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2018

**Celebrating the Past
Embracing the Future**

APP China Sustainability Report

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Message from Chairman

In 2018, China celebrated the 40th anniversary of its reform and opening-up. Those four decades has been a period of staggering achievements and economic growth for China that is unparalleled worldwide. China has become the world's largest manufacturer of paper products, transitioning from being an ancient paper manufacturer to a strong paper manufacturing power. We feel both happy and proud to have been a participant in and contributor to this grand journey.

As China crossed the threshold into a new era, its economy has been transitioning from a phase of rapid growth to one of high-quality development. Companies are playing an increasingly significant role in this process. Our "Integration of Plantation-Pulp-Paper" model has inherently transformed the backward traditional papermaking sector in China that was small in scale, highly

polluting and energy-inefficient, and cost-ineffective. We have developed expertise in pulp, industrial paper, cultural paper, household paper, and paper products, with our products sold in over 160 countries/regions worldwide. Standing at a new historic start, we are set to adopt a forward-looking perspective in scrutinizing the development within ourselves and of the industry and the wider society and further contribute to achieving the triple bottom lines of economic, environmental, and social benefits.

Innovation is a pivotal driver of sustainable development. The popularization and application of emerging technologies such as big data and artificial intelligence has triggered a new round of technological upgrading in the manufacturing sector. We actively pursue a path of corporate management innovations underpinned by emerging technologies. While

realizing "intelligent facilities, digitized management, and automated processes" on all fronts, we will work to boost integrated development of the industry by unifying its upstream, midstream, and downstream segments. This will give a radical boost to our productivity and deliver transparency across each and every operations stage, thereby further improving the quality of our products and services.

Innovative management approaches lead to higher efficiency, while product R&D and innovation fosters high-quality development of the papermaking industry as a whole. In this regard, we develop specialty and personalized products to cater to the diversified needs of our customers and consumers while embedding sustainability deeply into our R&D management and considering our products' environmental and health-related impacts throughout their

life cycle. Continuous breakthroughs in state-of-the-art technologies have led to reductions in our raw material consumption and less energy and water use during the manufacturing process. Our Foopak Bio Natura™ Cup that debuted at the first China International Import Expo (CIIE) provided a brand-new idea for food packaging solution in China.

Innovation opens up broad prospects; diligence and hard work produce solid and substantial progress. R&D, seedling planting, forest protection, manufacturing, finance, administration, logistics, sales ... the unremitting and concerted efforts of our employees in the various lines of work are at the heart of a bigger, stronger, richer, and enduring APP. We greatly value the work of all our employees and do our best to provide them with a rich selection of resources to help them grow and thrive at the workplace and achieve a worthy career.

Also bearing in mind our responsibilities for the environment and the community, we continuously intensify efforts in environmental management. While keeping our emissions far below the national emissions limits, we take "zero emissions" as our next target. We maintain sound communication with the community and respond to community concerns in a timely manner. Leveraging our strengths, we have launched talent cultivation programs and educational campaigns on paper culture and stayed actively involved in social welfare undertakings.

Listening to the voice of the times, we are fully aware that the future holds numerous challenges as well as infinite possibilities. In response, we have started building a brand-new industrial layout to integrate ourselves into the Belt and Road Initiative (BRI) construction and the megatrend of

global interconnection with an open mind. We will keep pushing our limits, help bring industry development to new heights, and contribute to a better life and greater shared value for our stakeholders through concrete actions.

黄志源

Teguh Ganda Wijaya
Chairman and President of Sinar Mas Group



About APP China

Company Profile

Founded by the prominent Indonesian Chinese Mr. Eka Tjipta Widjaja in 1962, Sinar Mas 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 household paper to various types of paper products. APP started investing in China in 1992. With the establishment of two seedling research centers, 18 large

forestry companies, 280,000 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 2018:

Products marketed in more than **160** countries/regions across **6** continents

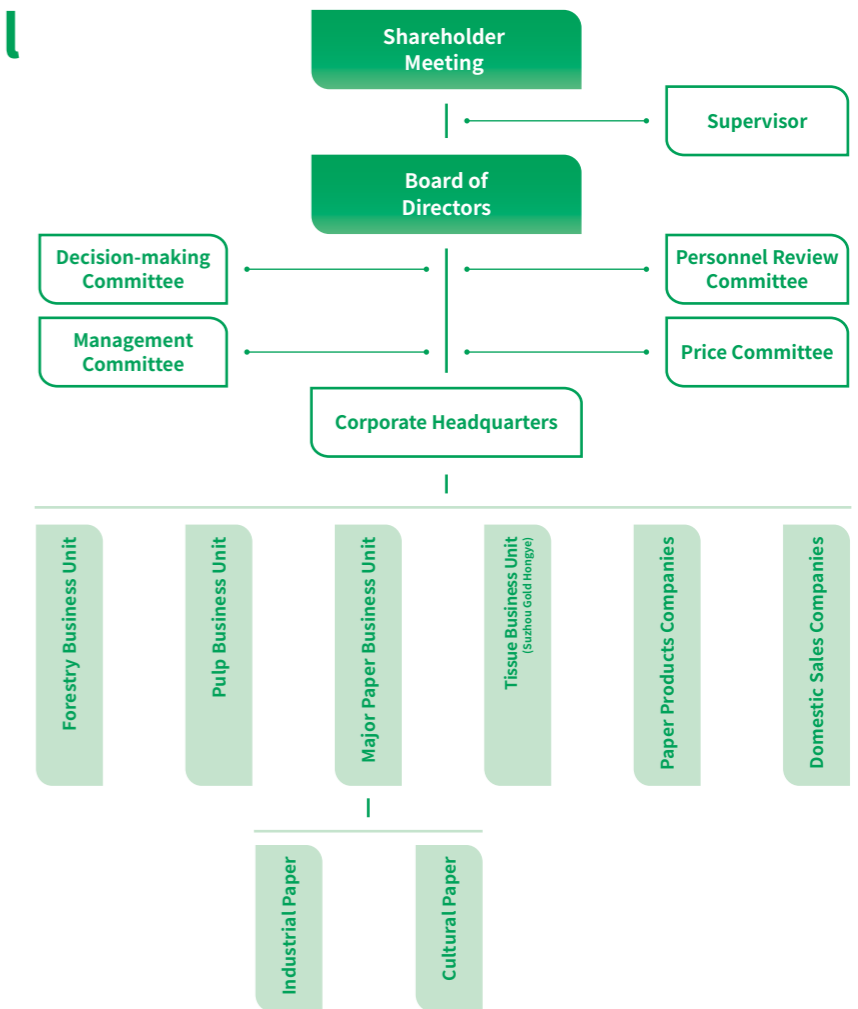
Over **11** million tons of annual capacity

RMB **172.6** billion in total assets

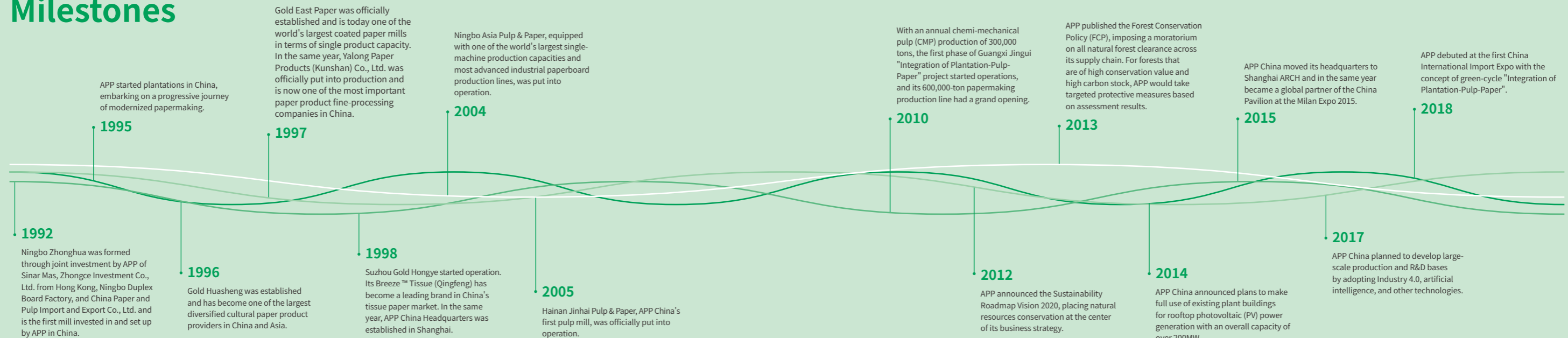
RMB **59** billion in annual sales revenue

27,822 full-time employees

Organizational Structure



Milestones



Achievements and Honors

	Honors and Awards	Issuers
APP China	Carbon-value Ecological Practice Award	World Economic and Environmental Conference
	2018 Best Practice Award for Chinese Businesses in Achieving SDGs	Global Compact Network China
	Most Responsible Enterprise of 2018	China News Service, <i>China Newsweek</i>
Gold East Paper	Top 500 Enterprises of China, Top 500 Manufacturers of China	China Enterprise Confederation, China Enterprise Directors Association
	Top 100 Enterprises in China's Light Industry	China Light Industry Council
	Top 10 Papermaking Enterprises in China's Light Industry	China Light Industry Council, China Paper Association
	China's Top 500 Foreign Trade Enterprises	Statistical Society for Foreign Economic Relations and Trade of China
	Certificate for China Environmental Labelling (Type II)	China Environmental United Certification Centre (Beijing)
	Jiangsu Famous Brand Product	Jiangsu Promotion Commission for Famous Brand Products
	2017 Top 20 Enterprises for Taxable Sales in Zhenjiang	Zhenjiang Municipal Economic and Information Technology Commission
	Model Organization of Zhenjiang	CPC Zhenjiang Municipal Government
	Best Organization for Volunteer Services	Publicity Ministry of Zhenjiang Municipal Committee of CPC
Hainan Jinhai Pulp & Paper	High-tech Enterprise	Science and Technology Department of Hainan Province, Department of Finance of Hainan Province, Hainan Province Tax Service of State Taxation Administration
	Forestry Product Brand Building – Hainan Famous Brand Product and Famous Brand Enterprise Building (National Leading Enterprise Award)	Department of Finance of Hainan Province
	2018 Top 100 Private Enterprises in Hainan (No. 4)	Hainan Industry & Commerce Association
	2018 Top 100 Enterprises in Hainan Province (No. 12)	Hainan Province Enterprise Confederation, Hainan Province Enterprise Directors Association
	Key Energy Consumers Overachieving 2017 Energy Conservation Targets	Office of Hainan Steering Group for Climate Change, Energy Conservation, and Emissions Reduction
	Advanced Organization for Green Raw & Auxiliary Material Quality Management	China Association for Printing Technologies
	Certificate for China Environmental Labelling (Type II)	China Environmental United (Beijing) Certification Center Co., Ltd.
	Control Class of the Pulp Engineering Department recognized as 2017 Exemplary Post for Youth Production Safety of Hainan Province	Communist Youth League Hainan Provincial Committee
Gold Huasheng	Certificate for China Environmental Labelling (Type II)	China Environmental United (Beijing) Certification Center Co., Ltd.
	China Environmental Labeling Outstanding Enterprises 2017	Shanghai Branch of China Environmental United (Beijing) Certification Center Co., Ltd.
	High-tech Enterprise	Science and Technology Department of Jiangsu Province, Department of Finance of Jiangsu Province, State Taxation Bureau of Jiangsu Province, Local Taxation Bureau of Jiangsu Province
	Food Packaging Paper (Straw Base Paper) won FDA Approval	Food and Drug Administration (FDA)
	Joining Efforts to Promote Green Development	China Environmental United (Beijing) Certification Center Co., Ltd.

	Honors and Awards	Issuers	
Guangxi Jingui Pulp & Paper	Guangxi Smart Factory Demonstration Enterprise	Economic and Information Technology Commission of Guangxi Zhuang Autonomous Region	
	2017 Qinzhou Municipal Science and Technology Special Contribution Award	Qinzhou Municipal Government	
	Enterprise Technology Determination Center of Guangxi Zhuang Autonomous Region	Economic and Information Technology Commission of Guangxi Zhuang Autonomous Region, Science and Technology Department of Guangxi Zhuang Autonomous Region, Development and Reform Commission of Guangxi Zhuang Autonomous Region, Department of Finance of Guangxi Zhuang Autonomous Region, Guangxi Zhuang Autonomous Region Tax Service of State Taxation Administration, Nanning Customs	
	2017 Publicly Posted Contract- and Commitment-compliant Enterprise of Guangxi Zhuang Autonomous Region	Administration of Industry and Commerce of Guangxi Zhuang Autonomous Region	
	Qinzhou Municipal Water-saving Enterprise	Qinzhou Municipal Economic and Information Technology Commission	
	Advanced Member Organization for Active Involvement in Social Welfare Activities, Advanced Member Organization	Chamber of Commerce of Qinzhou Free Trade Port Area	
	2017-2018 Advanced Member Organization of the Year, 2017-2018 Advanced Member Organization of the Year with Outstanding Contributions to Social Welfare	Organization Department of CPC Qinzhou Free Trade Port Area Work Committee, Chamber of Commerce of Qinzhou Free Trade Port Area	
	Ningbo Zhonghua	Top 100 Comprehensive Enterprises of 2018 (No. 36), Top 100 Manufacturers (No. 21), Top 100 Most Competitive Enterprises (No. 46) (Ningbo Asia included)	Ningbo Municipal Enterprise Confederation, Ningbo Municipal Enterprise Directors Association, Ningbo Municipal Federation of Industrial Economics
		Top 100 Fastest-growing Enterprises in Zhejiang Province (No. 5), Top 100 Manufacturers in Zhejiang Province (No. 88) (Ningbo Asia included)	Zhejiang Province Enterprise Confederation, Zhejiang Province Enterprise Directors Association, Zhejiang Federation of Industrial Economics
First Prize in 2018 Municipal Industrial Union Key Work Review (Five-star "Lively Grassroot Labor Union")		Industry and Information Industry Trade Union Committee	
2018 Municipal Voluntary Blood Donation Unit of the Year		Ningbo Municipal Office of Leading Group for Blood Donation	
Ningbo Asia	Award for Outstanding Contribution to Papermaking Industry Development of Zhejiang Province	Zhejiang Paper Industry Association, Zhejiang Technical Association of Paper Industry	
	2018 Statistics Integrity Demonstration Enterprise of Beilun District	Bureau of Statistics of Beilun District, Ningbo	
	2017 Top 10 Foreign Trade and Import Manufacturers and Top 10 Foreign Trade and Export Manufacturers of Beilun District (Development Zone)	Beilun District Government, Ningbo	
	First Prize in 2018 Municipal Industrial Union Key Work Review (Five-star "Lively Grassroot Labor Union")	Industry and Information Industry Trade Union Committee	
	High-tech Enterprise	Ningbo Science and Technology Bureau, Ningbo Municipal Finance Bureau, Ningbo State Taxation Bureau, Ningbo Local Taxation Bureau	
	2018 Municipal Unit of the Year for Voluntary Blood Donation	Ningbo Municipal Office of Leading Group for Blood Donation	
	"Red Pioneers, Green Risers, Green Riders" Unit	Qijiasan Street, Beilun District, Ningbo	
Suzhou Gold Hongye	2018 Top 10 Enterprises of Household Paper Industry in China	China National Household Paper Industry Association	
	High-tech Enterprise	Science and Technology Department of Jiangsu Province, Department of Finance of Jiangsu Province, State Taxation Bureau of Jiangsu Province, Local Taxation Bureau of Jiangsu Province	
Hainan Gold Hongye	2018 Top 100 Enterprises in Hainan Province	Hainan Province Enterprise Confederation, Hainan Province Enterprise Directors Association	

Our Value Chain



Inputs

Industrial layout

- Operating two large nurseries with an annual output of nearly 90 million seedlings
- Owning 18 forestry companies and 280,065.12 hectares of plantations
- Owning seven major pulp & paper mills
- Formulating Industry 4.0 Roadmap to promote intelligent development

R&D investment

- Committing RMB1.974 billion in R&D investment
- Filing 115 patent applications

Human resources management

- 27,822 full-time employees
- Investing RMB5.23 million in employee training
- Corporate culture building
- Corporate University construction

Sustainable manufacturing

- Investing RMB640.84 million in environmental protection
- 90.93% of plantations certified by CFCC/PEFC
- 100% of plantations supplied to pulp mills certified by CFCC/PEFC
- High conservation value (HCV) assessment carried out on 148,280.6 hectares of plantations

Communication and engagement

- Customer communication and engagement
- Supplier responsibility requirements
- Community communication and engagement
- External cooperation and communication
- Making a total external donation of RMB26.1 million
- Employee volunteer time totaling 31,018 hours



Outputs



Financial performance

- RMB172.6 billion in total assets
- RMB59 billion in sales revenue
- RMB3 billion in total profit



Products and technologies

- Products marketed in more than 160 countries/regions across 6 continents
- Over 11 million tons in annual production
- Several affiliates recognized as "High-tech Enterprise"
- Introducing and continuously innovating environmental technologies and products



Employee development

- Corporate University launching quality online and offline training modes
- 717,135 hours of employee training
- A growing number of employees becoming internal trainers
- Female employees taking up 27.38% of total workforce



Sustainability footprint

- Water reuse rate 95.96%
- 12.68 tons of waste water discharge per ton of pulp produced, and 0.94 kg of COD emission per ton of pulp produced
- 6.79 tons of waste water discharge per ton of paper produced and 0.23 kg of COD emission per ton of paper produced
- Promoting sustainable consumption
- Launching waste paper recycling program to promote dissemination of green and environmental concepts



Win-win development

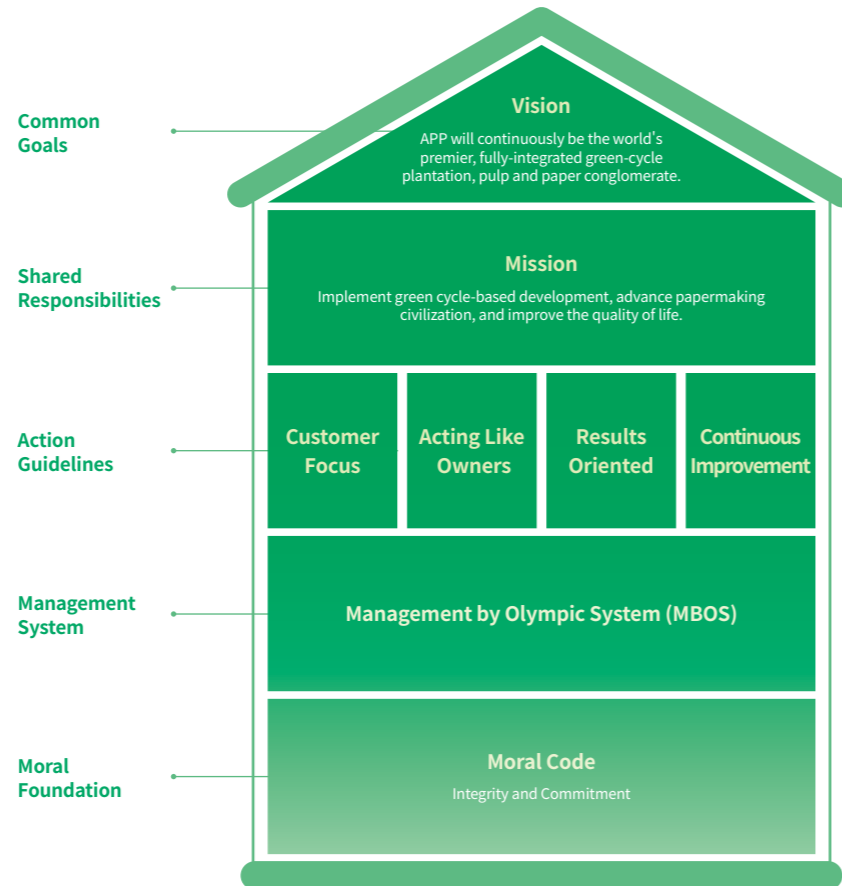
- Providing value-added services for more customers
- Greater commitment fulfillment on the part of suppliers
- Sound community relationship
- Involvement in discussions on forward-looking topics and contributing to industry standard setting
- Implementing a number of programs and activities in areas like education, poverty alleviation, and environmental protection

Joining Forces and Pursuing Culture-led Development

Corporate culture is the soul of a company. Starting from zero, APP has constantly grown its business volume to become an industry leader worldwide. Central to this development process are APP people, who are optimistic and perseverant fighters instilled with an ownership spirit that propels them to work hard and work smart. Integrity, diligence, solidarity, perseverance, vision ... those fine values embedded in our DNA have facilitated the major transformations at APP.

