Work Quality Assurance System*. It also built an anti-fraud system for raw material acceptance and an automatic testing result collection system, further tightening the already strict control of raw materials. The company asks suppliers to provide an improvement report if their supplies are found substandard and continuously tracks the quality of their next five batches of raw materials. If similar problems appear again, the company may consider reducing their volume of supply.



Full-process monitoring of raw material sampling

Green Manufacturing

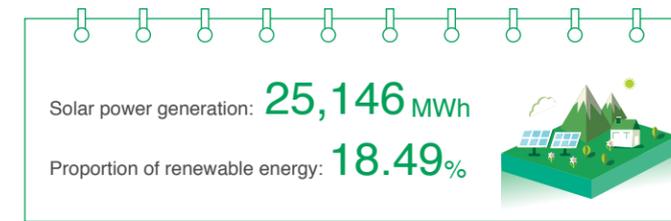
Accelerating green transformation is the gateway to high-quality development for the manufacturing industry. Our mills are highly mindful of the impact of their business operations on the environment. They invest heavily in promoting clean manufacturing and continue to improve management in energy conservation and consumption reduction, air pollution treatment, water management, waste treatment, etc., to contribute to a green and recyclable sustainable papermaking industry chain.

Promoting Energy Conservation and Consumption Reduction

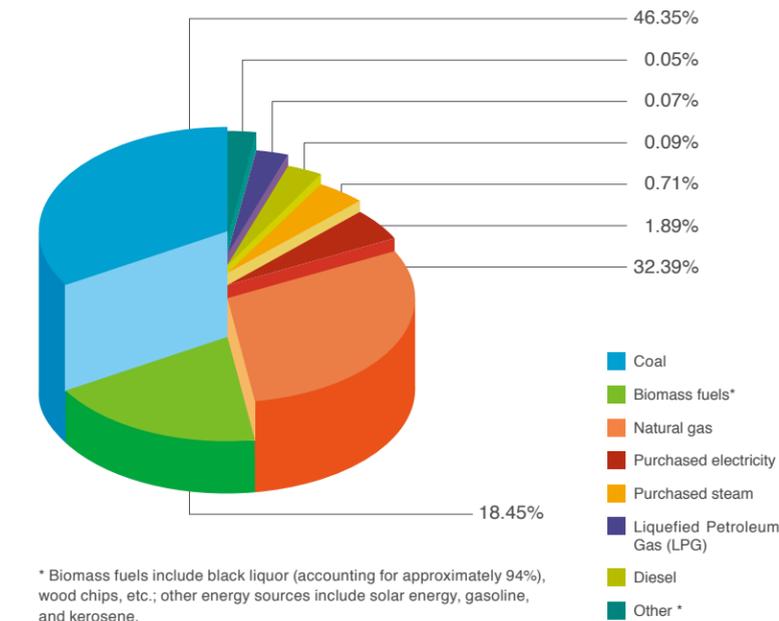
For a traditional manufacturing company, the key to achieving low-carbon green development lies in transforming its energy structure, reducing energy use, improving energy efficiency, and making technological breakthroughs. In 2020, we actively implemented a number of pilot energy saving and emissions reduction equipment upgrading projects at the Group level. The magnetic levitation blowers used in the wastewater plant of Guangxi Jingui Pulp & Paper's new project saved up to 10-20% on electricity compared with the traditional multistage centrifugal blowers. We also replaced electric compression refrigeration with lithium bromide-based absorption refrigeration in our new bases and projects, which, driven by vapor, led to higher energy efficiency and lower energy use at the thermal power plants. For each kilowatt-hour of refrigeration, there would be a 50-gram reduction in coal consumption compared with electric compression refrigeration. With the refrigeration units estimated to run 8,400 hours per year, these projects could lead to a reduction of 15,888 tons of

coal each year. If the pilot projects work well, we will promote them across the Group.

Industrial companies have come under increasingly heightened government scrutiny in the use of energy and resources. Our mills respond by continuously optimizing energy management policies and systems, tapping the potential for energy saving and carbon emissions reduction, and strengthening the tracking and assessment of the performance targets. Gold Huasheng revised the *Energy Baseline and Benchmarking Procedures* in 2020, optimizing the ways in which energy management targets, indicators, and performance were determined and evaluated. It set up a working group dedicated to energy conservation and consumption reduction and one dedicated to coal saving to regularly track and analyze the achievement of relevant targets, award team performance points for achieving the targets, and urge remediation measures for underachieved targets.



2020 Energy Mix of Mills Within Reporting Scope



* Biomass fuels include black liquor (accounting for approximately 94%), wood chips, etc.; other energy sources include solar energy, gasoline, and kerosene.

Progressively Promoting Energy Saving and Consumption Reduction

Case

Based on a comprehensive assessment of the energy use at the mills, Hainan Jinhai Pulp & Paper invested a total of RMB26.5 million in 2020 in a number of projects, such as the pulping workshop energy-saving retrofitting and the waste heat recovery project. This led to annual energy savings of 30,903 tons of standard coal. The company also realized refined tracking and management of the energy performance by adopting the Lean Management System while continuously checking for leaking and dripping in the equipment. In 2020, together with a third-party agency, the Development and Reform Commission of Hainan Province conducted an energy audit and assessed key energy-consuming units for the energy saving targets. The results showed that the company overachieved the "dual control" targets set by the Development and Reform Commission of Hainan Province in 2020, namely the total energy consumption and comprehensive energy consumption per unit of output.

Reducing Energy Consumption Through Interdepartmental Cooperation

Case

Guangxi Jingui Pulp & Paper carried out a special energy-saving program in the production workshops in the second half of 2020. A joint working group was formed among the Energy Department, Pulp Production Department, Paper Production Department, Environmental Safety Department, etc. They worked to identify energy saving opportunities for various production stages, including power generation, papermaking, pulp making, pulp beating, alkali recovery, and wastewater treatment, and developed specific energy saving targets and action plans accordingly. As a result, the company successfully achieved a combined steam and electricity energy-saving target of 101.97% and a total saving of approximately RMB5.667 million within six months.

Saving Water Resources

The convergence of economic development, population growth, environmental pollution, climate change, etc. is exacerbating global water scarcity. The Chinese government has increasingly intensified its focus on saving water, making it a strategic priority. The National Development and Reform Commission and the Ministry of Water Resources of the People's Republic of China issued the *China National Water Conservation Action* in 2019, endorsing a water-saving society. We work to reduce the water footprint of our business operations, with our mills all setting up an

evolving water management system and strictly aligning the withdrawal, use, and drainage of water with applicable national laws and policies. They also implement internal monitoring, set water management targets, and regularly track and evaluate their implementation. Our mills strive to be water-saving and do so by continuously upgrading the pulp and paper technologies, processes, facilities, and equipment to minimize the use of water in manufacturing. In 2020, the average water reuse rate of APP China mills within the reporting scope reached 95.63%.

Water Efficiency Leader

Case

Gold East Paper has prioritized water saving since its inception in 1997. It has established an organizational structure for water conservation management led directly by the general manager and a continuously improving water management system. The company has taken a variety of measures to strengthen water management, such as promoting standardized operations, improving the networks for water use calculation and measurement, carrying out science-based water balance tests, instituting a performance evaluation system, arranging for special inspections, and strengthening internal publicity.

Through efforts to save, reclaim, recycle, and reuse water in recent years, Gold East Paper has reduced the annual use of clean water by approximately 6.5 million cubic meters. In 2020, the company was among the second group of companies in China to be named a national Water Efficiency Leader for its outstanding performance in water management.

* "White water" is wastewater produced in the papermaking process. It contains fine fibers and fillers that look white to the naked eye, hence the name "white water". "Sand filter pool backwash water" refers to the sewage produced during regular sand filter pool backwash at the sand filter section of the clean water production process. "Wastewater" refers to water discharged into the external water environment after it is treated to meet relevant standards.

Water saving

- Procuring high-quality raw materials so that cleaning is not needed.
- Adjusting paper machine operations to reduce the use of cooling water.
- Modifying the vacuum condenser so that clean water is only used as a heat exchange medium and can create a cooling effect without being mixed with white water*.

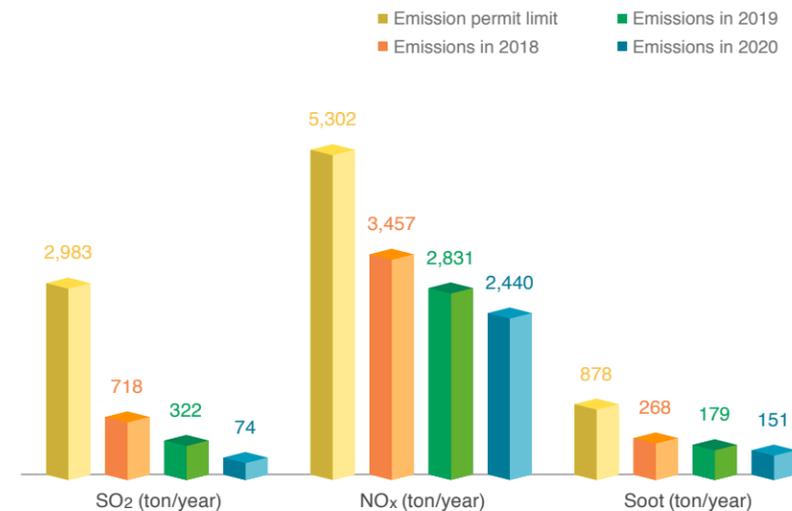
Water recycling and reuse

- Adding a white-water sand filter system to recover ultra-clear white water.
- Recycling sand filter pool backwash water*.
- Using treated wastewater* for greening and road washing at the mills.
- Separating mud from water in wastewater sludge and reusing the recovered water for manufacturing.

"Three Wastes" Management

China's efforts in preventing and controlling air pollution in recent years have resulted in remarkable reductions in the emission of pollutants relating to coal combustion. However, the overall atmospheric conditions remain worrisome, with regional compound pollution being a prominent issue. This is why air pollution control remains an important environmental issue in the 14th Five-Year Plan. Over the years, our mills have been deeply engaged in managing

exhaust gases. Guangxi Jingui Pulp & Paper, Ningbo Asia, Gold East Paper, and Hainan Jinhai Pulp & Paper have all completed ultra-low emission retrofitting at the end of 2019. Meanwhile, they continue to optimize and upgrade their equipment and technology to continuously drive down air pollutant emissions. Keeping up with the latest national and local policies, we will continue to improve our performance while meeting compliance requirements.



Hainan Jinhai Pulp & Paper Air Pollutant Emissions

Hainan Jinhai Pulp & Paper has achieved a decline in air pollutant emissions for three consecutive years; its emissions in 2020 are well below the limits of the emission permits.

In terms of wastewater management, our mills continue to increase their wastewater purification capacity by introducing advanced wastewater treatment systems, improving the treatment processes, etc. and ensure that all the wastewater discharge indicators are within the national standard limits.

Indicators	Unit	2020	2019	2018
Wastewater discharge per ton of paper produced (National standard* limit: 20 tons)	tons	6.20	6.37	6.79
Wastewater discharge per ton of pulp produced (National standard limit for pulp companies: 50 tons; national standard limit for pulp & paper companies: 40 tons)	tons	12.50	11.62	12.68
COD emissions per ton of paper produced (National standard limit: 1.6kg)	kg	0.22	0.29	0.23
COD emissions per ton of pulp produced (National standard limit for pulp companies: 5kg; national standard limit for pulp & paper companies: 3.6kg)	kg	0.85	0.63	0.94

* Discharge Standard of Water Pollutants for Pulp and Paper Industry (GB3544-2008)

Strictly Abiding by New "Zero Direct Wastewater Discharge" Requirements

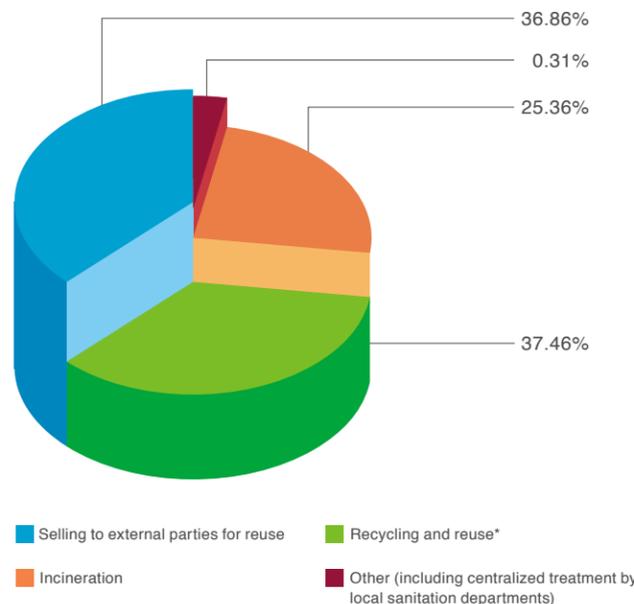
Case

The Department of Ecology and Environment, the Economy and Information Technology Department, and the Water Treatment Office of Zhejiang Province jointly launched the Zero Direct Wastewater Discharge Area initiative in 2020 in industrial parks across Zhejiang province. The initiative is intended to increase the wastewater collection capacity of and build a rainwater/wastewater diversion system in key industrial parks and industrial companies to maximize their ability to intercept and treat wastewater and provide a solid support for continuously improving water quality.

In response to the policy, Ningbo Asia formulated the rainwater/wastewater diversion plan based on the assessment points laid out in the "Zero Direct Wastewater Discharge" requirements for papermaking companies. To realize "zero drainage on sunny days and zero wastewater on rainy days", the company investigated its rainwater/wastewater pipeline networks, separated the entry points for rainwater and wastewater, and replaced damaged pipelines; added rainwater and wastewater flow signages to the manhole covers; revised the rainwater and wastewater pipeline diagrams; moved all wastewater pipelines aboveground to ensure transportation through "open channels and open pipes"; and built rainwater harvesting manholes at the mills with shut-off valves to ensure zero drainage on sunny days. Ningbo Asia was certified for "Zero Direct Wastewater Discharge" at the end of 2020 by the Beilun Branch of Ningbo Bureau of Ecology and Environment and the Qijashan Sub-district.

