

Country forges ahead with action on climate

Commitments on issue honored at home and overseas.
Hou Liqiang reports

An intriguing cross-shaped skylight sits atop Hangzhou West Railway Station in the capital of Zhejiang province, giving the structure a truly modern appearance. The skylight, covering 12,500 square meters, allows sunlight to reach a subway station under the 57-meter-high building, significantly reducing the consumption of electricity for lighting.

Although overshadowed by the blue skylight, the black section of the complex's huge roof does much more than just keep the wind and rain out. Comprising 7,540 photovoltaic modules, it can generate more than 2.3 million kilowatt hours of electricity a year, helping avoid 2,300 metric tons of carbon dioxide emissions.

Moreover, thanks to a type of high-tech material, the roof can reflect heat, reducing consumption of electricity in the complex, which has a floor area of 510,000 square meters, equivalent to more than 71 standard soccer pitches.

Designed and built by adopting a low-carbon philosophy, the structure is an official top-level green building.

President Xi Jinping announced in September 2020 that China aims to reach a peak of carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060.

At an international event in 2020 he stressed that China always honors its commitments. "We will take solid steps to implement the targets just announced, and contribute even more to tackling the global climate challenge."

China's actions at home and abroad show that it has kept its word.

Hangzhou West Railway Station, which opened last month, is just one project to hit the headlines as numerous policies are introduced at national and regional level to cope with the global climate crisis.

Climate action has not only been taken in bustling urban centers such as Hangzhou, but also in



A wind farm generates power for grids in Zhoushan, Zhejiang province, on Aug 6. YAO FENG / FOR CHINA DAILY

the country's vast offshore areas, sparsely populated mountainous regions, and even remote deserts. Overseas, pragmatic cooperation programs have been introduced to help other developing countries with their climate endeavors.

Liu Dechun of the National Development and Reform Commission, the country's top economic planner, said: "Over the past two years, under the strong leadership of the Communist Party of China Central Committee with Comrade Xi Jinping at its core, the country has got off to a good start for its dual climate targets thanks to the efforts of different regions and government bodies in pragmatically promoting related work."

Liu cited China's top-level design for these targets, dubbed the "1+N" policy system, as an example of such progress.

The "1" refers to a master guideline issued by the CPC Central Committee and the State Council as an overarching guide for the targets, and the "N" refers to a series of



Hangzhou West Railway Station in Hangzhou, Zhejiang province, on Sept 22.

LI ZHONG / FOR CHINA DAILY

specific plans for various industrial sectors and supporting policies.

"Government bodies have hammered out implementation plans for different sectors and industries, as well as supporting policies," Liu said. "Provincial-level regions have also worked out their implementation plans to reach peak carbon dioxide emissions."

For example, one of the plans

concerns the low-carbon transition in the construction industry, a major carbon dioxide emitter nationwide. The plan, issued by the National Development and Reform Commission and the Ministry of Housing and Urban-Rural Development in July, sets out key specific targets for energy conservation and the use of solar energy generation in buildings.

Energy-saving transformations are expected to be completed in all public buildings in major cities across China by 2030, typically increasing energy efficiency by at least 20 percent.

By 2025 photovoltaic panels will be installed on half of all newly constructed public buildings and factories nationwide, the plan says, and such panels will be added to more existing buildings.

China has also been endeavoring to tap the potential of renewable energy in offshore areas and deserts. For instance, the National Development and Reform Commission said in May that the country plans to build 450 million kW of solar and wind power generation capacity in the Gobi and other desert regions.

As one of the supporting policies for climate action, the People's Bank of China, the central bank, introduced a monetary policy tool late last year to back projects that reduce carbon dioxide emissions. It enables financial institutions to benefit from cheap loans.

Xie Zhenhua, China's special envoy for climate change, said at a recent symposium: "The nation faces huge challenges to realize its climate targets, but systematic low-carbon transition will create huge market and investment opportunities for technological development and innovation."

He stressed that climate actions will also help synergize efforts to bolster the economy, employment, energy development, food production, healthcare and environmental conservation.

