GRANDE CHINE & MONGOLIE

中国经济分析报告

Février 2019

REVUE DE PRESSE POLE DEVELOPPEMENT DURABLE, ENERGIE, TRANSPORTS

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China will be world's main energy growth driver until 2025, oil giant says (Caixin)

02-15-2019

China will remain the world's main driver of energy consumption and development into the mid-2020s until it is surpassed by India, but it will continue to hold the crown as the world's biggest energy market until 2040, according to a new report.

The country's unprecedented economic transformation has guzzled ever-growing amounts of energy, with China's total consumption of gas, oil, nuclear and renewable energy tripling over the past 20 years, also leading to a huge increase in carbon dioxide emissions.

Yet by 2025, China's neighboring giant is set to overtake it as the main engine of energy development, according to oil giant BP's "Energy Outlook 2019," published this week. The report predicts that Chinese energy demand will grow by 1.1% a year until 2040, down from 5.7% a year in recent history.

"Some of this decline stems from policy efforts to improve efficiency of existing industries," the report said, and "reflects the continuing transition of the Chinese economy away from energy-intensive industrial sectors towards less intensive service and consumer-facing sectors."

The prediction is based on a middle ground "Evolving Transition" scenario, under which policymakers continue to reform energy markets and make energy-related decisions at the same pace as they have in recent history.

This comes as the government attempts to reduce excess capacity in highly polluting energy-intensive industries such as aluminum, steel production and lower-end manufacturing, and push into more value-added manufacturing such as advanced robotics and chip development.

This year's report also substantially revises down BP's previous prediction for China's reliance on coal power due to the unexpected speed at which China has been moving to reduce coal's role in the country's energy mix.

The report also expects coals' share in China's energy mix to fall from 60% at present levels to around 35% in 2040, largely thanks to the continued development of renewable energy and gas power.

Yet while Beijing is turning heavily towards gas in order to reduce pollution from coal plants, BP predicts that 40% of gas consumption will come from imports, either from pipelines from Russia and central Asia, or shipped in liquefied natural gas form. This will occur despite a major push to develop energy resources in the country.

China's natural gas imports hit a record high for January, increasing 26.8% year-on-year to 9.81 million tons, the General Administration of Customs said on Thursday. Last year, China's natural gas consumption ballooned by 16.6% to 276.6 billion cubic meters (9.77 trillion cubic feet), with imported gas making up the lion's share of growth as demand races ahead of domestic production.

The country is also making efforts to reduce the carbon dioxide emissions produced by its substantial coal-fired power capacity, with state planner the National Development and Reform Commission announcing that 75% of coal plants have been fitted with "ultra-low emission" technology this week.

Global coal demand to be stable through 2023: IEA (Xinhua)

02-15-2019

Global coal demand in the next five years is set to be stable, with declines in the United States and Europe offset by growth in India and other Asian countries, a report showed Monday.

In terms of the total energy mix, coal's contribution will decline from 27 percent to 25 percent, mainly due to growth of renewables and natural gas, according to a report released by the International Energy Agency (IEA) at a press conference in Beijing.

China will see a gradual decline in demand of less than 1 percent annually on average, according to the IEA report.

So far, 70 percent of China's coal power generators have realized ultra-low emissions, said Liu Baohua, deputy head of National Energy Administration, at the press conference.

China has established the world's largest clean coal power supply system, according to Liu.

The press conference was co-sponsored by the IEA and China Energy Group, and was organized by China Shenhua Energy Company Limited.

Exclusive: China's Dalian port bans Australian coal imports, sets 2019 quota: source (Reuters)

02-21-2019

Customs at China's northern port of Dalian has banned imports of Australian coal and will cap overall coal imports from all sources to the end of 2019 at 12 million tonnes, an official at Dalian Port Group told Reuters on Thursday.

The indefinite ban on imports from top supplier Australia, effective since the start of February, comes as major ports elsewhere in China prolong clearing times for Australian coal to at least 40 days.

Australia's ties with China have deteriorated since 2017, when Canberra accused China of meddling in its domestic affairs. Tensions rose again last month after Australia rescinded the visa of a prominent Chinese businessman, just months after barring Chinese telecoms giant Huawei Technologies from supplying equipment to its 5G broadband network.

Coal is Australia's biggest export earner and the Australian dollar tumbled more than 1 percent to as low as $0.7086 on fears the Dalian ban would hurt its already slowing economy.

Asked if the ban was related to bilateral tensions, Geng Shuang, a spokesman at China's foreign ministry, told reporters on Thursday that customs were inspecting and testing coal imports for safety and quality.

"The goals are to better safeguard the legal rights and interests of Chinese importers and to protect the environment," Geng said, adding that the move was "completely normal".

Imports through Dalian comprise only 1.8 percent of Australia's total coal exports, but if the reported ban reflects a more significant deterioration in the trade relationship between Australia and China, then it could have a broader impact, said Ivan Colhoun, chief economist of markets at National Australia Bank, in a note on Thursday.

Five harbors overseen by Dalian customs - Dalian, Bayuquan, Panjin, Dandong and Beiliang - will not allow Australian coal to clear through customs, said the Dalian port official. Coal imports from Russia and Indonesia will not be affected.

“I’m aware of unconfirmed and unsourced media reports and have asked our Ambassador in Beijing to urgently clarify their veracity,” said Australia’s Minister for Trade Simon Birmingham.

“We continue to engage closely with industry on matters of market access ... China is a valued partner of Australia and we trust that our free trade agreement commitments to each other will continue to be honored.”

Birmingham also said that Australia’s exports of coal to China in the fourth quarter of 2018 were higher in volume and value than in the same period in 2017.

The Dalian ports handled about 14 million tonnes of coal last year, half of which was from Australia, said Gu Meng, an analyst at Orient Futures.

The Dalian official declined to be named due to the sensitivity of the matter. Neither Dalian customs nor the national General Administration of Customs immediately responded to a request for comment.

The Dalian official said he was not given a reason for the ban on Australian imports.

Australia’s New Hope Coal declined to comment. Yancoal said it will not be impacted by the Dalian ban as it does not ship to the port. Glencore directed queries to the Minerals Council of Australia, which declined to comment.

COAL RESTRICTIONS

Beijing has been trying to restrict imports of coal more generally to support domestic prices.

A Beijing-based coal trader said Dalian had cleared about 6 million tonnes of coal in January that had been delayed since late 2018 as China slowed customs clearance to curb imports.

The delayed cargoes would not be included in the 12 million tonnes under the 2019 quota, the trader said, citing customs information.

Dalian handles both thermal and coking coal imports but the clamp down is expected to have a bigger impact on coking coal, used in steelmaking, rather than on thermal coal, used to generate electricity.

Dalian customs accounted for 7 percent of China’s total coal imports in 2018, according to a report from consultancy Wood Mackenzie. A possible China-wide ban could cause spiking metallurgical coal prices and decouple seaborne coal prices from domestic prices, according to Robin Griffin, Wood Mackenzie’s research director.

Spot Australian coking coal at the northern Chinese port of Jingtang is 200 yuan ($29.85) cheaper per tonne than domestic prices, according to data tracked by Orient Futures. The price difference for thermal coal is about the same.

“It is hard to find a replacement for Australian coking coal since its sulfur content is very low,” said a purchasing manager at a large plant in Hebei province that produces coke, used in the steelmaking process, from coking coal.

"Current inventory at ports should be sufficient to support usage for one or two months, but it could be a problem in the long term, especially if other ports also tighten imports," he said, declining to be named due to company policy.

The most-active coking coal contract for May delivery rose more than 2 percent during morning trade on Thursday.

"(The restriction) will further squeeze profit margins at steel mills after Vale's accident has already driven up iron ore prices," said Gu at Orient Futures.

China bought 28.26 million tonnes of coking coal from Australia in 2018, accounting for 43.5 percent of the country's total imports of the fuel, customs data showed.

China's says Australian coal imports remain normal, Canberra seeks to calm investors (Reuters)

02-22-2019

China's foreign ministry said on Friday that Australian coal imports to the country continue as normal, although it added customs authorities had stepped up environment and safety checks on foreign cargoes.

The statement came after sources at Chinese ports told Reuters Australian coal imports are facing longer waiting times to clear customs than other supplies, and the northern port of Dalian was halting Australian coal shipments.

"At present, customs throughout the country are accepting as normal customs declarations for imported coal, including from Australia," said Geng Shuang, spokesman for the Ministry of Foreign Affairs in China, during a press briefing.

But Geng added the customs authorities in China have stepped up environment and safety checks on foreign cargoes, to "protect the rights of Chinese importing companies and the environment".

Overseas coal supplies into China, especially from Australia, have slowed for weeks, causing shipping backlogs outside key Chinese ports.

The Australian currency fell more than 1 percent to a 10-day low of $0.7070 on Thursday after Reuters reported that customs at Dalian had banned imports of Australia's biggest export earner since the start of February.

Seeking to ease fears of a further rift in ties with China, Australia's Prime Minister Scott Morrison said on Friday there was nothing to suggest the move was out of the ordinary. The country has asked its ambassador to China to seek urgent clarification.

"People should be careful about leaping to conclusions about this. This is not the first time that on occasion local ports make decisions about these matters," Morrison told reporters in Auckland.

China is the largest buyer of Australian coal, taking 89 million tonnes last year, worth A$15 billion ($10.7 billion), according to data from the Australian Bureau of Statistics.

Dalian's move came after major ports elsewhere in China prolonged clearing times for Australian coal and stoked concerns that Beijing is using trade to punish Australia amid a recent souring of bilateral ties.

Tensions arose in 2017 when Canberra accused Beijing of meddling in its domestic affairs, and the relationship suffered another setback last year when Australia banned China's Huawei from its 5G broadband network.

Australia's Minister for Trade, Simon Birmingham, said delays to exports of coal to China were caused by import quotas.

"We have no basis to believe that there is a ban on Australian coal exports into China, or into any part of China," he told reporters.

POLICY "VERY FUZZY"

The move is not the first time China has restricted coal imports. The country has periodically imposed customs delays and quality controls over the past several years, juggling efforts to curb smog, cut coal use, balance imports against domestic production and protect jobs.

"The potential political nature of this targeted ban after a number of bilateral issues have surfaced ... may be reminiscent of the impediments to Mongolia's coal exports to China after the Dalai Lama visit in 2016," U.S. bank Citi said on Friday in a note.

Dalian will ban imports of all Australian coal indefinitely and limit coal imports from all sources to 12 million tonnes in 2019, a port official told Reuters on Thursday.

A manager at Beibu Gulf Port Group, which operates the port of Fangchenggang and two other harbors in the southern region of Guangxi, said on Friday the port had no ban on Australian coal.

"For now, Australian coal can clear customs," he said, declining to be named because of company policy.

However, Australian coal, which accounts for more than half of the port's 18 million tonnes of imports each year, was taking longer to clear customs, he said, adding that official policy on product from Australia was "very fuzzy".

An trader based in Guangzhou also said customs clearance for Australian coal imports is taking more than 40 days, much longer compared to other countries.

A purchasing manager at a large steel mill in eastern China said his firm was not concerned about their supply of coking coal, a type of coal used in steelmaking, given sufficient inventory at ports, and did not expect the restriction to spread.

The ban at Dalian was due to relatively weak coal demand in northeastern China, but broadening the restriction to eastern and southern China where demand is firmer would affect downstream users like utilities and steel mills, the manager said.

Total imported coking coal inventory at five major Chinese ports stood at 3.02 million tonnes as of Feb. 22, up 180,000 tonnes from last week, according to Mysteel consultancy.

To make up for any shortfall in Australian coal for power generation, known as thermal coal, traders said there was ample domestic supply, and also the option to import from Mongolia and Indonesia.

SHARES FALL

Shares in Australian coal miners fell on Friday amid broad weakness in the resources sector, but losses eased in afternoon trade.

Stanmore Coal slipped more than 7 percent before closing down 2.1 percent. New Hope Corp fell 3.6 percent and Yancoal fell 3 percent, despite saying it was not directly affected.

The Australian dollar steadied, boosted by upbeat central bank comments on the economy and government comments on the ban, but had still not recouped its losses from Thursday.

Three-quarters of China's coal plants fitted with emission-cutting tech (Caixin)

02-13-2019

While China may be the belching king of coal power, it at least has the cleanest coal plants, the government said this week, announcing that three-quarters of its coal power plants have been fitted with emission-reducing technology.

Cheap coal-fired power plants fueled by abundant domestic resources propelled China's unprecedented economic transformation over the past four decades, though it also caused major environmental and ecological damage along the way. The government has moved to clean up its act in the last five years, especially around smog-choked northern cities.

This week it was able to celebrate another milestone in its clean-up effort. At least 700 gigawatts (GW) of power plants have been fitted with "ultra-low emission" technology, according (link in Chinese) to state news outlet Xinhua. This means the country has more than achieved its aim of fitting 580 GW-worth of plants with the technology two years ahead of schedule.

"At present, the emission levels of soot, sulfur dioxide and nitrogen oxides in coal-fired power plants in China are close to those of gas-fired power plants, which are stricter than the emission requirements of developed countries by more than 50%," Zhu Fahua, the president of government think tank the State Power Environmental Protection Research Institute of China, explained in the Xinhua report.

But it is not just China touting its success in improving coal-fired plant efficiency. Melanie Hart of U.S. think tank the Center for American Progress recently wrote in a presentation, "If current U.S. regulatory trends continue, by 2020, every coal plant operating in the United States would be illegal to operate in China."

The news received a cautious welcome from Lauri Myllyvirta, a senior analyst with Greenpeace's Global Air Pollution Unit. "Our main concern is that many of the plants that have spent a lot of money on retrofits should have been retired, given China's overcapacity in coal-fired power," he said. "But for plants that keep running, applying strict emissions norms does make a difference [in reducing emissions]."

China continues to have significant overcapacity in power generation, largely due to inefficiencies across the electric grid. This leads to the continued use of older plants that would be redundant if China's vast renewables capacity was better utilized, analysts say.

More coal capacity continues to come online, with Reuters reporting this month that more than $6.64 billion worth of new coal-mining projects were approved in 2018, a substantial increase on approvals in 2017. China also accounted for 11% to 24% of the global increase in methane gas emissions between 2010 and 2015, said a recent report published in Nature Communications.

Yet the push toward greener energy appears to be making headway overall. Last month Zhang Jianhua, the director of the National Energy Administration, told an audience at the annual gathering of elites in Davos, Switzerland, that coal consumption accounted for 60% of China's total energy consumption in 2018, down 9.5 percentage points since 2012.

Opinion: even China may not be able to soak up all 2019's new LNG: Russell (Reuters)
02-28-2019

China will announce a plan this year to form a national oil and gas pipeline group combining the long-distance pipeline assets of the country's state-owned energy companies, in the sector's largest reshuffle in two decades, said three persons with knowledge of the plan.

The change is designed to open access to China's pipeline infrastructure to private and foreign energy producers as a way to spur oil and gas exploration. The open pipeline network will allow companies to focus on exploration without any additional costs to move the fuel to market.

China's economic planner, the National Development and Reform Commission (NDRC), approved the plan for the group last month, including details of assets to be incorporated, and final approval from China's State Council is still pending, said one of the sources.

The initiative is considered the biggest energy market reshuffle since 1998 when Beijing restructured the entire sector and established China Petroleum and Chemical Corp (Sinopec) and PetroChina.

The new entity will effectively become a fourth state-controlled energy company next to Sinopec, China National Petroleum Corp, the parent company of PetroChina, and China National Offshore Oil Corp.

It is unclear when Beijing will officially announce the plan or when the new firm will be launched, but companies have been making preparations for the move, said a second source, an executive at a state-owned oil company. That includes PetroChina relocating its pipeline segment's management team to a separate office tower in Beijing, the source said.

The sources declined to be named due to the sensitive nature of the matter.

The NDRC did not respond to Reuters request for comment.

"It's the largest-ever step in (the oil and gas) sector reform. At the core of it, it's about removing a key bottleneck in the market and allowing producers and consumers equal access to infrastructures," said Dong Xiucheng, director of energy policy research at University of International Business and Economics in Beijing.

China is the world's second-largest oil consumer and third-largest natural gas user, but its 133,000-km (82,600 miles) long-distance oil and gas pipeline network is less than one- fifth the size of the system in the United States, the world's biggest oil and gas consumer.