In respect of solid waste management, APP China strictly complies with the *Law of the People's Republic of China on the Prevention and Control of Solid Waste Pollution* and has formulated the *Solid Waste Management Procedures*. We classify the major waste generated in manufacturing into general industrial solid waste, hazardous waste, and domestic waste, which are disposed of properly and separately. The mills also take measures to reduce the amount of waste generated and actively explore its recycling. The comprehensive utilization rate of general solid waste of APP China mills within the reporting scope reached 74.32% in 2020.

Methods of Solid Waste Disposal at Mills Within Reporting Scope in 2020



* "Recycling and reuse" refers to the recycling and reuse of waste through direct processing by APP China mills or through special cooperation with third-party agencies, such as making by-products from waste.

The mills classify hazardous waste based on the national hazardous waste list or relevant standards for hazardous waste identification. They ensure that hazardous waste is handled in a proper and compliant manner by implementing a strict process encompassing declaration and registration, accounting, collection, transfer, transportation, storage, and utilization. In carrying out the special action for hazardous waste disposal in 2020, Guangxi Jingui Pulp & Paper achieved reductions in hazardous waste generation by optimizing the production equipment and processes, procuring high-quality raw materials, etc. The company also provided operations personnel with training on standardized hazardous waste management based on the latest *National Catalogue of*

Hazardous Waste (2021 Edition) and standards and bases for hazardous waste management, further standardizing the management of hazardous waste at the mills and ensuring that the operations met the requirements of the latest regulations and policies.



Guangxi Jingui Pulp & Paper provided training on standardized management of hazardous waste

Promoting the Reduction and Reuse of Papermaking Waste

The lime mud and green mud are mainly generated in the alkali recovery process at paper mills. If not properly disposed of, their accumulation not only takes up a lot of land space but causes pollution to air, soil, and water as well. By streamlining processes towards waste reduction and recycling and deepening external cooperation, Hainan Jinhai Pulp & Paper was able to treat green and lime mud with much higher effectiveness in 2020. The company made process improvements to the alkali recovery causticizing workshop and set an average daily discharge limit of 160 tons for green mud. Through collective efforts of the staff members, the workshop kept the total discharge of green mud in 2020 at 41,140 tons, averaging 135 tons daily and meeting the target. The company also worked with professional technical companies to recycle green and lime mud and use them to make construction materials such as eco-friendly walls. In 2020, a total of 31,421 tons of lime mud was comprehensively utilized.

Building Greener Logistics

From raw material sourcing, manufacturing, and processing to the sale of finished products, logistics and transportation run through every link of the value chain, enabling the circulation of products and goods. The process of logistics and transportation, however, consumes a lot of energy and resources through the use of vehicles and packaging and leaves a footprint on the environment. We work to build a green, efficient, and economical logistics model with optimized transportation routes, enhanced packaging recycling and vehicle loading rate, greater digitization, etc. that reduces the environmental impact of our logistics and transportation.

Building Green Ports

Gold East Paper is located in Dagang, Zhenjiang, Jiangsu Province, the third largest port of the Yangtze River. Its exclusive terminal has a 40,000-ton multipurpose berth and a 35,000-ton bulk berth connecting it to more than 130 ports in over 40 countries/regions. Undertaking environmental initiatives at the terminal would have important implications for both the company itself and the entire value chain. Gold East Paper is a long-standing endorser of building green docks and has carried out a number of environmental improvement activities around the management of ship pollutants and exhaust.

Wastewater treatment

The company follows the requirement of Jiangsu Province for "terminal operators to receive domestic garbage and sewage free of charge when inland vessels stay in port", formulating and implementing the *Vessel Sewage Management Process*. It requires inland vessels to be equipped with a domestic sewage compartment and dispose of domestic sewage and garbage when arriving at the port to ensure that they are properly handled.

Exhaust treatment

To promote the development of electric ships and reduce the exhaust pollution caused by diesel generators used in traditional ships, the company designed and built a 1000kVA hybrid high- and low-voltage frequency-conversion shore power system to provide shore-based power for docking ships that can be adapted to the various power systems of electric ships.

Improving Utilization of Pallet Resources

The high humidity during the rainy season in south China easily causes mold and damages to the wooden pallets for the packaging materials, resulting in waste of resources. Ningbo Asia has made a dedicated effort in this regard, facilitating improvements in R&D, full inspection, in-process inspection, exit-mill management, etc., thus extending the service life of the pallets.

R&D

Succeeding in the experimental development of anti-mold eco-glue planks.

Full inspection

Organizing multiple departments to conduct a full inspection of the wooden pallets in stock.

In-process inspection

Conducting in-process inspections on wooden pallets entering the warehouses and isolating or rejecting those found moldy.

Exit-mill management

Spraying hydrogen peroxide on mold-free wooden pallets to prevent mold; Thoroughly cleaning or polishing moldy wooden pallets that can still be used and spraying hydrogen peroxide; making markings for easy traceability in the future.

Guangxi Jingui Pulp & Paper contributes to resource recycling by reusing starch pallets for the shipment of finished paper products. A total of 16,603 starch pallets were recycled in 2020.



Guangxi Jingui Pulp & Paper recycles and reuses starch pallets

Safety Management

Production safety is a cornerstone of a company's sustainable development and vital to individuals and the happiness of their families. This is why companies should always stay vigilant about it. In 2020, the State Council issued the *Three-Year Action Plan for Special Management of Nationwide Production Safety*, requiring companies to firmly implement safe development and strengthen bottom-line thinking and red-line awareness, improve the responsibility and management systems for production safety, and work to "eliminate the root causes of accidents".

APP China approaches production safety by putting safety first, highlighting prevention, and managing comprehensively. We continue to strengthen production safety management, with our Safety, Health & Environment (SHE) management system covering all the workers, business operations, and workplaces under APP China, and fully implement the production safety accountability system to prevent and minimize all kinds of production safety accidents.

Continuing to Strengthen Safety Monitoring

We set 2020 SHE targets for our mills engaged in paper business, with a focus on evaluating such key performance indicators (KPIs) as the number of fatalities, number of lost-time injuries per million hours worked, injury severity rate*, number of fire incidents, number of employees with occupational diseases, average employee safety training hours, and administrative penalties. We also include the performance of our contractors in the evaluation. The CEO of APP China Paper Business Unit signed the 2020 SHE Target Responsibility Statement with the general managers of its mills, encouraging them to make improvements to their vulnerabilities in SHE management. We have a reward and punishment system at the headquarters level, where we cancel all SHE-related bonuses in case of any negative events such as fatalities, and failure to achieve the annual targets adversely affects the SHE performance of the mills. To add to that, we have a cross-mill SHE MBOS competition platform, which, through benchmarking, prompts the mills to identify their inadequacies in management and adjust the management strategy in a timely manner.

* "Injury severity rate" refers to the average lost working hours per million working hours, used to measure the severity of accident injuries.

Highlighting Prevention in Production Safety

We continue to strengthen safety risk management. Regularly, we raise safety awareness through meetings, themed training, case sharing, etc. and ensure our safety measures are fully implemented through hazard identification and mitigation, special inspections, and emergency drills. In 2020, APP China held a monthly SHE meeting for all the mills, where we reviewed their monthly SHE performance, communicated the latest SHE laws and regulations and industry standards, and provided incident case studies to drive continuous improvement in safety management.

The management of contractors is a weak link in production safety management as they approach safety differently in terms of philosophy and operating specifications. Therefore, strengthening the unified and standardized management of contractors is essential to production safety management. We include contractor management into the APP China SHE management system and strengthen the safety awareness of contractors with management throughout bidding, contract signing, qualification review, factory access control, operations process management, safety performance evaluation, etc. We push our contractors to strictly enforce

SHE-related regulations and operating procedures to prevent safety accidents.

The hazard rectification rate* of mills within the reporting scope remained above 95% throughout 2020, with that of Gold Huasheng, Hainan Gold Hongye, Guangxi Jingui Pulp & Paper, Ningbo Asia, and Suzhou Gold Hongye standing at 99% and above.

*"Hazards" refer to the dangerous state of things, the unsafe behavior of people, or flaws in management that may cause accidents in production and business activities due to violations of production safety laws, regulations, rules, standards, and codes, the provisions of production safety management systems, or any other factors. The calculation of "hazard rectification rate": (Number of rectifications completed within reporting period / number of hazards detected within reporting period) × 100%.



Improving Safety Awareness of Employees and Contractors

Ningbo Asia organized extensive corporate production safety training in 2020 to improve employees' safety and emergency response skills. The training covered everything from production safety laws and regulations, risk identification, processes and specifications, and fire safety to the study of experience and lessons drawn from safety accidents. The company designated employees from relevant departments as safety "nannies" and supervisors for new employees of its own and from the contractors. They are responsible for passing on their experience in production safety, teaching newcomers position-specific operating standards and specifications, and correcting non-compliant operations in time. Newcomers who commit three violations during the "nanny" period would fail the probationary review, as well as those who fail the company's random checks.

In 2020, Guangxi Jingui Pulp & Paper organized 96 safety training sessions for employees and contractors, including safety inspection, electrical safety, machine safety, operational safety in restricted spaces, etc., recording 12,461 participations. It also has a safety section in the internal magazine, which includes prize quizzes and can be accessed online by all the employees.

Hainan Jinhai Pulp & Paper has built a safety accident warning education base at its safety training center. The company compiles safety accidents in recent years into text passages or pictures and displays them in prominent places at the mill. It organizes safety education activities for employees on a regular basis, urging them to learn lessons from past accidents, gain a deep understanding of the importance of production safety, and remain vigilant at all times.



Production safety training



Contractor safety meeting

Continuing to Strengthen Safety Hazard Checking

Guangxi Jingui Pulp & Paper works to minimize safety hazards and risks through a mixture of day-to-day inspections, fire inspections, special inspections, pre-holiday inspections, 6S joint inspections, weekly inspections by departmental heads, etc. In 2020, a total of 3,830 problems were identified, with 3,815, or 99.6%, rectified.

Gold East Paper and Ningbo Asia developed a safety hazard tracking information system that enabled closed-loop tracking of safety hazards from reporting to rectification and confirmation, to further standardize the identification and rectification of safety hazards and ensure they are eliminated in a timely manner.

Occupational Health and Safety

Our mills have all established an occupational health and safety management structure, a management system, and implementation rules and continuously evolve the system based on practical experience. By the end of 2020, Ningbo Asia, Gold East Paper, Gold Huasheng, Suzhou Gold Hongye, Guangxi Jingui Pulp & Paper, and Hainan Jinhai Pulp & Paper had all completed the transition from OHSAS 18001 to the ISO 45001 Occupational Health and Safety Management Systems (OHSMS). We now use the ISO 45001 to guide our internal audits and inform timely corrections to the problems identified.

The mills have also set up an Occupational Health and Safety Management Committee

to help prevent occupational diseases. It does so by designing programs and implementation plans for occupational disease prevention and control, establishing employee health monitoring files, providing employees with protective equipment, and organizing physical checkups, among other measures. The committee holds meetings regularly to communicate and discuss the main issues and problems relating to occupational health and safety and institute timely improvement measures. There were zero cases of occupational diseases at APP China in 2020 and one employee death caused by traffic accident on the way home from work.

Product Quality and Service Management

APP China operates with a customer-centric mentality, striving to provide customers with products and services that meet their needs. We implement an "All-Hands Marketing" strategy among the employees while continuing to strengthen product quality management and track customer satisfaction. Those are the pillars of a powerful service guarantee system at APP China that allows us to promptly respond to customer demands and needs and solve the problems they have with our products. Moreover, our "Little A Classroom", training sessions, and other activities have become high-quality platforms of communication for customers to obtain industry-leading information and understand the latest developments of products and technologies.



Implementing Quality Management Through Multiple Measures

Case

Hainan Gold Hongye and Hainan Gold Shengpu have set up a quality improvement team. The team worked out a scientific quality control plan based on in-depth on-site research and problem analysis, identifying two key areas of improvement in production management, namely target management and process management. According to the plan, the companies assigned all the assessment targets to small teams and created a team management accountability system to fully bring quality management to bear. Relevant efforts also included joint inspections by multiple departments, quality quizzes, quality awareness training for supervisors, theoretical and practical examinations, competitive product benchmarking, etc. which greatly improved the ability of employees of all levels to identify and address quality problems.

Strengthening Product Quality Control

We check and manage raw materials strictly according to the ISO 9001 Quality Management Systems (QMS) and authoritative testing methods and work to eliminate quality issues at the source by actively identifying quality risk factors through self-inspections. By implementing the Lean Management System across the Group, we also ensure stronger control over fraud risks.

Strengthening Quality Control of Product Process

Case

Guangxi Jingui Pulp & Paper has formulated a quality plan and quality control standards to further strengthen the quality control of the product process and ensure that "substandard products are not accepted, manufactured, or distributed". It also implements control measures before, during, and after production and guarantees product quality with strict operating specifications.

► **Control before production** Establishing an orderly production quality system covering production control procedures, process inspection procedures, etc.; confirming production process parameters, process plans, key processes, etc. to ensure the integrity of the process system; checking the raw materials, the quality of semi-finished products, and the conditions of equipment before production begins; training frontline employees regularly to strengthen their quality awareness.

► **In-process control** Prioritizing prevention, strengthening the tracking and inspection of key processes and weak links; guiding employees to detect problems, give feedback, and solve problems in time.