Fostering a Lively Corporate Culture

At APP China, we are committed to fostering a culture of perseverance and integrity and embedding the DNA of "cultural leadership" into every stage of our development. To ensure that our cultural values were actively upheld in the day-to-day work, we carried out a series of company-wide promotional events in 2018, including compiling theme briefings and organizing the Cultural Ambassadors' Contest, the Customer Focus values seminar, the Sunshine Integrity Month, and a variety of cultural training, to continuously deepen the employees' understanding of our corporate culture.



Fighters Who March Alongside the Company

Success favors those who boldly forge ahead. APP's path to excellence has been decked with a collective of outstanding fighters. Embedding APP's cultural values into every aspect of their work, they remain fully committed and contribute to the attainment of the corporate vision through solid and persistent efforts.

In 2018, we hosted the company-wide Cultural Ambassadors' Contest themed "Carrying Forward Fighting Spirit and Striving to Be Cultural Ambassadors" at APP China. After eight months and rounds of selection at the unit, business division, and Group level, 17 employees were chosen to be "Cultural Ambassadors" at last. True and lively personal stories that involved laughter or tears were shared by the contestants, inspiring all APP people to practice the cultural values at work in a professional, passionate, and dedicated manner.



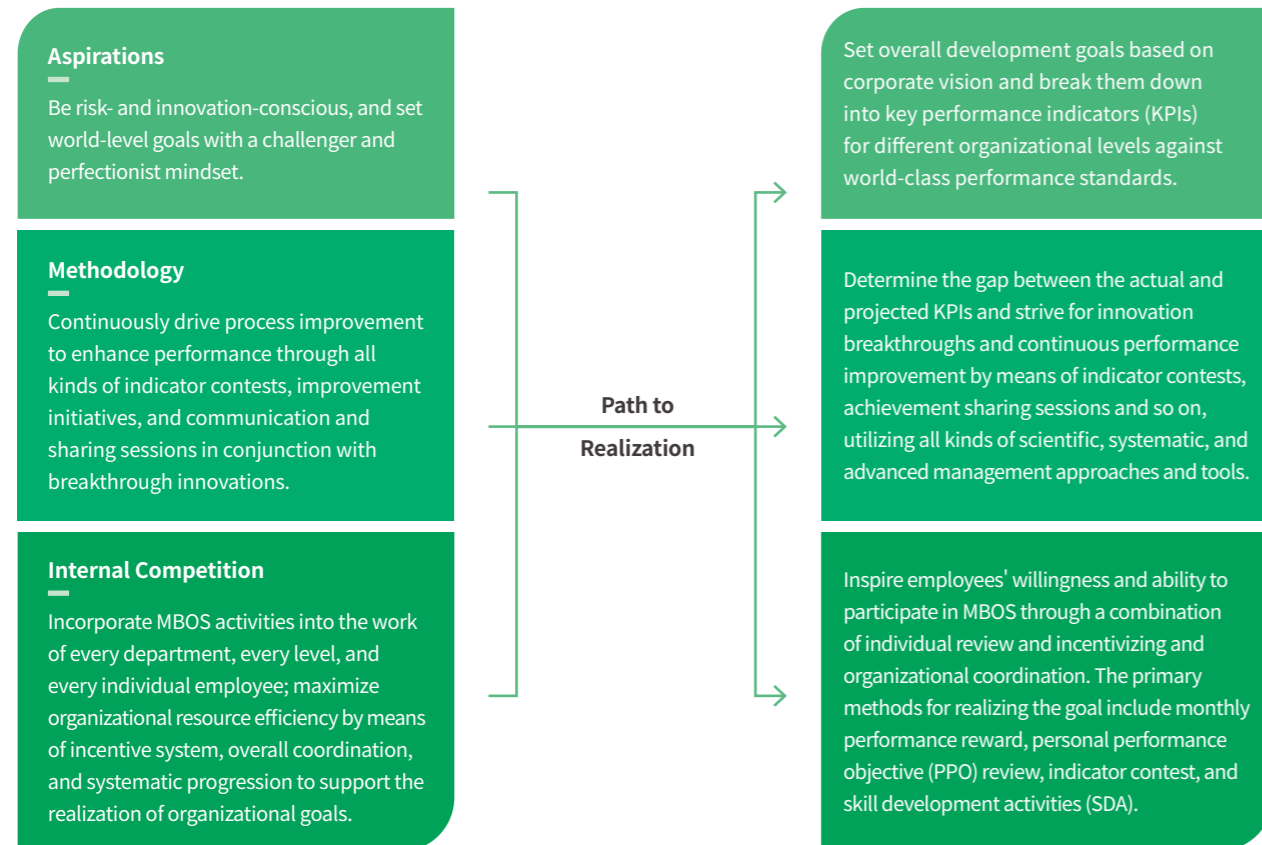
President Teguh Ganda Wijaya and Cultural Ambassadors



Distinctive MBOS

The Management by Olympic System (MBOS) is one of the core elements constituting APP China's corporate culture. It is a powerful management system originally devised by APP to drive the attainment of the corporate vision and a systematic management platform built by consolidating a variety of concepts, methods, and tools for improving an organization's operations and management. The system encourages employees to live the Olympic motto of "Higher, Faster, Stronger" by "Emulating, Learning From, Catching Up With, Helping, and Surpassing Each Other".

Three Guidelines of MBOS and Path to Realization



Talents Gathered at MBOS from All Over the World

The APP Global MBOS Conference (in short, the Global Conference) has taken place on 14 occasions since first convened in Indonesia in 1998. It is a compact embodiment of the unique Management by Olympic System at APP and provides a platform for outstanding managers and line-level employees to showcase their achievements.

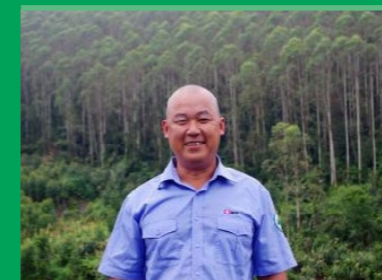
The 14th Global Conference was held in October 2018 at Gold Huasheng. Taking with themselves the top-of-the-range practices and concrete achievements in

their respective fields, outstanding APP representatives from all over the world came together and staged a successful annual MBOS event themed "Emulate, Learn From, Catch Up With, Help, and Surpass Each Other".

Outstanding employees from Hainan Jinhai Pulp & Paper, Ningbo Asia, and Gold East Paper shared their hands-on experience on issues such as integrating management and business development and facilitating business development by culture.

As MBOS activities get intensively implemented on different levels within the company, MBOS has become the most distinctive part of APP's corporate culture and the key to maintaining our competitive edge. The specific methods and tools under MBOS constantly evolve and develop in response to changes in the competitive landscape and technological development to unceasingly drive our sustainable development.

APP Fighters



Fighting All My Life

At the break of dawn, Lv Yixiong entered the forest quietly to check for abnormalities in the trees and examine their growth conditions at the observation points he had marked a few days before, among other duties. With the forests on top of his mind, Lv Yixiong patrols them every day without exception and makes it his obligation to know everything that goes on in the areas that he manages on a daily basis. It is through days like this that he has gradually developed a mature and effective set of methods for managing workers, dealing with partners, and protecting asset rights and interests.

The fighting spirit is instilled in the awareness of all APP China foresters, who commit themselves to this ordinary post and continuously create value in a perseverant and pragmatic manner.

As I watch the forest grow up each day, I can see them create considerable financial gains for the company in just a few years' time and feel that my efforts have not been made in vain. I cultivate them, and they give back by growing up sturdy and strong.

Lu Yixiong

Forester, Shaoguan Forestry Farm of Guangdong Business Area



Overcoming Bottlenecks with Persistence

In May 2018, some dents appeared on the surface of the cylinder dryers at Hainan Gold Hongye, resulting in holes in the base paper and compromised product quality. It was estimated that moving the grinding to professional factories would cost around RMB200,000 and 60 days of downtime, equivalent to RMB24.66 million in financial loss.

To minimize impact on manufacturing, Li Linjun decided to solve the problem by themselves. He formulated the grinding plan and a standard operating procedure based on the damage and trained his team on the detailed implementation. They conducted single-point grinding but failed after two days. Having revisited the problem, Li Linjun immersed himself in the workshop conducting repeated measurements and experiments and constantly modifying the plan.

After four days of grinding, they managed to decrease the depth of the dents from 0.03 mm to 0.01 mm, successfully restoring the production of hole-free base paper. By doing so, Li Linjun's team managed to shorten the repair period by 54 days, reducing 3,357 tons of production loss and delivering RMB23.53 million in cost savings for the company.

My only value is to create value for the company.

Li Linjun

Manager of Gold Papermaking Factory, Hainan Gold Hongye



Winning Through Dedication

From workshop to market and from technology to sales, Yu Dongming knows the products inside out from 29 years of honing and fostering work experience. With professionalism and integrity, he has won the trust of a large number of customers and made them truly feel the sincerity and dedication of APP.

Over the years, Yu Dongming has contributed to the development of new products and new markets based on an increasingly intimate knowledge of the customers. The determination of skin packaging standards was once a bottleneck facing the Industry Paper Business Unit. After joining the Unit, he led a team of R&D technology personnel and paid repeated visits to customers and skin packaging oil factories, etc. to gain a thorough knowledge of the customers' standards, against which he managed to persuade the factories to measure the performance of their skin packaging products. As a result, APP began to deliver a consistently high-quality output of skin packaging products, securing orders from a number of famous brands and a top spot in China in terms of the volume of skin-packaging white cardboard used.

Regardless of his/her role, a fighter ought to be driven by a customer-focused mindset, possess an in-depth knowledge of market and customer demands, and act with professionalism and integrity when serving customers.

Yu Dongming

Sales Specialist, Sales Department of Ningbo Asia

The Future Is Now, Unfolding a New Chapter

Companies in the new era are faced with opportunities and challenges alike. New opportunities for companies to maintain sound and sustained development lie in the pursuit of openness, sharing, and innovation. Armed with a global perspective, we initiated transformation and upgrading, supporting the advancement of Industry 4.0 and contributing to a better life by offering quality products and services. In active response to the Belt and Road Initiative, we have remained boldly innovative and explored new ways to achieve coordinated development of the industry. We embed sustainability into the company's entire product design and R&D process and have achieved continuous breakthroughs in developing environment-friendly technologies and products and driving industry-wide high-quality development. We actively endorse sustainable product labeling with a view to increasing consumer awareness of sustainable consumption and promoting the sustainable management of forests.



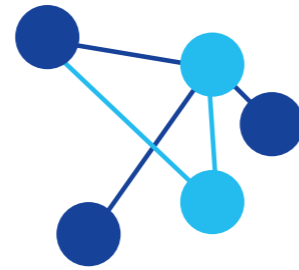
"Socialism with Chinese characteristics has crossed the threshold into a new era, and so has China's economic development. This is fundamentally characterized by the transitioning of China's economy from a phase of rapid growth to a stage of high-quality development. Promoting high-quality development is a request for maintaining sustained and sound economic growth."

"Promoting high-quality economic development requires placing priority on driving the transformation and upgrading of industrial structure and supporting the real economy in becoming more real, growing stronger, and doing better."

"High-quality development is development that reflects the new vision for development and where our focus changes from 'Is there enough?' to 'Is it good enough?'"

— President Xi Jinping

Exploring Win-win Through Integration



The Sinolink-APP Belt and Road Asset-backed Special Program, of which APP China was the original owner, passed the review of the Shanghai Stock Exchange on March 2, 2018. With an issue size of RMB5.5 billion, it was the first Belt and Road Asset-Backed Securities (ABS) product in China.

It is our hope that through this financial innovation program we would be able to mobilize the ample resources of countries along the Belt and Road and leverage our complementary strengths to extend our cooperation in both depth and scope. The program places the main business in countries along the Belt and Road. Raw materials, trims, and packaging materials are sourced from those countries before

being transported to paper mills in China for fine processing and again sold to those countries. Our Belt and Road Science and Technology (S&T) Industrial Base/High-grade Household Paper program based in Rudong County of Nantong, Jiangsu will play a key role in the ABS program.

2018 also saw us sign the Development Financing Cooperation Agreement with Hainan Branch and Xiamen Branch of China Development Bank (CDB) and China Hainan Rubber Industry Group Co., Ltd. Through the partnership, we hoped to utilize the "Go Out" investment and financing cooperation platform established by CDB to strengthen cooperation with China Hainan Rubber in terms

of rubber plantation and processing, mergers and acquisitions (M&A) in industry-chain subjects, and areas beyond rubber and jointly ramp up the implementation of "Go Out" projects.

In fact, we have become a participant of the BRI as far back as October 2013. In the presence of President Xi Jinping, we launched the first Belt and Road Southeast Asia and BRICS project, i.e. construction of the largest pulp mill in Indonesia with a capacity of 3 million tons funded by CDB. Today, the project has become a signature program for promoting the cooperation between China and Indonesia.

The Belt and Road Initiative opens the door wider for China to connect with the rest of the world and presents companies with unprecedented opportunities. In this context, staying open and inclusive will allow companies to evolve in step with the times towards a bright future. In the new era, APP China will embrace globalization, deepen industrial layout, and implement transformation and upgrading as it strives to further boost industrial and social development.



Refining Industrial Layout

APP started investing in China in the 1990s. With heavy investment in provinces like Jiangsu, Hainan, Guangxi, and Zhejiang, APP China currently has a combined annual pulp & paper capacity of 11 million tons and markets its products in over 160 countries/regions, effecting positive impact on Belt and Road construction.

Standing at the threshold of the new era, we have undertaken in-depth financial innovation and cross-sectoral innovation in light of the Belt and Road Initiative and moved beyond existing industrial models to create opportunities to support the development of multiple stakeholders. At the same time, we further deepened our industrial layout. With Jiangsu as the main base, we implemented centralized management of paper product manufacturing and processing, explored and pioneered more advanced technologies, and continuously pushed ourselves to provide high-quality and diversified products for consumers in China and beyond.



We will build a large intelligent household paper base equipped with both R&D and manufacturing capabilities in Jiangsu and start implementing transformation and upgrading of existing projects to explore more business opportunities and satisfy diversified market demands; we will also step up the construction of new projects in Qinzhou (Guangxi Zhuang Autonomous Region), Ningbo (Zhejiang Province), and Yangpu (Hainan Province) to further contribute to economic growth and to ensuring high-quality supply.

Promoting Regional Development

As an important way of zoning for regional economic development and industrial restructuring and upgrading, industrial parks carry such important missions as concentrating innovation resources, cultivating emerging industries, and promoting urbanization. In pursuit of innovation, openness, and win-win,

we are working to strengthen external cooperation and consolidate premium resources. By building the China-Indonesia Belt and Road Dual Industrial Parks, we will work together to create key future-proof projects that will promote regional economic development and drive deep industrial integration.



Suzhou APP Science and Technology Park

In partnership with Suzhou Municipal Government and Suzhou Industrial Park, we will build the Suzhou APP Science and Technology Park that integrates AI, big data, cloud computing, precision manufacturing, and high-tech R&D to promote innovation in R&D, manufacturing, and services.

Building Science and Technology Park in Indonesia

We plan to build a science and technology park in Indonesia in partnership with Jiangsu Government, Suzhou Municipal Government, and Suzhou Industrial Park. The project will give full play to each participant's strengths in resources, capital, talent, and park management and push forward the cross-border cooperation between China and Indonesia.

Building Smart Information Industrial Park with Shanghai Qingpu District

The signing ceremony for the Letter of Strategic Cooperation Intent for the APP Qingpu Smart Information Industrial Park between Qingpu District Government and Sinar Mas Group took place in November 2018. Maximizing its industry strengths, Sinar Mas would undertake in-depth cooperation with Qingpu District to boost the independent and innovative development of the information industry and drive regional value enhancement.



Contract Signing Ceremony

Leading Industry Development

We firmly support China's open-up policy for increasing imports and continuously deepen our commitment to "Serving China". The CIIE made a grand debut in Shanghai on November 5, 2018. As an exhibitor, we displayed our full range of forest, pulp, industrial paper, cultural paper, and household paper products, including our world-leading environment-friendly papermaking technologies and products, such as the Trutone technology and Foopak Bio Natura™ Cup.

We hope to bring new perspectives and insights to inform the development of China's papermaking industry through the sharing and communication of advanced environmental concepts, technologies, and products, thus further embedding sustainability into the entire industry chain. During the Expo, we signed seven importation contracts of intent with major importers from Zhejiang and Zhuhai, among other places.



Paper wedding dress at the CIIE made by APP China attracting reporter to stop and take photos



APP China staff introducing new products

Facilitating Modernized Office Through Technological Means

The APP office paper products displayed at the CIIE had been produced using the world-leading Trutone technology that is also unique to APP. Paper thus produced is ink-saving thanks to its rather even formation, faster ink absorption, and mottle-free printing performance. It is also characterized by optimal stiffness and a smooth finish for jam-free printing and greater brightness that guarantees clearer prints.



APP imported copy paper displayed at the CIIE

From "Manufacturing" to "Intelligent Manufacturing"



In recent years, Guangxi Jingui Pulp & Paper has been actively acting on APP China Industry 4.0 deployment, stepping up application of artificial intelligence and building platforms such as "Internet+ Intelligent Production Management". It has been striving for the short-term goal of "automated equipment, integrated management, and nimble services" and the long-term goal of "intelligent services, intelligent manufacturing, and intelligent mills" by means of automating equipment, redesigning processes, building integrated big data platforms, etc., making active explorations in promoting the transformation and upgrading of the manufacturing sector.

There are over 6,000 mobile paper rolls and half-made paper stacks at Guangxi Jingui Pulp & Paper workshops, with only two to three workers stationed

at each stage of manufacturing. At the automated transfer workshop, the operators can accurately locate the needed bundle of paper from among 70,000 tons of paper in the warehouse. This is made possible by the smartest brain at Guangxi Jingui Pulp & Paper – the "Internet+ Intelligent Production Management Platform", which has fully automated whole-process product tracking and quality control from order taking to the manufacturing of half-made and ready-made products. As a result, the productivity has been doubled at the stage of paper roll packaging alone.

As regards the construction of business information system, Guangxi Jingui Pulp & Paper has been independently developing the automation office system since 2007. Through continuous addition of new business models

and the use of new information technologies, it has been gradually evolved into the company's integrated management information system. The system now includes a range of modules such as human resources management, asset management, logistics management, vehicle dispatch, WeChat platform, and supplier management, successfully applying Internet+ to the company's business system and ensuring higher efficiency.

For its years of intelligence-focused development, Guangxi Jingui Pulp & Paper was among the first to be named "Demonstration Enterprises of Guangxi Intelligent Mills" in 2018 by the Bureau of Industry and Information Technology of Guangxi Zhuang Autonomous Region.

Besides Guangxi Jingui Pulp & Paper, other APP China mills have also been carrying out intensive intelligent construction and exploration with a view to realizing automated, data-based, visualized, systematic, and standardized corporate management. Since the concept of Industry 4.0 was first proposed in 2015, we have embarked on systematic research and exploration of intelligent manufacturing. Aware that Industry 4.0 cannot be realized at once, we are set to push towards its early materialization with an unyielding passion and conviction.

The Industry 4.0 Target



Automation Workshop of Guangxi Jingui Pulp & Paper

As intelligent manufacturing undergoes rapid development the world over, it has impacted industry development and division of labor in profound ways. Accelerating the development of intelligent manufacturing and Industry 4.0

is a necessary step in nurturing new drivers of economic growth and of great strategic significance for creating new competitive edges for China's manufacturing sector. When it comes to the pulp & paper sector, intelligent manufacturing would radically enhance its resource integration capability and productivity given the multitude of value chain stages and complexity of manufacturing processes involved.

