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Sinar Mas Paper (China) Investment Co., Ltd.

Address: 65/F, No. 501 Dongdaming Road, Hongkou District, Shanghai
Phone: +86-21-2283-8888
Fax: +86-21-2283-9063
Zip code: 200080
Website: www.app.com.cn

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Go Green, Go Low-Carbon

APP China Addressing Climate Change Report

November 2021

Contents

Preface

In September 2020, Chinese President Xi Jinping announced at the United Nations General Assembly that China would "scale up its Nationally Determined Contributions (NDCs), adopt more vigorous policies and measures, and hit peak carbon emissions by 2030 and attain carbon neutrality by 2060". "Carbon peak", "carbon neutrality", "green and low-carbon development" have been included in China's 14th Five-Year Plan, national and regional government work reports, and other key policies in 2021, among other keywords, and the national carbon trading market has also been officially launched. Those rapid moves embody China's firm commitment to the transition towards green, low-carbon growth and have catalyzed social actions for climate change mitigation.

As one of the first eight major sectors included in the national carbon trading market, the papermaking sector has a significant role to play in achieving the "carbon peak and neutrality" goals, even though in the face of a number of unprecedented challenges. Papermaking companies are thus in a position to ride the trend and plan in advance. They need to actively adjust and optimize the industrial structure and energy mix, and transform towards intelligent manufacturing and green growth, tapping opportunities while overcoming challenges.

Go green. Go low-carbon. APP China has a build-in green DNA as showcased through its "Integration of Plantation-Pulp-Paper" model. Embracing a green growth approach, we remain committed to management and practices that minimize the environmental impact of the industry chain. Against the backdrop of the "carbon peak and neutrality" goals and with profound awareness of the severity of climate change, we will adhere to our green DNA, and actively plan, explore, and deliver concrete actions towards carbon neutrality, contributing to addressing climate change in collaboration with our stakeholders.

Navigating Climate Risks

For years, the World Economic Forum has listed climate change as one of the most pressing threats facing the world in its *Global Risks Report*. According to the Global Risks Horizon in the 2021 report, "extreme weather events" and "climate action failure" are the top two global risks by likelihood; and "infectious diseases" and "climate action failure" are the top two global risks by impact. Urgent actions are needed to effectively mitigate and adapt to climate change.

In 2015, the *Paris Agreement* set out the goal of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels". The *Special Report: Global Warming of 1.5°C* issued by the Intergovernmental Panel on Climate Change (IPCC) in 2018 concludes that there will be much greater risks at 2°C compared to 1.5°C of global warming, including more frequent occurrences of heatwaves and ice-free Arctic summers, rising sea levels, extinction of vertebrates and insects, transfer of biological communities, thawing permafrost, reductions in crop yields, loss of coral reefs, declining fishery catches, and more.

The World Meteorological Organization also points out in its S*tate of the Global Climate 2020* that the global mean temperature for 2020 was around 1.2°C warmer than pre-industrial times. What can be directly felt by people beyond this number is the increasingly frequent occurrence of extreme weather events, such as heavy rains, extreme high temperatures, and extreme droughts. On August 9, 2021, IPCC released the *Climate Change 2021: The Physical Science Basis*, contribution of Working Group I to the Sixth Assessment Report, specifying that since 2000, human-induced climate warming has been happening at an unprecedented rate and that the global temperature increase will far exceed the goal of 1.5°C or even 2°C and cause catastrophic damage accordingly, unless we deliver deep cuts in emissions in the next few decades.

Undoubtedly, to reduce the possibility of "irreversible" disasters, the 1.5°C goal, which is not far from where we are now, should be the target of all human efforts. To achieve this goal, we need to tackle the problems head-on and put in massive efforts.

Becoming a Climate Champion

With the "carbon peak and neutrality" goals, China is living up to its responsibility for mitigating climate change as a major economy and further promoting the construction of an eco-civilization. The "carbon peak and neutrality" goals signify that China has taken green and low-carbon development as a new national strategic priority. The convergence of pressing climate change risks and heightened regulatory scrutiny makes it important and urgent for papermaking companies to optimize their sustainability management mechanism and speed up green transformation.