► **Control after production** Conducting timely first inspection of the quality of semi-finished and finished products to prevent mass production of substandard products; organizing the technical, production, quality, equipment, and other related departments to jointly analyze the quality problems that arise and develop improvement plans; finding the root causes of quality problems together with employees.

Understanding Customer Concerns Through Multiple Channels

A lot of the problems with cultural and industrial paper products relate to factors other than the products themselves, such as how they are used or produced, or the processing equipment used. Since APP China launched the "All-Hands Marketing" strategy in 2018, our mills have continued to deepen technical marketing, and the various departments of R&D, production, procurement, logistics, customer service, etc. would come together to study and solve the problems raised by customers as soon as possible to improve their experience with our products. Guided by the "All-Hands Marketing" strategy, employees of the tissue unit engage with consumers in person at the frontlines of sales to obtain first-hand feedback on the products, thus prompting continuous improvements of the product quality.

We highly value customer complaints and have set up an evolving customer complaint handling mechanism. Complaints and suggestions about our products or

services can be made through the service hotline, customer relationship management system, email, etc. We categorize and analyze the complaints and bring together multiple departments to develop solutions and improvement plans. Depending on the specific issues raised, we also sometimes visit customers to understand their needs and concerns more deeply. With thorough analysis and a series of improvements, the customer complaint rate for raw paper at Hainan Gold Hongye and Hainan Gold Shengpu continued on a downward trend, standing at 0.064% in 2020, down 18% from 2019.

Our mills have all set up their own customer satisfaction survey system and track and analyze the survey results every year through visits, online surveys, letter surveys, etc. The customer satisfaction survey in 2020 included issues related to product quality, sales service, logistics service, technical service, customer expectations, etc. Based on the results, the mills were able to develop detailed improvement plans.

Remaining Customer-Oriented and Creating Win-Win

Case

The wood-free printed paper produced by Gold Huasheng has been a popular product, but some customers may run into problems during printing due to a limited understanding of its properties and the printing process. To help solve such problems, experts from the Technical Department of Gold Huasheng provided training on printing for 12 customers in 2020, totaling 139 people, which covered the basic knowledge of printing, potential abnormalities in printing, the relationship between paper and printing, etc. The training was highly acclaimed by the customers.

Helping Customers Grow

APP China shares industry developments and insights with customers through different kinds of communication meetings and provides engagement and customized training sessions on technical issues that the customers are concerned about. The "Little A Classroom" is a popular customer engagement program launched by APP China Paper Business Unit in 2018, with all kinds of activities such as information sharing, product introduction, technical exchange, and strategic thinking. After the outbreak of COVID-19 in 2020, the "Little A Classroom" started to offer online classes, which provided a more flexible way for customers to participate and communicate. As of the end of 2020, the "Little A Classroom" had recorded over 2,000 attendances.

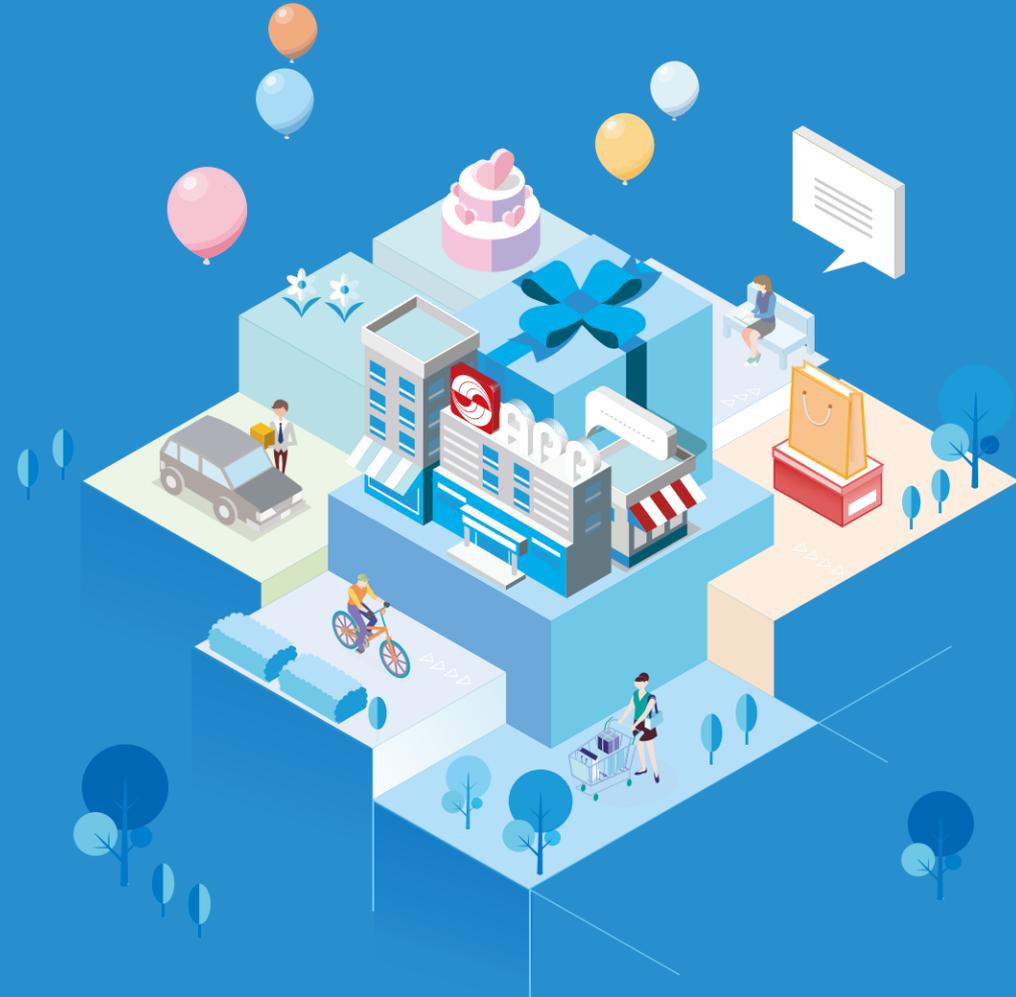


"Little A Classroom" offers online lectures



Remaining People-Centered and Building a Better Tomorrow

APP China is dedicated to working towards a community that is built, created, and shared by all the stakeholders. Our employees are the most valuable asset for achieving long-term, sustained development at APP China and a core dimension of our corporate strategy. We help our employees realize their personal values by optimizing their career development paths, fostering their engagement, and enriching their benefits. We have also been a long-standing supporter of philanthropy, carrying out diversified programs and activities in the field of education, environmental protection, poverty alleviation, paper culture transmission, etc. and making positive impacts on the community.



Talent Retention and Development

We create a pleasant working environment for our employees and continue to improve employee benefits and care for their physical and mental well-being to make them feel delighted at work; we continuously improve the education and training system and develop customized training lessons for different positions. Those training lessons enable employees to build better career paths by accessing a wealth of resources.



Protecting Employee Rights and Interests

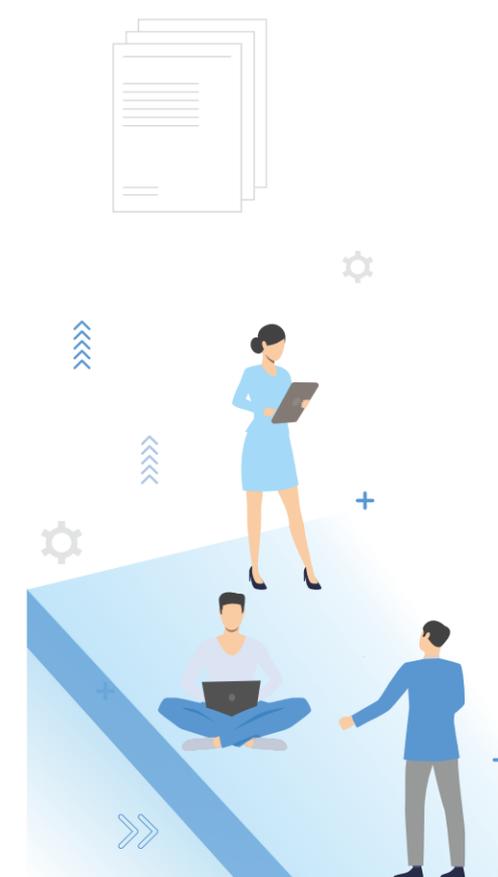
Strictly complying with Chinese laws and regulations such as the *Civil Code of the People's Republic of China*, the *Labor Law of the People's Republic of China*, and the *Provisions on Collective Contracts*, APP China ensures equal pay for equal work, respects employees' freedom of association and collective bargaining rights, and prohibits child labor and forced labor. We adjust the salary strategy every year according to the market level to ensure that our compensation and benefits plan stays competitive. We seek to enhance the retention of high-achieving and high-potential talent by offering incentives and favorable living conditions, etc. We are working on an employee housing project in Hainan that will enable the employees' children to go to school in close proximity to their workplace.

Promoting Talent Growth

APP China attaches great importance to employee training and provides targeted and multi-level systematic training for employees of different positions and levels to fully meet their needs for career development. The APP Learning and Development Center organized a rich collection of training and hands-on programs in 2020 to give employees more opportunities to participate and rapidly enhance their well-rounded work abilities. We also invest heavily in the management trainee program, which has been successfully launched in Ningbo Asia, Guangxi Jingui Pulp & Paper, Hainan Jinhai Pulp & Paper, Hainan Gold Hongye, Hainan Gold Shengpu, Gold East Paper, and Suzhou Gold Hongye. The program provides systematic theoretical and practical training for management trainees and plays a big part in building a strong pipeline of talent for the Company. A program for developing internal

trainers has also been implemented in Hainan Gold Hongye, Hainan Gold Shengpu, Suzhou Gold Hongye, Gold East Paper, and Ningbo Asia, to fully motivate employees and involve them in the important job of cultivating talent for the Company.

With respect to enhancing employees' professional skills, we have implemented the technical competence model of production positions for six consecutive years, covering positions in pulp production, paper production, energy, environment, safety, quality assurance, engineering, digital innovation, etc. In 2020, a total of 600 supervisors from APP China mills participated in the technical competence training and certification for production management positions, showing improvements in the review results compared with previous years.



Series Training Programs at APP Learning and Development Center

Flying Amid Headwinds – Team Leadership Special Training Camp

It is an online learning program organized for 40 grassroots managers from Hainan Jinhai Pulp & Paper and Guangxi Jingui Pulp & Paper. Every week, they studied two out of the 16 management courses offered on the APP Online Learning Management System (LMS), covering leadership thinking, decision-making and execution, conflict management, problem solving, etc. The trainees produced 640 learning notes in total and held 40 sharing sessions.

The 2nd "Wisdom Cup" Micro-Class Competition

A total of 150 employees enrolled in the competition. Two live-streaming classes and five workshops on micro-class development were held, allowing participants to systematically learn the process and methods of micro-class development and short video editing and production. They produced 139 high-quality micro-classes in total.

Looking into Future – APP Case Competition

Close to 70 employees enrolled in the competition. Three live-streaming classes and two case development workshops were held, allowing participants to systematically learn the process and methodology of case development. They produced 60 business cases and a booklet titled *Top 20 Selected Cases*.

Facilitation and Coaching Technical Training Program

Two training sessions were held in 2020 in the form of "a 2-day workshop plus 30-days after-school tutoring", leading 60 middle and grassroots managers from the headquarters and mills to understand and practice the essence of coaching techniques.



Facilitation and Coaching Technical Training Program



Team Leadership Special Training Camp



Micro-Class Competition

Putting Lecturers First and Passing Down the Torch

Case

Hainan Gold Hongye and Hainan Gold Shengpu have developed training courses around the two themes of "four steps to developing quality courses for internal trainers" and "two stages of teaching by good lecturers" to improve the ability of supervisors from different positions at the Hainan mills to develop training courses and give lectures. The trainees are required to develop a course within two months of finishing the training and do their best to pass the course review and the internal trainer certification. Hainan Gold Hongye and Hainan Gold Shengpu held an internal trainers' competence contest at the end of 2020 to select outstanding lecturers for follow-up training.

Gold East Paper regards the training of internal lecturers as a key part of talent cultivation, with a dedicated training mechanism that includes such modules as TTT (Train the Trainer) Training, Theoretical Study, Practical Exercises, and Interaction and Communication. In September 2020, it held an appointment ceremony for internal lecturers, where the general manager presented 47 employees with an offer as internal trainers, along with teaching tools, and encouraged them to nurture more professionals for the company while doing their own jobs.

TTT Training

Internal trainers can obtain knowledge and skills in curriculum design, language and expression, on-site control, etc. by taking professional trainer courses and get the TTT Certificate as corporate trainers.

Theoretical Study

The company provides internal trainers with relevant training and learning materials from time to time to facilitate their further study.

Practical Exercises

The company would have internal trainers serve as lecturers for its annual planning and training programs and give random lecture demonstrations.

Interaction and Communication

The company promotes communication between internal trainers and improves the comprehensive capabilities of the internal trainer team by organizing sharing sessions and seminars and offering Group or external training opportunities.



Internal trainer appointment ceremony at Gold East Paper

Building a Talent Pipeline

Hainan Jinhai Pulp & Paper held the first management trainee training camp in 2020, divided into the two stages of intensive training and interdepartmental rotation learning. The intensive training courses covered a broad array of general topics such as personnel-related rules and regulations, corporate culture, MBOS management system, pulp and paper production processes, industrial safety, and accounting, as well as military training and outreach activities. They were designed to acquaint trainees with the workflow, enhance team cohesion, and quicken their transition from school to work. The training was followed by practical rotation learning in different departments such as pulp production, paper production, processing, and technology. The company will continue with the trainee program to contribute to building a strong talent pipeline.