APP China has formulated the Industry 4.0 Roadmap that gears the company towards intelligent manufacturing, with automation renovation as the current priority. By

utilizing big data management model and scientific management approach, it focuses on improving the overall automation level and gradually driving the linkage and integration between the information system of the various operations stages, hence fully digitizing the entire process from suppliers to pulp mills and paper mills and to customers to enhance the overall efficiency. Meanwhile, APP China will utilize the opportunity for building new papermaking bases to make comprehensive planning for the construction of smart factories consistent with Industry 4.0 principles.

Gradually Materializing Intelligent Projects

Drawing on the company's real-time database platform and manufacturing execution management system, APP China has been gradually pushing forward the trilogy for digitized and intelligent production data. It helps improve the operations efficiency and product quality control while reducing material and energy consumption and emissions, and thereby enhance the company's capacity for

sustainable development. At present, "real-time visibility and automated statistics" has been brought to bear.

We started piloting Internet of Things (IoT) and data cloud technology in our mills in 2018. We run 24/7 wireless collection and transfer of important parameters on key electric machineries. Combined with cloud technology-empowered real-time analysis

and forecast, this enables the maintenance staff to check the equipment's running status and receive push notifications on mobile devices or webpages from the cloud platform for alerts or equipment maintenance regardless of their location, thus realizing unmanned patrol and forecast-based maintenance of key equipment.

Real-time visibility and automated statistics

Big data analytics and optimization modeling

Trends forecast and optimal control

APP China Trilogy for Digitized and Intelligent Production Data

Intelligent Logistics Development

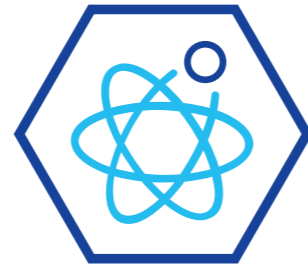
In 2018, we used the intelligent warehouse management system in our import warehouses for early warning, tracing, and feedback before, during, and after an event, successfully raising the FIFO (first in, first out) rate of import orders to 98.5%. The system conducts analysis of stock, customer requirements, and orders by intelligent

means, automatically generating information such as report forms, customer requirement analysis, and logistics reports, as well as alerts about order abnormalities and overstock and tracing delivery abnormalities.

We will continue to deepen IT-based development to realize visualized

management of the whole logistics process and, by utilizing such technological means as autonomous driving, automatic warehousing, IoT, and big data, achieve automated management and operations at the logistics bases to further enhance the logistics efficiency.

Pioneering Innovations



Plastics is causing ever more severe environmental problems as its global consumption continues to rise. United Nations Environment Programme estimates that by 2050, oceans will contain more plastic than fish by weight and 99% of seabirds will have ingested plastic. Reducing plastic production and consumption has become a matter of great urgency. Redesigning plastic packaging, recycling and reusing plastics, changing the ingredients of raw materials, and using alternatives to plastic ... a growing number of companies and individuals are getting involved in plastic reduction efforts, and we are one of them.

APP Foopak Bio Natura™ Cup made its debut at the CIIE 2018. Free

of optical brighteners and 100% biodegradable, it has been specially designed for containing beverages and food. Compared with its peers, Foopak Bio Natura™ Cup meets higher standards on measures of biodegradability, airtightness, and cold and heat resistance and can replace non-biodegradable, disposable paper cups in large amounts. The waterborne membrane inside of Foopak™ is plastic-free and can degrade completely in 12 weeks before being used for composting.

The product was named "Sustainability Product of the Year" by the Business Intelligence Group (BIG) Sustainability Awards Program 2018. It is a new attempt by APP for addressing problems like resource scarcity

and environmental pollution in the papermaking sector and will provide a brand-new environmental solution for China's food packaging sector.



Foopak Bio Natura™ Cup debuting at the CIIE 2018

R&D innovation is central to APP China's development and plays a key role in boosting the growth of the sector as a whole. While meeting social and market demands, we continuously move beyond current technological standards and enable technological advances. We incorporate environmental considerations from the very beginning of our product design process and strive to make our products more environmentally friendly through continued explorations to contribute to a better life.



Laying Solid Foundation for Innovation

In the papermaking sector, R&D innovations can not only help set products apart in the enormous market and lead to greater financial gains but also significantly boost high-quality development of the industry at large and mitigate social and environmental problems. This is why we continue to expand investment in this regard, bolster cultivation and incentivization of technical personnel, and actively engage in exploring cutting-edge industry issues, fueling constant technology and product innovations.



2018 R&D investment

RMB **1.974** billion

Patent applications filed

115

Including

75 invention patents

36 utility model patents

4 design patents

Independent Innovation Capacity Winning External Recognition



Ningbo Asia Pulp & Paper was recognized as a "High-tech Enterprise" in January 2018 by the Ministry of Science and Technology of the People's Republic of China. This is one of the highest honors for tech enterprises in China and has extremely stringent requirements for application. The title represented national-level recognition for Ningbo Asia in terms of core independent intellectual property

rights, technological development personnel, and high-tech products and its status as a leading enterprise in China or beyond in those regards.

Moreover, the company's application for "R&D Center for Provincial-level High-tech Enterprises for Industrial Packaging Paper in Asia's Pulp & Paper Sector" has been recognized by the Science Technology

Department of Zhejiang Province. It thus stood out from over 9,000 high-tech enterprises across the province to be ranked among the top 100 in terms of innovation capacity and became one of the demonstration enterprises in Beilun District for independent innovation and transformation and upgrading.

Participating in Industry Standard Setting



The GB/T 37074-2018 *Technical Requirements of Ultraviolet Excitation Fluorescent Anti-counterfeiting Fiber* jointly developed by Ningbo Asia and Beijing Tomo-Sapience Light Technology Co., Ltd. was officially launched in

December, 2018. Anti-counterfeiting fiber technology is one of the core cardboard anti-counterfeiting technologies, for which a uniform set of measurement standards had been lacking in China. The launch of the national standards

has not only standardized the technical requirements for anti-counterfeiting color fiber paper but also shed light on the future course of anti-counterfeiting technologies in the papermaking sector.

Reducing Environmental Footprint of Products

During product R&D and design, while ensuring product quality, we are always thinking about ways to minimize material consumption and the negative environmental impacts of our manufacturing process. At the

same time, we try our best to limit the environmental pollution of our products after use, all in an effort to improve the environmental friendliness of our paper products throughout their life cycle.

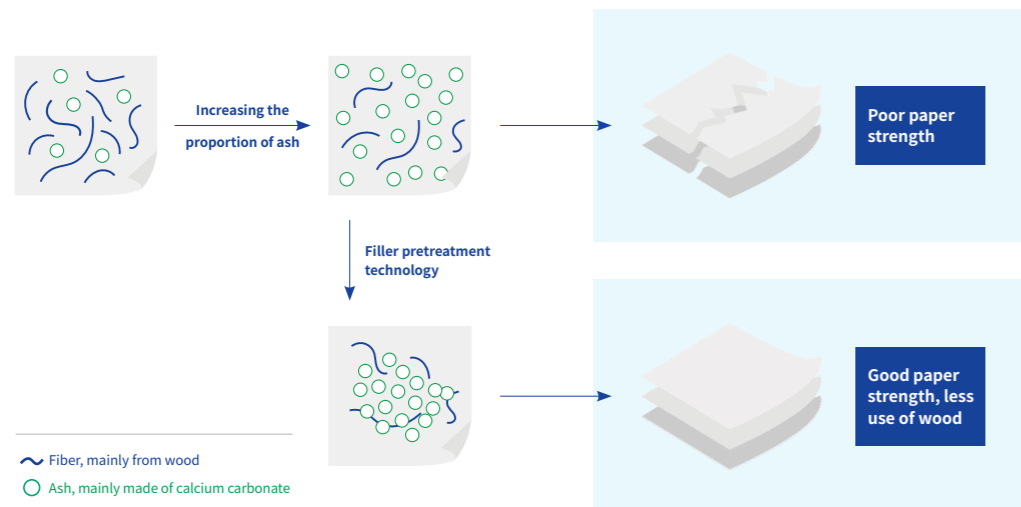
Hainan Jinhai Pulp & Paper: Developing Filler Pretreatment Technology

Paper mainly consists of fibers and ash. Fibers come from trees and other plants, and ash is mainly composed of calcium carbonate. Paper that contains more ash uses fewer wood materials to produce and is less costly. Meanwhile, the cohesion between fibers is what gives paper strength. Given that fibers and calcium carbonate do not cohere, a

higher proportion of ash would lead to poorer paper strength than is needed by use scenarios.

The filler pretreatment technology developed by Hainan Jinhai Pulp & Paper reduces the impact of fillers on paper strength mainly by pretreating calcium carbonate with chemicals, thus

enhancing the proportion of ash without compromising paper quality. At present, the technology has been fully developed and put to steady use in manufacturing, raising the proportion of ash by 1%~2% and lowering that of Needle Bleached Kraft Pulp (NBKP) by 2%, thereby reducing the use of wood.



Gold East Paper: Making Breakthroughs in Key Green Papermaking Technologies

In 2018, The Gold East Paper "Development and Industrialization of Key Green Papermaking Technologies" project was approved as a key R&D plan project of Zhenjiang. The program benefited from three forward-looking technological breakthroughs made by Gold East Paper that led to reductions in the use of raw materials, generating an annual profit of RMB9.87 million.

Developed a highly efficient fluorescent brightener carrier that helped reduce the annual use of efficient fluorescent by 1,440 tons as a result of markedly enhanced brightening efficiency.

Innovatively applied bio-enzymes to pulp pretreatment during pulp making, reducing energy consumption by 20 kWh/ton of pulp.

Developed the filler modification technology that helped raise the proportion of ash in coated paper, potentially reducing the annual use of fresh pulp by 300-900 tons.

Gold Huasheng: Making High-performance, Environment-friendly Blackening Microcapsules

The core technology for making blackening carbonless copy paper lies in the preparation of microcapsules. The primary raw material currently used in China for microcapsules, however, is solvent oil, a nonrenewable petroleum compound. Gold Huasheng set up the microcapsule research team and,

together with the suppliers, pioneered the development of the eco-friendly solvent oil-based "environment-friendly microcapsules" in China.

The team did not stop there but further improved the performance of the microcapsules after their successful

application to introduce the second generation. With guaranteed quality, the second-generation microcapsules allow for a 10% decrease in use, further reducing dependence on chemical raw materials such as dyes and wall materials.

Intensifying R&D on Lightweight Products

APP China has carried out intensive R&D of high-bulk products in the field of cultural paper and industrial paper to make them lighter while maintaining the same thickness, thus significantly reducing the use of raw materials.

Hainan Jinhai Pulp & Paper developed the ultrahigh-bulk coated paper in 2018, which features 17.6% higher thickness at the same basic unit weight. Compared with regular double-sided coated paper of the same thickness, this paper uses 15% fewer raw materials and has been very well received in the market.

As regards industrial paper, the introduction of high-bulk products has been especially conducive to the lightweight development of packaging. The "Si ji gui" GC2 Hi Bulk and "Di wang song" GC1 Hi Bulk developed by APP China Industrial Paper Business Unit are some of them. They have been very popular among consumers and even produced a lightweight trend across the paper packaging sector.



"Si ji gui" GC2 Hi Bulk used for food packaging

Providing Pure and Natural Household Paper for Consumers

The Breeze™ Tissue (Qingfeng) under Suzhou Gold Hongye has always been committed to log quality monitoring from the source and 100% natural virgin pulp manufacturing. Its Pure-wood Series tissue paper has won wide attention from the industry and consumers alike. It is a type of household tissue paper produced with pulp that has been prepared without bleaching. It has obtained an array of authoritative food-grade certifications from the FDA (United States), LFGB (Germany), AP (European Union), and many other agencies and is safe for contact with hands and mouths.

	Wood pulp products	Non-wood pulp products
Purity	A small amount of fine, ivory-colored powder is left over from the four-hour burning test at 575°C using professional facilities.	They contain several times more ash than wood pulp products and are left of black, gray, and brown impurities after burning.
Environment-friendliness	Energy and water use is lowered as raw materials need not be processed, and the APP China's "Integration of Plantation-Pulp-Paper" industry chain ensures the traceability of raw materials and environmental protection during manufacturing.	They contain a lot of impurities and consume a great amount of water, energy, and chemicals at the stage of raw material processing alone.



Managing Product Impacts on Health

At a time of higher-quality consumption, a growing number of consumers are paying more attention than ever to product health and safety when making purchase decisions. Our research team at APP China gives top priority to health and safety during product development and upgrading. We continuously improve our raw material formula to provide a more reassuring and safer range of products for our customers and consumers.

Environment-friendly BPA-free Thermal Products

Cashier receipts and lotteries are some of the everyday items printed on thermal paper. The raw materials for making thermal products contain Bisphenol A (BPA). With medically demonstrated negative impacts on the human body, BPA has been banned in some countries/regions. Although there is currently no such ban in China, Gold Huasheng has been committed to developing BPA-free products.

By sorting through a large volume of basic data, conducting thousands of experiments, and utilizing new types of combination filler, the team has successfully developed a BPA-free, environmentally friendly thermal product. While a bit more costly than regular products that contain BPA, it is also healthier and more environmentally friendly. The commercial marketing of the product officially began at the end of 2018.

Substituting Formaldehyde-Releasing Preservatives (FRPs)

By adding cream chemicals to the surface of paper, we can enhance the amount of water it contains, improve how it feels to the hand, and produce household paper that is delicate and skin-friendly. Preservatives initially used in cream chemicals were formaldehyde releasers, whereby a small amount of formaldehyde was released over a long period of time to produce preservation effects.

Drawing on numerous discussions and experiments, Suzhou Gold Hongye successfully substituted FRPs for a safer component without altering the primary ingredients and functionality of the chemicals. The optimized formula has been applied to a range of EMPORIA™ products.



Meeting Consumers' Needs for Paper

As the living standards continue to rise, people have increasingly higher requirements for household paper products and are showing a growing interest in high-quality and differentiated

products. To meet consumers' diversified needs for household paper and deliver a healthy, comfortable, clean, and convenient user experience, we continue to develop and enrich our line of functional

products consistent with the various life scenarios and incorporate more human-oriented considerations in our product packaging design process.



Many people suffer from skin allergies, which can be worsened by colds or during allergy seasons.

Suzhou Gold Hongye has developed and launched the Touchcare functional tissue series based on a number of patented technologies. The product contains moisturizing factors and vitamin E and can wipe away bacteria, hydrate the skin, and be used repeatedly on the skin for an allergy-free, smooth experience, helping get rid of red noses.



Profuse sweat after workout or hot summer walks can cause stickiness and even embarrassing body odor in public spaces.

Enriched with cooling factors and natural mint extracts, the Breeze™ Cooling Wipes give a cooling and soothing effect. The product uses large, ultra-thick non-woven fabric and is thick, strong, and absorbent. It can easily cleanse sweat and stickiness with just one wipe and help people get rid of body odor.



Fog, moisture, fingerprints, handprints, filth, oil ... they can all make mirror surfaces such as eyeglasses, cellphones, computers, and television screens foggy and dirty. Moreover, invisible bacteria stuck on screen surfaces can get into contact with our skin from time to time. Regular tissues or lens cleaning wipes cannot effectively cleanse eyeglasses or screen surfaces and may even result in damages.

Breeze™ Glass Cleansing Wipes can effectively cleanse the ashes, fingerprints, oil, and filth from mirror surfaces. With the addition of instant quick-drying formula, the product enables quick, stainless, and damage-free cleanse of lens or screens and removes 99.9% of bacteria. The wipes are individually wrapped and handy for use on the go.

Championing and Promoting Sustainable Consumption



Forest certification has been widely recognized by the international society and national governments as a tool for promoting sustainable forest management and market access of forest products through market mechanisms. It mainly consists of Forest Management (FM) certification and Chain of Custody (CoC) certification.

The Forest Management certification certifies whether a forest management agency implements sustainable forest management by examining and evaluating its forest management activities. The certification looks

at a range of issues including acting in accordance with laws and regulations, protection of the rights of local communities and workers, cultivation and utilization of forest resources, preservation of biodiversity, environmental impacts, and forest monitoring, among others.

The Chain of Custody certification examines and evaluates the entire chain of custody of forest product manufacturing and sales companies to certify the legitimacy and traceability of the raw materials for forest products, covering all stages from

sourcing, processing, manufacturing, transportation, storage, and sales to end consumers.

Based on more than a decade's efforts, China Forest Certification Council (CFCC) and the Programme for the Endorsement of Forest Certification (PEFC), the world's leading forest certification system, reached mutual recognition in 2014. This helps make China's forest products more globally competitive and is highly instrumental in enhancing the capacity of China's forestry sector for sustainable development.

As a strong facilitator of the mutual recognition efforts, APP China has been actively engaged in conducting forest certification for years to continuously improve sustainable FM and CoC management, with a number of affiliates obtaining the CFCC/PEFC certification. We are also among the first in the industry to promote forest certification labeling to provide consumers with reliable reference information for choosing sustainable paper products, make forest certification more widely known and understood, and involve stakeholders in efforts to promote sustainable consumption.

Conducting Forest Certification

APP China actively performs forest certification and continuously improves management at the review and evaluation stage to lay a solid foundation for promoting forest management and responsible manufacturing. As of the end of 2018, a total of 254,660.01 hectares, or 90.93%, of APP China plantations had obtained CFCC/PEFC FM certification, with 100% of the plantations supplied to pulp mills CFCC/PEFC-certified; 16 affiliated pulp mills and trade companies had obtained the PEFC CoC certification, which guaranteed that all their raw materials were sourced from sustainably managed forests.



Young Forest CFCC/PEFC FM review

Promoting Sustainable Consumption

Over time, the concept of sustainability has been deeply embedded in every aspect of our work and life. Being at the lower end of the supply chain, consumers' support and requirements for sustainable consumption will substantially improve companies' overall supply chain performance. Sustainable consumption has been listed as an important sustainability issue in the UN SDGs and a number of national policies in China as well.

Since 2015, APP China has been promoting CFCC/PEFC labeling on household paper, copy paper, and other series paper products through the provision of custom-made products for customers. Under the guidance of the National Forestry

and Prairie Science and Technology Development Center, we further progressed our efforts in 2018. Our high-end household paper brand Virjoy™ and famous Breeze™ brand are some of the first brands among their equivalents in China to start carrying the joint certification label.

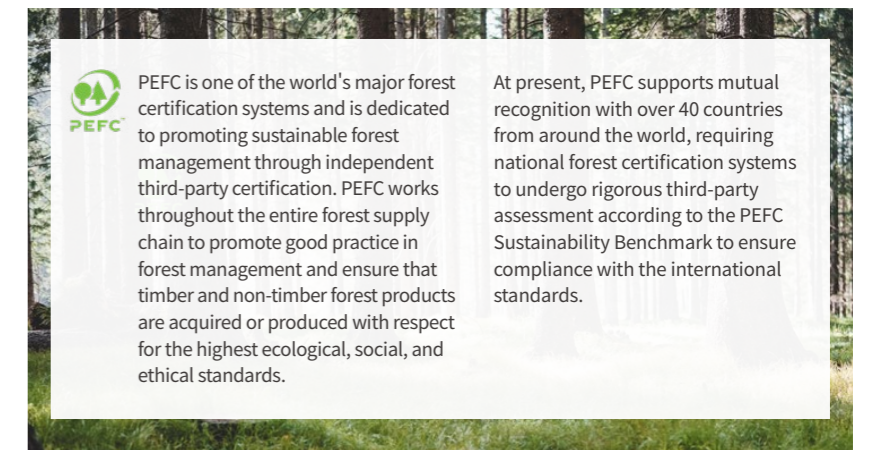
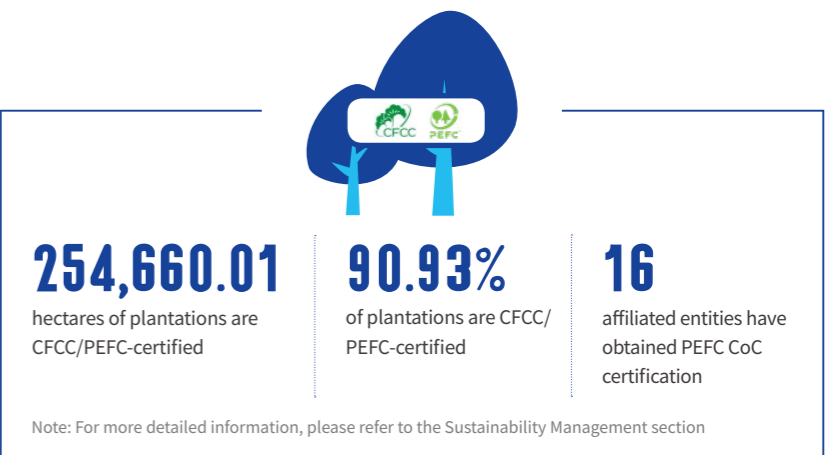
By doing so, we hope to increase consumers' awareness of products' environmental and social footprint and help them discern forest products made from sustainably managed forests so as to influence their purchase decisions and promote sustainable forest management.