Over the years, APP China mills have been working with relevant government authorities to conduct carbon accounting and auditing, and have established the management mechanism for carbon emissions monitoring, reporting, and verification. We continue to strengthen climate change response with internal and external employee training, as well as sharings and seminars on carbon sinks, carbon trading, carbon accounting, etc. In April 2021, APP China launched the cross-mill management program "Carbon Emissions Control: Reducing Carbon and Increasing Efficiency" to systematically implement performance management in carbon accounting and carbon trading at the Group level. The Group also invited third-party agencies to provide themed training for major mills on topics such as policies related to climate change and "carbon peak and neutrality" goals, progress in the carbon market, corporate response strategies, etc.

In 2020, our mills initiated a phased elemental carbon measurement program, independently testing the calorific value of energy used and the carbon content per unit of calorific value, with the intention of improving the quality of the carbon emissions data and laying the groundwork for the full participation of the Company in carbon trading in the future, besides our own power plants at the current stage. Hainan Jinhai Pulp & Paper has invested approximately RMB20 million carrying out the "Coal Sampling, Sample Preparation, and Testing" project to realize smart measurement of the above indicators through automatic detection and data sorting and transmission.

Exploring Green Financing

Financial innovation has been a key focus area at APP China. We are currently working with financial institutions to promote the issuance of carbon neutrality-themed green bonds. We hope to leverage the Group's ability to allocate green resources to provide financial support for green projects that contribute to carbon reductions and facilitate a green and low-carbon transition in industrial structure, energy mix, and lifestyle.

Forest Carbon Sinks and Forest Conservation

Seedling production

Building a modern seedling base and R&D center and focusing on the R&D and cultivation of high-quality seedling varieties

Forest certification labeling

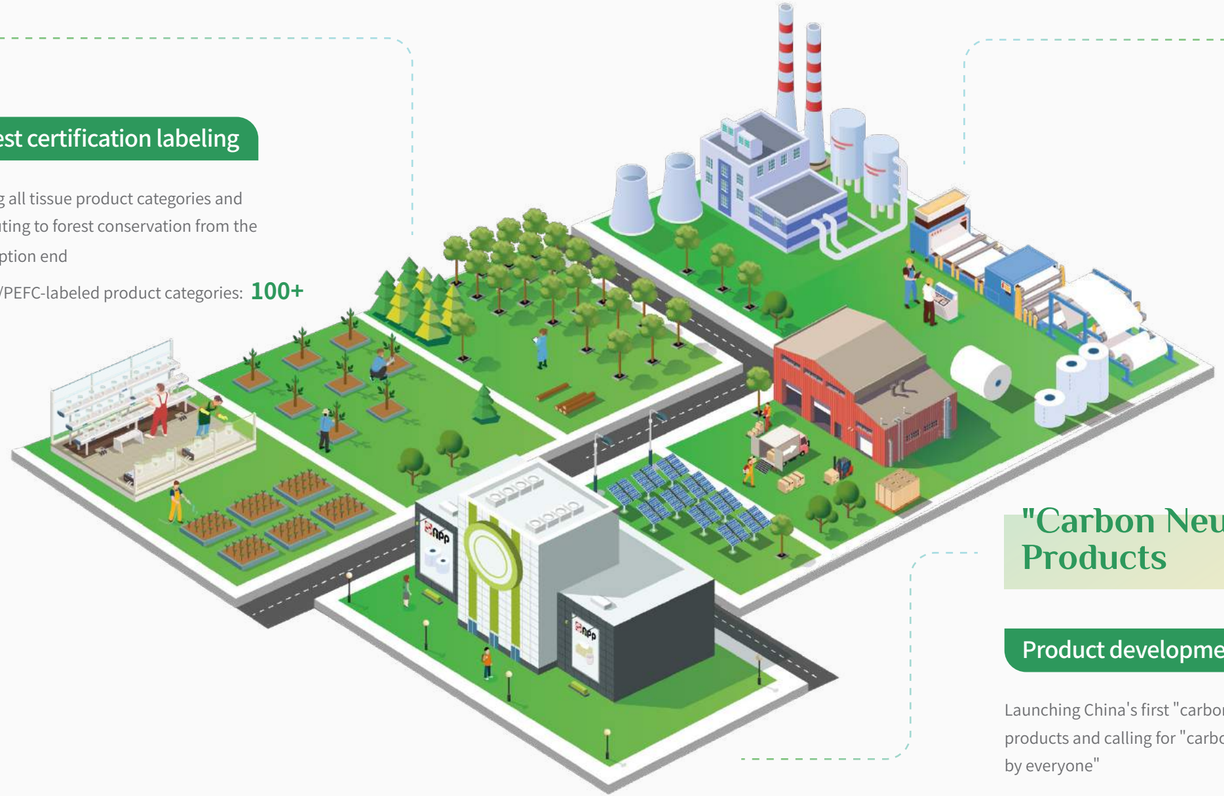
Covering all tissue product categories and contributing to forest conservation from the consumption end