The plan will mainly impact Petrochina, which controls 70 percent of China's oil pipelines and nearly 80 percent of the major gas pipelines. In 2017, the company reported monthly revenue of 3.6 billion ($537.93 million) yuan from its main pipeline operations.

Beijing started considering reforming the pipeline sector nearly a decade ago but NDRC finally formulated plans in 2017 while examining China's natural gas system as part of its plan to replace coal with gas.

"That is why it's taking so long to happen. The reform means the big oil companies losing part of their competitive edge," said Lin Boqiang, the Director of the Energy Economics Institute at Xiamen University who is also an independent member of PetroChina's board of directors.

The new reform plan also includes crude oil and refined product pipelines, said two of the sources. This will address access concerns for China's independent oil refiners and fuel dealers.

It will also set the stage for Beijing to reform Sinopec, PetroChina and CNOOC's dominance over the exploration sector and let independents explore for oil and gas, said Lin.

Petrochina said in an email that it hopes the reform process will be carried out in "accordance with the principle of marketization" to address its concern about the valuation of its assets that will moved to the new company.

County stops shale gas development after three earthquakes (China Daily)

02-25-2019

Rongxian county in Sichuan province planned to stop local shale gas development on Monday, said county magistrate Zheng Xiaoqing.

He made the announcement in the wake of public outcry that three earthquakes measuring at more than magnitude 4.0, had occurred in the county within two days. There was speculation that local shale gas development might be related to the earthquakes.

Monday's magnitude 4.9 quake took place at 1:15 pm and killed two people. Its epicenter was monitored at 29.48 degrees north latitude and 104.49 degrees east longitude at a depth of 5 km, the China Earthquake Networks Center said.

At 8:40 am on Sunday, a magnitude 4.3 quake jolted Rongxian at a depth of 5 km. Three hours and two minutes earlier, a magnitude 4.7 quake had taken place in the county at a depth of 5 km.

All three quakes were at a depth of 5 km and human industrial use could not reach that depth, said Du Fang, chief of the Sichuan Provincial Earthquake Research Center.

The seismic waves from the quakes show that they are related to structural earthquakes, he said.

Human activities are concentrated in the earth's shallow crust while earthquakes often occur deep in the crust. Whether earthquakes are related to human industrial utilization needs further study.

Alaska natural gas export deal still on table (China Daily)

02-23-2019

The conditions of an agreement that give three Chinese companies 75 percent outtake rights to a $43 billion Alaska liquefied natural gas project are still being determined, project insiders said.

Timothy Fitzpatrick, vice-president of external affairs and government relations at Alaska Gasline Development Corp, said the two sides are still negotiating the terms and framework of Chinese companies' investment in the project.

But he said AGDC is very interested in working with its Chinese partners and helping China meets its clean energy goal.

On Nov 9, 2017, senior executives from Sinopec, the Bank of China, and CIC Capital, a subsidiary of China Investment Corp, signed a nonbinding joint development agreement with AGDC and then-Alaska governor Bill Walker.

The deal included 75 percent of Alaska LNG disposition in China and 75 percent financing from the Chinese companies. But after Walker, an independent who was formerly a Republican, announced in October that he wouldn't seek re-election, Alaska voters elected Republican Mike Dunleavy as the new governor.

Dunleavy, who questioned the economic viability of the state's participation and leadership in the megaproject, had appointed new leadership at AGDC after taking over in December.

The parties were originally scheduled to sign final agreements by December, but they agreed to extend the negotiation period for another six months, due to the extra time needed to go over the complex deal, project leaders said.

However, leaders at the state corporation said the deal with the Chinese partners remained largely unchanged despite trade tension and leadership changes at both the state and organization levels.

"We are still pursuing an agreement with Sinopec being an off-taker of LNG of up to 75 percent of the output, consideration of equity for CIC, and possibly Sinopec in the project's equity ownership, and the bank financing by Bank of China," said Lieza Wilcox, vice-president, commercial and economics, at AGDC.

Wilcox said the state corporation and the Chinese consortium signed a supplemental joint development agreement last September, which reaffirms the goals of the agreement and added a few minor changes.

An executive from Sinopec said the company is carrying out a due diligence technical investigation and economic evaluation of the project. He said he was interested in hearing Dunleavy's thoughts on this project.

"Since coming into office, the governor and his team have been conducting a thorough review on this multibillion-dollar project," Dunleavy's press secretary Matthew N. Shuckerow said in an email to China Daily. "Alaska has tremendous LNG potential, but it must be economical if we are going to bring it to market.

"This is a stage gate review process, which will dictate which decisions will be made moving forward," said Shuckerow, adding that "there has been no material change to contract except a recent extension through July".

Wilcox said the state will be evaluating the potential financial impact of the project on its overall economy, including potential ownership, tax impact, upstream oil and gas effects.

She said a key structural change with the new administration is that private companies will play a significant role in the project.

Currently, the project is 100 percent owned by Alaska, Fitzpatrick said, but the state is looking for potential partners.

In a speech to the Alaska State Legislature on Tuesday, US Senator Lisa Murkowski voiced her support for the project.

"As chairman of the Energy and Natural Resources Committee, I'm also pushing to keep regulatory approval for our gasoline project on track. And this means filling the vacancies on the Federal Energy Regulatory Commission and ensuring that there are sufficient personnel … you have to have the bodies in place to process an application that is as massive as what has been presented," she said.

The project would include an 800-mile pipe to transport natural gas from North Slope to Nikiski, located on Alaska's Kenai Peninsula, for export to the international market.

It will provide "long-term and affordable gas supply" for Alaskan customers, as well as capitalize on the state's natural gas reserves by selling it to the Asian markets.

Natural gas is the primary fuel for generating electricity locally and for heating Anchorage.

According to the US Energy Information Administration, Alaskans used more than 85 billion cubic feet of natural gas in 2011, which accounted for 63 percent of power generation in the US and 53 percent of heating oil.

The North Slope fields are expected to deliver on average about 3.5 billion cubic feet of gas per day (Bcf/d).

China's concern for its environment has made it shift rapidly from coal to natural gas, a cleaner energy source that emits 50 to 60 percent less carbon dioxide in combustion than coal. The change has resulted in China's importing more natural gas.

According to the United States Energy Information Administration, China passed South Korea as the world's second-largest LNG importer in 2017, importing 5 Bcf/d, (141 million cubic meters per day), exceeded only by Japan's imports of 11 Bcf/d (311 million cubic meter per day).

China's LNG imports jumped by 46 percent in 2017. However, China's domestic gas storage capacity is estimated at just 3 percent of total natural gas consumption. Its seasonal peak is met mostly with LNG imports or by pipeline shipments from Central Asia.

"Alaska is rich in natural resources, including natural gas. … China has an increased want for clean energy like natural gas," said Wang Donghua, Chinese consul general in San Francisco.

Wang said China imported 94 billion cubic meters of natural gas from other countries in 2017.

"I think both China and Alaska could benefit more if we strengthen the cooperation by fully liberating our respective advantages," he said.

Nucléaire

Work on nuclear power plant to start in Fujian (China Daily)

02-26-2019

Construction of China's first nuclear power plant this year is scheduled to start in Zhangzhou, Fujian province, with work on unit 1 starting on June 30, according to a statement released on the website of the city's ecological environment bureau.

As each unit has an average construction period of 60 months and there will be a 10-month interval between the two units, the first one is forecast to become commercially operational in 2024, followed by the second unit in 2025.

China has pledged to raise its total installed nuclear capacity to 58 gigawatts by 2020. It also aims to have another 30 gW under construction by the end of 2020.

The nation had 45.9 gW in operation as of January 2019 with another 12.2 gW under construction. There is another 29.1 gW mostly ready for construction but awaiting final approval from the central government, according to Bloomberg Intelligence. Work on nuclear power plant to start in Fujian.

According to Joseph Jacobelli, a senior analyst of Asian utilities at Bloomberg Intelligence, China may miss its 2020 nuclear generation goal, but only by one or two years.

"Plans call for 58 gW in operational capacity and 30 gW under construction by then might not be reached, chiefly because of slow approvals as well as delays in the commissioning of new generation reactors such as Taishan Unit 1, but China's target should be reached by 2021 or 2022," he wrote in a research note.

"But as nuclear energy will be a crucial tool to mitigate greenhouse gases and shift primary energy consumption away from polluting coal in China, much of China's strong nuclear power capacity growth will stem from forceful environment-related policy support and the nation views nuclear energy as a key form of clean energy," he wrote.

According to the website of Zhangzhou's ecological environment bureau, the city's nuclear project will use the domestically developed third-generation Hualong One reactor.

Jacobelli said he expected China to lead a surge in nuclear energy growth in Asia in the next five to 10 years.

"Nuclear power in China will rise exponentially in the next few decades and provide key developers with a strong growth pipeline. The energy source is a critical government tool to cut emissions and an essential one for the replacement of coal-fired plants," he said.

China's fourth Westinghouse-designed nuclear reactor begins operations (Reuters)

02-11-2019

Not even China's voracious appetite for liquefied natural gas may be enough to absorb the additional supplies hitting the market this year, with the price of the super-chilled fuel potentially a casualty.

While China's LNG imports got off to a rollicking start in 2019, it's unlikely that will match the 41-percent growth experienced in 2018.

Imports were 6.58 million tonnes in January, a record-high and up 27.8 percent from the same month in 2018, according to customs data released on Feb. 23.

But the sharp rise in January imports is likely to unwind in coming months as much of the LNG is being used in coal-to-natural gas switching projects that run out of steam as the northern winter ends.

Some 3 million Chinese homes were switching from coal heating to natural gas this winter, boosting demand for LNG. However, this demand drops sharply after the winter heating period ends on March 15.

China will likely increase its LNG demand by about 8 million tonnes in 2019, Nicholas Browne, director of Asia gas and LNG at consultants Wood Mackenzie, told the LNGgc Asia conference in Singapore this week.

While other analysts at the event were somewhat more optimistic about the prospect for increased demand from China, none were forecasting that the 15.7 million tonne jump seen in 2018 from 2017 would be repeated.

The problem for the LNG market is that it's likely that more than 30 million tonnes of additional LNG supply will be available in 2019.

Poten & Partners head of business intelligence Jason Feer told the LNGgc Asia event that his company expected 33 million tonnes of new supply in 2019, but only 16 million tonnes of extra demand.

Wood Mackenzie's Browne said a total of about 70 million tonnes of new LNG would reach the market this year and next, driven by the full ramp-up of the last of the eight new Australian plants and by the start of new U.S. projects, including Kinder Morgan's Elba Island and Sempra's Cameron venture.

LONG-TERM GOOD, SHORT-TERM BAD

While the demand outlook over the next few years suggests that the new LNG supply will eventually be absorbed, the problem for the industry is 2019, and possibly part of 2020.

While there is some potential for India and other emerging buyers in Asia to take more of the fuel, the outlook for traditional big buyers Japan and South Korea is more muted.

Increasing nuclear generation in Japan is likely to result in lower LNG imports, although it will keep its status as the top buyer for several years yet.

Energy policy in South Korea is now heavily tilted toward renewables, and the country has already lost second spot among LNG importers to a surging China.

Overall, it seems unlikely that Asia will be able to absorb all the new LNG capacity coming to the market this year.

It's possible that demand could be boosted if prices weaken further, but there are also limitations to how much extra the major importers would want to buy, especially in the weak demand periods between the winter and summer peaks.

The spot price of LNG in Asia LNG-AS has dropped to $6.20 per million British thermal units (mmBtu), the lowest in 17 months and down 47 percent from the 2018 peak of $11.60 in June.

If low prices fail to spark a significant uptick in Asian demand, it makes it likely that cargoes will have to be diverted to Europe, especially those from major exporters Qatar and the United States.

In Europe, LNG can displace Russian pipeline gas, if the price is right, and it may just be getting low enough.

Russia's Gazprom expects to receive the equivalent of about $6.40 per mmBtu for piped natural gas to Europe in 2019.

This means that U.S. and Qatari producers are just as likely to ship to Europe as to Asia, especially if Gazprom chooses not to compete on price and rather gives up market share, most likely taking the view that the LNG oversupply is a temporary phenomenon.

Energies renouvelables

Fading solar subsidies scorch manufacturer's bottom lines (Caixin)

02-14-2019

Even as industry experts forecast brighter times for China's solar industry, several panel producers have released profit previews for last year that reveal bottom lines were badly burned by the sudden loss of industry subsidies.

Generous government subsidies designed to develop China's already globally-dominant solar industry continued to drive strong growth in the first half of 2018, but thunderclouds appeared on May 31, when the

government unexpectedly pulled the plug on further support. This threw several solar-panel producers into disarray, and cast a shadow over the industry's prospects.

Annual result previews of several companies released in the last month now give a fuller picture of how the removal of subsidies, known as the "531" policy, burned panel producers. The Shanghai-listed Longi Green Energy Technology Co. Ltd. said in January it expects net profit attributable to shareholders to be between 2.44 billion yuan ($360.3 million) and 2.54 billion yuan, a year-on-year fall of at least 26.58%.

Similarly, solar-panel manufacturer Risen Energy Co. Ltd. said it expects net profits attributable to shareholders to fall to between 250 million yuan and 350 million yuan, down by as much as 61.52% year-on-year. The same goes for Sungrow Power Supply Co Ltd., down at least 17%, and Jolywood Sunwatt Co. Ltd., down 41.99% year-on-year.

While several Chinese media outlets claimed that the China Photovoltaic Industry Association said 60% of Chinese solar panel companies had worse results in 2018 compared to a year earlier, the association told Caixin this was untrue.

Several of China's largest solar panel producers have not yet published reports for 2018. However, five analysts polled by Yahoo Finance believe that Canadian Solar Inc., the world's sixth biggest solar panel producer, will see earnings fall by 32% compared to a year earlier. On the other hand, the world's biggest solar panel producer — JinkoSolar Holding Co. Ltd. — is expected to see earnings triple in 2018, which perhaps reflects its dominance in global exports.

Despite a tough year in 2018 experts anticipate brighter prospects for solar-panel makers and solar-power producers in 2019. The country's top economic planner, the National Development and Reform Commission, is launching a major audit of the country's power grid in a move that is likely to help pass the lower cost of renewable energy transmission on to consumers.

The government is also promoting subsidy-free renewable projects as part of a pilot program that should cut the costs for buyers of solar power, increasing the industry's competitiveness and therefore increasing demand for solar panels.

"From now on, grid parity [pricing with other forms of power generation] will become the key driver of the sector globally, rather than any government subsidy," said Alex Liu, an equity research director focusing on renewables at UBS AG. "Therefore, the change of subsidies in the future won't impact the sector as much as it used to be. Yes, those companies with larger global exposures will be better positioned in 2019."

Refined stubble could be coal substitute, team finds (China Daily)

02-27-2019

Members of a Chinese research team said they have invented a new technology that could transform largely useless farm stubble and straw into fuel that's just as efficient and environmentally friendly as natural gas but at a much lower cost.

The invention, which the team believes is like finding a virtually inexhaustible energy source, could contribute to China's air pollution control campaign. But the technology has yet to be marketed, hindered mainly by the lack of national standards.

Highly efficient combustion can occur in a dust explosion. Based on this theory, the team - from Huazhong University of Science and Technology in Wuhan, Hubei province - created a machine in 2004 to break stubble and straw into particles with a diameter of less than 250 microns - a potentially volatile size.

Headed by environmental science and engineering professor Xiao Bo, the team developed a method in follow-up research to amplify the energy of combustion of the micronized stubble, raising the temperature above 1,450 C.

The team called the micronized fuel xiao and claims it's a sustainable green energy that could replace coal in industrial applications, though it has only been tried so far in industrial boilers.

The technology could be promoted on a large scale, considering the low cost of remolding traditional boilers. The new fuel is also cost-efficient and environmentally friendly, the team said.

The heat generated by 2 kilograms of xiao costing 1.8 yuan (0.27 cents) is equivalent to that generated by 1 cubic meter of industrial-grade natural gas costing more than 3 yuan, said Xiao, the professor.

The price of the new energy could be further reduced through mass production, he said, adding that a combustion temperature of more than 1,450 C means it could replace 60 percent of the solid fuel that is currently consumed in the country.

According to the team, China's 600,000-plus coal-fueled boilers consumed 700 million metric tons of coal. If 10 percent of the boilers shifted to xiao as an energy source, the country would see coal consumption decrease by 40 million tons, and more than 100 million tons of agricultural and forest waste would be put to good use every year.