China's carbon emission intensity, the amount of carbon dioxide emissions produced per unit of GDP, fell 3.8 percent last year compared with 2020, the Ministry of Ecology and Environment said. "China has essentially reversed the rapid growth of its carbon dioxide emissions," it said.

While promoting climate action at home, China has also announced a series of actions to shoulder its responsibility for building "a global community with a shared future".

In September last year President Xi said China would step up support for other developing countries in advancing green and low-carbon energy, and would not build new coal-fired power projects overseas.

To further promote green development as part of the Belt and Road Initiative, the Ministry of Ecology and Environment and the Ministry of Commerce updated a 2013 guideline earlier this year on environmental protection in overseas operations. Chinese companies were asked to adhere to environmentally friendly approaches for their projects from start to finish.

With climate change one of the major concerns, the document includes environment-related requirements for wide-ranging procedures in companies' overseas operations. For example, before overseas mergers and acquisitions, Chinese companies should assess environmental risks caused by target companies, and greenhouse gas emissions should be given priority in the assessment.

The guideline says priority should be given to renewable energy when Chinese companies develop energy projects.

Prospects for foreign investment look rosy

By LIU ZHIHUA

Halma plc, a company operating in safety, environment and analysis, and healthcare sectors, announced in September its latest investment on an integrated production, research and development base in Shanghai.

Upon completion, the base will be the largest single integrated site and a critical part of the global supply chain for Halma, a FTSE 100 global group whose headquarters is in the UK and that has more than 30 companies operating businesses in China.

That is an example of the bright foreign direct investment outlook for China, especially in the high-tech and services sectors, against a backdrop of numerous external and internal challenges.

"China continues to remain a long-term growth driver for Halma in the next 10 to 15 years," said Aldous Wong, executive board member of Halma and president of Halma Asia Pacific.

"We see China not only as a market, but also a source of innovation. The integrated site will be a valuable step of enhancing our R&D capability and agile supply chain for products that best serve the China and Asia Pacific market."

Experts and business leaders forecast that China will attract more foreign investment in the future as its supersized domestic market continues to expand while its weight in global supply and industrial chains continues to rise



An employee works on the production line of a foreign-funded machinery manufacturer in Suzhou, Jiangsu province. ZHAI HUIYONG / FOR CHINA DAILY

with its steady economic upgrades and high-level opening-up.

That means more of China's development dividends will be shared with foreign companies, which in turn will facilitate cross-border business interaction and China's economic growth, they said.

The actual use of foreign capital in China reached 892.74 billion yuan (\$125.56 billion) in the first eight months of the year, 16.4 percent more than in the corresponding period last year, the Ministry of Commerce said.

Inbound investment used in the services sector rose 8.7 percent year-on-year to 662.13 billion yuan. Growth in the high-tech sector was 33.6 percent.

"Apart from its huge domestic market, China also has a systemic

advantage in the industrial and supply chain system to attract foreign investment, thanks to its stable and comprehensive capabilities in various aspects such as manufacturing, logistics and talent," said Liu Ying, a researcher at the Chongyang Institute for Financial Studies at Renmin University of China in Beijing.

"Despite pressure from anti-globalization sentiments and political considerations, most foreign investors remain committed to the China market because they are aware it will continue to outperform others in providing business opportunities and development dividends."

Ingredient Incorporated, a US global ingredient solutions provider, is one of the multinational companies attaching greater importance to supply chains in the country.

The company recently opened a factory called Shandong South in Dezhou, Shandong province, to double its starch production capacity in China. It now has three manufacturing plants in China.

Jacques Guglielmi, vice-president and general manager of North Asia and Asia-Pacific Commercial at Ingredient, said: "With this investment we are positioned for customer success in a world where supply chain resilience and sustainability are more crucial than ever."

The company has witnessed many innovations in China and expects strong growth in the country within the next five years, he said.

The new factory features advanced digital technologies and automation, and is designed to export products worldwide. It can increase Ingredient's capacity to deliver consistent products and ensure stability of supply in the region, he said.