- CFCC/PEFC-labeled product categories: **100+**

Forestry

Implementing sustainable forest management

- Total carbon absorbed: **42.395** million tons
- **244,382** hectares of plantations are CFCC/PEFC-FM-certified, with a certification rate of **90.12**%



Green Mills and Energy Conservation & Carbon Reduction

Mill construction

Continuing to build green mills and use automation and intelligent technologies to boost the production efficiency and the utilization of energy and resources

Energy management

Scaling up the development and utilization of renewable and clean energy; using advanced technologies and processes to conserve energy and improve energy efficiency

- Annual solar power generation: over **25,000** MWh
- Proportion of renewable energy: **18.49** %

"Carbon Neutral" Products

Product development

Launching China's first "carbon neutral" tissue products and calling for "carbon reduction by everyone"

Forest Carbon Sinks and Forest Conservation

Absorbing carbon and releasing oxygen, retaining water, purifying air, regulating climate, conserving soil... the list of forests' ecological benefits goes on. As an invaluable asset for our planet, forests absorb carbon dioxide from the atmosphere and fixate it in vegetation or soil, making them the largest "carbon reservoir" in the terrestrial ecosystem, playing a significant role in global climate change mitigation and adaptation actions.

Growth of Plantations

1 Tissue culture

- Picking young shoots from the trees, disinfecting the buds, and placing them in a sterile environment for soilless culture
- Transplanting rooted seedlings after 9 to 12 months for seedling production

2 Seedling production

- Exposing seedlings to full sunlight
- Adjusting smart spray in different seasons
- Standards for high-quality seedlings:
  - ∗ Height: 25~45 cm
  - ∗ Diameter at breast height: ≧ 0.2 cm
  - ∗ Blades: ≧ 6 pieces

3 Seedling planting

- Digging planting holes, applying basal fertilizer, covering with soil, and mixing
- Planting seedlings vertically and filling in soil
- Planting on rainy days, and watering during dry days

4 Growing into forests

- Plantation staff carrying out weeding, top dressing, disinfestation, and soil loosening to help the seedlings grow robustly
- Growing into a 25- to 35-meter-tall eucalyptus forest in six years
- Absorbing carbon dioxide from the atmosphere and releasing oxygen

Forest Carbon Sink Accounting

Since 1995, APP China has been investing heavily in plantations in Guangdong, Hainan, Guangxi, and Yunnan, pioneering the concept of "Integration of Plantation-Pulp-Paper" in China. By the end of 2020, APP China owned 271,100 hectares of plantations.

APP China Forestry launched the forest carbon sink project in November 2019 under the leadership of the Group headquarters and invited climate change experts to conduct training on carbon trading, carbon inventory, and carbon sinks for business units of APP China Forestry, and systematically introduced climate change trends, national climate change policies, domestic and foreign carbon market development, and carbon sink calculation methods. We set up a dedicated Forest Carbon Sinks Project Team in September 2020 after a series of preparations. We also commissioned a professional third party to conduct an aggregate carbon sink accounting of our forestlands in accordance with the Carbon Sequestration Afforestation Project Methodology. The results showed that APP China plantations had absorbed approximately 42.395 million tons of carbon dioxide by the end of 2020, including 4.624 million tons absorbed in 2020.