About 300,000 yuan would be required to convert a coal-fueled boiler that generates 4 metric tons of steam per hour into a xiao-fueled one.

Referring to the new material a "solid natural gas fuel", Xiao added that the total combustion of xiao means there will be no emissions of residual polluting substances, such as volatile organic compounds. The residue of any leftover inorganic substances would be collected, he said.

But the lack of a national standard for fuels like xiao has hindered its adoption, he said. Haoweijia, a food factory in Shenzhen, Guangdong province, for example, used a xiao-fueled boiler for 19 months starting in February 2017 before local authorities ordered its suspension over the lack of standards.

According to a statement from the company, it consumed 3 metric tons of wood per day to fuel its boiler before it turned to xiao. It consumed just 1.7 metric tons of xiao per day after converting its boiler, resulting in savings equivalent to 600,000 yuan annually.

Xiao said he is now turning to a national burner test center for help in drafting an operating specification for xiao-fueled boilers, hoping to remove any regulatory obstacles.

Electricité, réseau électrique

Scientists envision solar power station in space (China Daily)

02-27-2018

Chinese scientists are exploring the possibility of putting in place a space-based solar power station, a futuristic approach expected to reduce pollution back on Earth and mitigate energy shortfalls.

Xie Gengxin, deputy head of the Chongqing Collaborative Innovation Research Institute for Civil-Military Integration in Southwestern China, said researchers from Chongqing University, the China Academy of Space Technology's Xi'an Branch in Shaanxi province, and Xidian University-also in Xi'an-have begun

designs on a testing facility in Chongqing's Bishan district that will be used to test the theoretical viability of a space-based solar power station.

The test facility will occupy 13.3 hectares and demonstrate space transmission technologies while studying the effect of microwaves beamed back to Earth on living organisms. The initial investment of 100 million yuan ($15 million) will be made by the Bishan district government.

Xie added that construction of the base will take one to two years and once it begins operations, scientists and engineers will build tethered balloons equipped with solar panels and use them to verify microwave transmission technologies.

"We plan to launch four to six tethered balloons from the testing base and connect them with each other to set up a network at an altitude of around 1,000 meters," he explained. "These balloons will collect sunlight and convert solar energy to microwave before beaming it back to Earth. Receiving stations on the ground will convert such microwaves to electricity and distribute it to a grid."

If the tests are successful, researchers will launch new tethered balloons to the stratosphere for further tests, he said.

So far, Chinese engineers are able to transmit energy-carrying microwaves over a distance of about just 100 meters, Xie said.

The designer noted that engineers will need to resolve two major technical difficulties-accurate, directed transmission of high-capacity microwaves, and construction of a large space-based power station. He said the size and weight of such a station have yet to be determined because the research is still in a preliminary stage.

"We can use several launches to place components in space and then assemble them into a single station," Xie said.

First proposed in 1968 by Peter Glaser, a late Czech-American scientist and aerospace engineer, the concept of an orbital power plant has been a popular aspiration among spacefaring nations such as the United States and Japan, but has seen little development due to technological and financial hurdles.

Xie said if everything goes well, a Chinese solar power station will be put into orbit about 36,000 kilometers above Earth and start generating power before 2040.

Pang Zhihao, a retired China Academy of Space Technology researcher, said space-based solar power stations are very attractive solutions to pollution and energy shortages.

He explained that a space-based solar power station will be able to collect sunlight around the clock without being affected by factors such as atmosphere and weather. In addition, the power generated in this manner will be pollution-free and limitless, he said, adding this source of energy can also power any spacecraft within its beaming range.

China's ambitious plan to build the world's biggest supergrid (IEEE Spectrum)

02-21-2019

Wind rips across an isolated utility station in northwestern China's desolate Gansu Corridor. More than 2,000 years ago, Silk Road traders from Central Asia and Europe crossed this arid, narrow plain, threading between forbidding mountains to the south and the Gobi Desert to the north, bearing precious cargo bound for Imperial Beijing. Today the corridor carries a distinctly modern commodity: gigawatts of electricity

destined for the megacities of eastern China. One waypoint on that journey is this ultrahigh-voltage (UHV) converter station outside the city of Jiuquan, in Gansu province.

Electricity from the region's wind turbines, solar farms, and coal-fired power plants arrives at the station as alternating current. Two dozen 500-metric-ton transformers feed the AC into a cavernous hall, where AC-DC converter circuits hang from the 28-meter-high ceiling, emitting a penetrating, incessant buzz. Within each circuit, solid-state switches known as thyristors chew up the AC and spit it out as DC flowing at 800 kilovolts.

From here, the transmission line traverses three more provinces before terminating at a sister station in Hunan province, more than 2,300 kilometers away. There, the DC is converted back to AC, to be fed onto the regional power grid. Since it opened in mid-2017, the 26.2 billion yuan (US $3.9 billion) Gansu–Hunan transmission line has moved about 24 terawatt-hours.

The sheer scale of the new line and the advanced grid technology that's been developed to support it dwarf anything going on in pretty much any other country. And yet, here in China, it's just one of 22 such ultrahigh-voltage megaprojects that grid operators have built over the past decade. In the northwestern region of Xinjiang, China recently switched on its largest UHV link: a 1,100-kV DC circuit that cost over 40.7 billion yuan. The new line's taller transmission towers and beefier wires parallel the Gansu–Hunan line through the Gansu Corridor, before diverting to Anhui province in the east.

The result of all this effort is an emerging nationwide supergrid that will interconnect China's six regional grids and rectify the huge geographic mismatch between where China produces its cleanest power (in the north and west) and where power is consumed (in the densely populated east). By using higher voltages of direct current, which flows through conductors more uniformly than does alternating current, the new transmission lines dramatically reduce the amount of power that's lost along the way.

But even as China celebrates the completion of more than 30,000 km of UHV lines, power engineers are struggling to master the resulting hybrid AC-DC transmission system. They must ensure that the new long-haul DC lines don't destabilize China's regional AC grids. For example, if the 8-gigawatt DC line from Gansu were to unexpectedly go off line, the power shock could cause widespread blackouts in Hunan and beyond.

To minimize the threat, the State Grid Corp. of China, a state-owned company that runs most of China's transmission and distribution grids, intentionally limits the line's throughput to no more than 4.5 GW. In practice, the line has carried less than one-quarter of its design capacity on average. That's one reason why over one-third of Gansu province's theoretical wind output and one-fifth of its solar potential went unused in 2017. Other UHV lines in neighboring regions have similarly operated below capacity. And eastern provinces don't have sufficient incentive to import the cleaner power that the UHV lines offer.

The ultimate solution to both issues, according to State Grid engineers, is to double down on UHV. They argue that the country must move far more energy via UHV DC to maximize the use of renewable energy while slashing reliance on coal. State Grid is also building a world-leading set of ultrahigh-voltage AC lines, to help eastern China's regional AC grids absorb the output from those massive lines.

"The UHV AC power grid is like a deep-water port, and the UHV DC is like a 10,000-ton ship. Only the deep-water port can support the 10,000-ton ship," says Qin Xiaohui, vice director of power system planning with State Grid's China Electric Power Research Institute, in Beijing.

China's Hybrid AC-DC Grids

Ultrahigh-voltage DC lines move coal-fired and renewable generation thousands of kilometers to China's megacities. UHV AC helps distribute the imported electricity.

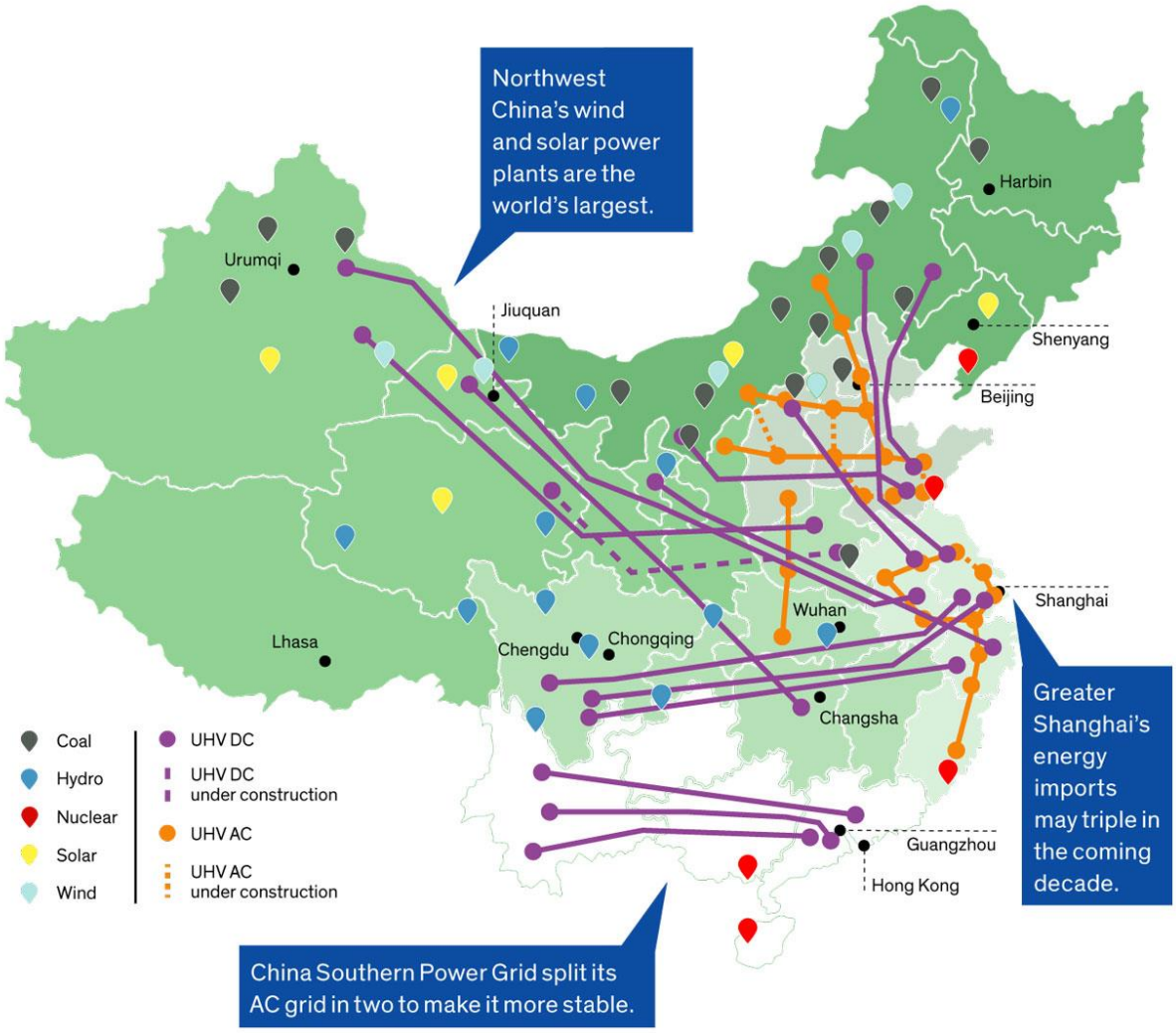

Illustration: Erik Vrielink

Meanwhile, power authorities everywhere are watching. Gregory Reed, a DC transmission expert who runs the University of Pittsburgh's Center for Energy, says China's UHV grid puts it far ahead of the rest of the world. "They're investing significantly, and they've gone right to the highest levels of technology capability from day one. There's no comparison anywhere else in the world. It's like we're all still pedaling our bicycles, while the Formula 1 race car goes flying by."

China's UHV movement was born of a limo ride. It was late 2004, and Liu Zhenya, then president of State Grid, was sharing a car with Ma Kai, minister of the National Development and Reform Commission (NDRC), the powerful state body that regulates China's growth and major investments. As Chinese policy expert Yi-chong Xu describes in her 2017 book Sinews of Power (Oxford University Press), Ma complained of the crippling power shortages of the day. Liu blamed "weak and fragmented" grids, ones ill-equipped to exchange bulk power. And he proposed a bold solution: massive cross-country power lines utilizing the most advanced UHV technologies.

Within a year, Ma's NDRC had approved an ambitious and comprehensive plan that embraced Liu's vision. It combined UHV DC lines, which excel at moving bulk power from one spot to another over long distances, and a UHV AC backbone to reliably distribute that power to consumers. State Grid would lead the

engineering and ensure that domestic suppliers would manufacture 90 percent of the UHV equipment, thus building up a new high-tech export sector for China.

Over the next decade, Liu delivered. He put some 2,000 State Grid engineers on the project and funded more than 300 professors and 1,000 graduate students at Chinese universities to conduct power-grid-related R&D. State Grid expanded and refocused its research centers to attack specific UHV issues, including how to safely handle the higher electromagnetic fields and the more potent impulses during switching and faults.

In January 2009, State Grid energized its first UHV demonstration line—a 650-km, 1,000-kV UHV AC transmission line that linked the North China and Central China regional grids. Ten years on, State Grid has completed 19 of 30 proposed UHV lines.

That aggressive build-out has helped fast-growing urban centers such as Shanghai stave off power shortages despite delays in the expansion of China's nuclear power capacity and constraints on local coal power due to air-quality concerns. The new UHV grid is also helping the country lead the global transition to renewable generation, moving 161.5 terawatt-hours of hydro, wind, and solar energy in 2017 alone.

ABB, Siemens, and other international power-technology companies have been instrumental in developing and validating key components of the Chinese UHV grid. But State Grid has insisted on sharing the intellectual property for the technologies developed at its behest.

In a 2014 interview, Executive Vice President Liu Zehong described one tense episode in 2006 when State Grid asked international suppliers to help develop 6-inch-diameter thyristors capable of handling more current than 5-inch thyristors could. The suppliers initially balked, said Liu, but ultimately relented because of State Grid's "determined attitude" and the "huge market opportunities" of the Chinese market. Two years later, Chinese firms were manufacturing the resulting 6-inch switches.

For all of State Grid's progress, its UHV deployment remains uneven and incomplete. China could end up with just half of the 89,000 km of UHV lines that its plans called for by 2020 and none of the anticipated UHV links to Kazakhstan, Mongolia, and Russia. Many proposed projects—particularly for the UHV AC backbone—have failed to gain the NDRC's blessing. As a result, many areas still have no UHV AC lines, and both types of UHV are delivering well below expectations.

What has blocked full implementation is an intense debate over the future of UHV. Some Chinese grid experts question the hundreds of billions of yuan spent on UHV projects and what they see as State Grid's monopolization of grid engineering and manufacturing. Provincial officials have chafed at the centralization of grid planning and operation that UHV requires.

Some experts have also criticized Liu's ultimate goal for the UHV AC backbone—linking up and synchronizing China's regional grids—as far too risky. Han Yingduo, a member of the prestigious Chinese Academy of Engineering and a professor at Tsinghua University, in Beijing, has warned that unifying China's grid would make it far more vulnerable to cascading blackouts, like the one in 2003 that knocked out power in the northeastern United States and Canada.

Because no other country has ever built a hybrid UHV AC-DC grid, State Grid engineers are having to feel their way along. In a traditional lower-voltage network, the grid operator typically reserves emergency power to cover the sudden loss of the grid's largest asset. That may mean keeping a gigawatt or two of extra power generation at the ready.

Now add multiple UHV lines to your network, each carrying 8 to 12 GW, and your requirements for reserve power rise dramatically.

Maintaining the ideal voltage on a UHV grid is also enormously challenging. Thyristor-based UHV converters consume what's known as reactive power—found in AC systems in which the current and voltage are out

of phase. (By contrast, active, or real, power is the power that's actually consumed by the grid's loads; its current and voltage waves are aligned.) By consuming reactive power, the UHV converters tend to pull down the voltage of surrounding AC lines, so converter stations have equipment to supply reactive power and prop up the AC voltage.

But if an AC line's voltage sags, nearby converters will consume even more reactive power, pulling voltage down further. A voltage sag can also disrupt the thyristors' ability to switch from one current path to another, a process known as commutation. A severe commutation failure [PDF] will cause the converter to shut down, deepening the AC voltage drop and starting a potentially destructive feedback loop that could end in a blackout. "Successive DC commutation failures will trigger a chain reaction," says Qin, the system planning expert at State Grid's Beijing research institute.

The resulting blackout could travel far and fast, notes Zhang Fang, a system operator in State Grid's National Electric Power Dispatching and Control Center, in Beijing. When a UHV DC circuit goes off line unexpectedly, it creates a power surge hundreds or thousands of kilometers away, on the AC grid that feeds it. "The UHV DC line is actually acting as an amplifier. A small AC disturbance in the receiving end can become a large AC disturbance in the sending-end grid," says Zhang.