Trade overcomes stiff headwinds

By ZHONG NAN

Despite headwinds from geopolitical tensions and softer overseas demand, China's foreign trade will grow steadily in the long run as the country takes more steps to ensure the global supply chain operates efficiently and accelerate the industrial upgrading of its export-oriented companies, policy makers and trade watchers say.

The country's foreign trade is stabilizing thanks to its complete and resilient supply chains, new forms of foreign trade, such as cross-border e-commerce, and its participation in various free trade agreements such as the Regional Comprehensive Economic Partnership agreement, they said, noting that the sector will maintain momentum in the years ahead as more policy measures are adopted.

With weakening overseas demand, global inflation, the pandemic and geopolitical tensions affecting China's trade, it is vital to adopt a new round of policies to ease pressure on businesses and stabilize foreign trade and the world's supply chain, said Wang Shouwen, vice-commerce minister and China international trade representative at the Ministry of Commerce.

In addition to helping exporters attend exhibitions in overseas markets, improving support for cross-border e-commerce and improving the logistics system for the next stage, the government introduced a series of support measures to help companies smoothen all links of export and import activities in late September.

The Ministry of Commerce urged

local authorities to strengthen support for foreign trade companies in pandemic prevention and control, energy consumption, labor recruitment and logistics, and also "help them fulfill their contracts on time".

China's foreign trade, with the support of policy measures and the resilience of its industrial chain in the electromechanical industry, rose more than 10 percent year-on-year to 27.3 trillion yuan (\$3.84 trillion) during the first eight months of this year, the General Administration of Customs said.

China has a complete supply chain support system unlike other countries. Backed by its advantage in capacity scale, China can deliver goods quickly and meet overseas customer demand for short-term replenishment of inventory, said Hong Junjie, vice-president of the University of International Business and Economics in Beijing.

Echoing such positive sentiment, Chen Bin, executive vice-president of the China Machinery Industry Federation in Beijing, said the Chinese market is able greatly to cut innovation, logistics, market development and even raw material procurement costs for both domestic and global manufacturers. Its advantages of scale help reduce a crucial part of total manufacturing cost.

Liu Xiangdong, a researcher with the China Center for International Economic Exchanges in Beijing, suggested that China make good use of multilateral and bilateral free trade deals, speed up the building of a network of high-standard free trade areas, and build more stable and resilient industrial and supply chains.

"These efforts will help create more favorable conditions for the high-quality growth of foreign trade."



Visitors check products in the exhibition area of South Korea at the 22nd China International Fair for Investment and Trade in Xiamen, Fujian province, on Sept 8.

LYU MING / CHINA NEWS SERVICE

One of the largest construction projects in the history of mankind, the Great Wall is the epitome of ancient Chinese wisdom and perseverance. It was an awe-inspiring defense strategy that spanned dynasties and remains an eloquent testimony to the edifice of Chinese civilization.

The earliest sections of the Great Wall were built by the ancient Chinese people to keep invaders at bay. After the Warring States Period (475-221 BC), the first emperor of China, Qinshihuang, wiped out six states and established the Qin Dynasty (221-206 BC). He ordered consolidation and extension of the Great Wall to protect his territory from his arch-enemy, the Xiongnu in the north.