On-site inspection and verification of our forestland

Summary meeting for carbon sink inspection

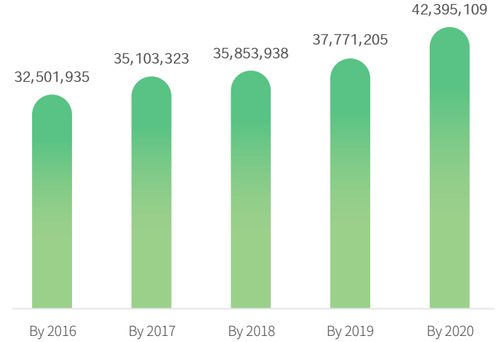
The carbon sink accounting allowed us to fully appreciate the value of APP China's "green DNA" and laid a solid foundation for the successful implementation of the project of "carbon neutral" products. It also provided an opportunity for the project team to gain an in-depth knowledge of forest carbon sinks, which would facilitate further implementation and innovations of climate-related practices in the future.

Consolidating Foundation of Carbon Sinks Through Sustainable Forest Management

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

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

Cumulative Forest Carbon Sinks at APP China from 2016 to 2020 (tCO_2)



Sustainable Forestry

Both increasing forest carbon sinks and maintaining their stability require a sustainable approach to forest management. APP China issued the *"Paper Contract with China" Sustainability Statement* in 2008, pledging to implement sustainable forestry policies. We manage our plantations in a technology-based, eco-friendly, and lawful manner, and in accordance with standards higher than those required in national laws and regulations. Based on the APP *Forest Conservation Policy*, we have subsequently formulated a number of forestry management policies and regulations, such as the *Sustainable Business Policy*, the *Environmental Policy*, and the *Social and Employment Policy*. From earthing, seedling culture, forest plantation, and tending to the monitoring of tree growth, we adopt science-based approaches at every step of forestry management.

APP China Forestry undertakes internal and external audits for the CFCC/PEFC forest certification and the ISO 14001 Environmental Management Systems (EMS) certification every year to identify areas to improve in forest management and form a virtuous "audit-improvement-audit" management cycle. APP China Forestry has long been carrying out high conservation value (HCV) and ecological monitoring to fully manage the impact of forest management activities on the environment and communities.

[Tip]

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

Fire hazards and wind hazards are the main threats facing APP China in forest management, and the increasingly frequent occurrence of extreme weather events, such as high temperatures, droughts, typhoons, and heavy rains, has also increased the safety hazards for the forests. Therefore, we continue to conduct risk monitoring and dynamic risk factor analysis, and actively manage risks through multiple measures and works to ensure the safety of forest resources. In 2020, APP China Forestry intensified its efforts in developing smart forestry, using aerial photography technology in the day-to-day forestland monitoring and applying it to a set of scenarios such as forestland area surveys and disaster monitoring as a more timely and direct reference for forestland surveys and management decision-making.

Fire control	APP China Forestry has designated a command for forest fire prevention, classified its forest areas according to different risk levels, and set up a fire control team. It has strengthened the fire prevention mechanism with the "five-network" system, including the observation and monitoring network, the communication network, the joint patrol and prevention network, the forest fire blocking network, and the prediction and forecasting network. It has also conducted various forms of fire prevention publicity programs in surrounding villages to raise people's safety awareness against forest fires.
Wind hazard response	• Developing typhoon-resistant varieties • Avoiding planting during typhoon seasons to ensure the survival rate of sprout forests • Enhancing forests' wind resistance by increasing plant density and implementing deep planting in affected areas • Placing a heightened focus on protecting young therophytes, which are more prone to damage • Pruning in advance according to early warnings of incoming typhoons to mitigate wind damage and carrying out immediate forest patrols right after • Maintaining sound records of wind damages, including the progress of disaster relief efforts and forest growth after disasters

Cultivating "Sustainability Genes of Forests"

APP China Forestry has a long-standing commitment to the R&D and innovation of quality seedling varieties. In 2020, its Sustainability Team and R&D Team jointly initiated a project on the region-based deployment and management of high-productivity, high-resistance, and high-pulp-yield varieties. With several months of surveys, analyses, and measurements, the project team developed a scientific and standardized variety management system with the release of the *APP China Forestry Optimal Asexual Eucalyptus Variety Management Measures* in August 2020 and the replacement of several old varieties with new ones. The project takes into consideration both the production factors of forestry, such as resistance to wind, pest, and frost, and an in-depth research and analysis of their pulping performance parameters, as well as cooking pulp yields, conducted in close collaboration with our pulp and paper mills. The selection of seedling varieties through this process results in not only high pulp yields, but also more efficient utilization of forest resources.