Opening ceremony of trainee training camp

Case

Strengthening Talent Development Management

Gold East Paper has a scientific talent selection and employment mechanism. The company makes sure that top talent stands out based on an open, fair, and just review process that combines a mix of open recruitment and internal competition with a scientific assessment method. The company created 13 internal recruitment vacancies in 2020 and, with over 50 employees applying, succeeded in filling all of them with internal candidates. The company also covers core employees with the Successor Plan and creates clearer career development paths by improving the talent pool information, standardizing the talent evaluation system, and tracking the implementation of the Successor Plan every month.



The company created **13** internal recruitment vacancies in 2020 and, with over **50** employees applying, succeeded in filling all of them with internal candidates.



Case



Trainee outreach activity

Caring for Employees' Life

We organize a variety of activities, such as fun sports meets, outreach programs, book sharing sessions, and family open days, to create a positive, healthy, and engaging working atmosphere for our employees.

Caring for Employees with Actions

Hainan Jinhai Pulp & Paper is concerned about the education of employees' children. Through active communication, the company was able to get the employees' children to attend nearby primary and middle schools, which solved a big problem for the employees and was highly appreciated. The company also held the 2019-2020 employees' children scholarship award event, where 46 employees received scholarships for their children. It also hosts an open day every year, when it welcomes employees' families to visit the workplace so that they develop a better understanding and stronger support for their work.



Employees were presented with scholarships for their children



Employee family open day

Creating a Vibrant Living Environment

Guangxi Jingui Pulp & Paper provides accommodation for the employees, equipping it with gyms, table tennis halls, badminton halls, dance rooms, basketball courts, and other facilities, making them feel motivated in a comfortable environment. In 2020, the company organized a number of activities, such as tug-of-war and fun sports meet, to enrich employees' life and build stronger rapport.



Fun sports meet



Tug-of-war

Case

Our Story

MBOS Spirit, Compass for APP People

"Perseverance and the courage to face difficulties head-on" are the "craftsmanship spirit" forged by countless papermaking companies and individuals through a process of continuous refinement. A most important part of APP's corporate culture is to carry on the craftsmanship spirit, push limits, and live the "MBOS spirit", which leads us forward in the changing times.

MBOS was formed when APP first set up mills in China and has grown alongside APP China for nearly three decades. The essence of MBOS is not only the craftsmanship spirit of papermaking people but also the mission of APP China to pass on the traditional Chinese civilization, and it is the key to APP China's success in becoming bigger, stronger, and richer. On the implementation side, the MBOS spirit is about setting and breaking down the Company's overall operational goals and helping the departments better achieve the goals with improved team efficiency. Instituting benchmarking throughout the process, APP people constantly push limits and make outstanding achievements. Amid a global economic slowdown in 2020 caused by COVID-19, some good news came from Gold East Paper. Its PM3 was operating at a speed of 1,800 meters

per minute and for over 24 hours without interruption, tying the world record for the speed of large cultural paper machines set by itself. This is an example of what our employees can collectively achieve led by the MBOS spirit.

Culture & MBOS and Organization & Talent are two key dimensions of our Four-Wheel Drive strategy proposed in 2020. We believe that the core competitiveness of a business lies not in talents themselves but in bringing talents together and playing to the best of their abilities. MBOS provides employees with such a mechanism to unlock their potential, by continuing to carry out improvement proposal competitions and encouraging employees to keep pushing boundaries and innovate. Hainan Gold Hongye and Hainan Gold Shengpu received 3,216 improvement proposals from different departments in 2020, including highly innovative and duplicatable ones. 100% of Gold East Paper employees participated in the proposal initiative, averaging 4.81 proposals per person. Throughout the year, the company organized a number of events such as the MBOS competition, MBOS conference, and MBOS regular performance reviews, which served as a platform for employees from different units and teams to engage with each other.

While the outside world keeps changing, the MBOS spirit remains the soul and real soft power of APP China's development. We look forward to working with our employees to create meaningful experience on the MBOS stage and helping them realize their career dreams and thrive.

In 2020, Hainan Gold Hongye and Hainan Gold Shengpu received 3,216 improvement proposals from different departments.

100% of Gold East Paper employees participated in the proposal initiative, averaging 4.81 proposals per person.

4.81 proposals per person.



Dedicated to Philanthropy

"What is taken from society is used for society". This is the philosophy that still guides the Company today. We have been actively engaged in philanthropic undertakings since day one, doing our part to give back to society. Over the years, we have donated over RMB1.1 billion in aiding disaster relief, educational

infrastructure construction, and community construction, helping disadvantaged groups, etc. Meanwhile, we play to our strengths as a papermaking company and help train professionals and transmit the papermaking culture.

Building a Better Society

The goal of the Huang Yicong Foundation (the "Foundation") is to "support the development of philanthropy in China, help the poor and the needy and the elderly and the very young, and build a harmonious society". It has programs in education assistance, poverty alleviation, and disaster relief and supports charities in the areas of scientific research, culture and sports, medical care, environmental protection, etc., which are crucial to national and social development. In 2020, the Foundation carried out 21 projects intended to promote equity in education,

cultivate philanthropy professionals, and speed urban-rural integration, with efforts to assist students and the disabled, help high school student build abilities, train charity professionals among college students, etc. The Foundation has established a sound project management system and visits the beneficiaries every year to understand their needs. Meanwhile, it continuously improves and deepens the mechanism and mode of the projects so that they can create a more lasting and sustainable impact on the people in need.



Case

Supporting the Cultivation of Young Charity Professionals

APP Charitable Youth Internship is a charitable program that encourages college students to take internships at local non-profit organizations during the summer vacation. It gives the students the opportunity to work at a charitable organization, where they can learn how they work and participate in charitable events. From 2010 to 2020, the project has been held on 11 occasions in different localities including Shanghai, Nanjing, Beijing, the Pearl River Delta, Chengdu, and Wuhan.

The project mainly works with officially registered non-profit organizations that have made an impact in their own fields. The organizations provide internship positions and tutors, and the Foundation provides subsidies and platforms. They openly recruit interns in colleges and universities who are enthusiastic and aspiring about philanthropy for a two-month summer internship. The interns need to complete certain tasks under the supervision of instructors from those organizations. They also need to leverage their own professional abilities and creativity to engage directly

in planning and organizing activities and promote the development of the organizations. Over the past 11 years, 512 top-performing college students have become APP Charitable Youth Interns and completed their internships with an outstanding performance.

The Foundation will get more non-profit organizations and college students to engage in the project, making it a broader platform that allows more young people to understand and experience philanthropy more deeply and shapes them into high achievers who also have a strong sense of social responsibility and leadership skills.



Philanthropy interns participate in charitable programs

Supporting Visually Impaired Students

Case

In 2020, the Foundation continued to implement the APP Lights Up Dreams program. The program works with the OPO Disability Group to hold the Pre-College Class for Visually Impaired Students, helping them better adapt to college life by improving their various skills.

The Pre-College Class for Visually Impaired Students is the first charitable training camp in China to prepare visually impaired college-students-to-be for the future. Campers are primarily high school graduates about to enter college, with some already in college. With skill-enhancing courses like Independent Travel, Technological Empowerment, and Youth Salon, the class is designed to help visually impaired students adapt to college life and study more quickly; courses like Knowing Yourself and Career Planning encourage the students to break through boundaries and limits and have the courage to explore more possibilities so that more visually impaired students can "see" the future.

In 2020, 20 visually impaired students from 16 provinces/regions across China completed the training camp. Twelve APP China employees and three employee children served as volunteers and accompanied the campers during the final examination.



Volunteers accompanied visually impaired students in training

Since its inception in 2018, the Dream Plan program has set up classes jointly with Guangxi Vocational and Technical Institute of Industry and the Mechatronics major of Nantong Vocational University and offered courses on pulp-making and papermaking collaboratively with College of Light Chemical Engineering and Food of Guangxi University and Zhejiang University of Science and Technology. The 3rd Dream Plan in 2020 shifted its focus to rural middle schools in remote areas, enrolling 66 students.

Outstanding students enrolled in the program are eligible for fully subsidized tuition and accommodation fees and partially subsidized living and transportation expenses when they are in college and offered jobs by APP China after graduation. The Dream Plan will continue to grow both in the breadth and depth of cooperation with schools. While helping students realize their dreams in college, it will also supply the papermaking industry with more professionals adept at applying knowledge to real-world scenarios.



Guangxi APP 2020 Dream Plan Class

Our mills maintain close communication with the communities all year round and carry out a wealth of philanthropic activities based on their actual needs for development, contributing to harmonious communities.



Case

Building a Harmonious Community

Ningbo Asia has been implementing the Harmonious Community initiative for ten consecutive years since 2011. In 2020, the company donated nearly 600 new civilian masks with a replaceable filter to three surrounding communities to show support and appreciation for workers at the frontlines of COVID-19 and care for community residents; donated picture books to the Qijiashan Central Kindergarten, totaling 2,300 in 6 years, to promote reading habits among children. The company also aided communities by visiting the elderly, thanking the fire department, transmitting knowledge of garbage sorting, etc., which were widely praised by community residents.



Volunteers from Ningbo Asia gave away masks to community residents



Ningbo Asia donated books to kindergarten

Gold East Paper started to implement the *Employee Volunteer Management Measures* in 2008, encouraging employees to actively volunteer. The company has set up several volunteer stations with different types of posts in places like welfare homes, hospitals, train stations, youth support centers, museums, and libraries to accommodate employees' different needs in terms of work content and length. As of the end of 2020, Gold East Paper had clocked over 380,000 hours of employee volunteerism in total.

Since 2015, Hainan Jinhai Pulp & Paper has responded to the call of the Yangpu Work Committee of Chinese Communist Youth League (CYLC) and the Yangpu Bureau of Social Development to support the Education Assistance initiative to pair up with impoverished students. In 2020, the company sponsored five impoverished college students in Yangpu, solving their financial difficulty in obtaining schooling. In the past six years, the company has invested a total of RMB95,000 in supporting 30 impoverished high school graduates in Yangpu to enter college.



Hainan Jinhai Pulp & Paper undertook paired education assistance

Spreading Papermaking Culture

All of our mills have an Open Day, when they open their doors from time to time to welcome community residents, teachers and students, the media, and other stakeholders. This provides a window for people to learn about manufacturing in the papermaking industry. Gold Huasheng and Ningbo Asia have both built a paper culture experience center, where visitors can systematically learn about the development and characteristics of ancient and modern papermaking industry.

The Gold Huasheng Paper Culture Center organized 43 events in 2020, recording nearly 900 visits from primary and middle school students. It was named the "Suzhou New Era Labor Education Practice Base for Minors" and "Outstanding Experience Base" by the Publicity Department of CPC Suzhou Municipal Committee, the Office of the Guidance Commission on Building Spiritual Civilization in Suzhou, and the Suzhou Municipal Education Bureau.

Ningbo Asia built the Green Paper Culture Center in 2020, focusing on creating an engaging presentation of history and knowledge and using multimedia images and digital technology to deliver a high-tech and interactive experience. The company has also built an extracurricular education practice base and extended the "Carrying on

Papermaking Civilization" charitable lecture from surrounding communities and schools to campuses across Ningbo. The company donated five small papermaking machines to the Qijiashan Central Kindergarten in 2020 so that the children could experience the fun of making paper by hand, thus enhancing their knowledge while exposing them to the charm of papermaking, one of China's four great inventions.



Papermaking experience activity at Gold Huasheng Paper Culture Center

Green Paper Culture Center

The Ningbo Asia Green Paper Culture Center covers an area of about 350 square meters and is divided into three parts, namely Hall 1, Hall 2, and the Experience Area. Hall 1 is mainly green, presenting the history of paper culture and the environmental protection facilities for "Three Wastes Management". It allows visitors to learn about the papermaking culture and the concept of green papermaking in a straightforward way. Hall 2 displays on LED screens the history of APP China and its subsidiaries such as APP China Forestry, the Pulp BU, the Industrial Paper BU, and the Cultural Paper BU. In the Experience Area, visitors can personally participate in papermaking processes such as beating, papermaking, and drying and have fun with this ancient craft.



Ningbo Asia Green Paper Culture Center

Case

Our Story

Irrigating Hope with Love – Ten Years of Foundation



"A lit candle can ignite thousands of candles, which will illuminate every corner. Those who do good exuberate kindness from within and become approachable to other people". This is how Mr. Eka Tjipta Widjaja, founder of the Sinar Mas Group, described his commitment to philanthropy. While living overseas, Mr. Eka Tjipta Widjaja had made a consistent donation together with other overseas Chinese since 1957 to help improve the education in his home country in the hope that children could all receive an education in school. His enthusiasm for supporting charities in his home country also subtly influenced his children. In 2006, Mr. Jackson Wijaya Limantara, together with his wife Ms. Olivia Yu, set up a foundation in the name of his grandfather, Mr. Eka Tjipta Widjaja, to carry on the family and corporate philanthropic undertakings. With over three years of preparation, the Huang Yicong Foundation was officially registered as a national non-public foundation on May 4, 2010 with the Ministry of Civil Affairs.

Ten years into its establishment, the Foundation has carved out its own path in philanthropy: to focus on changing the most important component of society, that is, people. Of the 20 plus projects currently operated by the Foundation, some have been ongoing for years and some have been established in the past two years following the latest trends in philanthropy. Through these projects, we see the inheritance of the spirit of philanthropy and the positive changes in the beneficiaries.

Little Sun Kindergarten

The project provides preschool education for children aged three to six in remote rural areas and helps train local kindergarten teachers to build a preschool education model suited to local conditions and promote the long-term development of rural communities. As of the end of 2020, the Foundation had supported 37 kindergartens in Ximeng, Funing, and Lancang, Yunnan Province, benefiting 3,631 children.