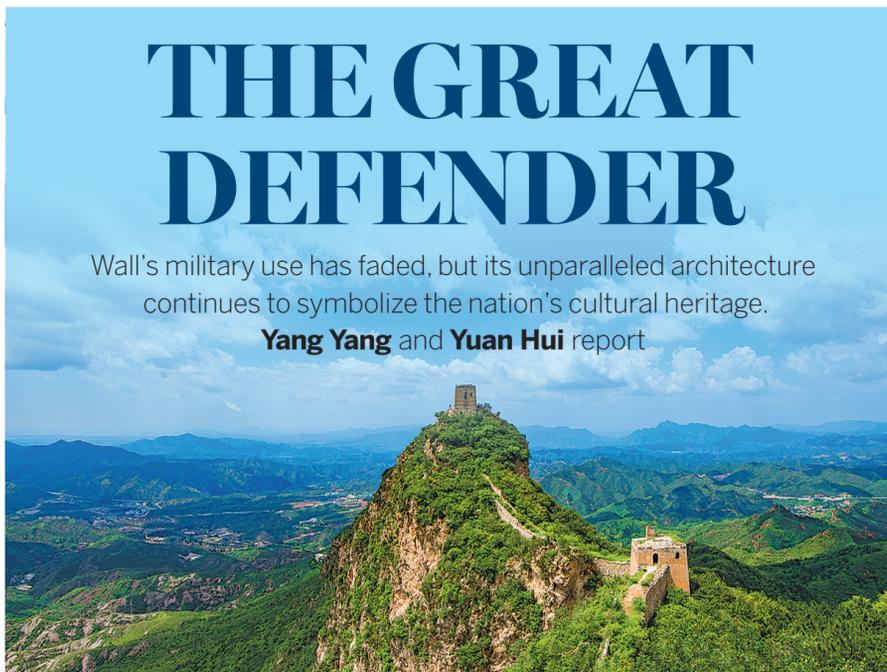
In the 2,000 years that followed, and until the Ming Dynasty (1368-1644), this effective military master plan was applied by rulers of different ethnicities.

From Northeast China's Liaoning province to swathes of arid land in Northwest China's Xinjiang Uygur autonomous region, from Central China's Henan province to the border between China and Mongolia in the north, the incredible fortifications ran through rugged mountains, vast grasslands and remote deserts.

In 1987, the Great Wall was listed as a UNESCO World Heritage Site. More recently, a nationwide survey of different sections of the Great Wall found that its total length of 21,196 kilometers surpassed the distance between the Earth's two poles.

Among the 15 provincial-level administrative regions through which the Great Wall runs, the Inner Mongolia autonomous region boasts the most extensive fortifications, adding up to 7,570 km across 80 banners and counties.

Construction of the bulwark in Inner Mongolia spanned more than 2,000 years, beginning during the Warring States Period, continuing through the Qin, Han (206 BC-AD 220), Liao (916-1125) and Jin (1115-



Above and bottom: The Great Wall's Simatai section in the Miyun district of Beijing. PHOTOS PROVIDED TO CHINA DAILY

THE GREAT DEFENDER

Wall's military use has faded, but its unparalleled architecture continues to symbolize the nation's cultural heritage.

Yang Yang and Yuan Hui report

1234) dynasties, and ending with the Ming Dynasty.

Based on the lengthy time frame, the Great Wall in the autonomous region is divided into 12 types. The most well-known section was built during the Ming Dynasty. It enters Inner Mongolia's Xinghe county from Hebei province and winds its way westward for over 860 km, across the cities of Ulaanqab, Hohhot, Ordos and Wuhai, and Alshaa League.

The earliest section of the Great Wall in the region was built in the 4th century BC by the king of the State of Zhao. "The Great Wall of Zhao was a military installation to defend the agricultural state from nomadic powers in the north," said Zhang Wenping, deputy director of the Inner Mongolia Museum.

“Areas along the Great Wall became a melting pot of cultures and civilizations.”

Zhang Wenping, deputy director of the Inner Mongolia Museum



Part of the Great Wall in Inner Mongolia. LEI QINGHUI / FOR CHINA DAILY

Such coexistence of agrarian dynasties and nomadic powers lasted for more than 2,000 years, Zhang said. "Rulers of the Central China Plains built the Great Wall along the Yanshan and Yinshan mountains. The latter lies in the central part of Inner Mongolia (connecting the Greater Hinggan Mountains on the east and the Helan Mountains on the west), forming a natural boundary between agrarian and nomadic civilizations in ancient times," he added.

The Great Wall helped rulers of the Central China Plains secure a relatively peaceful environment for development of an agricultural civilization. "During some historical periods, when nomadic powers broke through the defense of the Great

Wall and dominated the Central China Plains, the nomadic people became a part of the more influential agricultural civilization," Zhang said.

Building the extensive bulwark, sometimes on dangerous cliffs, and dispatching garrisons cost much money and labor. Bricks, stones and lime were carried along the mountain ridges on shoulders or by using handcars and rolling logs. Sometimes, donkeys and goats were used to ferry raw materials.