Our CFCC/PEFC labeling work will continue and gradually normalize in the future. At

the same time, we call for more companies to pay attention to sustainable product labeling in a concerted effort to facilitate the development of the industry chain in a virtuous circle and make greater contributions to forest preservation.



Breeze™ Pure-wood Series carrying the CFCC/PEFC label



Solidifying Foundation for Sustainable Growth

Promoting economic growth, social development, and environmental protection in a coordinated way is the key to realizing sustainable development and an important guarantee for building a business that lasts. We care about customers' real needs and fully implement the customer-focused service approach as reflected in taking innovative measures such as formulating the "All-hands Marketing" strategy and designing new customer service models. We incorporate green development into our brand value and operations and do our utmost to become a major force in the construction of an ecological civilization and the dissemination of green concepts. We adhere to human-centricity, promoting worker rights protection among our suppliers, respecting and caring for our employees, and providing them with ample resources to support their career development and a platform for showcasing their talent. Meanwhile, we leverage our resource strengths to support community development within our abilities and share the fruits of our development with the community.



"Independent innovation is an urgent requirement and key pillar for promoting high-quality development and the replacement of growth drivers. We must create the condition and atmosphere and mobilize the creative initiative of all parties to allow everyone with a desire for innovation to focus thereon and the creative initiative to be fully unleashed."

"Green development is a critical element of modernizing an economy; it is also a fundamental solution to pollution."

"We should stick to the practice of putting people first, and strive to build a happy society that is inclusive and benefits all."

— President Xi Jinping

Quality Products and Services



APP China firmly applies a customer-focused philosophy and endeavors to build a community of shared interests and shared success with customers. We put ourselves in our customers' shoes and strive to satisfy their demands on all fronts through the provision of quality products and prompt and excellent services. Meanwhile, we listen to their voices actively and continue to improve our services by conducting satisfaction surveys, strengthening management of customer complaints, organizing engagement activities, etc. to deliver consistent value creation for our customers.

Building a Service Brand

While satisfying customers' needs, APP China holds itself to a set of high standards that exceeds their expectations. We believe that companies can always find new pain points when thinking from a customer's perspective and realize that "sales" is not for any particular position alone.

APP China officially launched the "All-hands Marketing" strategy in 2018. Under the strategy, all the departments including R&D, manufacturing, finance, administration, logistics, etc. uniformly put customer service at the center of what they do, thus forming a complete chain of value creation for customers. Whenever a customer runs into trouble while using our paper products, whether about product quality, usage, or facilities, we bring together all relevant departments such as IT, manufacturing, and customer service to jointly work out the solutions.

"All-hands Marketing" has further facilitated our communication with the customers and deepened our understanding of customer needs, which would inform our efforts for future improvement. The marketing strategy has also fueled our employees' work initiative and improved their perceptive capacity for the market and customers.

Creating a Pleasant and Convenient Service Experience

The Breeze™ brand under Suzhou Gold Hongye fully upgraded its strategic partnership with JD Supermarket in 2018, planning to implement innovations in product content, sales model, logistics and transportation, and all the other areas to deliver high-grade, diversified household paper products and a more convenient shopping experience to consumers.

Breeze™ would shelve a diverse range of products on JD Supermarket to match the household paper demands of consumers of varying ages and needs and planned to introduce more

products tailored to the younger and more individualized consumer group. Breeze™ would also offer integrated online-offline shopping advice and experience that were informed and made more targeted by big data application.

Breeze™ would further optimize the supply chain layout together with JD to continue to improve its efficiency and shorten the transportation time. Data-based management and forecasts would be applied regarding sales needs and goods allocation to enable more convenient product delivery.

Commitment to Craftsmanship and Quality

Providing customers with high-quality products is a relentless commitment at APP China. We have established a complete quality management system based on the ISO 9001 standard, putting in place strict quality control guidelines for all stages of the product life cycle from raw material examination to finished products. We embed craftsmanship in our products through meticulous management of each production stage.

APP China mills continuously examine and optimize product quality management. Gold East Paper conducts regular internal self-examinations and produces reports at each manufacturing stage from manufacturing and storage and transportation to sales so as to detect and resolve problems in a timely fashion. Hainan Gold Hongye held the Quality Awareness Enhancement Event, raising employees' awareness of quality management through awareness training, banner publicity, independent examination of base paper, and other methods.

Implementing Total Quality Management

Gold East Paper actively implements Total Quality Management (TQM). Every department and individual employee involved in the production and operations processes is obligated to take up the responsibility for quality safety, thus fostering a quality-oriented culture where "everyone cares about product quality and everyone shoulders quality obligations".

The company reviews quality performance with tools such as the TQM Team and Group Assessment

Measures; the Outstanding Quality Managers Appraisal Measures has been drawn up to regularly select and award outstanding quality managers; the Post-based Responsibility System for Quality has been set up specifying the quality-related obligations of each post as well as punishment for violators. Additionally, the company actively hosts events such as skills competition and indicators competition to encourage employees to be the benchmarks for quality.

APP Industrial Paper Supporting Takeaway Packaging

Shanghai Municipal Bureau of Quality and Technical Supervision initiated and led formulation of the *Association Standards for Online Catering Takeaway Packaging in Shanghai* in 2018, proposing an interim scheme for substituting petroleum-based packaging materials for paper-based materials. The APP Industrial Paper Business Unit entered its downstream packaging partners in the takeaway food packaging material test offered by Shanghai Municipal Bureau of Quality and Technical Supervision. A majority of the paper materials that

passed the test belonged to APP China. At the same time, the Online Food Delivery Supply Chain Association, whose members included online food delivery platforms, disposable food container manufacturers, catering companies, industry associations, testing agencies, etc., published the Reassurance Directory for takeaway containers. The paper materials used by over half of the eight manufacturers listed in the directory came from APP China.



APP industrial paper products widely used for takeaway packaging



Listening to Voice of Customers

We highly value the feedback and opinions of our customers. We have established a variety of communication mechanisms that allow our customers to contact us about any issue related to our products and services, including service hotline, customer relationship management system, cellphone system, mail, fax, and more.

APP China mills have all set up a satisfaction evaluation system that supports face-to-face interaction, online

surveys, telephone conversations, and other forms of communication. Every year, they conduct a satisfaction survey to collect customer comments and opinions on a full range of issues including product quality, services, logistics, brand image, etc. to inform plans for future improvement.

The mills continuously intensify customer complaint management and have enabled closed-loop management by setting up a standardized handling process that consists

of investigation and determination, analysis and evaluation, and improvement measures. They also make a point of ensuring timely and effective response to and handling of customer complaints. In 2018, the mills systematically sorted their customer complaint data and improved customer satisfaction through concrete actions such as intensifying examination and improvement of each business stage and setting up dedicated improvement programs.

Going Out, Inviting In – Gaining a Thorough Understanding of Customer Needs



Acting on the "Customer-focused and Quality-first" mindset, Hainan Gold Hongye visits its customers, dealers, and downstream factory customers to gain a timely knowledge of the market and customer needs. Meanwhile, on a regular

basis, the company hosts production and marketing communication meetings among its dealers every year. Customers and domestic sales teams are invited to the meetings to offer analysis on each and every existing

problem. This is followed by promptly-made improvement plans and progress tracking measures, effectively improving the complaint handling efficiency.



Domestic sales team at our communication meeting

"Little A Classroom" Popular Among Customers

As new paper brands keep springing up, an increasing number of customers hope to learn about the quality and features of APP China's products in depth. In response, APP China Cultural Paper Business Unit launched a brand-new interactive program in 2018 — the "Little A Classroom in China". The program consists of industry news sharing, product introduction, technological communication, and strategic thinking and is designed to provide customers with more targeted value-added services. In three months and a half, the "Little A Classroom" was organized on nearly 20 occasions in cities like Hangzhou, Beijing, Xiamen, and Dongguan, involving the participation of over 200 customers.

Over the years, APP China has organized a variety of customer engagement activities, such as Return Banquets, VIP customer communication sessions, and product promotions. At those events, the company has been more than willing to enlighten the participants on market and technological development and share status quo and trend analysis of the pulp & paper sector. The launch of the "Little A Classroom" has made our sharing and communication more concentrated and normalized.

In the future, the "Little A Classroom" will continue to deliver shared value and growth with the customers in an attentive, meticulous, and sincere manner.



"Little A Classroom" in session

Sustainable Manufacturing Process



Sustainability is embedded throughout APP China's "Integration of Plantation-Pulp-Paper" operations model. From plantation to the various stages of pulp and paper making, we are tightly tied to the nature and the community. It is only by respecting the community's rights to development, fully incorporating environmental considerations into forest management and the manufacturing process and sticking to the bottom line of safe production that robust and sustained development can be truly achieved.



Forest Management



Scan the QR code for a detailed read of APP China's forestry policies

Sustainable Forest Management

"Scientific, ecological, and legal forestry" is the fundamental forest management approach that APP China adopts. While acting in accordance with the APP Forest Conservation Policy, we have also drawn up a series of forestry policies including Sustainable Management Policy, Society and Labor Policy, and Environmental Policy to bring our operations up to higher standards than required by national laws and regulations, continuously improving standardized operations throughout the forestry process and ensuring coordinated

development between forest management and the environment and society.

The CFCC/PEFC forest certification carried out annually is an important event that drives APP China to continuously improve its forest management. We use the opinions and advice of the expert panel to inform timely adjustment and improvement of the current management systems and measures and provide our employees with review training on a regular basis to continuously reinforce guidance on sustainable forestry.

Promoting R&D Communication and Cooperation

Scientific research plays an important role in growing seedlings and forestry. We have made a significant investment in building a modern R&D center. We conduct relentless exploration and research on cultivating quality

breeding lines and take an active part in exchange sessions, seminars, visits, and other events on industry technological innovations to continuously improve our capabilities of scientific forestry.

Reaching Win-win Cooperation with Eucalypt Alliance

The China Eucalypt Industrial Technology Innovation Strategic Alliance (in short Eucalypt Alliance) is an "Industry-University-Research" cooperative organization jointly established by eucalypt companies and research institutes in China. The Alliance focuses on researching and innovating technologies in eucalypt cultivation and utilization. APP China Forestry applies to the

Eucalypt Alliance every year for testing new breeding lines, which is conducted in the three provinces of Guangdong, Guangxi, and Hainan. The measurement data produced therein are fed back to the Eucalypt Alliance on a regular basis before being jointly processed and analyzed by both parties. In this way, more quality breeding lines suitable for pulp forest planting have been selected.

High Conservation Value Management and Eco-preservation

High Conservation Value (HCV) forests refer to forest areas with one or more particular attributes, primarily regarding the six areas of biodiversity, landscape-level ecosystems and ecosystem mosaics, ecosystems and habitats, basic ecosystem services, necessities of local communities, and cultural significance.

APP China devised the *High Conservation Value Management Measures* to conduct step-by-step assessment and monitoring of the HCV of its plantations and neighboring areas and developed

measures to protect HCV forests. As of the end of 2018, on-site HCV assessment and appraisal had been carried out on our plantations in Guangxi, Guangdong, and Hainan, bringing the overall evaluation rate to 52.95%.

We systematically sorted through national and industry-specific environmental policies, laws, and regulations. We examined our current practices against specific requirements and drew up corresponding management systems and improvement measures. APP China

Forestry formulated long-term monitoring plans in line with the eco-environment of eucalyptus to implement comprehensive monitoring and analysis of understory plant diversity, microbial diversity in soil, soil fertility, and other aspects by means of field investigation and lab analysis. The forest area also drew up the *Biodiversity Protection and Monitoring Management Measures* as guidance for recording, monitoring, and protecting rare, threatened, and endangered wild plants and animals potentially present in the forests.

Guarding against Forest Safety Risks

Illegal logging and fires are the major safety risks associated with forest management. In response, APP China Forestry has strengthened patrol management by using the GPS patrol system and ensures a higher level of protection against forest safety risks through measures such as forming alliance with law enforcement agencies and intensifying emergency drills. Meanwhile, APP China Forestry continuously conducts forest safety awareness campaigns and maintains active communication and cooperation with local public security agencies and residents in an effort to minimize safety risks.

Joint Efforts to Combat Illegal Logging

To prevent illegal or wonton logging from happening and preserve forest resources, the Qingyuan Forestry Farm of Guangdong Business Unit partnered with local law enforcement agencies and undertook joint prevention and handling of illegal logging at the Shimalin Forestland, where it was rampant. Thanks to measures such as joint patrols in neighboring villages, seminars and publicity campaigns for villagers, and warning banners, there were zero incidents of illegal or wonton logging

at the Shimalin Forestland in 2018. This helped effectively preserve forest resources and lighten the burden on the local police station, which had been kept busy handling illegal logging cases.



Combatting illegal logging

Facilitating Effective Communication with Fire-pit Talk

For generations, fire has been indispensable to every household in Lancang. Fire pits are used for cooking and welcoming guests; many family and village-level decisions are made beside them; major festivals are often celebrated with bonfire parties around them.

Employees of the Lancang Sub Business Unit of APP China Forestry actively visited local villages and organized publicity

and communication sessions on the prevention of forest fires and illegal logging around fire pits, fostering deeper understanding of and communication with local villagers. Thanks to the "Fire-pit Talk" platform, there has been zero incidents of fire or illegal logging and zero loss in the forests managed by the company for three consecutive years.



Communication around the fire pit



Green Production Continuously Intensifying Environmental Management

The Chinese government imposes increasingly heightened regulatory requirements on environmental protection. *Opinions on Comprehensively Strengthening Eco-environmental Protection and Resolutely Fighting against Environmental Pollution* and the *Three-year Plan on Defending the Blue Sky* issued by the State Council of the People's Republic of China and the *Opinions on Further Strengthening Regulations on Eco-environmental Protection* released by the Ministry of Ecology and Environment of the People's Republic of China are some of the policies released in 2018, raising higher requirements for companies' management and practice regarding the construction of a green industry chain and comprehensive implementation of clean manufacturing transformation, among other aspects.

All APP China pulp & paper mills operate in line with the principle of "environment-friendly pulp making and green papermaking". With handsome environmental investments and stringent process control measures, we ensure the manufacturing of our pulp and paper products meets and well exceeds the national environmental protection standards and continuously reduce the negative environmental impacts of our operations. In 2018, our environmental investments totaled RMB640.84 million.

The mills have devised environmental management approaches and measures

based on ISO 14001, which are regularly optimized in light of the production and operations, for example, by adding energy saving and emission reduction facilities, improving technologies and techniques, and unlocking energy saving and emission reduction potential. Guangxi Jingui Pulp & Paper revised the *Contingency Plan for Environmental Emergencies* and carried out emergency evacuation drills against environmental risk points. Environmental hazard examination and correction is also conducted regularly throughout the mills. Hainan Jinhai Pulp & Paper formulated environmental review and reward policies to enhance employees' sense of responsibility and initiative for getting environmentally involved and foster an awareness that everyone is a supervisor and promoter of environmental protection.

At the same time, APP China mills maintain an active environmental dialogue with the community as an important way to continuously improve their environmental performance and engage the community in the shared cause of environmental protection with an open mind. Back in 2015, Ningbo Asia set up the voluntary environmental supervisors' team comprising community residents. Upon receiving offense reports, the supervisors can inspect the mills anytime to help address detected environmental issues. They can also establish close contact with the mills through irregularly held face-to-face meetings, WeChat groups, etc.

From Pollution Discharge Fee to Environmental Protection Tax

"The change from pollution discharge fee to environmental protection tax has boosted companies' initiative in improving their technological processes, further enhanced their environmental awareness, and geared them towards greener and more ecological development," said the head of Accounting Department at Guangxi Jingui Pulp & Paper as he took over the very first environmental protection tax receipt issued in Qinzhou Port District.

The *Environmental Protection Tax Law of the People's Republic of China* took effect on January 1, 2018. The taxable pollutants include air and water pollutants, solid waste, and noise. The company has since actively communicated with the taxation, environmental protection, finance, and other departments and entered employees in training on taxation policies and hands-on practices to fully brace itself for when the levying of taxes starts.

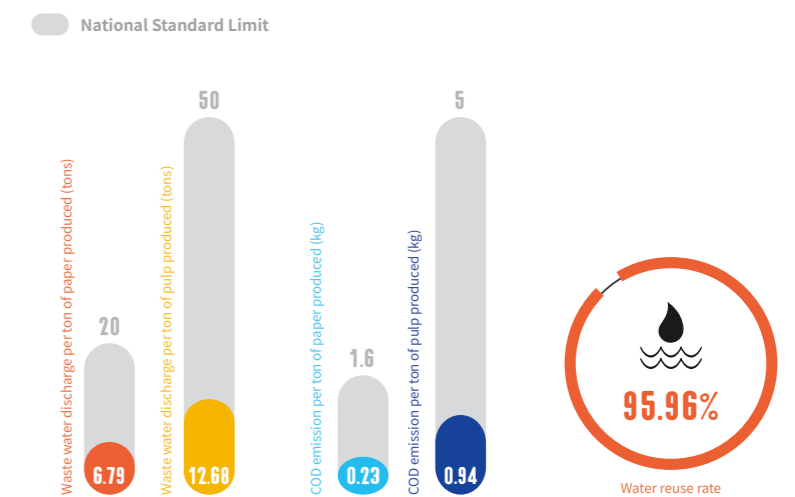


The first Environmental Protection Tax receipt issued in Qinzhou Port District

Water Resources Protection

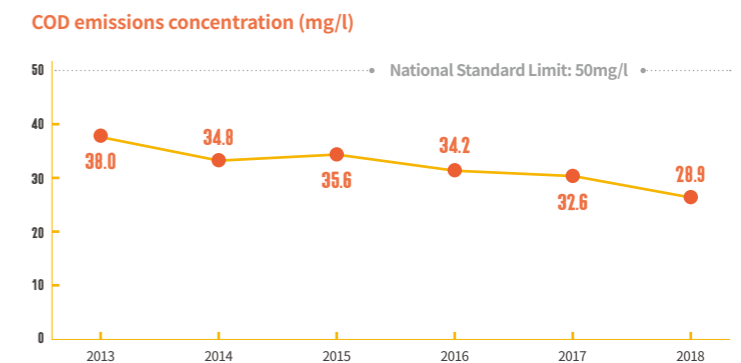
For the pulp & paper sector, water is used throughout the manufacturing process. APP China considers the protection of water resources to be a top priority in its environmental management efforts. We use a world-leading waste water treatment system and continuously improve the waste water treatment technologies to minimize the amount of chemicals used during manufacturing and ensure our waste water discharge performance far exceeds the national standards. Meanwhile, we strive to reduce the use of water through measures such as conducting water balance test, adopting the reclaimed water reuse system, modifying facilities and equipment, and optimizing processes.

We continued to maintain a sound record of waste water discharge in 2018, with the water reuse rate reaching 95.96%.



Further Enhancing Waste Water Discharge Performance with Continuous Tracking and Improving

To effectively reduce waste water discharge, Gold Huasheng has implemented source control measures since 2013, undertaking respective control over machine pollution discharge concentration and volume of water discharge. Progress towards the targets is tracked and evaluated every week to prompt timely improvement actions to address cases of excess pollution discharge at the source. The stringent supervision and management have resulted in a continual decrease in the company's waste water discharge per ton of paper produced and kept COD emissions well below the national standard limit.