Paired Assistance

The Foundation has teamed up with APP China employees in Shanghai since 2012 to aid schools in remote areas. The employees pair up with and provide financial assistance for elementary and junior high school students from impoverished families by making monthly donations, and the Foundation sets up supporting funds to improve the schools' facilities and teaching resources. In 2020, 100 employees participated in the project, funding 189 students.

High-school Scholarship and Teaching Fellowship Programs

The Foundation has launched a number of programs in eight high schools in Guangxi, Gansu, and Fujian Province, including the Yicong Scholarship, the Jinchen Scholarship, the Yicong Scholarship and Teaching Fellowship Fund. By awarding outstanding students and teachers, those programs are designed to improve the quality and liveliness of teaching in high schools in remote provinces, thus promoting educational equity in China. The Foundation also encourages the students to participate in philanthropy on campus, invites graduates to visit eco-friendly mills, provides remote vocational courses, and selects outstanding students for the Yicong Research Camp, among other methods. The goal is to equip the students with a broader and forward-looking vision and improve their overall qualities, ability to learn, and creativity.

The Huang Yicong Foundation celebrates its 10th anniversary this year. Over the last decade, the Foundation has been dedicated to philanthropic undertakings, bringing hope to children in many villages and towns. It has also been a decade of budding and growing hopes and of moving stories. We have come to the gradual realization that the purpose of the Foundation is not only to provide financial assistance for students, but more importantly, to cultivate students' sense of social responsibility and encourage them to give back to society.

Huang Yuqing, Secretary of CCYL Committee of Qinzhou No.1 Middle School

I had the honor of participating in the APP Charitable Youth Internship program in the summer of 2018. There, I learned to make handicrafts, develop complete event planning, make elaborate PowerPoints, communicate more effectively with others, etc. Inspired by the people devoted to philanthropy, I have come to understand many austere conceptions, for example, what constitutes "simple happiness" and what constitutes "contentment". I have taken a career turn to focus on philanthropy myself. It is going to be a long and bumpy road ahead and I will keep working harder.

Xing Qiuyue, an intern in the 2018 APP Charitable Youth Internship program

Governance and Management

Risk Management

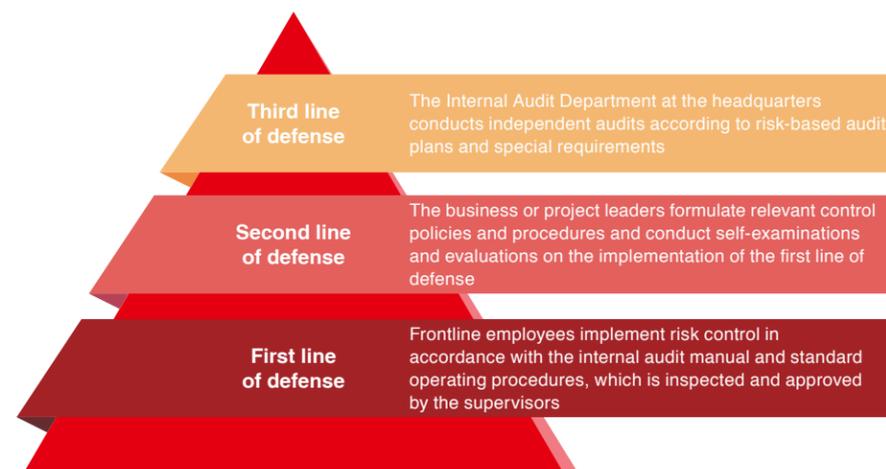
APP China continues to examine and evaluate the effectiveness of corporate governance, risk management, and internal control to identify potential major risks, continuously improve risk management, and ensure that the Company maintains sustained and robust operations. Based on the lines of defense system of internal control that offers three lines of defense, we work to strictly prevent any potential risks in our operations. Our internal audits are conducted in accordance with the

various mandatory guidelines issued by the Institute of Internal Auditor (IIA), such as the *Code of Ethics* and the *International Standards for the Professional Practice of Internal Auditing*. They cover all the organizations and processes in the forestry, pulp, paper, and other related fields of the Group. We appoint independent internal or external technical experts to assist in the audits when necessary to ensure that our internal audits remain effective and professional.

In 2020, we formed an IT Audit Team in the Internal Audit Department, improving the accuracy, coverage, and response of internal audits through the use of the data

analysis (DA) technology and data-based and intelligent applications and further improving the Group's ability to identify and manage risks.

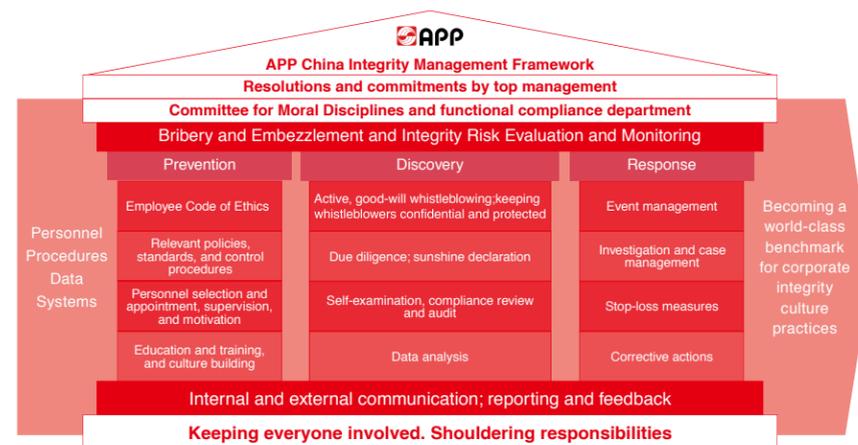
APP China's Three Lines of Defense for Internal Control



Integrity and Compliance

The set of moral values built on the cornerstones of "Integrity and Commitment" is the foundation of the corporate culture and a key driver of sustainable development at APP China. Under the guidance of the

APP China Integrity Management Framework, we embed integrity and compliance across all levels of the Company to fully promote management and practices in this regard.



Integrity and Compliance Management

In 2020, we standardized and deepened clauses relating to anti-bribery and integrity commitments in our commercial contracts and fully inspected and verified commercial contracts signed with external partners and employment contracts signed internally. We did so to ensure that all the contracts included integrity and anti-bribery clauses such as compliance with business ethics, prohibition of gifts and hospitality, protection of trade secrets, prevention of conflicts of interest, and channels for reporting concerns or complaints.

We encourage the reporting of misconduct in good faith and have established smooth reporting channels. Both internal and external personnel can file a report through the whistleblower mailbox (GRW@app.com.cn) or the 24-hour whistleblower hotline (021-22839763). The content of the report includes

but is not limited to sexual harassment, corruption, fraud, theft, forgery, commercial bribery, embezzlement, and conflict of interest. Meanwhile, we regularly evaluate the reporting response mechanism and repeatedly publicize the reporting channels and reward policies to encourage compliance supervision by employees. Our existing reporting channels all keep the reporters and the content of the reports strictly confidential.

We record and archive all the reported cases and report them to the Company's senior management. We ensure that people involved are treated fairly and justly with the closure meeting mechanism. The Company also reviews and improves relevant standard operating procedures based on past cases to prevent similar cases from recurring.

Building a Culture of Integrity

We make a point of drawing experience from past compliance cases. While using them to improve relevant work procedures, we also include those incidents as cases in the compliance training so that employees can understand the consequences of bribery and corruption in a straightforward way and develop a stronger awareness of compliance.

In the 2020 Sunshine Integrity Month, we organized all employees of the Group to take

an oath, study clauses relating to integrity and self-discipline in the *Employee Handbook*, participate in integrity and anti-fraud training, take integrity awareness tests, and sign the Pledge of Integrity online. Our training took more diverse forms in 2020 as a result of COVID-19 and the digital transformation across the Group, which included email and corporate WeChat articles, case board display, layer-by-layer communication



APP China management participated in the Integrity Month



Employees took an oath of integrity

Employees studied integrity before the publicity board

between business units, etc., ensuring that integrity education reached all the employees at APP China. We also provided special training on integrity for middle-level employees. With short videos and case study, we analyzed the causes of fraudulent behaviors for employees and underlined the importance of integrity and self-discipline and the Company's integrity values.

We continue to promote regulations regarding business ethics among employees, such as the *APP China Code of Ethics and Integrity for Employees* and the *Provisions on the Prohibition of Accepting Gifts and Hospitality*, and incorporate such publicity work as an important focus area in building a culture of integrity.

Sustainability Management

APP announced the "Sustainability Roadmap: Vision 2020" in 2013, which set forth 19 targets to be achieved by 2020 focusing on ten key impact areas such as fiber sourcing, reforestation, conservation & biodiversity, human rights & indigenous people, community empowerment, climate change, emissions, water management, solid waste, and employee welfare. 18 targets had been achieved by the end of 2020. The target of zero safety incident for employees and contractors had not been achieved.

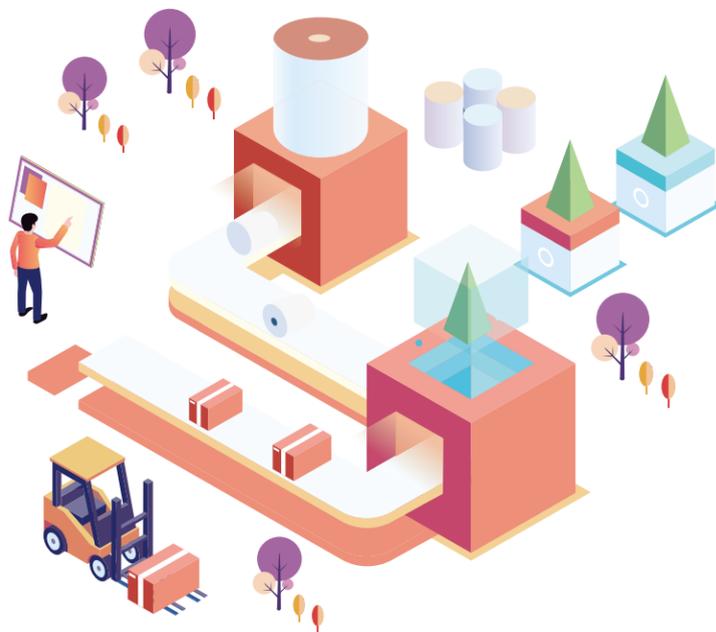
In 2020, APP announced "Sustainability Roadmap: Vision 2030", which will focus on specific actions in three main areas, namely production, forest and people. APP China will formulate its own sustainability strategy and action plans based on the 2030 Vision Roadmap as well as China's sustainability trends and policy requirements.



Scan the QR code to learn about the detailed progress of 2020 targets



Scan the QR code to see 2030 vision and targets



Sustainability Roadmap: Vision 2030

Target Area	Production	Forest	People
Overall Target	- 30% reduction in carbon footprint	- Over half a million hectares of natural forests conserved	- Improving the lives of millions
Specific Issues	- Low Carbon Product - Innovate Products	- Fiber Sourcing - Forest Protection - Integrated Fire Management	- Sustainable Livelihood - Workforce Management - Business Ethics & Conduct

Sustainability Certificates

CFCC/PEFC-FM Certification* at APP China

No.	APP China Forestry Companies	Certificate No.
1	Hainan Jinhua Forestry Co., Ltd.	CFCC/PEFC-FM-ZTFC-000003
2	Heyuan Jinmei Science & Technology Forestry Co., Ltd.	CFCC/PEFC-FM-ZTFC-000030
3	Leizhou Jin-taiyang Science and Tech Forestry Ltd.	CFCC/PEFC-FM-ZTFC-000030
4	Yangjiang Jin-taiyang Science and Tech Forestry Ltd.	CFCC/PEFC-FM-ZTFC-000030
5	Jin-Qingyuan Timberland (Paper mill) Ltd.	CFCC/PEFC-FM-ZTFC-000007
6	Shaoguan Jin-Shaoguan First Quality Timberland (Paper mill) Ltd.	CFCC/PEFC-FM-ZTFC-000008
7	Guangxi Jin Gui Forestry Co., Ltd.	CFCC/PEFC-FM-ZTFC-000005
8	Guangxi Jin Qinzhou High-Yield Forestry Co., Ltd.	CFCC/PEFC-FM-ZTFC-000006
9	Guangxi Xing Guilin Agriculture Technology Co., Ltd.	CFCC/PEFC-FM-ZTFC-000031
10	Guangxi Jin Taiyang Forestry Co., Ltd.	CFCC/PEFC-FM-ZTFC-000031
11	Wenshan Jin Wenshan High-Yield Forestry Co., Ltd.	CFCC/PEFC-FM-ZTFC-000017
12	Simao Jin Lancang High-Yield Forestry Co., Ltd.	CFCC/PEFC-FM-ZTFC-000018

*CFCC/PEFC-FM certification refers to CFCC/PEFC Forest Management certification.

CFCC/PEFC-CoC Certification* at APP China

No.	APP China Affiliates	Certificate No.
1	Gold East Paper (Jiangsu) Co., Ltd.	SGS-CFCC/PEFC-COC-001002
2	Gold Huasheng Paper (Suzhou Industrial Park) Co., Ltd.	SGS-CFCC/PEFC-COC-001026
3	Ningbo Asia Pulp and Paper Co., Ltd.	SGS-CFCC/PEFC-COC-001031
4	Hainan Jinhai Pulp & Paper Co., Ltd.	SGS-CFCC/PEFC-COC-001058
5	Gold HongYe Paper Group Co., Ltd.	SGS-CFCC/PEFC-COC-001032
6	Hainan Gold Hong Ye Paper Co., Ltd.	SGS-CFCC/PEFC-COC-001084
7	Gold Hongye Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1463
8	Guangxi Jingui Pulp & Paper Co., Ltd.	SGS-CFCC/PEFC-COC-001013
9	Hainan Jinhai Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1467
10	Gold East Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-0249
11	Gold Shengpu Paper Products (Suzhou Industrial Park) Co., Ltd.	SGS-CFCC/PEFC-COC-001037
12	Yalong Paper Products (Kunshan) Co., Ltd.	SGS-CFCC/PEFC-COC-001059
13	Gold Huasheng Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1464
14	Ningbo Yajiang Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1465
15	Jinxin (Qingyuan) Paper Industry Pte.,Ltd.	SGS-CFCC/PEFC-COC-001098

*CFCC/PEFC-CoC certification refers to CFCC/PEFC Chain of Custody certification.