In May 2020, APP China Forestry had an exchange with the China Eucalypt Research Centre, Chinese Academy of Forestry and the Leizhou Forestry Bureau, and introduced 22 and three new varieties from the China Eucalypt Industrial Technology Innovation Strategic Alliance and the Leizhou Forestry Bureau respectively for experimental cultivation. It also signed a strategic cooperation framework agreement with the China Eucalypt Research Centre on forest breeding, pest monitoring and treatment, soil testing and fertilization, improvement of soil fertility, etc. to deliver both research results and product industrialization. The APP China Forestry Sustainability Team also pushed for industry-university-research integration, initiating the cooperation together with Hainan Jinhai Pulp & Paper and the China Eucalypt Research Centre, signing the cooperation agreement on the *Systematic Evaluation of New Eucalyptus Varieties on Pulping and Papermaking Performance*, to select new eucalyptus varieties with high pulp yield. This is also the first time that APP China Forestry has collaborated with a research institute in the area of the "Integration of Plantation-Pulp-Paper".

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

Promoting Forest Certification

Forest certification is a globally recognized way to effectively promote sustainable forest management and ensure the market access for forest products. Forest Management (FM) certification and Chain of Custody (CoC) certification are two major forms of forest certification, and both are instrumental in promoting forest protection and responsible consumption. APP China has been carrying out forest certification for years and continues to improve the sustainable management of FM and CoC. Up to 90.12% of APP China plantations have obtained the CFCC/PEFC-FM certification, and 15 subsidiaries have obtained the CFCC/PEFC-CoC Certification.

[Tip]

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

What Does a CFCC/PEFC Forest Certification Label Mean?

Paper products carrying the CFCC/PEFC joint label are subject to a series of audits by certifying bodies to ensure that they are sourced from wood materials from 100% scientifically planted, legally compliant, and environmentally protected plantations (Forest Management Certification), with full material traceability across the whole process from material input, manufacturing, transportation, and storage to sales and consumption (Chain of Custody Certification). A product with the Forest Certification label means that it has the double guarantees of both "raw material reliability" and "product traceability".

Since 2015, APP China has been providing labeling of the CFCC/PEFC joint logo on tissues, copy paper, and other products on the requests of customers. In 2018, under the guidance of the Science and Technology Development Center of State Forestry and Grassland Administration, we stepped up efforts to promote CFCC/PEFC labeling to gradually cover more products. As of the end of 2020, the CFCC/PEFC joint logo had been applied to over 100 APP China product categories, including all of our tissue products. We also actively promoted the awareness of forest certification and its sustainability significance through a variety of advocacy campaigns in communities and colleges, as well as postings on our official WeChat account. It is our hope that with these efforts, more and more consumers will pay attention to the environmental and social impact of products and be equipped with the knowledge to choose products sourced from sustainably managed forests, contributing to forest conservation with sustainable consumption.

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

Green Mills and Energy Conservation & Carbon Reduction

APP China aspires to be a modern and green papermaking company, and continuously invests in building high-efficiency and low-emission production bases. In response to China's green development goals and government requirements in recent years, such as "fully implementing green manufacturing", "winning the battle against pollution", and "carbon peak and neutrality", APP China mills have been actively implementing government requirements, intensifying investment in technological upgrading and clean production and accelerating the deployment of carbon management, aiming at going green and low-carbon at full force.

Building Green Mills

The rapid industrial development has also given rise to a series of environmental challenges, such as pollution, climate change, and depletion of resources. The Chinese government started planning for green manufacturing and green factories during the 13th Five-Year Plan period. The Ministry of Industry and Information Technology has since issued a number of plans and projects, such as the *Industrial Green Development Plan (2016-2020)* and the *Green Manufacturing Project Implementation Guide (2016-2020)*, proposing building green factories that feature intensive land use, clean production, waste recycling, and low-carbon energy.

Our mills strongly advocate for clean production and continuously optimize environmental management by instituting management systems for energy, water, emissions, waste, etc. In 2020, Ningbo Asia and Gold East Paper were both named "National Green Factory", and Guangxi Jingui Pulp & Paper was named "Green Factory" in Guangxi Zhuang Autonomous Region, representing new levels of green manufacturing at APP China. We will apply more advanced technologies and equipment for green manufacturing in the future to further improve our environmental performance.