Commitment to Water-saving Actions

Guangxi Jingui Pulp & Paper become one of the two enterprises in Qinzhou to be named "Water-saving Enterprise of Qinzhou" in 2018. The company continues to increase investment in building water-saving facilities and organize various kinds of water-saving modification initiatives as it steadily works towards the title of "Autonomous Region-level Water-saving Enterprise".

Water-saving measures in 2018

- Introducing sand leach system to remove condensate water impurities and enhance the efficiency of condensate water alkali-recycling
- Increasing the amount of reused white water from paper machine rooms in pulping workshops, thus reducing the use of clean water

Water-saving achievements in 2018

- Total water withdrawal decreased by 117,630 tons from 2017
- Water consumption per ton of pulp produced decreased from 6.96 tons in 2017 to 5.64 tons in 2018
- Water consumption per ton of paper produced decreased from 7.49 tons in 2017 to 6.26 tons in 2018

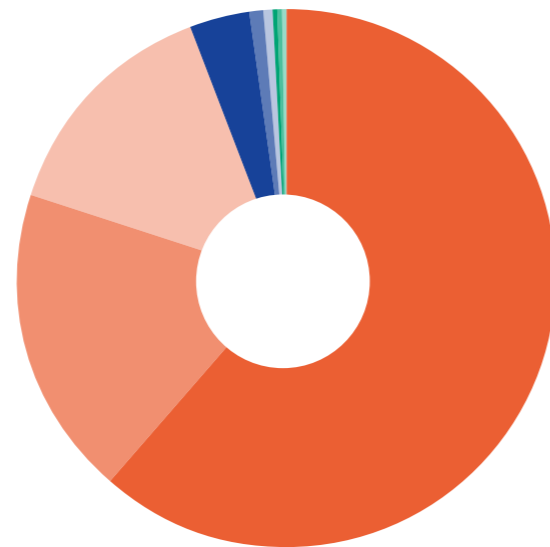
Energy and Combatting Climate Change

APP China responds actively to national policies on climate change. All the affiliated mills have calculated their own greenhouse gas emissions, with a number of them passing relevant government review. We are also actively involved in carbon trading training to lay a solid foundation for entry into the national carbon trading system.

We view carbon trading as an opportunity to promote energy saving and consumption reduction and change the energy mix. Functioning of the market mechanisms will drive improvement in the energy management of more companies. We continue to reduce the consumption of nonrenewable resources through measures like implementing energy-saving technological modification programs, innovating resource utilization, and increasing the amount of clean energy used.

Compared with 2017, the share of coal in our total energy consumption dropped by 8.77% in 2018, while that of natural gas grew by 9.53%. In terms of renewable resources, the Gold East Paper Phase II 10MW rooftop photovoltaic power station was completed in November 2017 and started generating power in January 2018. Phase I and Phase II combined to generate 27,990 MWh of solar PV electricity in a year.

2018 Energy Mix of Mills within Reporting Scope



● Coal	60.88%	● Power purchased	3.35%	● Liquefied Petroleum Gas (LPG)	0.27%
● Black liquor from pulp	18.58%	● Steam purchased	1.45%	● Diesel	0.25%
● Natural gas	14.11%	● Biomass fuels	1.04%	● Other	0.07%

Contributing to Defending the Blue Sky

Air pollution is directly linked to human health. Stepping up the improvement of air quality is a compelling obligation for manufacturing companies. Guangxi Jingui Pulp & Paper, Ningbo Asia, Gold East Paper, and Hainan Jinhai Pulp & Paper actively implemented ultra-low fuel gas emissions renovation, a crucial effort in defending the blue sky. When completed, the renovation will help reduce the emission of annual smoke dust by 197 tons, sulfur dioxide by 227 tons, and nitrogen oxides by 2,627 tons. As of the end of 2018, the renovation had been completed at Guangxi Jingui Pulp & Paper and Ningbo Asia, and it is planned for completion at Gold East Paper and Hainan Jinhai Pulp & Paper in 2019.

Providing Shore-side Power Services for Ships at Berth

The growing cargo handling capacity of ports has led to an increasing number of ships at berth and consequently a surge in air pollutants for burning fuels at berth. Gold East Paper actively answered to national and local calls for port enterprises to accelerate the construction of shore power facilities and had the Gold East

Pier Shore Power project filed in June 2017. The company worked for over 300 days and successfully designed a high and low voltage hybrid frequency conversion shore-side power system in 2018 that could power ships of any power utilization mode, thus eliminating air pollution emissions for ships at berth.

Strengthening Waste Management

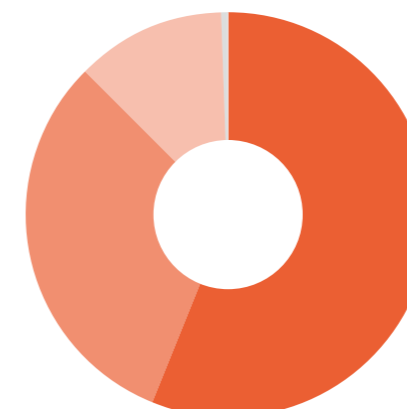
Circular economy is an important means of properly handling waste. "Reduce, Reuse, and Recycle" is highly conducive to decreasing the impact of economic activities on the environment. APP China mills have formulated the *Solid Waste Management Procedures* clearly specifying the types and disposal methods of waste. Waste generated during manufacturing usually includes woodchips, small wood chunks, pulp residuals, waste pulp boards, sludge cakes, green mud, white mud, coal ash,

etc. Over time, we have come up with a rich selection of circular economy models for waste management based on the "Reduce, Reuse, and Recycle" approach.

In terms of reducing, Hainan Jinhai Pulp & Paper managed to reduce the production of green mud by 41,055 tons in 2018 compared with 2017 thanks to optimized manufacturing technologies and processes. In terms of reusing, Gold East Paper and Ningbo Asia replaced calcium carbonate with sludge cakes

generated at the waste water treatment plant for boiler flue gas desulfurization; Guangxi Jingui Pulp & Paper and Gold East Paper practiced cross-plant recycling and reuse of pallets, which led to wood savings and cost reductions. Hainan Jinhai Pulp & Paper sent green mud, fly ash, and bottom ash to cement plants, where green mud was used as a raw material regulator and fly ash and bottom ash were used as construction materials.

Methods of Solid Waste Disposal in 2018 within Reporting Scope



● Selling to external parties for reuse	58.21%
● Incineration	31.04%
● Recycling and reuse	10.35%
● Centralized treatment by local sanitation departments	0.39%
● Other	0.01%

Overachieving Energy-saving Targets

In August 2018, the Office of Hainan Steering Group for Climate Change, Energy Conservation, and Emissions Reduction conducted appraisal and review of major energy-consuming entities on their progress towards energy-saving targets and implementation of energy-saving measures. Hainan Jinhai Pulp & Paper was appraised as an overachiever and publicly praised on the provincial-level for raising its energy consumption performance to international standards.

The company continued to intensify its energy-saving efforts in 2018. Energy efficiency was markedly improved through measures such as raising the vapor generation ratio of alkali recycling boilers, improving the efficiency of the multi-fuel boilers, multipurpose utilization of waste biomass, and optimizing operations and management of the machine set. This led to a reduction of 60 tons on average in the daily consumption of standard coal, equivalent to 21,900 tons in annual savings.

Promoting Use of Clean Energy

Methane is emitted during the treatment of wastewater. An excellent form of clean energy, the caloric value of methane at 1 cubic meter is equivalent to that of 1 kg of standard coal. How to transport methane to the power plant to replace coal was an important question to consider as Ningbo mill attempted to modify its processes in 2018. Drawing on repeated discussions, the company independently designed the gas transmission pipeline while having a number of electromechanical devices installed such as induced draft fan (IDF), configuration cabinet, and frequency transformer, thus enabling the said transportation. The program helped save 3,360 tons in annual coal consumption and reduced annual costs by RMB2.01 million.

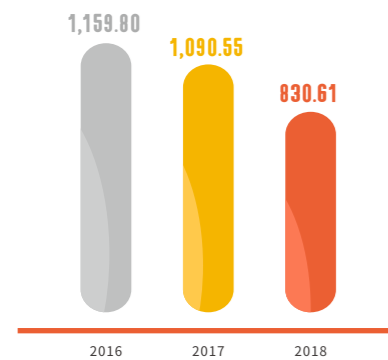


Production Safety

Production safety relates to workers' physical safety and the smooth running of the production process and is one of the main pillars of a company's sustainable development. APP China continuously improves its safety management and is committed to creating a zero-accident production environment. Besides continual efforts to optimize safety management systems and institutions, we conducted thorough hidden hazard screening and elimination as well as safety drills. In 2018, the lost hours per million working hours at APP China further decreased and the hazard correction rate of all the mills stood above 98%, reaching 100% at Ningbo Asia, Ningbo Zhonghua, and Guangxi Jingui Pulp & Paper; we conducted 327 safety drills.

At the same time, we continued to drive a greater awareness of safe production among all our employees through a rich variety of activities such as knowledge contests, internal and external excellent experience exchange sessions, special training offered by external experts, improvement advice collection, and safe production skills competitions.

Lost Hours per Million Working Hours at APP China (hours)



Gold Huasheng hosting internal sharing meeting on production safety

Contractor safety management is also an important part of our production safety efforts. As we outsource more work from our mills, safety risks resulting from "unsafe human behaviors" have increased as well. This is why we have been intensifying contractor safety management over the last few years. Contractor safety meetings are held regularly at each mill to ensure reinforced safety training among

contractors, especially new contractors, and educate participants on national laws and regulations, company policies, safe operating standards, accidents, and other contents; we implemented effective safety management and supervision by signing the Safety Liability Agreement with our contractors, laying down specific punishment measures, and conducting regular safety inspections, among other methods.

Promoting Second-degree Production Safety Standardization Among Paper Manufacturers

In 2018, our Ningbo mill initiated efforts to build itself into a second-degree production safety standardization company to further improve safety management and build a stronger foundation for sustainable development. The company revised and/or newly formulated over 50 systems and standards, making major

optimizations regarding issues such as hidden safety hazard screening and handling, re-identification and classified management of hazard sources, safety inspections, contractor safety management procedures and evaluation. The company fulfilled all the production safety targets in 2018.

	Injuries per thousand people (%)	Serious injuries and fatalities	Lost time per million working hours (%)	Hazard correction rate (%)	Number of fire accidents per month
Target	3	0	1	98	0
2018 Result	2.6	0	0.9	100	0

Responsible Procurement

The procurements at APP China mainly include key raw materials such as chemical preparations, woodchips, wood pulp, waste paper, and starch, energy sources such as coal, electricity, and natural gas, and projects such as technological services and equipment manufacturing. We embed sustainability fully into our procurement processes and actively push our suppliers to perform their responsibilities. We continuously optimize our supplier management policies and systems and regularly educate our suppliers about our procurement policies and requirements to make sure that they understand our sustainability philosophy and work to improve their own sustainability management during our cooperation.



Procurement Management

Our Supplier Relationship Management (SRM) platform became officially operational. The platform has enabled whole-life-cycle online procurement management and further standardized the operations of both parties and guarantees greater promptness and accuracy of business progression. Meanwhile, we have included more sustainability-related elements and requirements in our supplier selection and retention systems to push our suppliers to give weight to and actively perform their social responsibility. In 2018, there were zero incidents of supplier contract termination due to major negative social impact.

Strengthening Social Responsibility Requirements in Supplier Access Procedures

For registration, we require suppliers to provide information on technological and quality management, health, safety, and environmental protection besides their operations and financial status. We sign the *CSR Statement and Commitment Form* with our suppliers without exception, requiring them to make commitments in areas such as complying with business ethics, respecting human rights, protecting environment and intellectual property

rights, and producing positive impact on the community. We encourage our suppliers to obtain certifications for the ISO 9001 Quality Management System, the ISO 14001 Environmental Management System, the OHSAS 18001 Occupational Health and Safety Management System, and the SA8000 Social Accountability Certification and to adopt the Green Product Management System as endorsed by APP China mills.

Introducing Supplier Risk Evaluation Mechanism

We have embedded a supplier risk evaluation mechanism in our SRM platform, rating risks as low, medium, and high, which are assigned automatically by the system

once relevant information is keyed in. We would start a manual risk determination procedure for high-risk suppliers to decide whether to work with them or not.

Adding Social Responsibility-related Terms in Contract

We have included terms concerning the environment and human rights in our supplier contract. They include complying with the highest environmental protection regulations

laid down in national and local policies and with occupational safety and health regulations specified by the International Labor Organization and in national and local policies, eliminating

forced labor of any kind, prohibiting discrimination in employment and the workplace, and endorsing and respecting the *United Nations Universal Declaration of Human Rights*.

Creating Supplier Blacklist System

We have created a supplier blacklist system, blacklisting suppliers who

act in violation of the company's relevant requirements and ending all

engagements with them.



Responsible Sourcing

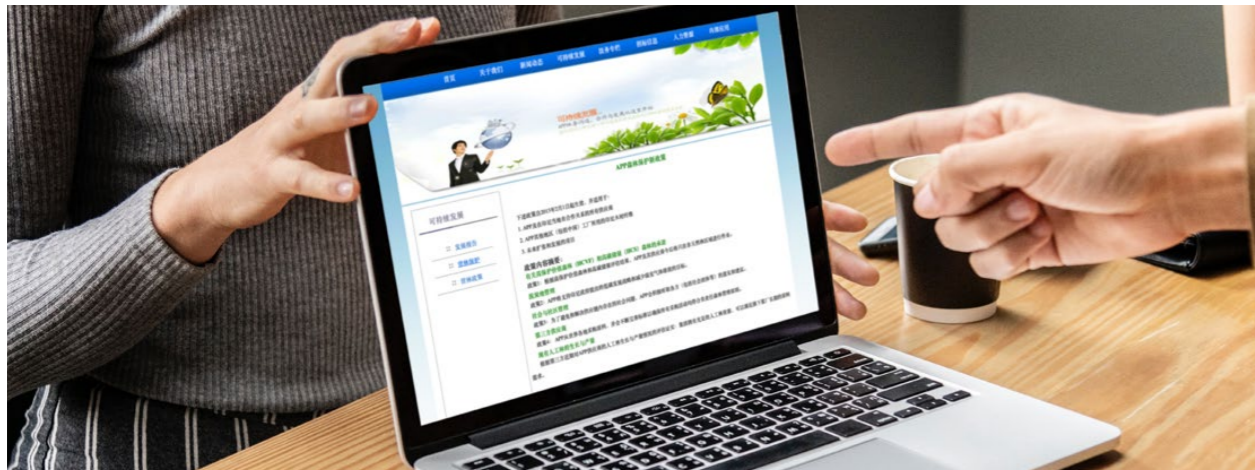
We seek to actively communicate with our pulp suppliers, encouraging them to obtain pulp certification as well as forest certification for their supplies, and prioritize procurement of certified pulp. As of 2018, we had 31 pulp suppliers from around the globe, and certified pulp accounted for 14.23% of our total pulp procurement.

To ensure compliance of the raw materials, we require suppliers to sign a statement committing to noncontroversial sourcing, timely access to raw material information for their customers, and permission for customers or designated third parties to examine their supply chain to prevent controversial raw materials from entering our supply chain.

Promoting Metal Content Testing Among Pulp Suppliers

The safety of food packaging paper has become an issue of great concern as it gets widely used today. Pulp contains metals such as copper, iron, and manganese, and they pose quality and safety threats at a certain concentration. In 2018, we urged a supplier from Chile to send their pulp samples for metal content testing at

an authoritative third-party agency, thereby guaranteeing the safety of our procurement. We also managed to raise our suppliers' concern for the safety of food-grade product raw materials. By obtaining the certification, our suppliers also won over more opportunities for their products to be consistently used.



Development with Employees

Viewing employees as the most important asset underpinning a company's path to excellence, APP China is committed to creating broad prospects for the employees and foster their growth with the company. We provide well-developed career paths to help our employees unleash their potential. We respect our employees' rights and interests and take actions to safeguard their health and safety. We care about our employees' personal wellness and organize a rich variety of support activities to make them feel at home.



Enriching Career Development Resources



Company executives participating in training at Huawei

Building APP Corporate University

Online training is an important part of APP Corporate University. In May 2018, we officially kicked off the development and construction of the APP online learning management platform, allowing our employees to access high-quality training in a more flexible and independent way. The platform provides a number of study sections such as management, professional skills, corporate culture, case study, and MBOS and hundreds of courses that are continually renewed and enriched.

APP Corporate University also provides a variety of offline training to meet the diversified needs of employees of different levels and roles for competency building. In December 2018, APP Corporate University entered a team of senior executives in the benchmarking training at Huawei, where they took courses like *Core Values*, *Change Management*, and *Human Resources Value Chain Management*. APP Corporate University plans to offer themed training in 2019 designed for managers, supervisors, high-performance employees, and other groups.

Role-based Technical Competency Model Certification

We have been implementing Group-wide role-based technical competency models since 2016. They cover a number of departments such as manufacturing, engineering, technology, and energy, facilitating the matching between our employees and the competencies consistent with their roles and boosting their continuous growth at work.

In 2018, APP China mills conducted technical competency model certification. A total of 1,660 employees from Ningbo Asia and Ningbo Zhonghua participated, with 167 obtaining the "Advanced Technical Expert" certification and 69 obtaining the "Technical Expert" certification.

Cultivating Internal Trainers

We place great importance on the cultivation of internal trainers. For one thing, training courses developed by internal personnel are more targeted and flexible, and thereby more effective. For the other, encouraging employees to participate in preparing and giving the lectures is a great way to fully stimulate their initiative and creativity.

At the headquarters, we invited senior external trainers to offer training on *Classroom Presentation and Lecturing Techniques* to employees aspiring to become our internal trainers, markedly improving the participants' presentation skills. Suzhou Gold Hongye conducted the "Cheer for Us" Teachers' Day event, selecting and awarding outstanding internal trainers, hosting exchange and sharing sessions on talent cultivation, and encouraging more employees to participate in this initiative.



"Cheer for Us" Teachers' Day Summary Meeting



"Cheer for Us" Teachers' Day Outstanding Internal Trainers Awarding Ceremony

Safeguarding Employees' Rights and Interests

APP China strictly abides by the *Labor Law of the People's Republic of China*, the *Labor Contract Law of the People's Republic of China*, the *Provisions on Collective Contracts*, the *Special Provisions on Labor Protection of Female Employees*, and other national laws and regulations. The company is committed to diversity and non-discrimination in hiring and prohibits the use of child and forced labor. It ensures equal pay for equal work and provides competitive remuneration that is regularly optimized and adjusted in line with the company's status of operations and the market rates.

We pay for the various types of social insurance including pension insurance, unemployment insurance, medical insurance, work-related injury insurance, and maternity insurance, and housing funds for all our employees across the country as required by law. We buy commercial insurance for our employees and offer perks such as high-temperature subsidies and physical exams.

We respect our employees' right to freedom of association and collective bargaining. In 2018, 100% of the employees from Ningbo Asia, Ningbo

Zhonghua, Gold Huasheng, Suzhou Gold Hongye, and Gold East Paper were covered by a collective bargaining agreement.

We host employees' communication meetings on a regular basis to learn about the difficulties they encounter in life and work as well as their suggestions or views as regards company management. We use their feedback to inform implementation plans or improvement measures in relevant departments and publicly display the work progress to all our employees.

Caring for Employees

Physical and mental health and a harmonious family are the premise of committed, happy workers. We make a point of fostering work-life balance for our employees and help improve their physical well-being through competition by organizing team sports events such as sports meets and tug-of-war contests; we host a rich variety of culture and entertainment activities and send wishes to our employees on festivals such as the Lantern Festival and the Dragon Boat Festival; we regularly have the family Open Day to allow our employees' families to learn about their work environment at close range and foster greater understanding and tolerance at home.



Ningbo Asia and Ningbo Zhonghua: Organizing Management Trainee Training Camp

To help fresh graduates better adjust to life in the workplace and master hands-on work skills, Ningbo Asia and Ningbo Zhonghua jointly organized a two-month management trainee training camp. Besides centralized face-to-face training and rotational training, there was also a rotational internship MBOS contest. They undertook a comprehensive appraisal of the trainees based on their rotational

internship score and MBOS score and rewarded top-ranked trainees.