2020 Sustainability Management System Certification at APP China

	ISO9001	ISO14001	ISO45001	ISO50001	CFCC/PEFC-CoC
Gold East Paper	Periodic audit	Periodic audit	Periodic audit	Certificate renewal	Periodic audit
Gold Huasheng	Periodic audit	Certificate renewal	Periodic audit	—	Periodic audit
Suzhou Gold Hongye	Periodic audit	Certificate renewal	Certificate Transition audit	—	Periodic audit
Ningbo Asia	Certificate renewal	Certificate renewal	Certificate renewal & Certificate Transition audit	—	Periodic audit
Hainan Jinhai Pulp & Paper	Re-certificate audit	Re-certificate audit	Re-certificate audit	Certificate audit	Periodic audit
Guangxi Jingui Pulp & Paper	Re-certificate audit	Re-certificate audit	Re-certificate audit	—	Periodic audit

Stakeholder Engagement

Based on a series of internal information collection, interviews, communication, survey and other work, we have identified ten key stakeholder groups. Each of APP China's functional departments has established multiple

channels for communication with different stakeholders, to timely and fully understand stakeholder expectations and concerns, and take their opinions as an important reference for future work improvement and innovation.

Stakeholders	Top Concerns	Engagement Channels
Employees 	<ul style="list-style-type: none"> - Occupational health and safety - Employment - Corporate governance and business ethics - Human rights - Sustainable forest management 	<ul style="list-style-type: none"> - Company intranet, internal magazine - Employee representative meetings - Employee communication meetings - Executive mailbox - MBOS proposal competition /conference - APP Online Learning Management System - Family opening day, book club, etc. - Sustainability reports - WeChat Official Account
Customers and consumers 	<ul style="list-style-type: none"> - Product quality and safety - Occupational health and safety - Customer service quality - Human rights - Environmental compliance 	<ul style="list-style-type: none"> - Customer visits, store visits - Engagement meetings/activities - Industry conferences/events - Customer satisfaction surveys - Customer service hotline/mail - Company website - Sustainability reports - WeChat Official Account

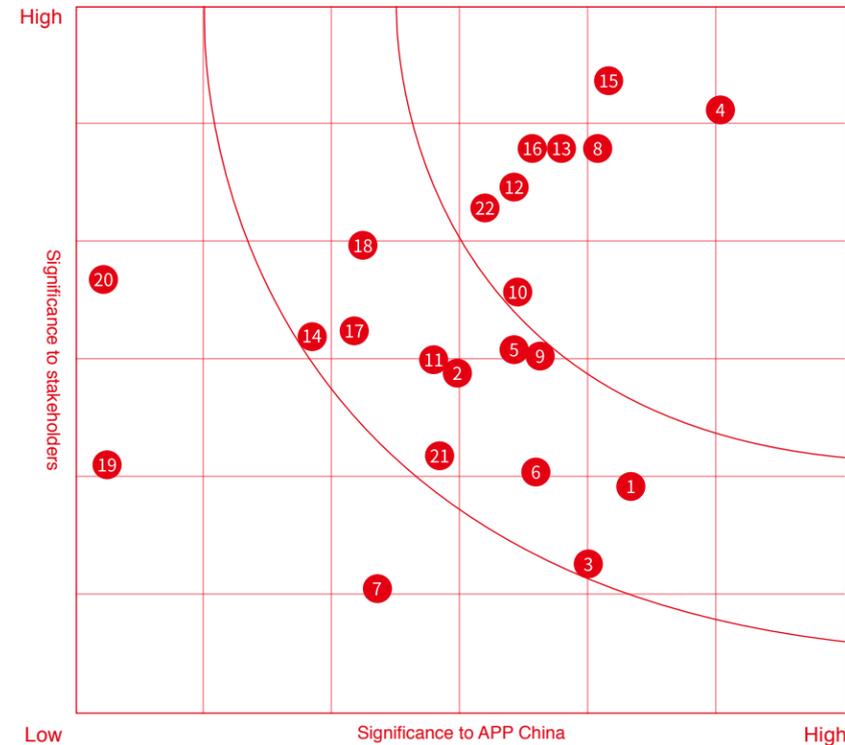
Stakeholders	Top Concerns	Engagement Channels
Suppliers/Contractors 	<ul style="list-style-type: none"> - Occupational health and safety - Employment - Corporate governance and business ethics - Employee training and development - Win-win cooperation - Environmental compliance 	<ul style="list-style-type: none"> - Supplier/Contractor meetings - Cooperative R&D mechanism - Supplier/Contractor training - Regular supervision and inspection - Sustainability reports
Banks 	<ul style="list-style-type: none"> - Economic performance - Product quality and safety - Customer service quality - Win-win cooperation - Compliance management and risk control 	<ul style="list-style-type: none"> - Daily communication meetings - Cooperative agreement - Sustainability reports - Company website

Stakeholders	Top Concerns	Engagement Channels	Stakeholders	Top Concerns	Engagement Channels
Government agencies 	<ul style="list-style-type: none"> - Sustainable forest management - Air pollutant emissions - Addressing climate change - Environmental compliance - Biodiversity - Water management - Employment 	<ul style="list-style-type: none"> - Government communication meetings - Governmental inspection and supervision - Information disclosure and reporting - Regular visits - Awards and recognition - Sustainability reports - Company website 	Academic institutions 	<ul style="list-style-type: none"> - Product quality and safety - Occupational health and safety - Environmental compliance - Water management - Addressing climate change - Air pollutant emissions - Waste management 	<ul style="list-style-type: none"> - Cooperative R&D - Joint talent cultivation - Company website - Sustainability reports
Community representatives 	<ul style="list-style-type: none"> - Supporting philanthropy and epidemic prevention and control - Environmental compliance - Product quality and safety - Water management - Win-win cooperation - Community relations and cultural popularization 	<ul style="list-style-type: none"> - Frequent visits - Community opinion processing and feedback - Community representatives' supervision and engagement - Mill visits - Community charitable activities and volunteer activities - Papermaking culture popularization activities 	NGOs 	<ul style="list-style-type: none"> - Product quality and safety - Sustainable forest management - Biodiversity - Occupational health and safety - Air pollutant emissions 	<ul style="list-style-type: none"> - Communication on specific topics - Charity projects donation and cooperation - Sustainability reports - Company website - WeChat Official Account
Industry associations 	<ul style="list-style-type: none"> - Product quality and safety - Customer service quality - Addressing climate change - Waste management - Win-win cooperation - Air pollutant emissions 	<ul style="list-style-type: none"> - Industry communication meetings, exhibitions and forums - Regular visits - Awards and recognition - Research and cooperation - Industry publications - Sustainability reports 	Media 	<ul style="list-style-type: none"> - R&D and innovation - Addressing climate change - Water management - Product quality and safety - Digital transformation - Waste management 	<ul style="list-style-type: none"> - On-site participation in events - Meetings, exhibitions, forums, etc. - Company website - WeChat Official Account - Executive interviews

Materiality Analysis

Drawing reference from the GRI Standards, the Global Compact Ten Principles, the Forest Management standard and the Pulp & Paper Products standard issued by the Sustainability Accounting Standards Board (SASB), the latest national and industry policies, as well as sustainability trends, we identified 22 issues closely related to the Company's development. Compared to 2019, "Digital transformation" is added to the material issues list. This issue is one of the company's current core development directions, and it is also

an important trend of national and industry development. Other adjustments are mainly the merging of certain issues and refining the description. No significant changes have taken place in issue boundaries. In 2020, we conducted surveys regarding the significance of the issues to stakeholders. A total of 1,237 valid questionnaires were collected online and offline. The issues have been arranged in order of materiality based on discussions with internal and external experts.



High Materiality Issues

- 4 Product quality and safety
- 15 Occupational health and safety
- 8 Environmental compliance
- 13 Sustainable forest management
- 16 Employment
- 12 Water management
- 22 Corporate governance and business ethics
- 10 Air pollutant emissions

Moderate Materiality Issues

- 9 Addressing climate change
- 5 Customer service quality
- 18 Human rights
- 2 Digital transformation
- 11 Waste management
- 1 Employee training and development
- 6 Responsible supply chain
- 14 Biodiversity
- 21 Compliance management and risk control
- 3 R&D and innovation

Low Materiality Issues

- 7 Win-win cooperation
- 20 Supporting philanthropy and epidemic prevention and control
- 19 Community relations and cultural popularization

Issues	Contents in report	Internal boundaries	External boundaries		
			Customers and consumers	Suppliers	Community
Economic performance	- Company Profile - Performance in Numbers	●			●
Digital transformation	- Company Profile - Industrial Layout and Development - Post-Epidemic Era: Proactively Creating Opportunities - Green Mill Management - Developing a Digital Transformation Strategy - Accelerating Digitization of Practices	●	●	●	
R&D and innovation	- Industrial Layout and Development - Shared Prosperity with Industry - Post-Epidemic Era: Proactively Creating Opportunities - Green Product Innovation - Sustainable Forest Management	●	●	●	●
Product quality and safety	- Post-Epidemic Era: Proactively Creating Opportunities - Green Product Innovation - Product Quality and Service Management	●	●	●	
Customer service quality	- Product Quality and Service Management	●	●		
Responsible supply chain	- Sustainable Procurement Management - Green Manufacturing - Sustainability Certificates - Performance in Numbers	●	●	●	●
Win-win cooperation	- Shared Prosperity with Industry - Sustainable Forest Management - Product Quality and Service Management	●	●	●	●
Environmental compliance	- Green Mill Management - Green Manufacturing - Performance in Numbers	●		●	●
Addressing climate change	- Green Forestry and Forest Conservation - Green Mill Management - Green Manufacturing	●	●	●	●
Air pollutant emissions	- Green Manufacturing - Performance in Numbers	●			●

Issues	Contents in report	Internal boundaries	External boundaries		
			Customers and consumers	Suppliers	Community
Waste management	- Green Manufacturing - Performance in Numbers	●			●
Water management	- Green Manufacturing - Performance in Numbers	●			●
Sustainable forest management	- Green Forestry and Forest Conservation - Sustainable Forest Management - Sustainability Certificates	●	●	●	●
Biodiversity	- Sustainable Forest Management	●	●	●	●
Occupational health and safety	- Safety Management - Performance in Numbers	●		●	●
Employment	- Talent Retention and Development - Performance in Numbers	●			
Employee training and development	- Talent Retention and Development - Performance in Numbers	●			
Human rights	- Sustainable Procurement Management - Talent Retention and Development - Safety Management - Dedicated to Philanthropy	●		●	●
Community relations and cultural popularization	- Dedicated to Philanthropy	●	●		●
Supporting philanthropy and epidemic prevention and control	- Post-Epidemic Era: Proactively Creating Opportunities - Dedicated to Philanthropy - Performance in Numbers	●			●
Compliance management and risk control	- Risk Management - Integrity and Compliance - Sustainability Management	●	●	●	●
Corporate governance and business ethics	- Company Profile - Sustainable Procurement Management - Risk Management - Integrity and Compliance	●	●	●	●

Performance in Numbers

Economic performance

Indicator	Unit	2020	2019	2018
Total assets	RMB100 million	2,480	1,914	1,726
Total taxes paid	RMB100 million	35	30	30
Sales revenue	RMB100 million	738	651	590
Total profit	RMB100 million	73	48	30
Net profit	RMB100 million	62	39	23

APP China sources of pulp procurement*

Region	2020	2019	2018
North America	18.49%	25.7%	23.9%
South America	4.23%	1.1%	2.8%
Europe	5.01%	2.8%	1.1%
Other Asian regions	28.69%	26.6%	22.7%
China	43.25%	43.8%	49.4%
Oceania	0.32%	—	0.1%

* The change in the proportion of different locations mainly resulted from the quality and market price of pulp.

Indirect economic impact

Indicator	Unit	2020	2019	2018
Employee volunteer time	Hours	15,544	18,618	31,018
Donations*	RMB10,000	14,579	3,197	3,207

*Data scope includes APP China Headquarters, the Foundation, Gold East Paper, Ningbo Asia, Ningbo Zhonghua, Gold Huasheng, Gold Hongye, Guangxi Jingui Pulp & Paper, Hainan Jinhai Pulp & Paper, and APP China Forestry.

Materials

Indicator	Unit	2020	2019	2018
Total volume of pulp purchased	10,000 tons	626.41	564.94	534.38
Total volume of certified pulp purchased	10,000 tons	151.60	111.88	76.07
Proportion of certified pulp in total pulp purchased	%	24.20	19.80	14.23
Proportion of certified wood fiber in total wood fiber purchased	%	26.95	19.41	17.45
Volume of waste paper purchased	10,000 tons	10.39	19.81	38.19

Energy

Indicator	Unit	2020	2019	2018
Coal	Tons	4,692,593.29	4,999,054.08	5,035,063.85
Gasoline	Tons	382.15	464.35	581.74
Diesel	Tons	4,721.00	10,306.70	10,065.11
Fuel oil	Tons	0.00	846.51	144.35
Natural gas	10,000 cubic meters	186,805.47	21,396.76	21,859.78
LPG	Tons	3,072.64	10,985.74	9,126.50
Kerosene	Tons	0.44	0.96	2.24
Power purchased	10,000 kWh	111,190.99	133,309.85	157,975.17
Steam purchased	GJ	1,502,787.00	1,490,357.25	2,455,775.16
Black liquor from pulp	Tons	2,760,861.37	2,735,798.96	2,592,609.55
Biomass fuel	Tons	331,960.35	295,426.22	240,512.46
Solar power generation	10,000 kWh	2,514.60	2,604.05	2,964.05

Water resources and waste water*

Indicator	Unit	2020	2019	2018
Total water withdrawal**	Tons	120,215,643	125,397,098	130,935,175
Total waste water discharge***	Tons	89,726,593	88,160,320	90,097,689
Waste water discharge per ton of paper produced	Tons	6.20	6.37	6.79
Waste water discharge per ton of pulp produced	Tons	12.50	11.62	12.68
COD emission per ton of paper produced	Kg	0.22	0.29	0.23
COD emission per ton of pulp produced	Kg	0.85	0.63	0.94

* Not including data from APP China Headquarters. Not including data from APP China Forestry except for the indicator of total water withdrawal.