To minimize the risk of multiple converter failures and cascading blackouts, engineers for State Grid's East China regional grid have deployed a fiber-optic control network that automatically rebalances supply and demand. If necessary, it can boost line voltage within 200 milliseconds of a voltage drop, using a set of fault responses that have been built into the East China grid's AC-DC converters. As soon as the fiber-optic network flags an outage on a UHV DC line, the converters pull up to 10 percent more power over the remaining DC lines to keep the grid operational. The optical control scheme can also restore balance by releasing power from pumped hydro plants, which store energy by pushing water uphill. And it can trigger small controlled blackouts, shutting off some distribution feeders to reduce demand while sparing hospitals and other essential loads.

These measures have enabled a trio of UHV DC lines that deliver hydropower from the Southwest China grid to operate continuously at their combined 21.6-GW design capacity. The result is an electrical trifecta: Greater Shanghai, China's most densely urbanized and industrialized region, gets more clean power; the Yangtze River Delta's megadams spill less excess water during flood season; and State Grid earns more revenue from its UHV investment. Even so, Shanghai still runs short of power for several weeks each summer, forcing State Grid to pay big customers to idle their factories. Keeping pace with growth may require tripling Shanghai's electricity imports within a decade.

At the national control center, in Beijing, mounting pressure to push more clean power through State Grid's UHV lines is hard to miss. The main screen displays the status of the AC and DC trunk lines, providing a real-time view of the entire system. Dominating the left wall are warning lights tracking renewable energy curtailment in each of 25 provinces—and who should be fixing it. Green lights mean that all of the potential solar and wind power is being used. Blue, yellow, and orange lights indicate renewable energy waste, which State Grid's provincial, regional, or national controllers, respectively, must try to stop.

"We are determined to consume the renewable energy to the maximum extent. That's our job," says Zhang. Controllers may reroute power from a province with low electricity demand to another where demand is higher. Or they may steer electricity to one of State Grid's 21 pumped hydro plants, which collectively can soak up 19 GW.

In theory, Chinese law has long required grid operators to prioritize renewable energy. But in practice, each province has its own plans and priorities, which tend to favor electricity generated locally. For instance, in Zhejiang province, south of Shanghai, significant opposition to importing electricity has hampered the operation of an 8-GW UHV DC line from Ningxia province, according to analysts at Bloomberg New Energy Finance.

On the windy, sunny day when I visited Gansu's DC converter station last year, its UHV line was carrying just 3 GW of its 8-GW capacity. That was the cumulative output from several renewable plants. But the province also has an additional 15 GW of solar and wind that's connected to the new line but not yet authorized to feed power into it.

Change is coming. Two months after my visit, power companies in coastal Jiangsu province struck a deal to buy power from Gansu's largest wind farm via another UHV DC line. And last November, State Grid began building a UHV DC line from Qinghai province to move even more of Gansu's renewable generation. Meanwhile, the NDRC is stoking demand by mandating minimum rates of renewable energy use by each region.

State Grid's long-term goal to interconnect its regional grids should also reduce curtailment, experts say. Zhang Ning, an authority on renewables integration at Tsinghua University, points out that the Southwest grid's hydropower can balance the fluctuations in the Northwest's wind and solar output. "If we interconnect the West, curtailment of wind power there can be reduced from more than 20 percent to 5 percent," he estimates, and both regions' use of coal can also be cut.

Even as State Grid irons out the kinks in its UHV grids, the company is pushing its equipment and expertise abroad. It has led the creation of nine UHV standards through the International Electrotechnical Commission and the IEEE—a move that researchers at Argonne National Laboratory, in Illinois, warned would help Chinese suppliers "crowd others out of the global market" [PDF].

State Grid is already working on its first international UHV DC project: a pair of 800-kV lines to move power from Brazil's Belo Monte megadam. But subsequent UHV sales have been slow to materialize. That may be because most countries do not yet need, or cannot afford, a 1,000-kV AC or DC line.

Undaunted, former State Grid chairman Liu is now crusading to build transcontinental and intercontinental UHV grids. The same technology that went into building the 1,100-kV line from Xinjiang to Anhui could efficiently move power up to 5,000 kilometers. "If we just turn that line around to point west, we are getting close to Europe. So the technology is available," says Magnus Callavik, general manager of ABB Sifang Power System, a Beijing-based joint venture between Swiss power-engineering giant ABB and China's Sifang Automation.

Callavik says he is convinced that continental-scale UHV DC will happen, sooner or later. In a world that must decarbonize, figuring out how to balance variable energy supplies such as solar and wind generation with regional loads is a growing concern. "Transmission is a very cost-efficient way of doing that," says Callavik.

In China the question is how quickly State Grid will overcome the technical and political obstacles that are holding back UHV's carbon-slashing potential. If the country continues to rely heavily on coal power, importing that power over thousands of kilometers will help clear the air in China's eastern megacities. But the country's carbon footprint will remain unchanged, and the benefits for the global climate will be nil. Mobilizing gigawatts of renewable power over a UHV grid, on the other hand, promises a real change, for China and the world.

This article appears in the March 2019 print issue as "A Grid as Big as China."

Environnement

Changements climatiques

US increasingly isolated denying trend of the times: Editorial (China Daily)

02-18-2019

When German Chancellor Angela Merkel said, "the question now is: do we fall apart into pieces of a puzzle and think everyone can solve the question best for himself alone?" she was denouncing the unilateralism the United States has been pursuing since 2016.

Speaking at the Munich Security Conference on Saturday, she called on the United States to put itself in other countries' shoes and to pursue win-win solutions together.

That the warm applause she received was absent after the address by US Vice-President Mike Pence speaks volumes about how unwelcome the unilateralist policies the US has adopted are.

The US has withdrawn from the multilateral nuclear deal with Iran, announced it is quitting the Paris Agreement on climate change and repeatedly pointed accusing fingers at China, even its own allies, on anything it considers to be not in its own favor.

The US administration refers to the unilateral and isolationist policies it is pursuing with the euphemism "America First", and Pence tried to claim that "does not mean America alone". But the US is becoming increasingly isolated as it stands against the trend for cooperation in pursuit of shared peace and prosperity.

Instead of solving the common problems the world is facing, the US is standing on the wrong side of history trying to dictate to other countries in a hegemonic manner what they should do.

It seems as if it believes it is the very source of justice and fairness and thus entitled to lead the world in whatever manner it pleases. It is with this mentality that it wields the baton of sanctions against any country that it considers to be defying its will, or raises tariffs on imports from any country when it feels it is losing the trade competition with that country.

Wherever the US exerts its unilateral policies in the world, the situation is sure to become chaotic.

The situation in the Middle East has become much more volatile and complicated since the US withdrew from the Iran nuclear deal.

It is increasing its pressure on the European Union to cut off its relations with Russia, which if the EU does, will increase the uncertainties and pose a threat to the stability of Europe.

Meanwhile the trade frictions it has instigated with China have seriously affected the development of the global economy. Its persistent persuasion of its allies not to use the equipment and services of China's telecoms giant Huawei Technologies Co Ltd for their 5G networks not only blocks the development of this world telecoms equipment maker. It will also have a negative impact on the development of the next generation telecoms network worldwide as the entire supply chain in this sector will be jeopardized.

Given the uncertainties the world faces, just as Chinese top diplomat Yang Jiechi said at the conference, the world needs multilateralism and cooperation more than at any other time. The world will only have more problems if unilateralism is not contained.

China develops unmanned semi-submersible for marine weather observation (China Daily)

02-14-2019

Chinese researchers are celebrating a breakthrough in the development of an unmanned semi-submersible vehicle that can launch a rocket to perform weather observations at sea.

Developed by the Institute of Atmospheric Physics under the Chinese Academy of Sciences, the unmanned submersible has passed a series of river and sea trials and successfully launched instrument-carrying rockets to obtain meteorological data in real-time over a wide area of the ocean that previously could not be monitored by traditional methods.

The results were recently published in the journal Advances in Atmospheric Sciences as a cover story.

According to lead author Chen Hongbin, traditional observation platforms to obtain meteorological and oceanographic data are ships, buoys, satellites and aircraft. However, they have limitations, such as high costs, poor endurance and inflexibility. The data collected by these platforms is always patchy and unreliable for research.

In 2016, to obtain long-term and real-time data, especially in remote areas or under severe sea conditions, researchers developed a new autonomous marine meteorological observation platform. It is an unmanned navigation vessel that can travel submerged, with only the equipment compartment exposed above the waterline. Such a structure can minimize the effect of waves on the vehicle, making it very stable, said Chen.

From May 2016 to May 2017, researchers conducted a series of trials, including launching meteorological rockets that can fly up to 8,000 meters into the atmosphere. They obtained real-time data including sea surface temperature, humidity, wind speed and wind direction, which are important for ocean research.

The structure and performance of the unmanned semi-submersible vehicle have been validated by these trials.

"The unmanned semi-submersible vehicle is an ideal platform for marine meteorological environmental monitoring, and the atmospheric information provided by the weather rockets launched from this platform can improve the accuracy of numerical weather forecasts at sea and in coastal zones," co-author of the study Li Jun said.

Biodiversité, eau

Vice premier urges solid efforts for biodiversity conservation (China Daily)

02-21-2019

Chinese Vice Premier Han Zheng on Wednesday stressed solid efforts to further protect biological diversity.

Han, also a member of the Standing Committee of the Political Bureau of the Communist Party of China Central Committee, made the remarks when presiding over a meeting of China National Committee for Biodiversity Conservation.

Despite the substantial progress that has been made, more needs to be done to stop the current decline in biodiversity, he said.

In order to offer the highest level of protection for biodiversity, Han stressed establishing a management system for protected nature areas by establishing a network of national parks, nature reserves and parks.

He urged stepping up protection of wild fauna and flora with strengthened oversight and cracking down on related illegalities, adding that biodiversity should be supported with the optimal institutional and legal framework.

Han also called for making preparations to host the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity in China next year.

China to restore Qinling Mountains environment (China Daily)

02-18-2019

Northwest China's Shaanxi Province has launched an action plan to conserve the environment of Qinling Mountains, a natural boundary between the country's north and south.

Illegal activities such as construction, felling of trees, mining, hunting and discharge of pollutants will be wiped out by the end of June, according to the action plan released by the provincial government.

Local authorities will limit mining activities, phase out small hydropower stations, repair their environmental impacts, and strengthen management on tourist spots and rural family inns in Qinling Mountains by the end of 2020.

The action plan targets six cities -- the provincial capital Xi'an, Shangluo, Ankang, Hanzhong, Baoji and Weinan.

Authorities have demolished more than 1,000 illegal villas at the northern foot of Qinling range in Xi'an since July last year.

The ecologically important Qinling Mountains are home to a huge variety of plant and wildlife such as giant pandas, golden monkeys and crested ibis.

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100 poached harbour seals found; rules suggested (China Daily)

02-21-2019

Experts called for further protection of harbor seals, after a poaching case came to light involving 100 wild seal cubs in northern China's Liaodong Bay last week.

Thirty-eight of the animals were confirmed dead as of Tuesday.

On Feb 11, police in Dalian, Liaoning province, found 100 stolen seal cubs, 29 of which had died. Another nine died the next week despite intensive care from a rescue team. The remaining 62 are now being looked after by a local animal protection institute.

Dam proposed to address soil, flooding risks (China Daily)
02-11-2019

Experts say plan would also help protect Tibetan antelope in remote Qinghai

Chinese environmental engineers and activists are advocating the construction of a dam to prevent the loss of frozen soil in the Hoh Xil National Nature Reserve in Qinghai province, an isolated region in the northwestern part of the Qinghai-Tibet Plateau that was added to UNESCO's World Heritage list in 2017.

The proposed dam would be near the reserve's Zunai Lake, a major breeding area for the Tibetan antelope, said Lu Shanlong, a researcher at the China Biodiversity Conservation and Green Development Foundation and a professor at the Chinese Academy of Sciences' Aerospace Information Research Institute.

China's largest saltwater lake level rises further (China Daily)
02-22-2019

China's largest inland saltwater lake saw its water level rise 0.48 meters in 2018 as a result of increased rainfall, the local meteorological center said.

Qinghai Lake, situated in Northwest China's Qinghai province, has been expanding since 2005. The water level rose to 3,195.41 meters at the end of last year, according to the Qinghai hydrology and water resources investigation bureau.

Statistics show the area where the lake is located saw average precipitation of 503.7 millimeters in 2018, 30 percent higher than that between 1981 and 2010.

Experts said the rising level of the lake could help increase the area's humidity and temperature, which contributes to the improvement of the region's wildlife habitat and ecosystem.

Dubbed as the "most beautiful lake in China," Qinghai Lake plays an important role in the ecological security of the Qinghai-Tibet Plateau. The lake had been shrinking since the 1950s, but combined effects of conservation and changes to the regional climate turned things around in 2005.

NASA data verify China's contribution to greening efforts (China Daily)
02-23-2019

Standing on a hillside, 46-year-old ranger Huang Xiaobin looks down at the lush landscape that surrounds his village in the remote mountainous areas of the southwestern Jiangxi Province. Terraced slopes that were once barren are now filled with cedars and pine trees.

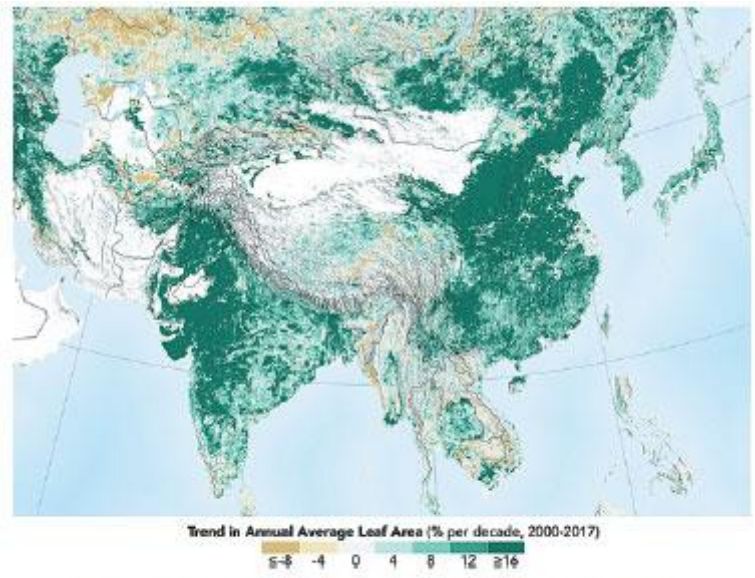
The landscape has changed a lot since Huang's grandfather, the first ranger in his family, took the job in 1951. At that time, the fields were just sparsely dotted with bushes.

Inspired by the idea of turning barren hills to green ones, Huang's father and Huang picked up the batons in succession.

"The landscape looks completely different," said Huang Xiaobin, who has spent 25 years planting trees and taking care of the forest. "It's worthwhile," he said simply, despite the harsh environment and heavy workloads.

Thanks to hundreds of thousands of devoted rangers like the Huang family, China has made huge headway in reforestation over the past decades, contributing enormously to global efforts in fighting soil erosion, air pollution and climate change.

A new study using data from NASA satellites shows that China and India are leading the increase in greening on land and concludes that the "effect comes mostly from ambitious tree-planting programs in China and intensive agriculture in both countries." The study was published on Feb 11, in the journal Nature Sustainability.



Satellite data shows that China and India have led the global increase in leafy coverage over the past several years. NASA

The researchers found that global green leaf area has increased by 5 percent since the early 2000s, an area equivalent to all of the Amazon rainforests. At least 25 percent of that gain came in China.

With almost 1.4 billion mouths to feed, China needs both the land and the timber to fuel its economy. China's contribution to the global greening efforts comes in large part from its vigorous programs to conserve and expand forests.

China aims to increase the forest cover to 23.04 percent by 2020, and to 26 percent by 2035. To achieve the ambitious goals, the country has taken a slew of measures ranging from reforesting hillsides to creating protected grassland and nature reserves.

After several decades of blistering economic growth, China has realized the damage on the environment and begun to pursue a greener path forward.