The trainees were also invited to the employees' seminars so they could share their ideas, views, and suggestions in terms of employee training, career planning, company development and management, etc. The information was then fed back to relevant departments

as an important reference for making improvement.



Fresh Graduates Communication Meeting

Suzhou Gold Hongye: Organizing Employee Training Camp

Suzhou Gold Hongye organized training camps specially designed for the Human Resources Department, the Accounting Department, and the Supply Chain and Logistics Department respectively. The lessons were given by senior departmental supervisors, outstanding experts, and external trainers. Focus areas in daily

management and operational procedures were sorted and taught in the form of specialized training and team building, and the employees were encouraged to exchange ideas about the key issues in their day-to-day work. Nearly 200 employees took an active part in the specialized training camp.



Suzhou Gold Hongye Employee Training Camp

The primary causes of occupational diseases in the pulp & paper sector are noise, dust, and high temperature. Adhering to the human-centric approach, we have established a comprehensive occupational health and

safety management system. We take measures to guarantee the health and safety of our employees. They include increasing investment in protective gears, monitoring risk and hazard factors for occupational diseases, mitigating

potential safety hazards, providing health and safety training as well as occupational medical exams before, during, and after employment.

Harmonious and Better Communities

Participating in public welfare causes and giving back to society are the responsibilities bestowed upon every corporate citizen. Fully applying its expertise as a pulp & paper company, APP China continuously organizes professional educational activities for the general public to facilitate the inheritance of papermaking culture and instill new life in the papermaking industry. We organized a variety of programs and events and engaged in public welfare causes in environmental protection, education, poverty alleviation, and other areas. We encouraged and supported our employees in participating in charitable activities to contribute to the construction of better communities.



Carrying Forward Papermaking Essence Cultivating Papermaking Talents

APP China launched the "Dream Plan" educational assistance program in 2018. The program funds academically outstanding students in remote, impoverished areas and is designed to cultivate pulp & paper talents in partnership with professional colleges. It is a three-year program where all tuition and accommodation fees are paid by APP China, supplemented with monthly living allowances and job opportunities provided upon graduation.



Guangxi Jingui Pulp & Paper welcoming "Dream Plan" students for internship

Under the "Dream Plan", two APP classes have been set up in China. One class features the Electrical Automation major of Guangxi Vocational & Technical Institute of Industry, with pulp & paper related classes taught jointly with the College of Light Chemical Engineering and Food of Guangxi University; the other class features the Mechatronics major of Nantong Vocational University, with pulp & paper related classes taught jointly with the Zhejiang University of Science & Technology. Regularly, the students are sent by the school on study tours to APP China mills and participate in on-the-job practice. The two classes currently contain 45 students and are running smoothly.



"Dream Plan" students studying at the mill

In the future, the "Dream Plan" will be brought to places like Guangxi, Guizhou, and Yunnan to provide training opportunities for more impoverished students.

Supporting the Education of Employees' Children

Children's education is a family's top concern. To assist employees in this matter, Ningbo Zhonghua, Ningbo Asia, Hainan Jinhai Pulp & Paper, Gold East Paper, and other APP China affiliates have all set up a scholarship/grant system dedicated to employees' children. Scholarships/grants are given to children who demonstrate excellence in both conduct and academic studies, achieve outstanding grades in science, technology, and art, and come from financially stressed families to encourage them to be fully devoted in school.



Employee children's scholarships awarded at Hainan Jinhai Pulp & Paper



Employee children's scholarships awarded at Ningbo Asia



Not only do the children excel academically but they get rewarded by our company as well. This makes us very proud as parents. We will also strive to fulfill our duties to make greater contributions to the company.

— Employee from Hainan Jinhai Pulp & Paper

Raising Awareness of Occupational Diseases

To protect employees from occupational diseases, Hainan Jinhai Pulp & Paper joined hands with Yangpu Safety Supervision Bureau, Yangpu Labor Union, Yangpu Center for Disease Control and Prevention, Yangpu Social Insurance Administration, and other units in May 2018 to implement awareness raising campaigns. The campaigns were designed to vividly educate all employees on the Law of

the People's Republic of China on the Prevention and Control of Occupational Diseases and share knowledge of occupational disease prevention and control through consulting, prize quizzes, and videos. The campaigns enriched the employees' knowledge of occupational disease prevention and control and ways to protect themselves at work.



Hainan Jinhai Pulp & Paper educating employees on occupational disease prevention and control

Offering Educational Classes on Papermaking

APP China mills have designed a number of educational classes on papermaking centered around paper culture, and they have been well received in society. By taking part in those activities, an increasing number of students have gained a renewed understanding of the modern papermaking industry in China and the environmentally friendly practices adopted therein.

Ningbo Asia has developed a series of creative classes such as papermaking, papermaking with petals, pulp handicraft, and pulp drawings and hosted 18 practice classes on papermaking in a number of schools in Ningbo. As the base for middle school and primary school quality education in Suzhou, Gold Huasheng is a long-standing organizer of cultural paper experience station events. The experience station received 119

batches of students in 2018, totaling 2,189 person-times. On the World Environment Day, Guangxi Jingui Pulp & Paper gave a lecture on traditional and modern papermaking technologies to students from Qinzhou Port Economic and Technological Development Zone No.5 Primary School and encouraged them to develop habits of saving paper and protecting the environment in their day-to-day life.

Planting Green Concepts

We heavily endorse the dissemination of green and environmental concepts. We have organized a variety of environment-related public welfare activities such as tree planting, low-

carbon bike-riding, and garbage collecting to plant the seeds of environmental protection in people's minds through concrete actions.



Breeze™ plaque-awarding ceremony for foreign company-planted commemorative forests



Gold Huasheng employees planting trees with partners



Guangxi Jingui Pulp & Paper employees and their families planting commemorative family trees

Paper Culture Experience Journey

Gold Huasheng has set up the Paper Culture Experience Gallery, developing targeted, quality educational contents for middle school and primary school students of different grades by combining paper and environmental protection with education. The students can not only acquire knowledge on environmental protection and get to know the history and status quo of paper but also experience firsthand the fun of manual papermaking and handicraft creation.

 <p>Evolution of Paper Presenting the history and current status of paper by introducing its invention, communication, and historic value.</p>	 <p>Ancient Papermaking Introducing "Ancient Papermaking" process by means of dummy models and pictures.</p>	 <p>Modern Papermaking Introducing the development of paper culture, modern papermaking process, the "Integration of Plantation-Pulp-Paper" model, and environmental protection measures at APP China.</p>
 <p>Creative Handicraft Turning pieces of paper into pieces of creative work using a variety of tools.</p>	 <p>Practicing Papermaking Making a piece of paper using ancient papermaking method.</p>	 <p>Factory Tour Visiting Gold Huasheng mill to learn firsthand about the environment-friendly treatment of exhaust gas, waste water, and waste materials.</p>



Students from Wellington College International at the Gold Huasheng Paper Culture Experience Gallery



A child studying papermaking technology intently



Guangxi Jingui Pulp & Paper giving a class on papermaking and environmental protection in school

"Environmental Guardians" Family Event

The Yangpu Ancient Salt Pan is over 1,200 years old and the best-preserved ancient salt pan in China that features the original salt production method with solar evaporation. It attracts a large number of visitors every day, who always leave behind some garbage. Hainan Jinhai Pulp & Paper hosted the "Environmental Guardians" Family Event in May 2018, inviting employees to bring along their children and collect the garbage visitors had left at the Salt Pan. Games were designed into the event, and the families all had a great time.



Employee collecting garbage with his kid



"Little Environmental Guardians" selection

"You Use Paper; We Plant Trees"

Suzhou Gold Hongye sponsored the tree-planting event headed by Suzhou Sports Bureau as a name partner. The company bought 100 malus hallianas and invited representatives from foreign companies to plant the "Breeze™ Public Welfare Forest" together in the Dayangshan National Forest Park.

Joining hands with Suzhou Daily, Changshu Economic & Technological Development Zone, and Shengpu Street, Gold Huasheng hosted a tree planting event, planting over 300 cherry blossom trees and cherry-apple trees along the Yangtze River.

Hainan Jinhai Pulp & Paper organized employee volunteers and a team of 160 representatives from Yangpu Middle School, Yangpu Technical School, and relevant government agencies in Danzhou to plant 1,000 seedlings at the Wangwu Station of Hainan Jinhua Forestry Danzhou Forestry Farm.

Guangxi Jingui Pulp & Paper invited employee families to grow commemorative family trees at the mill, planting 50 lychee trees and mongo trees in total.

Steward of Ancient Trees

In 2011, Ningbo Zhonghua applied to and was authorized with the stewardship of five over-200-year-old trees and 500 square meters of green land on Ningbo Zhongshan Square. The stewardship was extended to include daily maintenance in 2018. Under the guidance of professional gardeners, the company's environmental volunteers regularly maintained and managed the trees through weeding, disinsecting, trimming, and watering. As a steward of those ancient trees, the company hopes to raise public awareness of and participation in natural heritage protection.



Community Outreach Events

Supporting Education

The High-school Scholarship program (also called Yicong Scholarship) is jointly established by APP China and the Huang Yicong Charitable Foundation. The program has been undertaken in seven high schools in Guangxi and Gansu since 2011, offering scholarships to 355 students.

In 2018, the scholarship-winning senior high students, 58 in total, achieved good grades in the college entrance examination, with 53 enrolled by 985 or 211 universities, including nine by Tsinghua University, ten by Peking University, two by Fudan University, and two by Shanghai Jiao Tong University.

To equip students with a broader horizon and stronger capabilities, the Huang Yicong Charitable Foundation has been organizing the Yicong Capability Building Summer Camp since 2016 for scholarship-winning high school students from Guangxi, Gansu, and Fujian.



Programming course at the Summer Camp



Entrepreneurship course at the Summer Camp where theories are put into practice



I was really lucky to be able to participate in the Summer Camp. After three years, the skills acquired during the Summer Camp may have been long forgotten, but what I feel most grateful for is how the Summer Camp has changed and shaped my views. It has influenced my perspective and choices for the future, including my college major, the entrepreneurship projects I participated in, and even my future career planning.

— Sha Fei

Member of the 2016 Summer Camp, enrolled by Peking University in 2018

Supporting Volunteer Teaching in Rural Areas

In August 2018, Hainan Jinhai Pulp & Paper funded the "Yangpu Warming Villages" university student volunteers' team in offering volunteer teaching in remote rural areas. The team combined classic classes, such as mathematics, Chinese Language and Literature, fun English, and natural science, with feature classes such as music, PE, arts, calligraphy, handcraft, psychology,

safety, and sanitation. They made the lectures entertaining, lively, innovative, and very popular with the kids.

Since the volunteer teaching first started in 2015, Hainan Jinhai Pulp & Paper has offered strong support to the team every year to help improve the education in rural areas.

Endorsing Public Welfare by All

Participation of the general public is indispensable to public welfare undertakings. APP China endorses "public welfare by all" and strives to realize such a vision by organizing a rich variety of engagement activities.

Public Welfare Community Photography Exhibition

The Huang Yicong Charitable Foundation started to work with nonprofit organizations in 2016 to jointly host normalized public welfare photography exhibitions. This is done in the hope to accentuate the vitality of vulnerable, grassroots figures by photographic means to rally wider social support for public welfare causes.

In 2018, the Foundation worked actively to boost public participation. In partnership with Sanlin Street of Shanghai Pudong New Area and Wujiaochang Street of Yangpu District, the Foundation hosted the "Harmonious Charity Home" public-welfare community photography contest and community photography exhibition. A total of 169 photographs were submitted, with 38 standing out and selected in the end. It was a lively event that involved the active participation of community residents.



Photography Exhibition



First-prize photograph

"Walking with Light" Charity Walk

In partnership with the Shanghai Magnolia Plaza, the Huang Yicong Charitable Foundation invited APP China employees and their families to take part in the "Walking with Light" charity walk. For every kilometer that the volunteers finished, the Foundation matched with RMB10. All of the donations went to the

Alzheimer's program at the Shanghai Jian'ai Charity Development Center to help people with cognitive impairment.

After the walk, the Jian'ai Charity Development Center hosted the "Getting to Know Cognitive Diseases" lecture for the volunteers to help them gain an in-

depth knowledge of cognitive impairment and the right ways to help those affected. At the lecture, they also learned how to help elderly people take early-stage cognitive impairment seriously and stay open for intervention.



APP China employees participating in charity walk

Breeze™ Family Series Products Supporting Charity Run

As the partnership brand, Breeze™ supported the United Overseas Bank (UOB) "Benevolence Charity Run/Walk" event organized by the China Business Network (CBN) in July 2018. The event raised nearly RMB420,000 in charity

fund by means of sports, donations, and charity bazaar and involved the participation of 17,000 person-times. The donations were intended to support the education of impoverished children.



Charity runners using Breeze™ Cooling Wipes

Encouraging Volunteer Services

We have established a volunteer management mechanism and work to continuously improve it. We encourage our employees to participate in volunteer services to provide assistance for people in need. In 2018, APP China conducted a variety of volunteer activities, with employees clocking 31,018 hours of volunteer time in total.

Everyone Is a Volunteer

Gold East Paper independently developed the volunteer management system, digitizing the entire process from volunteer enrollment to information feedback. The company has drawn up a series of incentivizing measures; for example, at the year-end commendatory meeting, it awarded departments and individual employees that had been actively involved in volunteer activities. The culture of volunteerism has been well broadcast thanks to sound management and implementation of the incentivizing mechanisms.

As of the end of 2018, Gold East Paper had set up 14 permanent volunteer stations in the neighborhood of Zhenjiang, organizing volunteer opportunities in welfare houses, hospitals, train stations, libraries, etc. to regularly deliver volunteer services every week. Employee participation rate grew from 19% in 2008 to 158% in 2018, with 69,441 person-times participating and 338,849 hours of volunteer time clocked.

Warming Activity at the Laba Festival

January 24, 2018 was the traditional Chinese Laba Festival. Ningbo Asia and Dongsheng Community jointly organized the "Sending Warmth on Laba" event. Company

volunteers gave out freshly cooked Laba congee to neighboring residents. There were over 90 seniors living alone in Dongsheng Community, and considering

their limited mobility, the volunteers sent the congee to their doors and helped them put up couplets to make them feel the festive happiness.

"Paperback" Bringing New Life into Waste Paper

The Implementation Plan for Prohibiting the Entry of Foreign Garbage and Advancing the Reform of the Solid Waste Import Administration System officially issued in 2017 markedly reduced the import quota of major papermaking companies for waste paper. Meanwhile, the government is pushing strongly for garbage sorting and recycling. It can be predicted that waste paper recycling will gain growing momentum in China.

Waste paper recycling not only can help reduce logging of old-growth forests and curtail greenhouse gas and pollutant emissions but accords with the attribute of paper for being naturally recyclable as well. With the mission of implementing a green cycle, we partnered with the third-party nonprofit organization Green Initiatives and launched the waste paper recycling program "Paperback" in 2018, intending to lead a wider dissemination of the idea of waste paper recycling and correct garbage sorting knowledge. APP China Ningbo Asia is in charge of remanufacturing the waste paper recycled from the program.

We have placed 19 waste paper recycling bins at APP China headquarters and hosted a number of promotional events and awareness campaigns. At the "Paperback" program launch, experts from Green Initiatives explained in detail to nearly 100 APP employees how to distinguish between recyclable and non-recyclable paper to help them sort waste paper more accurately. At the Changning District Garbage Sorting Volunteers Team Founding Ceremony/the first *Got Sorting Talent* launch event, the head of the "Paperback" program gave a detailed presentation on its implementation and demonstrated the low-carbon environmental protection concepts that we endorsed.

As of the end of 2018, three enterprises and two schools had taken part in the program, sending 4.47 tons of recycled waste paper to Ningbo Asia for remanufacturing. In the future, we will mobilize the participation of more enterprises, schools, and other external stakeholders in the "Paperback" program and engage more people in waste paper recycling efforts, contributing to a beautiful China.

4.47 tons of recycled waste paper

Equivalent to:

76 fewer trees felled

13.41 m³ of landfill space saved



"Paperback" poster



"Paperback" program launch

Sustainability Management

Building a Culture of Compliance

Integrity Management

"Integrity and Commitment" is the cornerstone of APP corporate culture system and is fundamental for maintaining the company's core competitive advantages. We officially introduced the APP China Integrity Management Framework in 2018. We will use the framework as the guidance as we provide thorough anti-corruption training for employees at all position levels, perform risk assessment and due diligence on our projects and business partners, implement corrective measures against non-compliance risks, and follow up the improvement actions of relevant business departments.



Hainan Jinhai Pulp & Paper using the monitoring system to manage daily work

We have optimized the supplier and customer risk evaluation and compliance procedures to make them more objective, systematic, and standardized. On the customer front, we have intensified basic information collection to better manage conflicts of interest and fraud risks. On the supplier front, we have established a standardized evaluation procedure consisting of the three risk control lines of quality, compliance, and audit. We perform an independent due diligence investigation regarding suppliers evaluated as high-risk.

We have also set up a monitoring system control center at Hainan Jinhai Pulp & Paper and optimized the monitoring system in our offices in places like Tianjin, Beijing, and Shanghai. This facilitates the real-time safety monitoring of each operations stage and management of daily work at our mills and offices and prevents non-compliances from happening.

Enhancing Integrity and Compliance Awareness

We ensure that all the employees are instructed in our anti-corruption policies through regular internal emails, the Integrity Monthly, face-to-face lectures, Q&A on APP Corporate University and APP WeChat Account, and other methods.

In the first Integrity Month, we organized a series of educational activities including group discussions, guest lectures, and case sharing sessions. 549 director-level

employees participated in physical classes, around 6,000 employees watched the lectures online, and 8,546 employees participated in the online integrity test. Additionally, 177 suppliers took part in our integrity awareness raising training and signed the integrity commitment form.

We publicize the reporting and rewarding measures through multiple channels, encouraging our employees and the wider

society to report unethical conducts. Our ethics reporting channel allows both APP employees and external personnel to file reports via email (GRW@app.com.cn) or hotline (021-22839763) on conducts like malpractice, corruption, theft, fraud, counterfeit, commercial bribery, and conflict of interest.

Sustainability Strategy and Management



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

In 2012, APP announced the Sustainability Roadmap Vision 2020, laying down specific sustainability targets in ten key areas, namely climate change, emissions, solid waste, reforestation, water management, conservation & biodiversity, fiber sourcing, employee welfare, community empowerment, and human rights & indigenous people. At present, most of the targets have been achieved or are making steady progress.

APP China actively promotes and deepens practices under the sustainability strategy and will further clarify sustainability planning based on the sustainability targets beyond 2020 currently being developed.