Some dynasties employed other strategies. Tang (618-907) rulers, for example, built three cities in the Hetao Plain and stationed troops there as defense against the comparatively weaker nomadic powers. Qing (1644-1911) rulers including Kangxi managed the Mongolian powers with a banner system instead of building a wall extension.

As both troops and commoners ventured into uncharted territory for security and farming purposes, people of different ethnicities exchanged goods and traditions. "In other words, areas along the Great Wall became a melting pot of cultures and civilizations," Zhang said.

However strong it is, the Great Wall, made of stones, lime, bricks, wood or rose willow, still faced wind erosion and human activity over centuries so that in many sections only obscure ruins remain. "This is why we need to capture images for posterity," said 72-year-old Hohhot photographer Lei Qinghui.

Since he retired 10 years ago, Lei has visited 95 percent of the 924-km-long Ming Great Wall in Inner Mongolia and snapped 80,000 pictures. What fascinates him the most are the beacon towers, some of which are 22 meters tall.

The Ming Wall is in relatively better shape than the sections built by other dynasties. Some portions are still magnificent, such as the Badaling section in Beijing, which has hosted many world dignitaries, including US president Richard Nixon in 1972 and the late Queen Elizabeth II in 1986.



Wall riddle refuses to go away

By WANG KAIHAO

The Jiankou section of the Great Wall that ribbons over the tops of jagged green mountains in Huairou district, Beijing, is both perilous and picturesque.

While magnificent landscape makes the over 7-kilometer stretch, built during the final decades of the Ming Dynasty (1368-1644), a magnet for hikers and photographers, narrow ridges and dangerous cliffs ensure that it remains one of the toughest sections to climb.

A hot spot for daredevil adventures not so long ago, Jiankou has drawn public attention in recent years for dogged restoration efforts, currently in the fourth phase, to prevent the towers from crumbling into rubble.

Shang Heng, 38, an associate researcher at the Beijing Archaeological Research Institute, and his colleagues are busy solving the restoration riddle, which seems to require more than deep analysis

of ancient records. Some clues are probably hidden in the Great Wall itself, and the team is leaving no stone unturned to decode them.

Since June, Shang has led a fresh round of archaeological research along the Jiankou section. The project covers an area of 2,530 square meters. "The Great Wall is a cultural icon of China and many think they know all about it. Nothing could be further from the truth," he said.

"Archaeological study in recent years has deepened our understanding. The Great Wall is more than just a fortified boundary. It is a very complex defense installation, which once included towers, ramparts and other fortifications," Shang said.

In Beijing, the Great Wall runs for 520 km and was built through a millennium, from the Northern Qi Dynasty (550-577) to the Ming Dynasty.

According to Shang, the Ming rulers began raising the Wall soon after the dynasty was founded. The



Researchers including Shang Heng (left) inspect the relics found at the Jiankou section of the Great Wall.

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fortifications were reinforced once tension began growing between the dynasty and its northern Mongol neighbors in the 16th century.

Most of the surviving Ming wall sections in Beijing were strengthened during the reigns of Longqing (1567-72) and Wanli (1573-1620). The projects were led by the likes of Zhang Juzheng, the head politician of the imperial government, and the legendary general Qi Jiguang.

Extant historical documentation

on the construction of the Great Wall lacks detail. For instance, the construction time for the Jiankou section remains obscure in records. Hence, researchers have to depend on field work to forecast the time needed for restoration.

Jiankou was not built in a hurry, stone tablets recently unearthed at the site suggest. Inscriptions on one tablet indicate that beacon tower 145 was erected in 1584. Another tablet inscription says the wall connecting towers 143 and 144 was built in 1597.

A tablet found during the third phase of Jiankou restoration in 2020 suggests that beacon tower 127 was built in 1617. Another tablet, recently recovered from the half-collapsed tower 156, shows it was built in 1573.