Reiterating that "lucid waters and lush mountains are invaluable assets," Chinese leadership has stressed that the country must embrace eco-friendly models for growth and ways of life. Over the past three years, 44.67 million hectares of state forest farms have been protected. Logging of natural forests has been strictly banned. Consumption of natural forests has fallen 5.56 million cubic meters annually.

The government has also conducted regular quality tests of tree seedlings and established a nationwide resource database of robust seedlings in a bid to ensure that healthy seeds are restored and used.

The notion of the eco-friendly way of life has resonated with the aspiration of the general public, with many individuals actively participating in various greening campaigns.

One of the most popular programs is "Ant Forest," which was launched in September 2017 by a Hangzhou-based company, Ant Financial Services Group, which has become a feature in the Alipay app, one of the most widely used online payment platforms in China.

Users can claim carbon points for doing environmentally friendly things such as walking, using public transportation, going paperless in the office and more. These points can then be used to water and grow their own virtual saplings. After the virtual saplings have grown to become virtual trees with the constant watering of carbon points, Ant Financial and their charity partners will plant real trees somewhere in the world.

By the end of May last year, the number of Ant Forest subscribers had exceeded 350 million, reducing exhaust equivalent to 3 million tonnes of carbon dioxide. More than 55 million trees had been planted and attended.

"Such programs are quite appealing to me. I feel satisfied to see a real tree planted just by doing some simple things such as riding bicycles and buying tickets online," said Zhang Jing, a 28-year-old salesperson.

New water projects planned in Xinjiang (China Daily)

02-19-2019

The Xinjiang Uygur autonomous region will speed up the construction of major water conservation projects in the vast area to increase and better allocate water resources and provide a boost to economic development, said local officials and experts.

"Xinjiang has been experiencing a serious shortage of water resources which have been overstretched and are in need of better management," said Li Gengsheng, head of the regional Water Resources Bureau.

The region plans to launch three major water conservation projects along seasonal rivers in southern Xinjiang this year to increase and better regulate water supply for industrial and agricultural use, and help reduce flood risks, Li said.

Shohrat Zakir, chairman of the region, said in January that Xinjiang will accelerate the construction of key water conservation projects this year as water is a critical natural and economic resource. The number of reservoirs in Xinjiang reached 543 last year, up from just 19 in 1978, according to the bureau.

Water conservation projects such as reservoirs are crucial for Xinjiang's development because climate change has made water supplies from the Tianshan and Kunlun mountains in the region more irregular and unpredictable, said Chen Xi, deputy head of the Chinese Academy of Sciences' Xinjiang branch.

Many rivers in southern Xinjiang that originate in the mountains flood each year when snow in the highlands begins to melt in spring. But the waterways are left dry in other seasons due to low precipitation and high evaporation rates. That means people are unable to use the water when they need to, such as during irrigation seasons. Also, fighting the floods every year has become a burden for locals, Chen said.

Xinjiang, in northwestern China, is one of the driest parts of the country. The distribution of its water resources is also extremely unbalanced, with about 93 percent found in the northwest of the region, meaning that the sourcing of water for poverty-stricken southeastern Xinjiang has always been a challenge.

Having a stable and sufficient water supply is the foundation for boosting the local economy, Chen said, and it will also play an important role in helping farmers in southern Xinjiang's rural areas emerge from poverty as the efficiency of irrigation will be significantly improved.

There are still villagers in Xinjiang who do not have access of safe drinking water. The water conservation projects are expected to provide safe drinking water to 360,000 people living in poverty, Li said.

Air

Northern China pollution up 16 percent in January (Reuters)

02-12-2019

Air pollution in 39 major northern Chinese cities rose 16 percent on the year in January, official data showed, with surging industrial activity making it increasingly unlikely they will meet their winter emissions targets.

Average concentrations of small, hazardous particles known as PM2.5 in two major northern Chinese emissions control zones climbed 16 percent from a year earlier to 114 micrograms per cubic meter, according to Reuters analysis of official pollution data.

China has vowed not to ease up when it comes to fighting pollution even amid an economic slump, but rising emissions of lung-damaging smog last month suggests that some provinces could struggle to balance that goal with an upturn in industrial production.

"The reasons for the increases in PM2.5 levels are not hard to identify," said Lauri Myllyvirta, energy analyst with environmental group Greenpeace, who noted that steel, thermal power and cement production surged throughout the region in the final quarter of 2018.

"The outsourcing of industrial output that took place last winter in order for Beijing to hit its air quality targets was reversed this winter, driving air pollution levels up in the region while the rest of the country has seen improvements."

The worst performer over the month was the coal city of Linfen in Shanxi province, which saw average PM2.5 levels of 174 micrograms, up 23 percent from a year earlier. Shijiazhuang, the provincial capital of Hebei, China's biggest steelmaking region, also saw emissions rise 30 percent to 144 micrograms.

China's official air quality standard is 35 micrograms, while the World Health Organization recommends an annual average of no more than 10.

Over the three months beginning in November 2018, when coal-fired heating systems are switched on throughout the north, average PM2.5 in the 39 cities reached 93.5 micrograms, up 12 percent on the year.

Anyang, a coal and steel producing city in Henan province, was the worst performer over that period, with average concentrations at 124 micrograms, up 27 percent. Henan has blamed its poor performance this winter on "unfavorable weather conditions".

China's environment ministry did not respond to a request for comment. However, senior official Liu Bingjiang told reporters last month that local governments would be held fully accountable for any failures, regardless of the weather.

Most of the cities are aiming to cut pollution by 3 percent compared to 12 months earlier, far lower than last year's target of around 15 percent. The compliance period also began a month earlier in October, when pollution is normally much lower. However, they are still struggling to meet targets.

"With four months of the October-March period passed and two to go, it would take a very steep 20-percent reduction in February-March to get to the 3-percent reduction target," said Myllyvirta.

China's capital Beijing vows air quality improvement but gives no target (Reuters)
02-20-2019

China's capital city Beijing has pledged to improve air quality this year but did not commit to a specific target, suggesting the country's air-pollution campaign is stalling as the easily attainable measures have already been taken.

"Beijing will keep improving air quality, with average annual concentrations of small particles (PM2.5) and three-year rolling average PM2.5 level continuing to be lowered," said Beijing Municipal Government in a statement on Wednesday.

Average concentrations of PM2.5, or particulate matter that measures 2.5 microns, in 2018 fell 12.1 percent from 2017 to 51 micrograms per cubic meter, as a result of its stringent push to trim coal consumption and to clear out polluting plants.

However, Beijing's 2018 PM2.5 levels were still much higher than China's average of 39 micrograms per cubic meter and national target of 35 micrograms per cubic meter.

PM2.5 is a closely monitored air pollutant because its small size allows the particles to lodge deep in the lungs.

The World Health Organization recommends an air quality standard for PM2.5 of no more than 10 micrograms per cubic meter.

The Beijing government said it will target emissions from vehicles, the biggest PM2.5 source in the city, construction sites and manufacturing plants in 2019.

However, the Ministry of Ecology and Environment (MEE) warned in a news briefing last month that "emission cuts in Beijing itself will be not enough to support a large scale of PM2.5 cuts".

The ministry reckons Beijing will also need to reduce external impacts from other regions, in particular from the coal-mining hub of Shanxi and Shaanxi provinces.

"In a word, Beijing's target this year is to maintain current (anti-smog) achievements...Public should be prepared to see a rising PM2.5 reading if there is adverse weather condition," Liu Bingjiang, the head of the atmospheric environment department at the MEE, said at the briefing.

Average PM2.5 level in Beijing was 52 micrograms per cubic meter in January, up 52.9 percent from a year ago, according to the MEE data.

The city also aims to improve its water quality and tackle soil pollution in 2019 by improving the efficiency of fertilizer usage in rural area and tightening heavy-metal disposal standards, according to the government statement.

Polluters face harsher penalties in Beijing (China Daily)
02-27-2019

Beijing's environmental protection watchdog handed out harsher punishments to polluters in 2018 in the city's battle to improve its environment.

Fines for fixed pollution emission sources totaled 229 million yuan ($34 million) last year, up 22 percent year-on-year, according to the Beijing ecology and environment bureau.

Li Bin, deputy head of the bureau's environmental monitoring division, said the fines were handed out in 4,929 cases, nearly half involving air pollution.

The bureau carried out more random environmental inspections last year, which included better coordination with public security and city management authorities and more efficient use of technology, he said at a news conference on Monday.

The bureau also strengthened the regulation of heavy-duty diesel vehicle emissions, with 2.17 million diesel vehicles inspected last year, said Liu Zijian, head of the bureau's vehicle emissions management division.

It cited 325,000 heavy-duty diesel vehicles for violations last year, more than five times of that of 2017, Liu said.

The bureau also conducted inspections of 17,800 gas stations, oil tanks and oil trucks, of which 154 were given administrative penalties for offering substandard oil products.

Mobile sources contributed 45 percent of locally generated PM2.5 in Beijing, with diesel trucks the top culprit. Kicked-up dust came in second at 16 percent, according to the bureau's analysis of pollution sources in 2018.

Heavy-duty diesel vehicles have long been regarded as one of the key sources of vehicle emissions by environmental protection departments, and their inspections have become a vital part of their routine work.

Beijing saw its PM2.5 density drop by about 12 percent year-on-year to 51 micrograms per cubic meter last year - 5 mcg/cu m lower than the target set in the 13th Five-Year Plan (2016-20).

Officials have stressed that it will be increasingly difficult for Beijing to further improve its air quality, especially since the capital has already rolled out all major measures capable of achieving quick results. This includes, for example, the shift from coal to clean energy for heating.

Beijing plans to further cut the annual average concentration of PM2.5, a major particle pollutant, in its fight against pollution, according to a plan issued by the bureau recently.

The city will work to cut the annual and three-year average concentration of PM2.5, as well as improve water and soil quality to meet the target standards set in a national plan for 2020.

In 2019, Beijing will phase out 300 manufacturing and pollution-intensive enterprises, and gradually replace diesel-powered vehicles with new energy ones, it said.

China, South Korea to conduct joint research on air pollutants (China Daily)

02-27-2019

China will strengthen its cooperation with South Korea on air pollution control by promoting joint research on long-distance transportation of air pollutants in Northeast Asia, Li Ganjie, minister of ecology and environment, told his South Korean counterpart in Beijing this week.

Li met with Cho Myung-rae, South Korea's environment minister, on Tuesday.

He said environmental cooperation between the two countries has "harvested a series of achievements", according to a news release issued by the Ministry of Ecology and Environment.

Speaking highly of an environmental cooperation center established in Beijing in June, Li said China is willing to further intensify its environmental cooperation with South Korea by making full use of the center to promote joint research on long-distance transportation of air pollutants in Northeast Asia to improve the region's air quality.

Li also told Cho of the achievements China has made in improving air quality. China saw its average PM2.5 density decrease by 9.3 percent to 39 micrograms per cubic meter in 338 major cities last year, he said.

The two ministers also signed two agreements, one on the exchange of air quality forecast information and technologies, and the other on enhancing the operation of the environmental cooperation center.

Beijing's future forecast: Blue skies, clear horizons China Daily)

02-21-2019

Capital city winning war against pollution, as results indicate major reduction in smoggy days

Yun Duo and her family were looking forward to spending this year's traditional Spring Festival in Beijing - but they were worried about one issue: the capital city's reputation for polluted air, especially in the winter.

They needn't have worried.

"Only when it was snowing did the sky turn dusky; the rest of the time, it was blue. The temperature is low, but we were never bothered by air pollution during the seven-day stay," said Yun, who comes from Shenzhen, a southern city bordering Hong Kong.

"We have heard many stories about the serious air pollution in Beijing, but the personal experience is pretty different. Maybe we are lucky," Yun said with a smile.

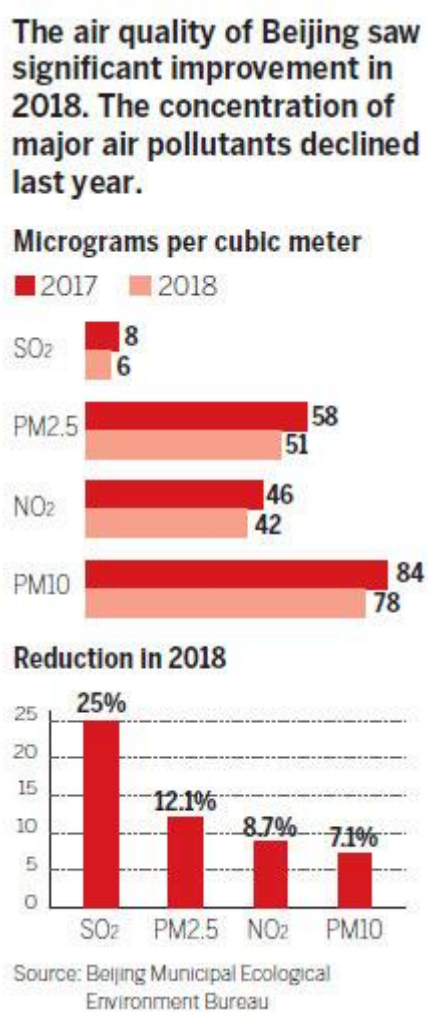
In fact, her experience is not unique. Statistics indicate that Beijing's air quality has steadily - and dramatically - improved in recent years, thanks to the government's efforts to restore the blue sky and its three-year action plan to guide the tough campaign.

According to the Beijing Municipal Environmental Monitoring Center, the air quality of Beijing was sound during the public holiday of the Chinese Lunar New Year, which started on Feb 4.

During the week-long holiday, the air quality was rated as "excellent", which means the Air Quality Index stands between 1 and 50, for four days. It was measured as "good", a level between 51 and 100, for two days. Only one day was rated as "slightly polluted".

By comparison, only three days were rated as "good" or "excellent" during the Spring Festival holidays in Beijing last year, according to the official figure.

The Air Quality Index measures the average density of PM2.5 - the particulate matter with a diameter of less than 2.5 micrometers in the air. On average, the measurement was recorded as 38 micrograms per cubic meter from Feb 4 to 9, down 51 percent from 78 micrograms of the corresponding period last year, the figures show.



The good air quality during the Lunar New Year holiday in Beijing was an encouraging sequence, and an example of the less polluted days seen in the capital in the past year.

The Beijing Municipal Ecological Environment Bureau released a report on the city's air pollution in early January, indicating that last year, all four major pollutants in the capital city's air dropped.

The average density of PM2.5 was cut 12.1 percent year-on-year to 51 micrograms per cubic meter in 2018, the figures show.

The highest level of PM2.5 on a daily average basis stood at 244 micrograms per cubic meter in 2018, which was down 46.3 percent from a year earlier, said Liu Baoxian, deputy director of the monitoring center. He noted that the few heavily polluted days that did take place never lasted more than three consecutive days at any time last year, the first time that's happened since monitoring started in the capital.

The average density of sulfur dioxide, nitrogen dioxide and PM10 - the other three major pollutants - dipped by 25 percent, 8.7 percent and 7.1 percent, to 6 micrograms, 42 micrograms and 78 micrograms per cubic meter.

As a whole, Beijing's air quality was rated "excellent" for 72 days in 2018 - six days more than a year before - and "good" for 155 days, accounting for 62.2 percent of the whole year. Correspondingly, the heavily polluted days - the highest level of AQI that stands at 300 or up - was shortened by nine days to a total of 15.

By contrast, there were 58 heavily polluted days in 2013, when the capital kicked off its battle against serious air pollution.

In September 2018, Beijing issued a three-year action plan to keep air pollution at bay, bringing benefits to human health and the area's beauty, as well as playing a role in mitigating the effects of climate change.

The action plan focuses on cutting PM2.5 and continuing to reduce the number of heavily polluted days.

The PM2.5 of the six major districts of Beijing was targeted at 52 micrograms per cubic meter, while that of some suburban areas should be held below 46 micrograms by the end of 2020, according to the plan.

Meanwhile, to cut the greenhouse effect, the emissions of nitrogen dioxide and the volatile organic compounds in 2020 are projected to be lessened by at least 30 percent from the levels of 2015. Heavily polluted days are expected to be cut at least 25 percent from the levels of 2015.

Déchets et économie circulaire

Hainan to phase out single-use plastic bags by 2020 (China Daily)
02-27-2019

China's island province of Hainan will phase out single-use nonbiodegradable plastic products starting next year, becoming one of the first Chinese regions to set a timeline for such a ban.

A ban on production, sale and use will take effect first by the end of 2020 for single-use nonbiodegradable plastic bags and eating utensils. The ban will be extended to other single-use nonbiodegradable plastic products on a hit list by 2025, a local environmental watchdog announced at a news conference recently.