Strategic Areas and Action Directions for APP China Sustainability

Strategic Areas	Action Directions	United Nations Sustainable Development Goals (SDGs)
Sustainable forest management	<ul style="list-style-type: none"> Forest certification Forest Conservation Policy Forestland and local community and government 	8 DECENT WORK AND ECONOMIC GROWTH, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION, 15 LIFE ON LAND, 16 PEACE, JUSTICE AND STRONG INSTITUTIONS, 17 PARTNERSHIPS FOR THE GOALS
Responsible supply chain	<ul style="list-style-type: none"> Supplier code of conduct and responsibility requirements Relationship with partners and NGOs 	11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 15 LIFE ON LAND, 16 PEACE, JUSTICE AND STRONG INSTITUTIONS, 17 PARTNERSHIPS FOR THE GOALS
Responsible manufacturing	<ul style="list-style-type: none"> Occupational health and safety Energy saving and emission reduction Carbon credits/carbon neutrality 	3 GOOD HEALTH AND WELL-BEING, 7 AFFORDABLE AND CLEAN ENERGY, 11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION
Sustainable consumption	<ul style="list-style-type: none"> Sustainability education for consumers and customers Green, high-quality products Cooperation with government and media relations 	3 GOOD HEALTH AND WELL-BEING, 11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Recycling and reuse	<ul style="list-style-type: none"> Waste materials, water, and energy generated during manufacturing Recycling and reuse of finished products after consumption Treatment of unrecycled waste paper and materials 	11 SUSTAINABLE CITIES AND COMMUNITIES, 12 RESPONSIBLE CONSUMPTION AND PRODUCTION, 13 CLIMATE ACTION

CFCC/PEFC FM Certification at APP China

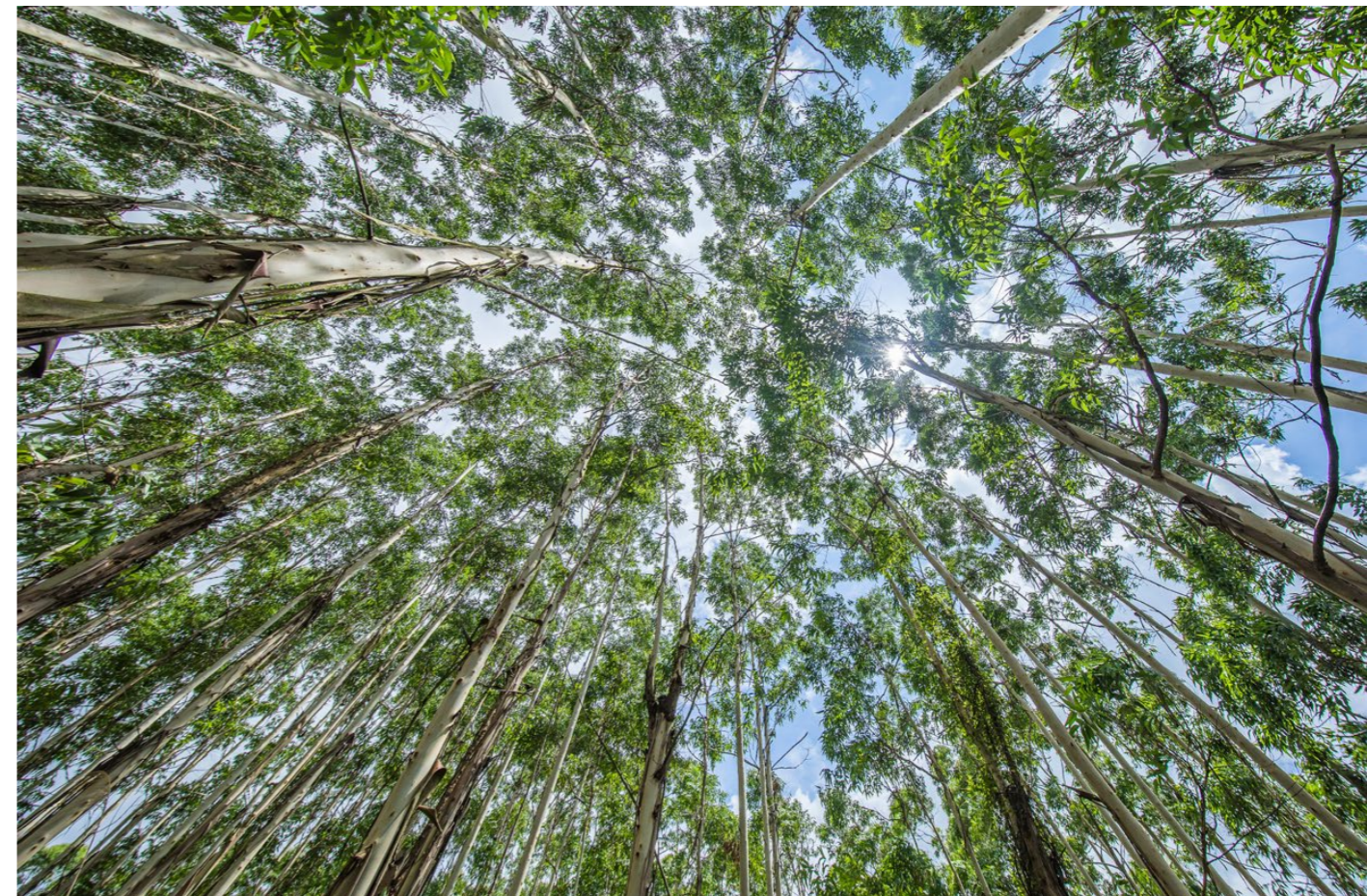
No.	APP China Forestry Companies	Certified areas (hectares)	CFCC/PEFC FM Certificate No.
1	Heyuan Jinmei Science & Technology Forestry Co., Ltd.	3,086.63	CFCC/PEFC-FM-ZTFC-000030
2	Leizhou Jin-taiyang Science and Tech Forestry Ltd.	746.97	CFCC/PEFC-FM-ZTFC-000030
3	Yangjiang Jin-taiyang Science and Tech Forestry Ltd.	2,456.91	CFCC/PEFC-FM-ZTFC-000030
4	Guangxi Jin Gui Forestry Co., Ltd.	42,873.90	CFCC/PEFC-FM-ZTFC-000005
5	Hainan Jinhua Forestry Co., Ltd.	68,583.00	CFCC/PEFC-FM-ZTFC-000003
6	Simao Jin Lancang High-Yield Forestry Co., Ltd.	42,672.60	CFCC/PEFC-FM-ZTFC-000018
7	Guangxi Jin Qinzhou High-Yield Forestry Co., Ltd.	44,076.10	CFCC/PEFC-FM-ZTFC-000006
8	Jin-Qingyuan Timberland (Paper mill) Ltd.	11,072.00	CFCC/PEFC-FM-ZTFC-000007
9	Jin-Shaoguan First Quality Timberland (Paper mill) Ltd.	14,240.00	CFCC/PEFC-FM-ZTFC-000008
10	Wenshan Jin Wenshan High-Yield Forestry Co., Ltd.	19,642.50	CFCC/PEFC-FM-ZTFC-000017
11	Guangxi Xing Guilin Agriculture Technology Co., Ltd.	3,820.40	CFCC/PEFC-FM-ZTFC-000031
12	Guangxi Jin Taiyang Forestry Co., Ltd.	1,389.00	CFCC/PEFC-FM-ZTFC-000031
Total		254,660.01	

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 Zhonghua Paper Co., Ltd.	SGS-CFCC/PEFC-COC-001030
4	Ningbo Asia Pulp and Paper Co., Ltd.	SGS-CFCC/PEFC-COC-001031
5	Hainan Jinhai Pulp & Paper Co., Ltd.	SGS-PEFC/COC-0805
6	Gold HongYe Paper Group Co., Ltd.	SGS-CFCC/PEFC-COC-001032
7	Hainan Gold Hong Ye Paper Co., Ltd.	SGS-CFCC/PEFC-COC-1733
8	Gold Hongye Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1463
9	Guangxi Jingui Pulp & Paper Co., Ltd.	SGS-CFCC/PEFC-COC-001013
10	Hainan Jinhai Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1467
11	Gold East Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-0249
12	Gold Shengpu Paper Products (Suzhou Industrial Park) Co., Ltd.	SGS-CFCC/PEFC-COC-001037
13	Yalong Paper Products (Kunshan) Co., Ltd.	SGS-CFCC/PEFC-COC-001059
14	Gold Huasheng Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1464
15	Sinar Mas Paper (Shenzhen) Co., Ltd.	SGS-PEFC/COC-1640
16	Ningbo Yajiang Trading (Hong Kong) Co., Ltd.	SGS-PEFC/COC-1465

2018 Sustainability Management System Certification at APP China

	ISO 9001	ISO 14001	OHSAS 18001	PEFC CoC
Gold East Paper	Certificate renewal	Periodic audit	Periodic audit	Certificate renewal
Gold Huasheng	Periodic audit	Periodic audit	Periodic audit	Periodic audit
Suzhou Gold Hongye	Periodic audit	Certificate renewal	Certificate renewal	Certificate renewal
Ningbo Zhonghua	Certificate renewal	Certificate renewal	Periodic audit	Certificate renewal
Ningbo Asia	Certificate renewal	Certificate renewal	Certificate renewal	Certificate renewal
Hainan Jinhai Pulp & Paper	Certificate renewal	Certificate renewal	Certificate renewal	Certificate renewal
Guangxi Jingui Pulp & Paper	Periodic audit	Periodic audit	Periodic audit	Periodic audit



Stakeholder Engagement

Drawing on an array of interviews, communication, and information, we have identified ten key stakeholder groups. On an irregular basis, each of our functional departments engages directly and maintains close contact with a range of stakeholder groups through varied channels during their daily operations. They manage to respond promptly to stakeholder expectations and concerns and continuously improve their management and practices in this process.

We visited industry associations on many occasions in 2018, when we had in-depth communication on issues such as the establishment and optimization of waste paper recycling system in China, implementation of national environmental policies, and industry self-discipline. We provided our own practice cases and assisted with development of the first sustainability white paper of the papermaking sector to help better

showcase papermaking companies to the outside world.

We had an internal quarterly published to deeply enlighten our employees on national policies, industry development, corporate practices, and excellent team and individual experience, among other contents. On average, we published 10 articles every month on our WeChat account to share our latest practices and industry knowledge.

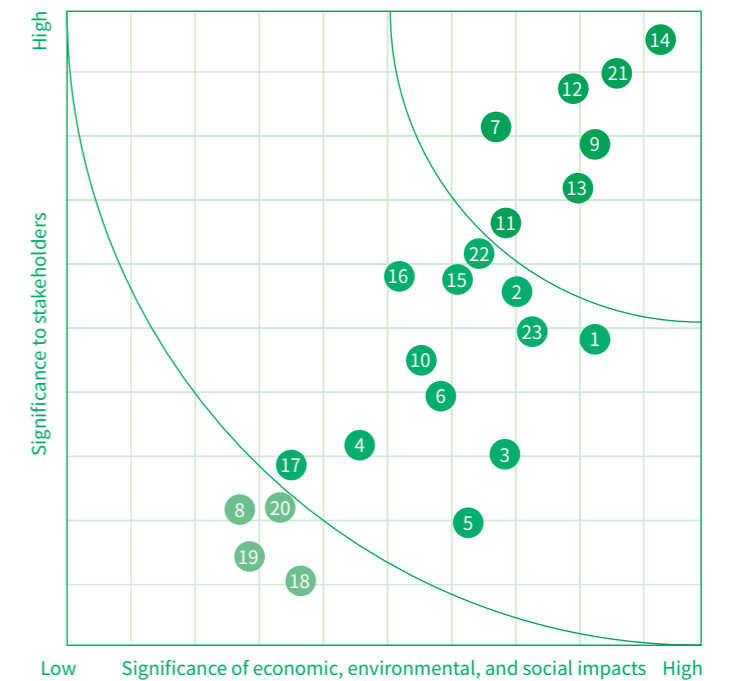
Besides materiality surveys, we also invited experts from environmental government agencies, domestic environmental organizations, colleges and universities, and third-party consultancies during the report preparation to have in-depth communication and discussions on the company's sustainability strategy and key practices.

Stakeholders	Top 5 Concerns	Engagement Channels	
Employees	<ul style="list-style-type: none"> Occupational health and safety Product quality and safety Environmental compliance Air pollutant emissions Employment 	<ul style="list-style-type: none"> Company intranet Internal corporate magazine Employee representative meetings Employee communication meetings 	<ul style="list-style-type: none"> CEO mailbox MBOS Conference/Contest Sustainability reports WeChat Official Account
Customers and consumers	<ul style="list-style-type: none"> Product quality and safety Customer service quality R&D and innovation Environmental compliance Compliance and risk management 	<ul style="list-style-type: none"> Customer visits Engagement meetings/activities Satisfaction surveys Customer service hotline/mail 	<ul style="list-style-type: none"> Brick-and-mortar store visits Company website Sustainability reports WeChat Official Account
Suppliers/contractors	<ul style="list-style-type: none"> Product quality and safety Supplier social assessment Customer service quality Economic performance Compliance and risk management 	<ul style="list-style-type: none"> Supplier meetings Contractor meetings Cooperative R&D mechanism 	<ul style="list-style-type: none"> Email, phone, and other daily communication channels Sustainability reports
Banks	<ul style="list-style-type: none"> Economic performance Product quality and safety Compliance and risk management R&D and innovation Air pollutant emissions 	<ul style="list-style-type: none"> Daily communication meetings Cooperative agreement Sustainability reports Company website 	
Government agencies	<ul style="list-style-type: none"> Environmental compliance Air pollutant emissions Waste management Promoting regional development Greenhouse gas emissions 	<ul style="list-style-type: none"> Government communication meetings Governmental inspection and supervision Information disclosure and reporting 	<ul style="list-style-type: none"> Regular visits Work cooperation Sustainability reports Company website
Community representatives	<ul style="list-style-type: none"> Community relationship Environmental compliance Water resources management Waste management Sustainable forest management 	<ul style="list-style-type: none"> Daily visits Community opinion processing and feedback Community representatives' supervision and engagement Community outreach activities 	
Industry associations	<ul style="list-style-type: none"> Waste management Product quality and safety Air pollutant emissions Energy management Environmental compliance 	<ul style="list-style-type: none"> Industry communication meetings Regular visits Industry exhibitions and forums 	<ul style="list-style-type: none"> Research and cooperation Industry publications Sustainability reports
Academic institutions	<ul style="list-style-type: none"> R&D and innovation Water resources management Air pollutant emissions Sustainable forest management Waste management 	<ul style="list-style-type: none"> Cooperative R&D mechanism Talent cultivation Company website 	
NGOs	<ul style="list-style-type: none"> Water resources management Environmental compliance Air pollutant emissions Biodiversity Waste management 	<ul style="list-style-type: none"> Communication on specific topics Work cooperation Sustainability reports Company website WeChat Official Account 	
Media	<ul style="list-style-type: none"> Product quality and safety Environmental compliance Greenhouse gas emissions R&D and innovation Water resources management 	<ul style="list-style-type: none"> Media coverage Participation in meetings and forums Press conferences Company website WeChat Official Account 	

Materiality Analysis

Drawing reference from the GRI Standards, the Global Compact Ten Principles, key industry sustainability issues, and the latest national and industry policies, we identified 23 issues closely related to the company's development. Compared to 2017, the major changes in materiality include the addition of "biodiversity" "customer service quality" and "community relationship" and the deletion of "customer relationship management"; other than the merging

of certain issues, such as the inclusion of "diversity and equal opportunity" in "employment", no significant changes have taken place in issue boundaries. We conduct online and offline surveys every year regarding the significance of the issues to stakeholders. A total of 765 valid questionnaires were collected in 2018. The issues have been arranged in order of materiality based on discussions with internal and external experts.



- ### High Materiality Issues
- 14 | Occupational health and safety
 - 21 | Product quality and safety
 - 12 | Environmental compliance
 - 9 | Air pollutant emissions
 - 7 | Water resources management
 - 13 | Employment
 - 11 | Waste management

- ### Moderate Materiality Issues
- 22 | Customer service quality
 - 2 | Compliance and risk management
 - 1 | Economic performance
 - 15 | Employee training and development
 - 23 | R&D and innovation
 - 16 | Human rights
 - 10 | Greenhouse gas emissions
 - 6 | Energy management
 - 3 | Anti-corruption
 - 4 | Sustainable forest management
 - 5 | Responsible sourcing
 - 17 | Community relationship

- ### Low Materiality Issues
- 20 | Supplier social assessment
 - 8 | Biodiversity
 - 19 | Supporting public welfare
 - 18 | Promoting regional development

Issues	Contents in report	Internal boundaries	External boundaries		
			Customers and consumers	Suppliers	Community
Occupational health and safety	<ul style="list-style-type: none"> Sustainable Manufacturing Process Development with Employees Performance in Numbers 	●		●	●
Product quality and safety	<ul style="list-style-type: none"> Pioneering Innovations Quality Products and Services 	●	●	●	
Environmental compliance	<ul style="list-style-type: none"> Sustainable Manufacturing Process Performance in Numbers 	●		●	●
Air pollutant emissions	<ul style="list-style-type: none"> Sustainable Manufacturing Process Performance in Numbers 	●			●
Water resources management	<ul style="list-style-type: none"> Sustainable Manufacturing Process Performance in Numbers 	●			
Employment	<ul style="list-style-type: none"> Development with Employees Performance in Numbers 	●			●
Waste management	<ul style="list-style-type: none"> Sustainable Manufacturing Process Performance in Numbers 	●			●
Customer service quality	<ul style="list-style-type: none"> Quality Products and Services 	●	●		
Compliance and risk management	<ul style="list-style-type: none"> Sustainability Management 	●	●	●	●
Economic performance	<ul style="list-style-type: none"> About APP China Our Value Chain Performance in Numbers 	●			●
Employee training and development	<ul style="list-style-type: none"> Joining Forces and Pursuing Culture-led Development Development with Employees Performance in Numbers 	●			
R&D and innovation	<ul style="list-style-type: none"> Pioneering Innovations 	●	●	●	●
Human rights	<ul style="list-style-type: none"> Sustainable Manufacturing Process Development with Employees Responsible Procurement 	●		●	●
Greenhouse gas emissions	<ul style="list-style-type: none"> Sustainable Manufacturing Process 	●			●
Energy management	<ul style="list-style-type: none"> Sustainable Manufacturing Process Performance in Numbers 	●			●
Anti-corruption	<ul style="list-style-type: none"> Sustainability Management Performance in Numbers 	●	●	●	●
Sustainable forest management	<ul style="list-style-type: none"> Championing and Promoting Sustainable Consumption Sustainable Manufacturing Process Sustainability Management Performance in Numbers 	●	●	●	●
Responsible sourcing	<ul style="list-style-type: none"> Championing and Promoting Sustainable Consumption Responsible Procurement Performance in Numbers 	●	●	●	
Community relationship	<ul style="list-style-type: none"> Sustainable Manufacturing Process Harmonious and Better Communities 	●			●
Supplier social assessment	<ul style="list-style-type: none"> Responsible Procurement 	●	●	●	
Biodiversity	<ul style="list-style-type: none"> Championing and Promoting Sustainable Consumption Sustainable Manufacturing Process 	●	●	●	●
Supporting public welfare	<ul style="list-style-type: none"> Harmonious and Better Communities Performance in Numbers 	●			●
Promoting regional development	<ul style="list-style-type: none"> About APP China Exploring Win-win Through Integration 	●			●

Performance in Numbers

Economic performance

Indicator	Unit	2018	2017	2016
Total assets	RMB100 million	1,726	1,582	1,618
Total taxes paid	RMB100 million	30	26	23
Sales revenue	RMB100 million	590	553	474
Total profit	RMB100 million	30	36	32
Net profit	RMB100 million	23	26	24

Indirect economic impact

Indicator	Unit	2018	2017	2016
Employee volunteer time	Hours	31,018	26,645	33,784
Donations	RMB10,000	2,610	1,869	1,327

APP China sources of pulp procurement

Region	2018	2017	2016
North America	23.9%	27.0%	28.9%
South America	2.8%	3.8%	8.0%
Europe	1.1%	2.2%	1.0%
South Africa	-	0.1%	-
Other Asian regions	22.7%	23.2%	15.9%
China	49.4%	43.4%	45.8%
Oceania	0.1%	0.3%	0.4%

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

Materials

Indicator	Unit	2018	2017	2016
Total volume of pulp purchased	10,000 tons	534.38	573.25	540.97
Total volume of certified pulp purchased	10,000 tons	76.07	98.71	92.64
Proportion of certified pulp in total pulp purchased	%	14.23	17.22	17.12
Proportion of certified wood fiber in total wood fiber purchased	%	17.45	16.90	21.91
Volume of waste paper purchased	10,000 tons	38.19	44.08	60.72

Energy

Indicator	Unit	2018	2017
Coal	Tons	5,035,063.85	5,195,476.17
Gasoline	Tons	581.74	687.50
Diesel	Tons	10,065.11	8,155.76
Fuel oil*	Tons	144.35	26,112.59
Natural gas	10,000 cubic meters	21,859.78	19,400.94
LPG	Tons	9,126.50	7,350.49
Kerosene	Tons	2.24	2.09
Biomass fuel	Tons	240,512.46	272,813.88
Black liquor from pulp	Tons	2,592,609.55	2,527,691.50
Solar power generation	10,000 kWh	2,964.05	2,355.62
Power purchased	10,000 kWh	157,975.17	149,857.23
Steam purchased	GJ	2,455,775.16	1,455,093.24

*The marked decrease in the use of fuel oil resulted from its substitution by natural gas at Hainan Jinhai Pulp & Paper.