** 98.42% came from surface water, 1.56% from third-party facilities, and 0.02% from underground water.

*** In 2020, there were zero incidents of major water body pollution at APP China.

Annual average discharge concentration*	Unit	COD	NH3-N	Total Phosphorous (TS)	Total Nitrogen (TN)	Suspended Solids
Gold East Paper	mg/L	41.81	1.55	0.12	2.87	13.00
Hainan Jinhai Pulp & Paper	mg/L	68.79	0.73	0.013	4.19	18.26
Ningbo Asia	mg/L	42.20	1.00	0.05	2.35	13.00
Gold Huasheng	mg/L	22.82	0.19	0.063	4.33	5.00
Guangxi Jingui Pulp & Paper	mg/L	61.25	0.66	0.07	3.31	0.28

*Waste water discharged by Hainan Gold Hongye and Hainan Gold Shengpu was treated by Hainan Jinhai Pulp & Paper. Waste water discharged by Suzhou Gold Hongye was treated by Gold Huasheng. Therefore, the data of the three mills are not disclosed separately. The annual pollutant discharge concentration of each mill is lower than the limit set in the *Discharge Standard of Water Pollutants for Pulp and Paper Industry* (GB3544-2008).

Water reuse

Amount of reused water	Unit	2020	2019	2018
Gold East Paper	Tons	594,104,400	573,048,504	567,192,412
Hainan Jinhai Pulp & Paper	Tons	1,022,668,368	981,208,947	1,290,127,756
Ningbo Asia	Tons	234,576,459	269,558,416	269,995,863
Gold Huasheng*	Tons	390,423,282	377,985,044	372,484,717
Guangxi Jingui Pulp & Paper	Tons	311,807,317	596,060,424	322,287,500
Hainan Gold Hongye	Tons	69,750,625	67,569,742	82,413,167
Hainan Gold Shengpu	Tons	59,399,375	61,526,999	59,984,587

* The data of Gold Huasheng include those of Suzhou Gold Hongye.

Waste

Indicator	Unit	2020	2019	2018
General waste generated	Tons	1,772,130.11	1,592,579.39	1,743,836.25
General waste disposed of	Tons	1,914,695.06	1,592,473.46	1,738,064.25
Recycling and reuse	Tons	717,315.56	513,583.54	179,793.10
Incineration	Tons	485,644.50	446,418.20	539,570.50
Selling to external parties for reuse	Tons	705,781.84	564,674.86	1,011,777.75
Centralized treatment by local sanitation departments	Tons	5,293.00	5,653.00	6,747.70
Hazardous waste generated	Tons	759.77	883.84	989.81
Hazardous waste disposed of	Tons	844.36	1,003.65	939.54

Air pollutant emissions*

Indicator	Unit	2020	2019	2018
Total SO ₂ emissions	Tons	404.50	697.80	1,254.11
Total NO _x emissions	Tons	4,145.61	5,362.75	5,715.42
Total soot emissions	Tons	305.06	429.06	502.62
Exhaust gas emissions	Unit	SO ₂	NO _x	Soot
Gold East Paper	Tons	90.11	273.74	29.83
Hainan Jinhai Pulp & Paper**	Tons	74.06	2,440.31	151.61
Ningbo Asia	Tons	93.08	592.61	37.80
Gold Huasheng***	Tons	39.37	263.97	29.26
Guangxi Jingui Pulp & Paper	Tons	107.88	574.98	56.56

* Not including the data of APP China Headquarters and APP China Forestry.

** The data of Hainan Jinhai Pulp & Paper include those of Hainan Gold Hongye and Hainan Gold Shengpu.

*** The data of Gold Huasheng include those of Suzhou Gold Hongye.

Environmental investment

Indicator	Unit	2020	2019	2018
Environmental investment	RMB10,000	73,084.31	87,457.18	64,083.68

Environmental compliance

Indicator	Unit	2020	2019	2018
Environmental fines	RMB	0	90,000	1,620,000

Employment*

Indicator	Unit	2020	2019	2018
Employees directly and indirectly employed	Number	19,027	20,460	21,381
Employees directly employed	Number	17,455	18,909	19,976
Male employees directly employed	Number	12,926	14,003	14,507
Female employees directly employed	Number	4,529	4,906	5,469
Employees indirectly employed	Number	1,572	1,551	1,405
Male employees indirectly employed	Number	1,102	1,107	870
Female employees indirectly employed	Number	470	444	535
New employees	Number	1,507	1,773	1,514
New male employees	Number	1,165	1,256	1,064
New female employees	Number	342	517	450
Employee turnover	Number	1,962	2,796	3,862
Male employees who voluntarily resigned	Number	911	1,274	1,282
Female employees who voluntarily resigned	Number	366	645	626
Male employees who involuntarily resigned	Number	479	544	1,341
Female employees who involuntarily resigned	Number	151	265	557
Male employees who retired	Number	10	9	13
Female employees who retired	Number	45	59	43

*The employment data are within the reporting scope.

Employee turnover rate

Indicator	Unit	2020	2019	2018
Employee turnover rate	%	10.10	12.88	16.20
Male employee turnover rate	%	9.77	11.54	15.38
Female employee turnover rate	%	11.04	16.48	18.31

Employee retention after maternity/paternity leave

Indicator	Unit	2020	2019	2018
Female employees who took maternity leave	Number	239	373	530
Female employees who returned to work after maternity leave	Number	212	340	479
Female employees who resigned after maternity leave	Number	20	31	44
Male employees who took paternity leave	Number	437	447	808
Male employees who returned to work after paternity leave	Number	418	425	756
Male employees who resigned after paternity leave	Number	5	20	41

Employee composition by level

Indicator	Unit	2020	2019	2018
Percentage of senior-level managers	%	1	1	1
Percentage of middle-level managers	%	11	10	10
Percentage of line-level employees	%	88	89	89

Employee composition by gender

Indicator	Unit	2020	2019	2018
Percentage of female employees	%	25.95	25.97	27.38
Number of female employees in management	Number	571	573	560
Percentage of female employees in management	%	27.29	26.69	25.85

Employee composition by age

Indicator	Unit	2020	2019	2018
Percentage of employees aged 30 and below	%	14.13	16.33	20.66
Percentage of employees aged between 31 and 50	%	81.05	79.27	75.79
Percentage of employees aged 51 and above	%	4.82	4.40	3.55

Employee training

Indicator	Unit	2020	2019	2018
Total training investment	RMB10,000	391.81	475.42	523.14
Total employee training time	Hours	619,287	762,701	717,135
Number of employees who participated in company-paid diploma programs	Number	11	35	78
Total investment in company-paid diploma programs for employees	RMB10,000	3.30	11.20	12.77
Average training time for senior-level managers	Hours	11.23	29.53	21.08
Average training time for middle-level managers	Hours	17.54	46.03	41.82
Average training time for line-level employees	Hours	35.34	39.79	35.43

Occupational health and safety*

Indicator	Unit	2020	2019	2018
Employee safety training time	Hours	300,011.50	333,033.00	294,354.45
Total investment in protective gears	RMB10,000	634.58	578.74	630.35
Lost hours per million working hours	Hours	924.79	854.70	830.61
Work-related injuries of employees	Person-times	45	51	50
Number of work-related fatalities of employees	Number	0	0	1
Work-related injuries of contractors	Person-times	3	3	—

* The 2019 and 2020 data do not include those of APP China Forestry.

Anti-corruption*

Indicator	Unit	2020	2019
Number of governance agency members reached by anti-corruption policies and procedures	Number	15	13
Percentage of governance agency members reached by anti-corruption policies and procedures	%	100	100
Number of governance agency members receiving anti-corruption training	Number	15	13
Percentage of governance agency members receiving anti-corruption training	%	100	100
Number of senior-level managers receiving anti-corruption training	Number	160	188
Percentage of senior-level managers receiving anti-corruption training	%	100	100
Number of middle-level managers receiving anti-corruption training	Number	1,917	1,548
Percentage of middle-level managers receiving anti-corruption training	%	100	79.02
Number of line-level employees receiving anti-corruption training	Number	15,363	15,804
Percentage of line-level employees receiving anti-corruption training	%	100	94.28

* During supplier registration, APP China requests suppliers to sign an anti-corruption statement. The percentage of suppliers that APP China's anti-corruption policies have been communicated to is 100%.

Assurance Statement



Independent Verification Statement

To the management and stakeholders of APP China:

TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch (hereinafter referred to as "TÜV SÜD") has been engaged by Sinar Mas Paper (China) Investment Co., Ltd. (hereinafter referred to as "APP China" or "the Company") to perform an independent third-party verification on APP China Sustainability Report 2020 (hereinafter referred to as "the Report"). During this verification, TÜV SÜD's verification team strictly abided by the contract signed with APP China and provided verification regarding the Report in accordance with the provisions agreed by both parties and within the authorized scope stipulated in the contract.

This Independent Verification Statement is based on the data and information collected by APP China and provided to TÜV SÜD. The scope of verification is limited to the said information. APP China shall be held accountable for authenticity and completeness of the provided data and information.

Scope of Verification

Time frame of this verification:

- The Report contains the data disclosed by APP China during the reporting period from January 1st, 2020 to December 31st, 2020, including economic, environmental and social information and data, methods for management of material topics, actions/measures and the Company's sustainable development performance during the reporting period.

Physical boundary of this verification:

- Except for Gold Hongye Paper Co., Ltd and Gold Huangsheng Paper (SuZhou Industrial Park) Co., Ltd, which respectively locate in Jinsheng Road No.1 and 2, Shengpu District, Suzhou Industrial Park, Suzhou City, Jiangsu Province. The subject and address of the on-site verification are the same with those specified in the Report.

The following information and data are beyond the scope of this verification:

- Any information and contents beyond the reporting period of this Report; and
- Data and information of APP China's suppliers, partners and other third parties; and
- The financial data and information disclosed in this Report that have been audited by an independent third party are not verified again herein.

Limitations

- This verification was performed at aforementioned physical boundary. Sampling and verification are adopted for the data and information in the Report by TÜV SÜD, and only the stakeholders within the organization are interviewed, and
- The Company's standpoint, opinions, forward-looking statements and predictive information as well as the historical data and information before January 1st, 2020 are beyond the scope of this verification.

Basis for the Verification

This verification process was conducted by TÜV SÜD's expert team who are highly experienced in the corporate social responsibility, economic, social, environmental and other relevant issues and this team drew the conclusions thereof. The verification referred to the following standards:

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Web: <http://www.tuv-sud.cn>

- Global Reporting Initiative: *Sustainability Reporting Standards (GRI Standards) (2018)*
- *TUV SUD Procedure of Verification on Sustainability Report*

In order to perform adequate verification in accordance with the contract and provide reasonable verification for the conclusions, the verification team conducted the following activities:

- Preliminary investigation of the relevant information before the verification;
- Confirmation of the presence of the highly substantial issues and performance in the Report;
- On-site review of all supporting documents, data and other information provided by APP China; tracing and verification of key performance information;
- Interviews were carried out with the management of APP China, and with the employees who are engaged in collecting, organizing and reporting the disclosed information; and
- Other procedures deemed necessary by the verification team.

Verification Conclusions

Based on the verification, we believe that the Report prepared by APP China are reliable, consistent and substantive; the information disclosure is made in an objective, truthful, complete and clear manner, without systematic or material issues. This report can be used by the stakeholders of APP China.

As to this report, the verification team has come to the following conclusions:

Stakeholder Inclusiveness	In the Report, internal and external stakeholders have been fully identified; direct communications with them were maintained through multiple channels. In this report, sufficient responses to the stakeholders' highly concerned issues are provided.
Sustainable Context	The Report displays the Company's influence on economy, environment and society in a broader context of sustainable development.
Materiality	The Report discloses the Company's process of analyzing substantive issues, including identification of the substantive issues and their boundaries, where the priority substantive issues are identified based on the significance thereof to the stakeholders and sustainability, while the materiality level of some issues can be further promoted, such as toxic emissions and water stewardship.
Completeness	The Report discloses the scope of the materiality issues' influences; as well as how the Company is involved in these influences. Generally, the information collection process of the Company is appropriate and reasonable.
Accuracy	Upon on-site verification and confirmation, it is believed that the Company utilizes a reasonable data collection system. The reported information is authentic, objective and valid; the data used are accurate and traceable.
Balance	During the process of preparing the Report, the balance of the Report was adequately considered, where both positive information and negative information are disclosed.
Clarity	In the Report, diversified expression means of pictures, diagrams and texts are used, terminologies and acronyms are clearly interpreted, the ways of directly accessing the Report are also disclosed.
Comparability	In the Report, comparability of the information and data is fully considered, with the data over the recent 3 years clearly displayed, for convenience of the stakeholders and other organizations.
Reliability	In the Report, the statistical caliber of data, assumptions and calculation and estimation methods are specified. Sources of the data used are provided.