It wasn't clear whether the list would include all varieties of such products, but the watchdog said the list will be updated in a timely manner based on local needs. Manufacturers of the first round of targeted plastic products will be shut down by the end of 2020.

In preparation for the ban, the province will draft a series of regulations and standards, and will improve its supervision and law enforcement capabilities this year. Banned plastic products will not be allowed to come to the island from outside.

A report by Economic Daily said the ban will first apply to government departments, schools, tourism destinations, supermarkets, shopping malls and hospitals-venues where it is considered easier to enforce.

Deng Xiaogang, head of the watchdog, said at the news conference that Hainan consumes 120,000 metric tons of single-use nonbiodegradable plastic products annually, more than half of which is produced locally.

China prohibited supermarkets and other big retailers from offering free plastic bags to customers in 2007, hoping to reduce their use. Increasing concern has been expressed, however, that the measure may not be playing its expected role.

The increasing amount of plastics consumed in the booming food delivery and express industries has not been fully addressed. According to the State Post Bureau, China's express delivery industry used about 3.2 billion large woven plastic bags, 8.6 billion cardboard boxes and 330 million rolls of adhesive tape in the 30 billion-plus deliveries it made in 2016. The number of deliveries is expected to hit 60 billion this year.

Hainan will promote biodegradable plastic packaging for express deliveries in the province as it seeks cooperation with major logistics platforms outside the island to increase the use of green packaging, Deng said.

He also said the province will establish a demonstration center for the production of biodegradable plastics and enhance research and development of green plastic products to ensure the success of the shift.

Zhang Jing, an official with the watchdog's soil environment management department, said the province will develop a product certification system, which will enable law enforcement officers to know whether locally produced plastic products meet standards by scanning with a mobile app.

Beijing publishes street management policies (China Daily)
02-26-2019

The Beijing municipal government published a guide on street management on Tuesday, which has given law enforcement power to street-level authorities to improve community development.

On Feb 18 the capital government held a meeting focusing on street management, the first of its kind in 23 years. It has shown the importance of public services and city environment management among the priorities of the city government.

The guide has confirmed street-level authorities will be given law enforcement power, which is the first on the matter.

Teng Anying, an official in the municipal government, said previously street governments have multiple tasks and cannot enforce the law, which brought difficulties to their daily work.

The guide also said the government will give more welfare services to employees at street level to reward their contribution.

Sewage exits along Yangtze River to be mapped (China Daily)

02-21-2019

The Ministry of Ecology and Environment, China's top environmental watchdog, has launched a campaign to comb the banks of the Yangtze River to map all sewage outlets and identify any that are unregistered.

Water quality monitoring will be done at all sewage outlets, and environmental officers will trace any pollution they find to its source. Tailor-made remediation measures will then be undertaken, the ministry said.

It also said the latest technologies, including satellite remote sensing, unmanned aerial and aquatic vehicles and intelligent robots will be brought into the campaign, which will last for two years.

Chongqing municipality's Yubei district and Taizhou, Jiangsu province, have been chosen as pilot areas for the campaign. The ministry hopes initial work in those places will help establish technical norms and work procedures that can then be extended to all 11 provincial-level regions along the Yangtze River Economic Belt beginning in the second half of this year.

The first priority of the campaign is to clarify how many sewage exits there are, where discharges are happening, who is discharging, and what and how much they discharge, said Zhai Qing, vice-minister of ecology and environment, during a video conference on Friday, according to a news release from the ministry.

In the country's latest institutional reshuffle last year, management of sewage exits in rivers was shifted from the Ministry of Water Resources. According to the top water resources authority's survey in 2017, there were 6,092 major sewage outlets along the Yangtze.

Zhai said the outlet survey this time will be "extended and deepened" based on previous work.

"The biggest difference of this campaign from other previous work on sewage outlets is that it will not overlook any exits that discharge into the Yangtze," he said.

The ministry said outlets with direct or indirect pollution discharges will be targeted in the campaign.

Government bodies have increasingly emphasized the protection of the Yangtze since early 2016, when President Xi Jinping urged officials from provincial areas along the river to concentrate on ecological restoration and protection, and avoid large-scale development.

Early this year, the Ministry of Ecology and Environment and the National Development and Reform Commission published a circular on Yangtze restoration and protection, vowing to comprehensively improve water quality by 2020.

The ministry said it will continue its campaigns focusing on solid waste and on water bodies that supply drinking water along the Yangtze.

The Ministry of Water Resources and the National Energy Administration, along with another two government agencies, launched a campaign at the end of last year to eliminate small hydropower stations.

In Shanghai, efforts to sort garbage get helping hand (China Daily)

02-20-2019

Shanghai's Hongkou district has established an association focused on trash sorting as the city gears up to enforce its first regulation on domestic waste management.

The rule takes effect on July 1, to the applause of environmentalists and the green industry.

Organizers said the association-the Shanghai Hongkou New Fashion Garbage Classification Office-is the first social group of its kind in the city. It released a guide for promoting trash sorting in residential neighborhoods during its founding ceremony on Monday.

Tang Jiafu, deputy director of the city's greening and appearance bureau, which is responsible for guiding residents to sort their garbage, said educational materials have been compiled to teach people how to classify their garbage accurately. The bureau organized 12 training sessions for teachers, who will merge the information into their teaching.

"Garbage sorting should become fashionable in society, and I encourage everyone to participate in the initiative," said Ying Yong, Shanghai's mayor.

The city, which is home to 24 million residents and produces more than 9 million metric tons of domestic garbage every year, aims to have trash sorting programs in all of its residential neighborhoods by 2020.

The regulation approved by the city's legislative authority at the end of January emphasizes garbage classification, separate transportation and treatment.

The city has already launched pilot garbage sorting programs in six of its districts, and more than 3,300 recycling stations and 15 domestic waste treatment facilities are under construction, according to the municipal government.

On Monday, Li Qiang, Shanghai's Party secretary, visited the Aijian neighborhood in Changning, one of the pilot districts, to see how the implementation of the sorting program was coming along. He inspected a garbage transportation hub in Xuhui district and Pudong New Area's Laogang waste treatment center, which handles half the domestic waste produced in the city.

Li said ongoing efforts are needed to ensure the program's success, which will help make Shanghai cleaner and tidier, and a more pleasant place to live.

Kate Sogor, who organizes weekly events for a running group that picks up litter from the streets, said transforming the domestic waste management regulation into law shows that the government takes waste reduction and recycling seriously.

"Although it'll probably take a while to develop the habit of separating trash, this is great," she said. "This is how it starts."

Yang Yuanhui, East China regional manager of Beijing Goldenway Bio-tech Co, which converts kitchen waste to fertilizer, said Shanghai's new regulation will help companies like his cut costs and boost production.

He said many businesses in the sector face shortages and low quality raw material, and he believes the new regulation will bring more well-sorted "wet garbage" for the company to process.

Cao Weiqiu, managing director of Shanghai Mu Yin Investment, which focuses on environmental projects, said recycling companies can convert almost all garbage back into useful resources and products.

The mandatory garbage classification regulation is good news for the industry, he said, because it requires government and public institutions to give priority to purchasing products made from recycled materials.

"In the next step, government should provide incentives to direct more capital and enterprises into the circular economy," Cao said.

Politiques et réglementations chinoises transversales

Xi article shows determination to build ecological civilization (Global Times)
02-01-2019

An article by President Xi Jinping on building an ecological civilization was published in the flagship magazine of the Communist Party of China (CPC) on Friday.

The article, in the third issue of semimonthly Qiushi Journal in 2019, was a speech Xi delivered at a tone-setting meeting on environmental protection on May 18, 2018. The title of the journal is derived from the four-character phrase *shi shi qiu shi*, which means "seek truth from facts."

In the article, Xi, also general secretary of the CPC Central Committee and chairman of the Central Military Commission, demands the coordination of economic and social development and the building of an ecological civilization, the Xinhua News Agency reported on Friday.

With the Chinese economy transitioning from high-speed growth to high-quality development, Xi said there will be conventional and unconventional challenges and difficulties.

"We must bite the bullet and overcome them," he said.

Su Wei, a professor at the Party School of the CPC Chongqing Municipal Committee, told the Global Times that "publishing an article based on a speech the Party's top leader delivered several months ago is not unusual for Qiushi Journal, and another reason for the timing is probably that the two sessions of 2019 are nearing."

Many projects at the level of national strategy, such as the Yangtze River Economic Belt and Xiongan New Area development, will be discussed at the two sessions in early March, Su noted, so the Party wants to reemphasize the importance and the priority of environmental protection and ecological civilization.

China has started to conduct central environmental inspections, implement guidelines to control air, water and soil pollution, has published its own plans to realize the 2030 Agenda for Sustainable Development, and is implementing a national plan to tackle climate change, Xinhua reported.

Environmental inspection is a new measure taken by China in recent years to prevent pollution. In 2017, the Ministry of Environmental Protection - which has since been incorporated into the Ministry of Ecology and Environment - sent 5,600 law enforcement officers to 28 cities in the Beijing-Tianjin-Hebei region to inspect air pollution control work.

In June 2018, about 18,000 law enforcement officers were dispatched to conduct air pollution control inspections, dubbed the "Blue Sky Protection Campaign," in the Yangtze River Delta and the Fenhe and Weihe plains in Shanxi and Shaanxi provinces. The campaign is scheduled to last until the end of April.

By June 15, 2018, six inspection groups had finished provincial-level inspections where they warned 126 local officials on environmental protection issues. The inspections brought the effect of deterrence and publicized a series of problems, according to reports from the people on pollution activities, Xinhua said. The next plan is to inspect Chinese cities.

The building of an ecological civilization has entered a critical period that requires more high-quality ecological goods to meet people's ever-growing demand for a beautiful environment, Xi noted. It is also a period when China is capable of addressing prominent ecological and environment issues, according to Xi's speech.

Su said China is a huge country still seeking industrialization: How to build an industrial civilization and ecological civilization at the same time is a challenge that no country has experienced before.

"The Green Party in Western countries emerged after industrialization and their ideology and theory are serving the post-industrial era. Therefore, the CPC theory of building an ecological civilization is an entirely new innovation," Su said.

"If its practice is successful, it would be a great contribution to humanity, especially for those non-industrialized countries struggling between environmental protection and industrialization."

National security

Comprehensive efforts must be taken to implement the plan for prevention and control of soil pollution, while key regions and sectors and major pollutants must be targeted, Xi said. The restoration of polluted soil should be intensified so that people can have peace of mind about the food they eat and the place they live in.

Xi called for effective prevention of ecological and environmental risks, as ecological and environmental security is an important part of national security, as well as an important guarantee to achieve sustainable and healthy development of the Chinese economy and society.

Party leadership

Xi stressed the need to enhance the Party's leadership to win the battle of pollution prevention and control, and asked governments at all levels to thoroughly carry out the decisions and policies made by the CPC Central Committee.

The anti-graft campaign is targeting the "tigers" - senior officials taken down on corruption charges - whose corrupt activities related to environmental pollution. The latest example is the January 1 investigation into former Shaanxi Party chief Zhao Zhengyong.

News of the investigation came a week after China Central Television broadcast a documentary on January 9 detailing how a group of Shaanxi officials were punished for failing to demolish villas built illegally in the Qinling Mountains despite repeated orders from Xi.

The documentary showed that after Xi instructed Shaanxi provincial leaders to pay attention to the illegal villa problems in May 2014, the main leader of CPC Shaanxi Provincial Committee failed to convey the instructions at standing committee meetings or conduct special research on the illegal villa issue.

Major leaders of local party committees and governments shall be held responsible for environmental protection in their own administrative regions, Xi said in the article.

A scientific and reasonable evaluation system will be established to assess the performance of officials and those damaging the environment will be held accountable, it said.

Environmental crime arrests jumped by half in 2018 targets (Caixin)

02-15-2019

China arrested more than 15,000 people for environmental crimes in 2018, an increase of 51.5% from 2017, as it steps up efforts to enforce environmental compliance, the country's top prosecuting body said Thursday.

At a press briefing held by the State Council Information Office, officials from the Supreme People's Procuratorate (SPP) also said 59,312 public interest litigation cases involving natural resources and ecological protection were filed last year. The number of cases involving illegal mining and fishing increased by 190% and 145% respectively from 2017.

A stepped-up war on pollution has seen China take measures to improve environmental protection and crack down on practices that previously flew under the radar. Last year, President Xi Jinping announced the nation will push for greater coordination between "ecological civilization" and economic and social development.

"Those who come to pollute the whole environment or the whole river, especially for the sake of pursuing personal interests, should be severely punished and strictly investigated for legal responsibility," said Zhang Xueqiao, the deputy chief procurator of the Supreme People's Procuratorate (SPP).

Zhang Zhijie, a senior prosecutor at the SPP, said half of all environmental and resource protection cases involve deforestation and the illegal occupation of agricultural land. Prosecutions rose 21% in 2018.

One of the major issues with China's battle to control pollution is lax governance. Companies that are hired for environmental monitoring frequently falsify data or take bribes in exchange for a passing grade. In more serious cases, companies' failure to control pollutants and governmental failure to enforce regulations has led to deadly explosions and the poisoning of water and soil.

China's Ministry of Environment and Ecology has launched multiple rounds of inspections of provincial and local governments over the past two years, including "second look" investigations to check on the progress of rectification of violations. In December, the ministry announced that 917 people would be punished for failing to implement regulations.

"The problems found during the inspections, including the typical cases we have published, are mostly due to the inadequate performance of local governments," said Bie Tao, director of the MEE's Department of Regulations and Standards.

In July 2015, the SPP launched a pilot program allowing procuratorates to initiate public interest litigation in 13 provincial regions, which was expanded to nationwide practice in 2017. In 2018, there were more

than 110,000 public interest litigation cases handled across the country, Zhang Xueqiao said. And 59,312 of them were filed that year.

The officials stressed that the SPP had been working closely with the MEE and local environmental protection bureaus and public security bureaus to protect and restore damaged areas.

“Many localities have established special environmental procuratorial departments, focusing on innovative exploration of how to handle environmental protection cases and on dealing with crimes of environmental pollution,” Zhang Xueqiao said.

Officials said that more than 1,400 square kilometers (540 square miles) of damaged land were recovered through public litigation last year. Procuratorial organs have urged the closure and control of 4,015 enterprises that illegally discharged exhaust gas and other pollutants.

Authorities tighten environmental rules to protect Qomolangma (China Daily)

02-28-2019

The nation's highest supervisory body over environment is taking measures to reinforce protection of Qomolangma, the world's most vulnerable ecosystem known as Mt Everest in the West, by strengthening inspection and issuing stricter waste disposal requirements.

Liu Youbin, spokesman with the Ministry of Ecology and Environment, said that travelers bound for the Qomolangma National Nature Reserve registered a remarkable growth due to the local tourism development, putting more pressure to the reserve's protection.

He said the ministry, jointly with the Tibet autonomous region, amended mountaineering regulations and rules on the reserve's protection. Also, inspections were enhanced to regulate attractions below 5,200 meters above the sea level, and regular cleanups are in process to collect wastes around base camp.

Ecological infrastructure, including trash bins, eco-friendly toilets and moving restrooms, has installed along routes from the reserve's north entrance to base camp, he said. Mountain climbers were also offered portable toilets.

So far, the reserve's eco-environment has been greatly improved, Liu said. Junk heaps and waste water along routes from the region's Dingri county to the reserve were cleared by the local government, and waste disposal along hiking routes are also under control.

Liu said the ministry will consolidate the reserve's waste disposal and strictly review rule violations to better protect the natural reserve.

Opinion publique et environnement

China selects top 10 scientific discoveries of 2018 (China Daily)

02-27-2019

China's Ministry of Science and Technology Wednesday selected the country's top 10 scientific discoveries of last year, including macaque monkey cloning, a DNA nanorobot and the precise measurements of the gravitational constant. The following are highlights of the major discoveries:

1.MACAQUE MONKEY CLONING

Chinese researchers cloned the world's first macaques from somatic cells by the same method that made Dolly the sheep. It made research with customizable populations of genetically uniform monkeys a possibility, with the potential of furthering human disease research.

2.CREATION OF FIRST SINGLE-CHROMOSOME YEAST

Chinese scientists have created a single-chromosome yeast, and its life functions show no difference from its wild counterparts, making it the first time in the world that organisms with multiple chromosomes were artificially transformed into single-chromosome forms. The research shows that a complex genome system can be simplified through manual intervention. This study may also pave the way for new man-made species in the future.