APP China was an early adopter of digital and intelligent transformation. We have nearly completed the construction and restructuring of the digital framework for Digital 1.0 and set up a connected digital management system, leading to much enhanced productivity. Digital transformation has enabled us to track the environmental indicators of production and operations in real time, further streamlining our environmental management.

For our new bases, we strive to institute a holistic intelligent process including manufacturing, service, and management and make them green and low-carbon models integrating technology, advanced manufacturing, and the circular economy. Building on advanced technologies such as 5G, cloud computing, and "Industry 4.0 + Artificial Intelligence", the Sinar Mas Rudong High-Grade Tissue Industrial Base integrates papermaking, processing, and logistics seamlessly through digitized information, modularized management, and automated manufacturing. Everything from suppliers to pulp mills, paper mills, and to customers has gone digital, leading to increased supply chain efficiency and significant reductions in energy and resource consumption.

Concept plan of the Rudong High-Grade Tissue Industrial Base

Automated papermaking workshop

Energy Conservation and Carbon Reduction Management

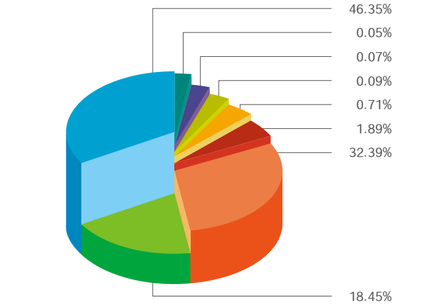
For a traditional manufacturing company, the key to achieving low-carbon green development lies in transforming its energy structure, reducing energy use, improving energy efficiency, and making technological breakthroughs.
APP China attaches great importance to energy management in the manufacturing process. Our mills continuously optimize energy management policies and systems, tap the potential for energy saving and carbon emissions reduction, and strengthen the tracking and assessment of performance targets.

Transforming the energy structure is crucial to attaining the "carbon peak and neutrality" goals. In 2020, thermal power still accounted for nearly 70% of the total power generation in China, which means that changing the fossil fuel-based power energy structure is key to reducing GHG emissions. The power generation units at our mills generally rely on coal-fired power generation, which means that replacing thermal power generation with green power will be an important focus area for us in the future.

We have installed photovoltaic power generation systems at a number of our mills. Taking advantage of its abundant rooftop space, Gold East Paper has built a large-scale photovoltaic power generation demonstration project, serving both its own power need and local power grid. The Phase-I 20-MW and Phase-II 10-MW rooftop photovoltaic power generation projects were completed and started operation in 2016 and 2017 respectively, generating over 25,000 MWh of electricity annually between 2018 and 2020. Ningbo Asia has also started the construction of its own photovoltaic power generation project.

We also plan to ramp up the use of green power at our new bases, with the Rudong Base as a pilot. We are currently designing a green power plan for the Rudong Base, powering its operations mainly with green power such as solar energy. Drawing on the results of the pilot project, we will gradually extend the application of green power to all of our mills with thermal power plants, marking a significant step towards carbon neutrality at APP China.

2020 Energy Mix*



* Data are from the following APP China mills: Gold East Paper, Hainan Jinhai Pulp & Paper, Guangxi Jingui Pulp & Paper, Ningbo Asia, Gold Huasheng, Suzhou Gold Hongye, Hainan Gold Hongye, Hainan Gold Shengpu.
**Biomass fuels include black liquor (accounting for approximately 94%), wood chips, etc.; other energy sources include solar energy, gasoline, and kerosene.

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

Using Biomass Energy

When it was founded in 2003, Hainan Jinhai Pulp & Paper invested close to RMB2 billion in alkali recovery equipment to recover black liquor produced in the pulping process and use it to generate steam and power. Black liquor recovery helps the company save 3,268.67 tons of standard coal per day, which generates 4,081 MWh of power, providing over 90% of the energy use of the pulp mill.

Setting Up Carbon Emissions Management Committee

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

Continuously Promoting Energy Saving and Emissions Reduction

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

In April 2021, Guangxi Jingui Pulp & Paper set up the Energy Conservation and Emissions Reduction Management Committee chaired by its general manager. The committee's responsibilities mainly include formulating energy management strategy, energy consumption targets, and implementation plans for energy saving and emissions reduction, conducting statistics, accounting, and analysis of carbon emissions, electricity, natural gas, and other indicators, evaluating and planning energy-saving projects, and the application of energy-saving technologies.