Timeliness	The Company publishes reports to the stakeholders on an annual basis. The time frame of the Report is consistent with the annual report, so the stakeholders can obtain information in a timely manner to make decisions.
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Recommendations on Continuous Improvement

- The Company is recommended to increase relevant disclosures on addressing climate change, such as greenhouse gas emissions on Scope 1 and Scope 2.

Statement on Independence and Verification Capability

TUV SUD is a trusted partner of choice for safety, security and sustainability solutions. It specializes in testing, certification, auditing and advisory services. Since 1965, TUV SUD has remained committed to its purpose of enabling progress by protecting people, the environment and assets from technology-related risks. Today, TUV SUD is present in over 1,000 locations worldwide with its headquarters in Munich, Germany. TUV SUD has been committed to sustainable development and actively promotes environmental protection related projects. Over the years, TUV SUD has been actively expanding its performance in energy management, renewable resources, and electric automobiles, etc., helping its customers meet sustainable development needs. TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch is one of TUV SUD's global branches and has an expert team whose members have professional background and rich industrial experiences. TUV SUD and APP China are two entities independent of each other and both TUV SUD and APP China and their branches or stakeholders have no conflict of interest. No member of the verification team has business relationship with the Company. The verification is completely neutral. All the data and information in the Report are provided by APP China. TUV SUD has not been involved in preparation and drafting of the Report, except for the verification itself and issuance of the verification statement.

Signature:

On Behalf of TUV SUD Certification and Testing (China) Co., Ltd. Shanghai Branch

Zhu Wenjun
TUV SUD Sustainability Product Manager

Date October 15th, 2021

Note: In case of any inconsistency or discrepancy, the simplified Chinese version of this verification statement shall prevail, while the English translation is used for reference only.

GRI Content Index

GRI Standards	Disclosure	Page numbers/Reasons for omission	External Assurance
General Disclosures			
Organizational Profile			
102-1	Name of the organization	4; 84	✓
102-2	Activities, brands, products, and services	4	✓
102-3	Location of the headquarter	6; back cover	✓
102-4	Location of operations	4; 6-7	✓
102-5	Ownership and legal form	4	✓
102-6	Markets served	4	✓
102-7	Scale of the organization	4; 6; 69; 72	✓
102-8	Information on employees and other workers	72	✓
102-9	Supply chain	38; 69	✓
102-10	Significant changes to the organization and its supply chain	4; 6-7; 84	✓
102-11	Precautionary principle or approach	38; 60-61	✓
102-12	External initiatives	8; 63	✓
102-13	Membership of associations	8-13	✓
Strategy			
102-14	Statement from senior decision-maker	2-3	✓
102-15	Key impacts, risks, and opportunities	2-3; 14-15; 62-63; 66-68	✓
Ethics and integrity			
102-16	Values, principles, standards, and norms of behavior	60-61	✓
102-17	Mechanisms for advice and concerns about ethics	61	✓
Governance			
102-18	Governance structure	4	✓
Stakeholder engagement			
102-40	List of stakeholder groups	64-65	✓
102-41	Collective bargaining agreements	49	✓
102-42	Identifying and selecting stakeholders	64-65	✓
102-43	Approach to stakeholder engagement	64-66	✓
102-44	Key topics and concerns raised	64-68	✓

GRI 102: General disclosures 2016

GRI Standards	Disclosure	Page numbers/Reasons for omission	External Assurance
General Disclosures			
Reporting practice			
	102-45 Entities included in the consolidated financial statements	84	✓
	102-46 Defining report content and topic boundaries	67-68; 84	✓
	102-47 List of material topics	66-68	✓
	102-48 Restatements of information	None	✓
	102-49 Changes in reporting	84	✓
GRI 102: General disclosures 2016	102-50 Reporting period	84	✓
	102-51 Date of most recent report	84	✓
	102-52 Reporting cycle	84	✓
	102-53 Contact point for questions regarding the report	84	✓
	102-54 Claims of reporting in accordance with the GRI Standards	84	✓
	102-55 GRI content index	78-82	✓
	102-56 External assurance	75-77	✓
Materiality Issues			
Economic Performance			
GRI 103: Management approach 2016		5; 7; 14-15	✓
GRI 201: Economic performance 2016	201-1 Direct economic value generated and distributed	4; 69	✓
Indirect Economic Impacts			
GRI 103: Management approach 2016		5; 7; 14-15; 22-28; 32-34; 37; 55; 62	✓
GRI 203: Indirect economic impacts 2016	203-2 Significant indirect economic impacts	14-15; 22-28; 37; 55; 59; 69	✓
Procurement Practices			
GRI 103: Management approach 2016		38	✓
GRI 204: Procurement practices 2016	204-1 Proportion of spending on local suppliers	69	✓
Anti-corruption			
GRI 103: Management approach 2016		38; 60-61	✓
GRI 205: Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	74	✓
Materials			
GRI 103: Management approach 2016		38; 43	✓
GRI 301: Materials 2016	301-1 Materials used by weight or volume	69	✓
	301-2 Recycled input materials used	69	✓
Energy			
GRI 103: Management approach 2016		20-21; 39-40; 62-63	✓
GRI 302: Energy 2016	302-1 Energy consumption within the organization	39; 70	✓
	302-4 Reduction of energy consumption	39-40	✓

GRI Standards	Disclosure	Page numbers/Reasons for omission	External Assurance
Materiality Issues			
Water and Effluents			
GRI 103: Management approach 2016		20-21; 39-41	✓
GRI 303: Water and effluents 2018	303-1 Interactions with water as a shared resource	40-42	✓
	303-2 Management of water discharge-related impacts	41-42	✓
	303-3 Water withdrawal	70	✓
	303-4 Water discharge	41; 70	✓
	303-5 Water consumption	40; 70	✓
Biodiversity			
GRI 103: Management approach 2016		17; 33; 36-37; 62-63	✓
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	36-37	✓
	304-2 Significant impacts of activities, products, and services on biodiversity	36-37	✓
Emissions			
GRI 103: Management approach 2016		20-21; 39; 41-42; 62-63	✓
GRI 305: Emissions 2016	305-5 Reduction of GHG emissions	21; 39-40	✓
	305-7 Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	71	✓
Effluents and Waste			
GRI 103: Management approach 2016		20-21; 39; 41-42; 62-63	✓
GRI 306: Effluents and waste 2016	306-1 Water discharge by quality and destination	70	✓
	306-2 Waste by type and disposal method	42; 71	✓
	306-3 Significant spills	None	✓
Environmental Compliance			
GRI 103: Management approach 2016		20-21; 41-42	✓
GRI 307: Environmental compliance 2016	307-1 Non-compliance with environmental laws and regulations	71	✓
Supplier Environmental Assessment			
GRI 103: Management approach 2016		38	✓
GRI 308: Supplier environmental assessment 2016	308-1 New suppliers that were screened using environmental criteria	38	✓
	308-2 Negative environmental impacts in the supply chain and actions taken	38	✓
Employment			
GRI 103: Management approach 2016		49; 62-63	✓
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	72	✓
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	49; 52-53	✓
	401-3 Parental leave	72	✓

GRI Standards	Disclosure	Page numbers/Reasons for omission	External Assurance
Materiality Issues			
Occupational Health and Safety			
GRI 103: Management approach 2016		44-45; 62-63	✓
GRI 403: Occupational health and safety 2018	403-1 Occupational health and safety management system	45	✓
	403-2 Hazard identification, risk assessment, and incident investigation	44-45	✓
	403-3 Occupational health services	45	✓
	403-4 Worker participation, consultation, and communication on occupational health and safety	45	✓
	403-5 Worker training on occupational health and safety	44-45; 74	✓
	403-6 Promotion of worker health	45	✓
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	44-45	✓
	403-8 Workers covered by an occupational health and safety management system	44-45; 63	✓
	403-9 Work-related injuries	74	✓
Training and Education			
GRI 103: Management approach 2016		28; 49	✓
GRI 404: Training and education 2016	404-1 Average hours of training per year per employee	73	✓
	404-2 Programs for upgrading employee skills and transition assistance programs	49-52; 73	✓
Diversity and Equal Opportunity			
GRI 103: Management approach 2016		49	✓
GRI 405: Diversity and equal opportunity 2016	405-1 Diversity of governance bodies and employees	73	✓
Non-discrimination			
GRI 103: Management approach 2016		38; 49	✓
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	No such incidents occurred	✓
Child Labor			
GRI 103: Management approach 2016		38; 49	✓
GRI 408: Child labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	38	✓
Forced or Compulsory Labor			
GRI 103: Management approach 2016		38; 49	✓
GRI 409: Forced or compulsory labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	38	✓

GRI Standards	Disclosure	Page numbers/Reasons for omission	External Assurance
Materiality Issues			
Local Communities			
GRI 103: Management approach 2016		33; 37; 55; 62-63	✓
GRI 413: Local communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	37; 55-58	✓
	413-2 Operations with significant actual and potential negative impacts on local communities	33; 36-37	✓
Supplier Social Assessment			
GRI 103: Management approach 2016		38; 44; 61	✓
GRI 414: Supplier social assessment 2016	414-1 New suppliers that were screened using social criteria	38; 61	✓
	414-2 Negative social impacts in the supply chain and actions taken	38; 44-45	✓
Customer Health and Safety			
GRI 103: Management approach 2016		14-15; 24; 46-47	✓
GRI 416: Customer health and safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	14-15; 24; 46	✓
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	No such incidents occurred	✓
Marketing and Labeling			
GRI 103: Management approach 2016		18-19	✓
GRI 417: Marketing and labeling 2016	417-1 Requirements for product and service information and labeling	18-19; 63	✓

UN Global Compact Ten Principles Index

No.	Principle	Page Numbers
Human Rights		
Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights	37-38; 44-45; 49-53; 55-58; 62-63; 72-74
Principle 2	Make sure that they are not complicit in human rights abuses	37-38; 44-45; 49-53; 62-63
Labor		
Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	49
Principle 4	The elimination of all forms of forced and compulsory labor	38; 49
Principle 5	The effective abolition of child labor	38; 49
Principle 6	The elimination of discrimination in respect of employment and occupation	38; 62-63
Environment		
Principle 7	Businesses should support a precautionary approach to environmental challenges	17-25; 33-43; 62-63; 69-71
Principle 8	Undertake initiatives to promote greater environmental responsibility	17-25; 27-30; 33-43; 62-63
Principle 9	Encourage the development and diffusion of environmentally friendly technologies	22-25; 39-43
Anti-corruption		
Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery	38; 60-61; 74

About this Report

This is the 14th Sustainability Report issued by Sinar Mas Paper (China) Investment Co., Ltd. and the group of companies under its direct investment in China (herein referred to as APP China). The report is released in both Chinese and English. The English report is translated from the Chinese report. If there is any discrepancy between the two reports, the Chinese version shall prevail.

Reporting Boundary and Scope

The time span of this report is from January 1, 2020 to December 31, 2020. Our last Sustainability Report was published in November 2020. Data in "Company Profile" and "Economic Performance" relate to Sinar Mas Paper (China) Investment Co., Ltd. and the group of companies under its direct investment in China; data in "APP China sources of pulp procurement" and "Materials" do not include those of Bohui Paper. Cases and other data in the report are collected from APP China Headquarters, eight pulp & paper mills, and APP China Forestry Business Unit, unless otherwise stated.

- APP China Headquarters
- Gold East Paper (Jiangsu) Co., Ltd. (Gold East Paper)
- Hainan Jinhai Pulp & Paper Co., Ltd. (Hainan Jinhai Pulp & Paper)
- Guangxi Jingui Pulp & Paper Co., Ltd. (Guangxi Jingui Pulp & Paper)
- Ningbo Asia Pulp & Paper Co., Ltd. (Ningbo Asia)
- Gold Huasheng Paper (Suzhou Industrial Park) Co., Ltd. (Gold Huasheng)
- Gold Hongye Paper Group Co., Ltd. (Suzhou Gold Hongye, including Suzhou Mill and Sales & Marketing)
- Hainan Gold Hongye Paper Co., Ltd. (Hainan Gold Hongye)
- Hainan Gold Shengpu Paper Co., Ltd. (Hainan Gold Shengpu)
- APP China Forestry Business Unit (APP China Forestry, including Forestry Business Headquarters, Hainan, Guangxi, and Guangdong BUs, and Lancang, Wenshan, Ganzhou and Henan Sub-BUs)

To meet the needs of municipal development and social public interest, Ningbo Zhonghua Pulp & Paper Co., Ltd. (Ningbo Zhonghua) was shut down as scheduled in 2020. The cases and data in the 2020 report do not involve Ningbo Zhonghua, unless otherwise stated.

In July 2020, APP China completed the acquisition of Bohui Paper. Due to the impact of the epidemic, the handover and integration between APP China and Bohui Paper is still in progress. APP China will include Bohui Paper in the future report according to the integration progress.

Reporting Framework

The report has been prepared in accordance with the core option of the GRI Standards (2018) issued by the Global Sustainability Standards Board (GSSB). Additionally, the report refers to the Global Compact Ten Principles, the Forest Management standard and the Pulp & Paper Products standard issued by the Sustainability Accounting Standards Board (SASB), and papermaking industry clean production and emissions standards.

Content and Indicator Selection

This report was prepared in accordance with the GRI principles of materiality, stakeholder inclusiveness, sustainability context, and completeness, etc. At the preliminary stage, our work group conducted policy analysis, industry issues analysis, stakeholder surveys, and field visits to our headquarters and pulp & paper mills to collect the management approaches, specific practices and performance indicators on sustainability issues most relevant to APP China.

Report Assurance

APP China commissioned Technischer Überwachungs-Verein (TÜV) to assess the reliability, objectivity, and transparency of this report. Please refer to the Assurance Statement for further details.

Contact Us

We sincerely welcome readers' comments and suggestions regarding this report and our work. Readers can contact us by email: csr@app.com.cn.



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