Water resources and waste water

Indicator	Unit	2018	2017	2016
Total water withdrawal*	Tons	130,935,175	118,173,907	124,417,318
Total waste water discharge**	Tons	90,097,689	84,968,795	92,621,594
Waste water discharge per ton of paper produced	Tons	6.79	6.35	12.23
Waste water discharge per ton of pulp produced	Tons	12.68	13.90	21.87
COD emission per ton of paper produced	kg	0.23	0.26	0.69
COD emission per ton of pulp produced	kg	0.94	1.99	1.36

* 99.53% came from surface water, 0.34% from municipal water, 0.12% from recycled rain water, and 0.01% from well water.

** In 2018, there were zero incidents of major water body pollution at APP China.

Water reuse

Amount of reused water (tons)	2018	2017	2016
Gold East Paper*	567,192,412	581,093,529	598,451,353
Hainan Jinhai Pulp & Paper	1,290,127,756	1,046,378,081	1,210,049,099
Ningbo Zhonghua	134,936,133	135,358,599	134,535,550
Ningbo Asia	269,995,863	219,904,179	220,452,737
Gold Huasheng**	372,484,717	368,663,480	351,196,666
Guangxi Jingu Pulp & Paper	322,287,500	445,290,787	489,439,287
Hainan Gold Hongye	82,413,167	65,982,500	64,712,622
Hainan Gold Shengpu	59,984,587	56,721,070	57,168,302

* The 2016 and 2017 data of Gold East Paper have been corrected.

** The data of Gold Huasheng include those of Suzhou Gold Hongye; 2016 data have been corrected.

Air pollutant emissions

Indicator	Unit	2018	2017	2016
Total SO ₂ emissions	Tons	1,254.11	2,622.63	1,892.79
Total NO _x emissions	Tons	5,715.42	6,883.50	5,374.06

Indicator	Unit	2018
Total smoke dust emissions	Tons	502.62

Exhaust gas emissions (tons)	SO ₂	NO _x	Smoke dust
Gold East Paper	113.39	495.86	75.02
Hainan Jinhai Pulp & Paper*	705.67	3,410.85	252.49
Ningbo Zhonghua	17.75	213.09	32.14
Ningbo Asia	63.57	689.91	26.71
Gold Huasheng	61.22	330.91	35.09
Suzhou Gold Hongye	8.51	27.80	4.18
Guangxi Jingu Pulp & Paper	284.00	547.00	77.00

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

Waste

Indicator	Unit	2018
General waste generated	Tons	1,743,836.25
General waste disposed of	Tons	1,738,064.25
Recycling and reuse	Tons	179,793.10
Incineration	Tons	539,570.50
Selling to external parties for reuse	Tons	1,011,777.75
Centralized treatment by local sanitation departments	Tons	6,747.70
Hazardous waste generated	Tons	989.81
Hazardous waste disposed of	Tons	939.54

Environmental investment

Indicator	Unit	2018	2017	2016
Environmental investment	RMB10,000	64,083.68	82,593.16	47,111.28

Environmental compliance

Indicator	Unit	2018	2017
Environmental fines	RMB	1,620,000	977,400

Employment

Indicator	Unit	2018	2017
Number of employees directly employed	Number	19,976	21,746
Number of male employees directly employed	Number	14,507	15,779
Number of female employees directly employed	Number	5,469	5,967
Shanghai and Jiangsu	Number	10,905	12,157
Zhejiang	Number	2,551	2,675
Guangxi	Number	1,514	1,621
Hainan	Number	5,006	5,293
Number of employees indirectly employed	Number	1,405	1,887
Number of male employees indirectly employed	Number	870	1,156
Number of female employees indirectly employed	Number	535	731
Shanghai and Jiangsu	Number	199	218
Zhejiang	Number	2	0
Guangxi	Number	364	587
Hainan	Number	840	1,082
Number of new employees	Number	1,514	2,259
Number of new male employees	Number	1,064	1,473
Number of new female employees	Number	450	822
Employee turnover (number)	Number	3,862	3,786
Voluntary resignations of male employees	Number	1,282	1,274
Voluntary resignations of female employees	Number	626	698
Involuntary resignations of male employees	Number	1,341	1,301
Involuntary resignations of female employees	Number	557	460
Number of male employees who retired	Number	13	23
Number of female employees who retired	Number	43	30

Note: The employment data are within the reporting scope; the notable increase in 2018 turnover was a result of industry management upgrading and the application of AI programs that led to workforce streamlining; other reasons mainly included job transfer and negotiated contract termination. Our employees are notified of major operational changes at least one month in advance as required by the labor contract.

Employee turnover rate

Indicator	Unit	2018	2017	2016
Employee turnover rate	%	16.20	15.77	18.00
Male employee turnover rate	%	15.38	15.09	16.20
Female employee turnover rate	%	18.31	17.50	13.40

**Employee retention after
maternity/paternity leave**

Indicator	Unit	2018	2017
Number of female employees who took maternity leave	Number	530	634
Number of female employees who returned to work after maternity leave	Number	479	568
Number of female employees who resigned after maternity leave	Number	44	50
Number of male employees who took paternity leave	Number	808	991
Number of male employees who returned to work after paternity leave	Number	756	943
Number of male employees who resigned after paternity leave	Number	41	31

**Employee composition
by level**

Indicator	Unit	2018	2017	2016
Percentage of senior-level managers	%	1	1	1
Percentage of middle-level managers	%	10	9	7
Percentage of line-level employees	%	89	90	92

**Employee composition
by gender**

Indicator	Unit	2018	2017	2016
Percentage of female employees	%	27.38	27.44	28.10
Number of female employees in management	Number	560	528	374
Percentage of female employees in management	%	25.85	24.28	22.50

**Employee composition
by age**

Indicator	Unit	2018
Percentage of employees aged 30 and below	%	20.66
Percentage of employees aged between 31 and 50	%	75.79
Percentage of employees aged 51 and above	%	3.55

Employee training

Indicator	Unit	2018	2017	2016
Total training investment	RMB10,000	523.14	396.50	423.50
Total employee training time	Hours	717,135	762,557	685,563
Number of employees who participated in company-paid diploma programs	Number	78	96	63
Total investment in company-paid diploma programs for employees	RMB10,000	12.77	29.51	16.68
Average training time for senior-level managers	Hours	21.08	28.77	33.90
Average training time for middle-level managers	Hours	41.82	32.71	31.34
Average training time for line-level employees	Hours	35.43	34.39	40.22

**Occupational health
and safety**

Indicator	Unit	2018	2017	2016
Employee safety training time	Hours	294,354.45	206,759.50	313,700.20
Total investment in protective gears	RMB10,000	630.35	615.55	442.58
Lost hours per million working hours	Hours	830.61	1,090.55	1,159.80
Work-related injuries	Person-times	50	79	83
Number of work-related fatalities	Number	1	1	1

Anti-corruption

Indicator	Unit	2018
Number of governance agency members reached by anti-corruption policies and procedures	Number	28
Percentage of governance agency members reached by anti-corruption policies and procedures	%	100
Number of governance agency members receiving anti-corruption training	Number	28
Percentage of governance agency members receiving anti-corruption training	%	100
Number of senior-level managers receiving anti-corruption training	Number	107
Percentage of senior-level managers receiving anti-corruption training	%	49.54
Number of middle-level managers receiving anti-corruption training	Number	1,563
Percentage of middle-level managers receiving anti-corruption training	%	80.15
Number of line-level employees receiving anti-corruption training	Number	8,545
Percentage of line-level employees receiving anti-corruption training	%	47.98

Assurance Statement



ASSURANCE STATEMENT

SGS-CSTC STANDARDS TECHNICAL SERVICES CO., LTD. SHANGHAI BRANCH'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE SINAR MAS PAPER (CHINA) INVESTMENT CO., LTD.'S SUSTAINABILITY REPORT FOR 2018

NATURE AND SCOPE OF THE ASSURANCE

SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch was commissioned by SINAR MAS PAPER (CHINA) INVESTMENT CO., LTD. (hereafter as "APP-China") to conduct an independent assurance of the 2018 SUSTAINABILITY REPORT (2018 CSR Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, including the text and data in accompanying tables, contained in the 2018 CSR Report. Assurance data and information are including APP-China Head Office, Gold Hongye Paper Group Co., Ltd., Gold Huasheng Paper (Suzhou Industrial Park) Co., Ltd., Gold East Paper (Jiangsu) Co., Ltd., Guangxi Jingui Pulp & Paper Co., Ltd., Ningbo Asia Pulp & Paper Co., Ltd., APP-China Forestry Business Headquarters and Hainan Business Units, which were on-site assurance, as well as, Ningbo Zhonghua Paper Co., Ltd., Hainan Jinhai Pulp & Paper Co., Ltd., Hainan Gold Hongye Paper Co., Ltd., Hainan Gold Shengpu Paper Co., Ltd., Guangxi and Guangdong Business Units, and Lancang, Ganzhou, Wenshan and Henan Business Sub-BUs, which were off-site assurance. Data and information of other companies were not included in this assurance process.

The information in the 2018 CSR Report of APP-China and its presentation are the responsibility of the directors and the management of APP-China. SGS has not been involved in the preparation of any of the material included in the 2018 CSR Report.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of assurance set out below with the intention to inform all APP-China's stakeholders.

The SGS protocols are based upon internationally recognized guidance, including the Principles contained within the GRI STANDARDS for accuracy and reliability and guidance for Assurance Providers.

This report has been assured at a moderate level of scrutiny using our protocols for:

- evaluation of content veracity;
- evaluation of the report against the GRI STANDARDS.

The assurance comprised a combination of pre-assurance research, on-site verification and interviews with the management and employees, documentation and record review.

Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE

SGS is the world's leading inspection, verification, testing and certification company that operating a network of over 1,650 offices and laboratories around the world, providing the services includes the certification of management systems and services; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirms our independence from APP-China, being free from bias and conflicts of interest with APP-China, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors with CSR Lead Assuror, SAI Registered SA8000 Auditor, CCAA Registered ISO 14001 Auditor and ISO45001 Auditor.

ASSURANCE OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within 2018 CSR Report verified is accurate, reliable and provides a fair and balanced representation of APP-China's sustainability activities in 2018. The assurance team is of the opinion that the Report can be used by the Reporting Organization's Stakeholders.

We believe that the organization has chosen an appropriate level of option in accordance to all requirements in



core option of GRI STANDARDS (2016), and disclosed part of indicators in comprehensive option according to the Standards.

GRI STANDARDS CONCLUSIONS

In our opinion the APP-China CSR Report 2018 is presented in accordance with the core option for GRI STANDARDS (2016) and fulfills all the required content and quality criteria.

Stakeholder Inclusiveness

APP (China) directly faces different stakeholders, through a variety of communication channels, through the regular close communication with stakeholders, timely response to stakeholders' expectations and requirements, to ensure the effective inclusiveness of stakeholders in sustainable development management.

Sustainability Context

APP (China) demonstrates the organization's performance in the broader sustainability philosophy through analysis by relevant stakeholders in the economic, environmental and social fields.

Materiality

APP (China) continues to identify current substantive aspects through stakeholders' research, combining GRI standards with the Ten Principles of the Global Compact, industry sustainability issues, research and surveys of the latest national and industry policies to ensure the substantive and comprehensive nature of the issues of concern.

Completeness

APP (China) consider the reasonable expectations and requirements of stakeholders based on the substantive issues identified, reflecting the significant economic, environmental and social impacts in a more complete way.

Balance

APP (China) objectively discloses the positive and negative performance of the organization based on stakeholder expectations, giving stakeholders a reasonable assessment of the overall performance of the organization.

Comparability

APP (China) presents the public with historical data in the disclosed data, using trend charts and tables to analyse the organization's performance year by year.

Accuracy

The collection mechanism for disclosing information and data in the APP (China) report is objective and complete, providing accurate disclosure to stakeholders of more perspectives, to provide stakeholder assessment of the organization's performance.

Timeliness

APP (China) discloses information and data that are in the reporting cycle, enabling stakeholders to obtain information and make reasonable and wise decisions.

Clarity

The report is clear and can be understood by stakeholders concerned about APP (China). Overview reports, when disclosing information, APP (China) uses a few descriptions, charts and pictures, consider the way and type of information is used.

Reliability

The data and information can be traced and validated through internal collection, recording, compiling, analysis and disclosure, to ensure the quality and materiality of the information.

Signed:

For and on behalf of SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch

Ben Tsang
Senior Director, China and Hong Kong
Certification and Business Enhancement
10 October, 2019
B-11/F, No.900, Yishan Road, Xuhui District, Shanghai, P. R. China
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GRI Content Index

GRI Standards	Disclosure	Page numbers/ Reasons for omission	External Assurance
General Disclosures			
Organizational Profile			
	102-1 Name of the organization	4; 74	✓
	102-2 Activities, brands, products, and services	4-5	✓
	102-3 Location of the headquarter	4-5; back cover	✓
	102-4 Location of operations	4-5	✓
	102-5 Ownership and legal form	4-5	✓
	102-6 Markets served	4-5; 8-9	✓
	102-7 Scale of the organization	4-5	✓
	102-8 Information on employees and other workers	65-66	✓
	102-9 Supply chain	43-44; 63	✓
	102-10 Significant changes to the organization and its supply chain	4-5; 74; no significant changes	✓
	102-11 Precautionary principle or approach	56-57	✓
	102-12 External initiatives	57-58	✓
	102-13 Membership of associations	6-7	✓
Strategy			
	102-14 Statement from senior decision-maker	2-3	✓
	102-15 Key impacts, risks, and opportunities	2-3; 14-30	✓
Ethics and integrity			
	102-16 Values, principles, standards, and norms of behavior	10-13; 56	✓
	102-17 Mechanisms for advice and concerns about ethics	56	✓
Governance			
	102-18 Governance structure	5	✓
Stakeholder engagement			
	102-40 List of stakeholder groups	60	✓
	102-41 Collective bargaining agreements	47	✓
	102-42 Identifying and selecting stakeholders	59-60	✓
	102-43 Approach to stakeholder engagement	59-61	✓
	102-44 Key topics and concerns raised	60-61	✓
Reporting practice			
	102-45 Entities included in the consolidated financial statements	74	✓
	102-46 Defining report content and topic boundaries	62; 74	✓
	102-47 List of material topics	61	✓
	102-48 Restatements of information	64	✓
	102-49 Changes in reporting	No significant changes	✓
	102-50 Reporting period	74	✓
	102-51 Date of most recent report	74	✓
	102-52 Reporting cycle	74	✓
	102-53 Contact point for questions regarding the report	74	✓
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	102-55 GRI content index	70-72	✓
	102-56 External assurance	68-69	✓
Materiality Issues			
Economic performance			
	GRI 103: Management approach 2016	4-5; 8-9	✓
	GRI 201: Economic performance 2016	201-1 Direct economic value generated and distributed	4; 8-9; 63
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	GRI 103: Management approach 2016	8-9; 16-19; 30; 49-55	✓
	GRI 203: Indirect economic impacts 2016	203-2 Significant indirect economic impacts	63
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	GRI 103: Management approach 2016	43-44	✓
	GRI 204: Procurement Practices	204-1 Proportion of spending on local suppliers	63
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	GRI 103: Management approach 2016	56	✓
	GRI 205: Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	56; 67

GRI Standards	Disclosure	Page numbers/ Reasons for omission	External Assurance
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	GRI 103: Management approach 2016	24-25; 44	✓
	GRI 301: Materials 2016	301-1 Materials used by weight or volume	63
		301-2 Recycled input materials used	63
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	GRI 103: Management approach 2016	38; 40	✓
	GRI 302: Energy 2016	302-1 Energy consumption within the organization	40; 63
		302-2 Energy consumption outside of the organization	40; 63
		302-4 Reduction of energy consumption	40; 63
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	GRI 103: Management approach 2016	38-39	✓
	GRI 303: Water 2016	303-1 Water withdrawal by source	64
		303-2 Water sources significantly affected by withdrawal of water	None
		303-3 Water recycled and reused	39; 64
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	GRI 103: Management approach 2016	29; 37	✓
	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	8-9; 37
		304-2 Significant impacts of activities, products, and services on biodiversity	37
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	GRI 103: Management approach 2016	38; 41	✓
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	GRI 103: Management approach 2016	38-39; 41	✓
	GRI 306: Effluents and waste 2016	306-1 Water discharge by quality and destination	39; 64
		306-2 Waste by type and disposal method	41; 64
		306-3 Significant spills	None
		306-5 Water bodies affected by water discharges and/or runoff	No significant impact on water bodies or related habitats
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	GRI 103: Management approach 2016	38	✓
	GRI 307: Environmental compliance 2016	307-1 Non-compliance with environmental laws and regulations	65
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	GRI 103: Management approach 2016	43-44	✓
	GRI 308: Supplier environmental assessment 2016	308-1 New suppliers that were screened using environmental criteria	43-44
		308-2 Negative environmental impacts in the supply chain and actions taken	43-44
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	GRI 401: Employment 2016	401-1 New employee hires and employee turnover	65-66
		401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	47-48
		401-3 Parental leave	66

GRI Standards	Disclosure	Page numbers/ Reasons for omission	External Assurance
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GRI 402: Labor/ management relations 2016	402-1 Minimum notice periods regarding operational changes	66	✓
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GRI 103: Management approach 2016		42; 47-48	✓
GRI 403: Occupational health and safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	42; 67	✓
	403-3 Workers with high incidence or high risk of diseases related to their occupation	47-48	✓
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GRI 103: Management approach 2016		10-12; 45-46	✓
GRI 404: Training and education 2016	404-1 Average hours of training per year per employee	67	✓
	404-2 Programs for upgrading employee skills and transition assistance programs	10-12; 45-46; 67	✓
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GRI 103: Management approach 2016		47	✓
GRI 405: Diversity and equal opportunity 2016	405-1 Diversity of governance bodies and employees	66-67	✓
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GRI 103: Management approach 2016		43-44; 47	✓
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	43-44; 47	✓
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GRI 103: Management approach 2016		47	✓
GRI 407: Freedom of association and collective bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	43-44; 47	✓
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GRI 103: Management approach 2016		47	✓
GRI 408: Child labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	43-44	✓
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GRI 103: Management approach 2016		43-44; 47	✓
GRI 409: Forced or compulsory labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	43-44	✓
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GRI 103: Management approach 2016		29; 37-38; 47	✓
GRI 413: Local communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	29; 37-38; 47	✓
	413-2 Operations with significant actual and potential negative impacts on local communities	37-38; 65	✓
Supplier Social Assessment			
GRI 103: Management approach 2016		43-44; 56	✓
GRI 414: Supplier social assessment 2016	414-1 New suppliers that were screened using social criteria	43-44	✓
	414-2 Negative social impacts in the supply chain and actions taken	43-44; 56	✓
Customer Health and Safety			
GRI 103: Management approach 2016		26-27; 33	✓
GRI 416: Customer health and safety 2016	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	None	✓
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GRI 103: Management approach 2016		28-29	✓
GRI 417: Marketing and labeling 2016	417-1 Requirements for product and service information and labeling	28-29; 58	✓

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About this Report

This is the 12th 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, 2018 to December 31, 2018, with certain 2019 data included for the continuing nature of our work. Our last Sustainability Report was published in November 2018. Data in "Company Profile", "Economic Performance", "APP China sources of pulp procurement", and "Materials" and for R&D investment relate to APP China Group; cases and other data in the report are collected from APP China Head Office, nine pulp & paper mills, and APP China Forestry Business Unit, unless otherwise stated.

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

Reporting Frameworks

The report has been prepared in accordance with the core option of the GRI Standards issued by the Global Sustainability Standards Board (GSSB). Additionally, the report refers to the Global Compact Ten Principles, the International Integrated Reporting (IR) Framework developed by International Integrated Reporting Council (IIRC), and papermaking industry clean production and emissions standards. The disclosure of indicators can be found in the section of GRI Content Index and UN Global Compact Ten Principles Index in this report.

Content and Indicator Selection

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

Report Assurance

APP China commissioned SGS-CSTC Standards Technical Service Co., Ltd. (SGS) 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