"Although the Jiankou section is not very long, it took more than 40 years and at least two generations to build," Shang said. "In short, individual fortifications were built before the entire Great Wall. It shows the evolution of a defense system."

"Archaeological study tells us how a section of the Great Wall was built, developed, used, abandoned

and, sometimes, collapsed — almost like a person's life. One gets an impression of the challenges that people faced in creating this architectural wonder."

The Great Wall offers a glimpse into the lives of soldiers stationed on the border centuries ago. On the top of a beacon tower, Shang's team discovered a hearth built to beat harsh winters. It was also used for cooking.

"General Qi's books mention soldiers preparing meals on the Great Wall. Our find corroborates the historical record," he said.

Restoration efforts in olden times were different. Collapsed portions of the Great Wall were treated as rubble and cleared from the site, Shang said. Today, archaeologists are determined to preserve the ruins for future study.

"The ruins are a key source of historical information," Shang said.

Beijing is among the first cities to launch archaeological expeditions at the Ming Dynasty sections of the Great Wall to facilitate restoration work. Earlier this year Shang had led an excavation project on the Dazhuangke section in Yanqing district.

Pioneer keeps injured birds under wing

By HOU LIQIANG

When an injured white crane was sent to Li Chunru in 2015, the little chick was so severely dehydrated it was close to expiring.

Li got to work straight away to bring the injured fledgling back to health, and over the following 24 hours, the dedicated 78-year-old from the village of Dongzili in Jiangxi province was able to snatch Xiao Bai from the jaws of death. Xiao Bai was the name Li gave to his struggling patient. Xiao Bai was not out of the woods yet as the bird was still so weak that it was unable to eat unassisted. For days Li treated his charge, diligently feeding it nutrient-rich corn juice with a pipette.

They gradually developed a bond, Li said, and when he would go out for a walk Xiao Bai would often follow closely. After the bird fully recovered, Li tried unsuccessfully several times to encourage it to return to nature. That was until he followed the suggestions given to him by some local ornithologists that he should offer the bird no food for five straight days.

Xiao Bai is not the only special bird that Li has taken in under his wing to provide treatment to over the years. In total about 2,200 birds have been brought back to health at his rescue center for migratory birds that he set up 10 years ago.

His good deeds in protecting migratory birds won him the honor of being selected as one of China's 100 model environmental protection volunteers this year. The group was jointly selected by the Ministry of Ecology and Environment and the Central Commission for Guiding Ethical and Cultural Progress.

For every bird that Li has taken in, he has kept meticulous notes, filling up 10 big notebooks. His enthusiasm for protecting migratory birds dates back about 40 years.

When his village, located near Poyang Lake, the country's largest freshwater lake, was hit by torrential rain one day in the 1980s, he could also hear loud squawks from birds in distress above the crashing thunder.

In a forest near his home, he found many birds' nests fallen from their trees, and many chicks struggling on the ground amid the downpour. Li eventually took more than 500 injured chicks back home with him.

Though he was only a farmer at the time, he was able to learn a bit from a local medical school in Jiujiang, a city that administers the village of Dongzili. With that knowledge he was able to treat and release about 300 of the chicks.

The incident provoked a passion for bird protection that has never left him.

In 2012, he decided to set up his own rescue center for migratory birds, buying an old house for 30,000 yuan (\$4,300) and spending about 100,000 yuan on renovations to ensure it could shelter birds from the wind and rain.

With no income from the project, he spends about 20,000 yuan a year to keep the rescue center up and running.

Without donations from different sectors of society, the rescue center, which can accommodate more than 200 birds at any one time, would probably have closed.

Today, the center has good medical equipment, he said, thanks to help from a nearby veterinary education and practice center established by the local authorities and the China Agricultural University's College of Veterinary Medicine.

Nine volunteers assist with his work at the rescue center, including a rural medical doctor.

Each day, Li patrols 7.5 kilometers of the shoreline of Poyang Lake. To date, he said, his patrols have covered 126,000 km.



Li Chunru (right) feeds an injured migratory bird at the birds' hospital in Jiujiang, Jiangxi province, in 2019. FU JIANGBIN / FOR CHINA DAILY

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