3.KETAMINE FOR ANTIDEPRESSION

Chinese researchers reported in the journal Nature how the anesthetic painkiller ketamine blocks the neuronal activity that drives depression-like behavior. The finding may provide new perspectives on the treatment of depression and anxiety, which currently affects some 300 million people worldwide.

4.DNA NANOROBOT FOR CANCER THERAPY

Chinese scientists have constructed an autonomous DNA robot programmed to transport payloads and present them specifically in tumors. The nanorobot proved safe and effective for mice and pigs. It represents a promising strategy for precise drug delivery in cancer therapy.

5.PRECISE MEASUREMENTS OF THE GRAVITATIONAL CONSTANT

Chinese scientists have calculated the most precise value of the gravitational constant, one of the most fundamental constants of nature. To achieve their results, the team used both the angular-acceleration-feedback method and time-of-swing method to come close to producing an accurate value.

6. MYSTERIOUS SIGNALS IN SEARCH FOR DARK MATTER

In late 2017, China's Dark Matter Particle Explorer detected unexpected and mysterious signals in its measurement of high-energy cosmic rays, which might bring scientists a step closer to shedding light on invisible dark matter. It is the first time a space experiment has reported a detailed and precise electron and positron spectrum up to about 5 tera-electron-volts (TeV, corresponding to 1 trillion times the energy of visible light). In this energy range, the Chinese researchers detected a spectral break at 0.9 TeV and a possible spike at 1.4 TeV.

7.BREAKTHROUGH IN STUDYING WATER STRUCTURE

Using China-developed new atomic force microscopy, scientists have observed the atomic structure of the hydrated ions in their natural environment. It is the first time visualizing the atomic structure of hydrated ions since the notion was proposed more than 100 years ago. Scientists also discovered that exactly three water molecules are needed to allow a single sodium ion to travel 10 to 100 times faster than other ion hydrates - a process that could lead to more efficient ion batteries, anti-corrosion coatings and seawater desalination plants.

8.SUPER-RESOLUTION IMAGING TECHNIQUE

A team of Chinese and U.S. scientists developed a new imaging technology that can perform high-speed, long-term and super-resolution imaging of intracellular physiological processes. Using this technique, a variety of new interactions between organelles were discovered.

9.BALANCED PLANT GROWTH

Crops can be bred with high yields and less fertilizer, as Chinese researchers found a growth-regulating transcription factor GRF4 that had the opposite effect of a growth-inhibiting protein called DELLA in crops. GRF4 and DELLA existed in a balance that regulated plant growth and nitrogen metabolism. The finding could aid efforts toward reaching sustainable global food safety.

10.EARLIEST EVIDENCE OF HUMANITY

Archeologists found a series of stone tools from the Early Pleistocene at Shangchen in the Chinese Loess Plateau. The oldest ones date back to 2.12 million years ago, 270,000 years older than the 1.85-million-year-old skeletal remains and stone tools from Dmanisi, Georgia. The new discoveries suggest that there may have been a human presence outside Africa earlier than previously thought. The results were selected from 353 sets of research carried out from December 2017 to November 2018. About 2,600 leading scientists from the Chinese Academy of Sciences, the Chinese Academy of Engineering and other academic departments voted online for the 30 candidates.

Legislature focuses on environment (China Daily)

02-27-2019

Environmental specialist Fu Yuhang complimented achievements made by China's top legislature related to ecology and the environment last year, but she said the fight against pollution via legal means still needs to be strengthened.

"I'm happy to see that our country adopted a series of environmental laws over the past few years, including those concerning air, water, soil and solid waste pollution prevention," said Fu, also a deputy to the 13th National People's Congress, from Sichuan province.

It means a legal framework to safeguard ecology and the environment has been basically built, she said.

As a researcher specializing in water quality control, Fu said the environment in her hometown of Zigong, Sichuan, has gradually improved thanks to the country's intensified efforts in environmental protection. These include the adoption of the Law on Air Pollution Prevention 2015 and the Water Pollution Prevention and Control Law, which took effect in January last year.

"We don't need to wear masks in winter as smoggy days have been reduced in recent years," she said.

But Fu is still worried about some pollution problems, including classification of trash and overuse of plastic bags.

"These problems urgently need to be regulated by laws," Fu said, adding that she plans to make related suggestions at the annual plenary session of the NPC, which is scheduled to open on March 5.

The deputy said she believes that environmental protection will remain a key topic at this year's legislative session.

"This year, I'm looking forward to more legally binding measures to regulate the use of plastic bags and reduce disposable goods in hotels, as well as a specialized inspection to see how the Solid Waste Law is adopted," she said.

The 13th NPC Standing Committee, which was elected in March, has listed such an inspection and a new law on noise pollution control on its five-year work agenda.

Additionally, a thorough review of the environment and ecology-related documents, including administrative regulations and relevant rules made by the top court, will be conducted this year to make sure they are consistent with the Constitution and laws.

The top leadership has made pollution control one of the "three tough battles" that China must win to achieve building a well-off society in an all-around way by 2020.

Yue Zhongming, an official with the NPC Standing Committee's Legislative Affairs Commission, said the top legislature is doing its part by intensifying legislation and law enforcement inspection in environmental protection.

In 2018, the Soil Pollution Prevention and Control Law was adopted after a unanimous vote. "Soil relates to people's food safety, and its protection also contributes to the nation's ecological quality," said Zhang Guilong, another official with the commission.

In July, the NPC Standing Committee also had a meeting at which environmental officials came to answer questions on air pollution from NPC deputies and committee members.

Cleanup campaign restores Yangtze River habitat (China Daily)

02-25-2019

One man's preservation efforts have mushroomed to encompass hundreds of volunteers and boost civic pride. Li Lei reports from Beijing, with Zhou Lihua and Liu Kun in Yichang, Hubei.

Get up at 5:30 am. Leave the house at 6 am and start collecting garbage on the banks of the Yangtze River. Finish collection at 7:30 am.

Li Nianbang, from Yichang, Hubei province, has followed this routine every weekend and national holiday for the past few years, no matter what the weather.

Wearing rubber gloves and dragging a huge bag, the 52-year-old self-employed hairdresser has encountered everything from broken bottles to cans and rags during hundreds of early morning excursions in the riverside city, which crouches in the shadow of the Three Gorges Dam, a massive flood-control and hydropower project on the Yangtze River.

Three years ago, the Hubei native founded a volunteer group called Sanxia Yigong, or the "Three Gorges Ant Workers", which refers to the hundreds of volunteers who swarm across the riverbank like ants collecting garbage.

His motive was simple: to protect the river, which has provided local residents with water for drinking, irrigation and transportation, along with acting as a boundary marker with other provinces, for thousands of years. The waterway is also home to a wide array of endemic and endangered species, including the Chinese alligator and the Yangtze River dolphin.

However, the water has been polluted by domestic sewage and industrial wastewater for decades, while residents and visitors have strewn garbage along the riverbanks.

"A single ant is limited in power, but when many ants come together they bring change beyond measure," Li said. "That is what I anticipated our group would achieve."

Improvement

In the past three years, some 30,000 of these ant workers have removed more than 1,000 metric tons of garbage from the riverbanks, according to Li's estimates. Participants range across all age groups, from government officials to retirees and students.

According to Zhou Fengying, a 62-year-old volunteer who has lived in Yichang all her life, the ant workers have made a massive difference.

"There was a time when lots of stinking rubbish would be washed onto the banks during summer. The smell was unbearable," she said.

Now, the riverbank is slowly regaining its place as a peaceful spot for urban commuters and a popular haunt for family outings and post-supper walks.

It is also increasingly common for newlywed couples to have wedding photos taken there.

The transformation started with an impulse, according to Li, who opened his barbershop in 1986.

On Dec 1, 2015, he read a news story about Tommy Kleyn, a young man in the Netherlands.

Kleyn was shocked by the sight of a heavily polluted river he passed every day as he rode his bicycle to work, so he decided to clean it up.

To achieve his aim, he decided to get up 30 minutes earlier every day and spend the extra time working on the riverbank until all the garbage had been cleared away.

Inspired by Kleyn's devotion, Li decided to follow suit and clean up the banks of the Yangtze in his area. He began his mission two days later, equipped with rubber gloves and trash bags.

At that time, he visited the riverbank every day of the week.

On the first day, he collected more than 25 kilograms of trash from the riverbank, which had long been a dumping ground for garbage. The amount doubled on the second day, and again on the third.

"I'd say those days were some of the most unforgettable of my life. To be frank, I could not sleep the night before I started because I had an inner struggle," he said, recalling his concerns about people's opinions of him and whether they would look down on him as a "waste collector".

He also had to battle the harsh weather conditions. It was December in the southern province, where the generally humid climate exacerbates the feeling of being cold on winter mornings.

"On rainy or snowy days, the wind was like a knife that cut deep into my skin," he said.

"I dared not slacken off even once, because if I had done so, I would have found a million excuses not to go the next time."

Even more hurtful, though, was the barrage of unflattering opinions and misunderstandings from friends, neighbors and even passersby who questioned his motives. Many believed he was being paid to do the work or assumed he was only conducting the cleanup campaign to gain fame.

Other people laughed at what they saw as his stupidity and stubbornness.

"They thought I would never accomplish the task, because even if I cleaned up the riverbank one day it would be littered again the next," he said.

Growing popularity

However, the critical comments subsided as Li persisted with his task, and a growing number of people showed their support by sharing his vision of a pristine riverbank.

In October 2016, Li founded Sanxia Yigong, which has about 380 active members and many more occasional participants.

He said that since the group was founded, the number of contacts on its WeChat account has risen sixfold to 3,500, and many people express deep interest in the group's activities.

To avoid short-lived popularity, Li has led by example. He has only missed three of the group's more than 500 collective operations, and each time he had a sound reason.

"Once was because I had to attend a crucial meeting related to my work, and once was for a relative's funeral. On the other occasion, I had to drive my son to the place where he took the national college entrance exam," he said.

In addition to support from the public, local authorities have also stepped in to aid his endeavors.

At first, the ant workers were unable to find suitable places to dispose of the garbage they collected, so they had to pile the trash up on the riverbank and hire a truck to carry it away every few weeks.

Now, authorities in the city's Xiling district have set up an office to assist the workers' activities, and also provide a truck to transport the waste immediately after every operation.

Li refuses all offers of financial assistance from local businesses. "We only accept donations such as trash bags, rubber gloves and bottled water," he said.

"I like to ask for donations on our WeChat moments feed, where users can share photos with captions or websites, because it helps to get them more involved in the process."

It seems that things are developing in Li's favor. According to the Yichang government, more than 600,000 volunteers have joined various activities designed to help restore the local environment, which is something the city can be proud of.

I'm happy to be one of the 'ant workers'

I used to work as an administrator, and when I retired in 2016, I began visiting the riverbank because a lot of retirees do physical exercises there.

I was curious when I saw groups of people - usually five or six at a time - picking up garbage on the riverbank. I was very impressed when I learned that they were volunteers rather than paid sanitation workers sent by the government.

The garbage stank, but they didn't seem to care. Moreover, they asked for no return, financial or reputational.

Some people said that what they were doing was trivial, but it's not easy to do this work long term.

I decided to join them. As far as I can recall, I have taken part in more than 300 voluntary operations since 2016, and I am happy with what we "ant workers" have brought about.

I also encouraged my immediate family, other relatives and friends to come along. I have spoken about voluntary service to almost everyone I know. I believe that as long as we all make an effort, the Yangtze will become cleaner day by day.

Transports

Ferroviaire

State railway operator sells 15% of cargo unit (Caixin)

02-16-2019

China Railway Corp. (CRC), the state railway operator, sold 15% of its cargo transportation subsidiary to six investors as part of a push for state-owned enterprise reform that may lead to a public listing of the unit.

CRC said Friday that it completed the 2.4 billion yuan ($354 million) sale of the stake in China Railway Special Cargo Services Co. Ltd. to investors including Dongfeng Motor Corp., BAIC Group, CRRC Capital Management Co., JD Logistic, Global Logistic Properties Ltd. and China International Marine Containers Group.

CRC put the 15% interest in China Railway Special Cargo up for sale on the Shanghai United Assets and Equity Exchange in December as part of CRC's efforts to push forward a mixed-ownership reform. China Railway Special Cargo revealed plans to optimize its shareholding structure for an initial public offering this year, according to a company filing.

China Railway Special Cargo's business mainly focuses on automobile shipping and other cargo transport. As of June 30, the net assets of China Railway Special Cargo totaled about 14.7 billion yuan with liability of 914 million yuan.

Business registration records showed that China Railway Special Cargo has reduced its registered capital to 4 billion yuan from 18.4 billion yuan as of Jan. 9, as the company moves to meet shareholding reform and listing rules.

China's National Railway struggling to revitalize cargo business (Caixin)

02-20-2019

China's national railway operator needs to streamline its bureaucracy and empower local bureaus to make decisions if it wants to shore up its cargo business and pare down debt, industry watchers say.

The comments come after Caixin published an opinion piece last month rekindling years-long debates over China's debt-fueled expansion of its rail network, and asking whether the reforms undertaken by China Railway Corp. (CRC) to improve its operational efficiency have been effective.

"People often see only the convenience of China's high-speed rail network and boast about it being the world's longest, but they turn a blind eye to its enormous debt and operating losses, as well as the serious deterioration of the country's transportation structure," wrote Zhao Jian, director of the China Urbanization Research Center at Beijing Jiaotong University.

Trains were once a central method of transporting cargo but they started to give way to roads and waterways in 2016, Zhao said. "Because China's railway freight capacity cannot meet the demand, a large number of vehicles have been deployed to transport goods and raw materials, like coal, over the roads, which greatly increases logistics costs and seriously reduces overall efficiency in the transportation system."

Industry experts, who spoke to Caixin on condition of anonymity citing the sensitivity of the issue, agreed that CRC's attempt to revitalize its cargo business had not borne much fruit.

"CRC is the single entity dealing with clients, relevant billing and transport coordination," said one rail expert who asked not to be identified. "This leaves little leeway for its domestic bureaus to contribute to business expansion."

The state operator lacks the agility of its rivals in the private sector, losing out in the areas of seamless coordination of logistics, information sharing and capital flow management — three key areas of competitiveness.

"Today's business customers are demanding and they want fast lead time. CRC loses out in this regard because it's time consuming for its various bureaus to coordinate the delivery of goods," one specialist said.

The rail operator's other Achilles' heel is its lack of cargo processing centers. Only in last September did authorities say they were crafting a plan to encourage construction of a greater number of short connector railways to move goods like coal, ore and other freight between depots and processing centers.

The plan would allow for construction of such short-distance lines using private money — part of Beijing's efforts to open up the rail network to outside financing and ownership. Low profitability has made CRC reluctant to build short connector railroads, which typically link up factories or other company facilities with logistics centers like ports or major rail freight centers, a CRC official told Caixin.

"Even when such projects are proposed, the current procedure is relatively bureaucratic and time-consuming. That can create bottlenecks, for example, for shippers of commodities like coal that need to move those goods short distances from rail yards to ports," the official said.

However, the government policy that encourages coal to be transported by train instead of trucks in an apparent bid to reduce pollution is set to be a boon for CRC.

This will create tailwinds for CRC's target of boosting its annual freight volume to nearly 5 billion tons by 2020, an increase of 35% from 2017. The plan will see CRC ship up to 2.8 billion metric tons of coal, or 75% of the country's total shipments of the fossil fuel, annually by 2020.

Railway firm to raise funds on A-share market (China Daily)

02-27-2019

Beijing-Shanghai High-Speed Railway Co Ltd, a unit of China Railway Corp and the company that runs the Beijing-Shanghai high-speed railway, is planning to raise funds through an initial public offering on the A-share market, it said in a regulatory filing on Tuesday.

Launched in 2011, the Beijing-Shanghai railway line is one of China's most profitable high-speed routes.

The public float is seen as a significant step in the State-owned enterprise's efforts to promote mixed ownership reforms and optimize its capital structure. Company officials expect to complete the preparatory listing work by the end of this year.

The Beijing-Shanghai High-Speed Railway is 1,318 kilometers long and spans seven provinces and municipalities including Tianjin, Hebei, Shandong and Jiangsu. It is regarded as the country's premium transportation asset and has since its start in 2011 hosted 940 million trips.