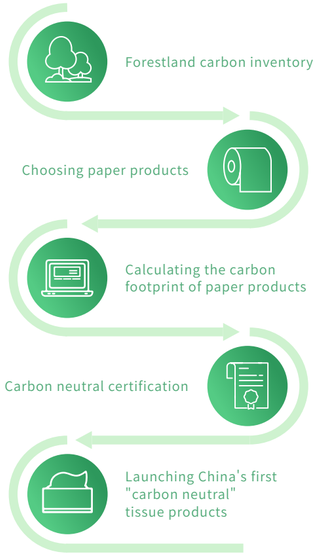
[Tip]

Separating the cellulose from the raw materials by cooking is an important step in the pulping process. It produces a large amount of waste liquid containing lignin and alkali. Lignin can be used as a biomass fuel, and alkali is an indispensable chemical used in the pulping process. The waste liquid is dark in color and smelly so is usually called "black liquor". If directly discharged without being treated, the black liquor will cause serious environmental pollution. The alkali recovery equipment not only helps prevent the pollution caused by black liquor but also leads to reductions in the use of energy and resources.

"Carbon Neutral" Products

APP China released the Group's first collection of "carbon neutral" tissue products in May 2021, including the Three Kingdoms Series Breeze™ Primary-Color IF 3-Layer 120-Piece 24 Packs, Three Kingdoms Series Breeze™ Primary-Color HK 4-Layer 7-Piece 12 Packs, EMPORIA Boxed Facial Tissue 3-Layer 4 Boxes, Breeze™ Alcohol Base Disinfecting Wipes Family Size 40 Wipes, etc.

Ti Group Certification, a third-party agency authorized by the Certification and Accreditation Administration (CNCA), conducted a cradle-to-gate Product Carbon Footprint (PCF) assessment on APP China's tissue products through the three major stages of raw material production, raw material transportation, and manufacturing. It also issued the Product Carbon Footprint Certificate to Gold Hongye. The launch of the "carbon neutral" products is intended to further raise the awareness among consumers about the importance of carbon neutrality and encourage more people to take action to help reduce carbon emissions.



"Carbon neutral" tissue products by Gold Hongye

Looking Forward

As China strives for the "carbon peak and neutrality" goals, a wave of low-carbon, green transformation is set to sweep across all sectors. As an important pillar of the national economy, the papermaking industry faces huge pressures to reduce carbon emissions. While there will be a challenging journey ahead, papermaking companies are also presented with a significant array of opportunities to make a difference and create synergies in the economic, social, environmental, climate, safety, and health fields, among others.

Intelligence and digitization will foster new drivers of growth, making manufacturing much more efficient, greener, and safer. This has been demonstrated by the digital transformation at APP China. In terms of energy structure transformation, there is huge room for the development of renewable energy in China. The replacement of fossil energy with renewable energy will give a major boost to the low-carbon transition of papermaking companies. Our recyclable and degradable "Paper in Place of Plastic" products will help mitigate plastic pollution and reduce the use of fossil fuels. Those products have performed well in the market, motivating us to make further innovations. As was mentioned earlier in this report, APP China has launched a number of "carbon neutral" products and is promoting the issuance of carbon neutrality-themed green bonds. The advancements of those innovative attempts have shown us the value brought about by actions to address climate change.

We are standing at a critical crossroad in history. To protect the planet, we need to act proactively with full dedication. APP China will continue to deepen practices for addressing climate change along the value chain and contribute to the realization of the "carbon peak and neutrality" goals.

* Note: Unless otherwise specified, the APP China performance data included in this report are as of December 31, 2020.

About APP China

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

As a core business sector of Sinar Mas, Asia Pulp & Paper (APP) was set up in 1972 and its line of business ranges from pulp, industrial paper, cultural paper, and tissues to various types of paper products. APP started investing in China in 1992. With two seedling research centers, 17 forestry companies, 271,100 hectares of plantations, and seven major pulp & paper mills, APP China implements green-cycle development based on the concept of "Integration of Plantation-Pulp-Paper", where forests support paper, the paper industry nurtures forests, and forests and paper are integrated.

- Products marketed in over **160** countries/regions across **6** continents
- RMB **73.8** billion in annual sales revenue
- RMB **248** billion in total assets