A spokesperson for China Railway emphasized that by raising funds from the market, the company will be able to securitize its assets. Securitization is the practice of pooling various types of contractual debt, such as mortgages, and selling their related cash flows to third-party investors as securities.

"It will increase funding for the transportation business, boost socioeconomic efficiency, services and help State-owned railway enterprises establish a market-oriented operating system," the spokesperson said.

China Railway has been actively engaging in securitization and optimization of its assets. Last April, the company signed a strategic cooperation agreement with the Shanghai Stock Exchange for railway construction bonds, railway capital securitization and plans for its subsidiaries to go public. Earlier this month, China Railway Special Cargo Services Co Ltd, another subsidiary of China Railway, completed its share transfer, another significant push in its mixed ownership reform.

Zhao Jian, a professor at Beijing Jiaotong University, said such steps were necessary to ease the financing constraints in railway construction.

"For example, profitable companies such as the Beijing-Shanghai High-Speed Railway Co Ltd can go public and become financing platforms for China Railway," he said.

"There are a number of premium assets in the country's railway system, such as the commercial properties around railway stations and railway projects for resource transportation," said Xu Weihong, chief economist of AVIC Securities. "Profitable assets can be securitized so as to lower China Railway's debt ratio," he said.

China rail to lay groundwork by year end for Beijing-Shanghai IPO (Caixin)

02-27-2019

China’s national rail operator hired an official institutional adviser for the planned public listing of its lucrative Beijing-Shanghai high-speed rail line, aiming to complete supporting work for the initial public offering (IPO) by year end.

China Railway Corp. (CRC) and the China Securities Regulatory Commission (CSRC) posted separate announcements Tuesday related to what could become one of the biggest new domestic listings this year or next. The ground-breaking move would be one of the rail operator’s largest yet to pay down hundreds of billions of dollars in debt built up over the past decade by building the world’s largest high-speed rail network.

CRC engaged CSC Financial, a joint venture of leading financial conglomerate Citic Group, as the official institutional adviser to get the listing process underway, according to an announcement on the site of the CSRC's Beijing branch. It said CRC officially signed its agreement with CSC Financial last October.

In a separate announcement on its microblog, CRC confirmed that it hopes to complete supporting work for the IPO by the end of this year.

CRC began accelerating a drive to securitize its assets last year as part of a broader Beijing campaign to get companies and government agencies to pay down big debt piled up over years of breakneck growth. As of September, CRC reported owing a massive 5.28 trillion yuan ($789 billion).

The new materials show a 70% reduction in the registered capital for the Beijing-Shanghai line, from a previous 130.6 billion yuan to a current 40 billion. CRC didn't give a reason for the drop, and analysts said such a move is relatively rare. Reasons could include large losses for the asset or inaccurate earlier data.

Also noteworthy was the disappearance of Bank of China from the line's list of registered shareholders. The bank, one of China's four largest, previously owned about 4% of the line and was one of its oldest stakeholders. Other investors include various entities around stations along the line that have previously taken part in construction and operations as well as investment.

The Beijing-Shanghai line is one of CRC's more lucrative assets thanks to the popularity of travel on the route connecting two of the nation's largest, most advanced cities. CRC said the line, which opened in 2011, has been profitable for more than three years. In 2016, it earned 9.5 billion yuan, up from 6.6 billion yuan a year earlier, according to its financial reports.

CRC's decision to float the unit also came under pressure from two other shareholders — Ping An Asset Management Co. Ltd. and a national social security fund — which have a combined 20% stake in the operation, sources previously told Caixin. CRC holds a controlling 46% share of the line.

In addition to securitization of existing lines, CRC is also attempting to ease its debt burden by bringing in private partners to help build some newer lines. In September 2017, a group led by private equity giant Fosun Group signed an agreement to launch China's first privately controlled railway line under a government program designed to finance more infrastructure with private money.

Railway trips up on short-distance travel demand (China Daily)

02-06-2019

The national railway operator has predicted the number of passengers to continue to grow during the Spring Festival holiday due to rising short-distance travel demand.

The China Railway Corporation said it will add 208 trains on Wednesday to handle a total of 7.67 million railway trips expected, up 8.5 percent year on year.

Local railway bureaus have increased services in remote towns and villages, worked to help passengers transfer to buses and subways, offered better Wifi access and allowed fast security checks for the elderly and disabled.

Around 4.22 million railway trips were made Tuesday, up 9.6 percent year on year.

Hundreds of millions of Chinese go back to their hometowns to celebrate the Chinese Lunar New Year each year, creating an annual travel rush around the festival that often puts the transport system to the test.

This year's Spring Festival travel rush started from Jan 21 and will last till March 1, with railway trips expected to hit 413 million in total, up 8.3 percent.

Metro, tram & bus, bicyclettes en libre-service

Beijing to build two new metro lines in 2019(China Daily)
02-22-2019

Beijing plans to build two new metro lines stretching a total of 7.1 km this year, Beijing Major Projects Construction Headquarters Office said Friday.

The western section of Line 11, measuring about 3.6 km, is designed to have four stations. The construction of the line will start in the first half of 2019. Upon completion, the metro line will link the existing Line 6 and S1.

The new metro line will serve the Shougang Industry Park, where the Beijing Organizing Committee's Office for the 2022 Winter Olympics is located, as well as the Beijing Winter Olympic venues.

Another new line, the northern extension of Beijing's new airport line, will measure about 3.5 km. This line is expected to link Line 14 and Line 16 which are under construction and the proposed Line 11.

Meanwhile, an urban airport terminal will be built on the line to offer check-in and baggage consignment services to travelers.

Beijing will have a total of 17 metro lines under construction in 2019, totaling 339.1 km, according to the office.

Beijing has taken measures to ease traffic congestion in the city by building more subway lines. The national capital has 22 metro lines now. The total length of operational subway lines in the city was extended to 637 km by the end of 2018.

Beijing to open 3 more metro lines in 2019(Xinhua)
02-22-2019

Three more urban rail sections will be put into service in Beijing this year, the Beijing Municipal Commission of Transport announced Friday.

With commissioning of the subway line link to the city's new airport, the eastern extension of the existing Line 7 and Batong Line, the total length of metro rails in operation in the Chinese national capital will reach 699.3 km by the end of the year, comparing to 636.9 km at the present, according to the commission.

This year, Beijing will also work on the construction of 14 other metro lines or sections, with the length totaling 252.3 kilometers.

Beijing has 22 metro lines now, with three newly opened in 2018.

Bye to public transport tickets, hi to cool apps (China Daily)
02-18-2019

In the not too distant future, passengers in China can simply use their smartphones to board buses, subway trains and even railway trains, industry experts said.

Electronic payment operators and the government are working together toward that goal, they said.

In late January, the Guangzhou-Shenzhen railway line in South China's Guangdong province, became the first to adopt digital payments, to improve operational efficiency during the Spring Festival holiday.

The Guangzhou-Shenzhen route has seven stations, and is one of the busiest lines in the Guangdong-Hong Kong-Macao Greater Bay Area.

"I don't need to buy tickets in advance, or worry about forgetting my ID card," Li Chao, a Guangzhou native, told Xinhua News Agency before boarding a train at Guangzhou East Railway Station. "Now taking a train is as convenient as paying at shopping mall checkouts."

Normally, passengers with a valid identity card can buy tickets online or at ticket counters at railway stations. Now, on the Guangzhou-Shenzhen route, they can pay directly using Alipay, a mobile payment app of internet giant Alibaba, and reach the platform by allowing the electronic gates to scan a QR code on their phones.

The verification process is done using Alipay's registration system and facial recognition devices at the gate.

This reduces the overall transaction time from about 20 to 30 minutes to just a few minutes, according to Wang Lihui, who is in charge of the Guangzhou East Railway Station's ticket sales office.

According to a report in Caijing magazine, Guangdong's local railway authority's support facilitated the introduction of the digital tool.

Zhou Weiran, a partner at PwC specializing in technology, media and telecommunications, said there is high chance for such payment methods' introduction across the whole national railway system.

"For one thing, mobile payment methods significantly save passengers' time and make travel more efficient. For another, since the government administers the whole railway transportation system, it's easier for it to develop and roll out a unified payment system on a nationwide basis."

Local bus services and subway train systems in over 120 Chinese cities already accept Alipay app's phone-based payments. Tencent's digital payment service has also covered more than 100 cities where about 60 million people use it.

ApplePay, JDPay, UnionPay and China Telecom Bestpay, a subsidiary of China Telecom Corp, also provide such services.

Wu Chunlan, 27, a human resources professional in Foshan, Guangdong province, said: "When going out, a cellphone is all I need now."

According to a report from consulting firm Deloitte, among 1,000 smart cities worldwide under construction, 500 are in China, compared with 90 in Europe, confirming the country's lead in the trend of equipping cities with advanced technologies.

However, challenges remain in the drive to adopt digital payments across all public transportation systems in the country. One is the high cost of installing related equipment and maintenance, Zhou of PwC said.

"Since these services are provided free of charge to the general public, the government may need to find a way to compensate them, such as, in the form of subsidy," he said.

Besides, for older people, and people in lower-tier cities where smartphone penetration is low, awareness campaigns are needed to popularize the new payment methods, he said.

Wang Pengbo, an analyst with consultancy Analysys, said for mobile payment companies, further negotiation with different government departments is needed to promote their products. The debut in Guangdong railway is a promising sign.

Zhou said mobile payment operators would also like to collect an individual's travel data for other commercial applications, such as personalized products and promotion of certain services.

To mark the unveiling of its payment service on the Guangzhou-Shenzhen railway, Alipay published a travel guide for passengers through websites. The guide recommends exclusive services to its registered members at high-speed railway stations. Passengers now can use Alipay QR codes to enter railway stations, and also use the app to order and pay for meals on the train, enjoying a 50 percent discount.

Consumption and usage data of travelers can be mined for research and development of customized products and services; but any such operations should be under the supervision of the government, to protect passenger privacy, Wang said.

Southwest China's Sichuan province tested a subway with the highest level of automation at its provincial capital Chengdu Tuesday, according to Sichuan Daily.

The metro is the country's first Grade-of-Automation 4 (GoA4) subway with eight carriages, said the newspaper.

Trains running on the GoA4 system operate automatically at all times, including opening and closing doors, detecting obstacles and handling emergencies, according to the International Association of Public Transport.

The extended length allows it to carry up to 3,496 people in one trip, more than the current automated subways running in Beijing and Shanghai.

The test model is designed to run at 100 km per hour on Chengdu's metro line 9, a 22-km rail connecting the western and southern parts of the city.

A total of 25 such trains will operate on the route when the line is put into use in late 2020, according to the newspaper.

Aviation, aérospatial

Airbus to pull A380 superjumbo jet out of production (Caixin)
02-15-2019

The world’s largest superjumbo passenger jet, Airbus’s A380, is wrapping up its long-haul journeys after 11 years in production.

Airbus said Thursday it will stop building the A380 passenger jet in 2021 because of disappointing sales.

The European aerospace group made what it called the "painful" decision after Emirates, the A380's biggest customer, slashed an outstanding order for 53 planes to 14.

Airbus has counted heavily on the A380, with advanced technology and space to accommodate more than 550 people, to compete with archrival Boeing's 50-year-old 747 jetliner. Airbus predicted at launch that it would sell 1,200 of the superjumbo jets. But it has sold just 234 so far.

Airbus expected China to be one of the major customers of the A380 with orders for more than 200 in 20 years. However, China Southern Airlines has so far been the only Chinese buyer of the jet with orders of five.

Bloomberg reported last year that Airbus proposed to move part of the A380's production to China in exchange for big orders. However, the plan didn't go through.

Civil aviation sector embracing digital era (Xinhua)

02-20-2019

Digitalization improving operational efficiency, upgrading services and reshaping industry development models

China's civil aviation industry is accelerating its advance into the digital era.

Already this year, China Southern Airlines has started online seat selection services for all domestic flights, as well as paperless e-boarding passes. As well as offering more convenience for passengers, the move is also a response to environmentally friendly travel initiatives.

In the first week after the services were offered, about 75 percent of passengers on its domestic routes opted to select their seats via digital devices, said China Southern.

Based in Guangzhou, Guangdong province, China Southern operates the largest fleet in Asia and the third-largest worldwide. In 2018, it recorded 139 million passenger journeys.

China Southern e-Travel, its mobile app, is part of the airline's digital strategy, which combines mobile internet functionality with all its services, consolidating resources for air travel and tourism, and offering one-stop shopping and door-to-door services for customers.

Cathay Pacific and Cathay Dragon have also had paperless services on their 15 daily flights between Shanghai and Hong Kong since Oct 29, 2018. Passengers can enjoy easier and more flexible digital services including booking, paying, check-in and boarding.

"The global aviation industry is at a crucial point. It is transitioning from an increment-driven market to one in which greater value and opportunities are being extracted from the existing market. And digitalization presents a crucial opportunity for China," said Yu Zhanfu, partner and vice-president for China at consultancy Roland Berger.

Rising cost pressures and safety concerns are affecting the aviation industry worldwide. Digitalization is seen as key to improving operational efficiency, upgrading services, and reshaping development models, Yu said.

"It is widely recognized that digitalization is a new value-growth point. Alongside dramatic growth in China's civil aviation sector, the authorities, domestic aviation manufacturers and technological giants are

all eyeing digitalization," said Xu Jun, vice-president of Asia-Pacific original equipment manufacturers at Honeywell Aerospace.

In January 2018, the Civil Aviation Administration of China issued its assessment guidelines on personal electronic devices. It was seen as an impetus to reshape the cabin experience with in-flight internet.

Since then, domestic airlines have been relaxing their restrictions on in-flight mobile device usage and major domestic aviation manufacturers have been embracing the digital era.

At the 2018 China Airshow, Hainan Airlines announced a partnership with Honeywell that would see Honeywell's supply auxiliary power units and aftermarket support to the airline's fleet, including its GoDirect connected maintenance services, a predictive technology based primarily on data.

The aviation industry has an extremely long value chain covering research, development, operation and maintenance, each of which has significant added value and constantly generates enormous amounts of data, according to Xu.

Digitalization is inevitable for aircraft manufacturers and systems vendors, Xu said. In the design phase, digital systems and methods are increasingly applied, significantly enhancing the efficiency of design, research, development and testing while reducing costs.

Airlines are using digital technologies to improve operating efficiency and safety. The results are smarter and safer aircraft, better flight experiences and lower operating costs.

"Digitalization opens a new horizon with regard to safety, efficiency and cost for both aircraft manufacturing and civil aviation sectors," Xu said.

For example, airlines can lower maintenance costs by predicting the health of aircraft equipment using big data, while passengers enjoy communications and entertainment in "connected aircraft".

With internet-based predictive maintenance technology, auxiliary power unit maintenance and malfunction data is downloaded from existing data on the aircraft. It allows for the prediction of imminent hardware malfunctions or other potential problems with a high degree of precision.

The data is then relayed to maintenance crews in an intuitive and visual manner, helping them tackle malfunctions before they occur. This allows for proactive and more efficient maintenance.

"An aircraft makes money for the airline only when it is flying, and revenue ceases as soon as it lands," Yu said.

If technicians can sense the aircraft's "health" by using data generated by it and carry out predictive maintenance, "it's a safer and more profitable operation", Yu said.

In fact, technicians can monitor and assess the health of an airplane while it is in the air by analyzing real-time data and selecting the appropriate time to carry out maintenance, repairs or replacement of parts.

In November 2018, the Commercial Aircraft Corp of China and e-commerce giant Alibaba Group jointly launched the Wang Jian Large Aircraft Workshop, an initiative to explore the use of intelligent manufacturing technology in passenger aircraft. COMAC is the developer of China's C919 large passenger airplane.

The workshop is one of several collaborations between China's internet giants and commercial aircraft manufacturers to inject technologies like the internet, big data, cloud-computing and artificial intelligence into aviation manufacturing.

The International Civil Aviation Organization has forecast that China will be the world's largest civil aviation market by mid-2020.

In 2018, China's civil aviation industry hit a new record with more than 10 million flights. Passenger numbers were up 10.9 percent year-on-year to 610 million and cargo was up 4.6 percent to 7.385 million metric tons, according to the CAAC.

China's civil aviation authorities are pushing forward the integration of the civil aviation sector with new technologies such as facial recognition, automatic vending and luggage check-in, and intelligent inquiry services.

The CAAC is also encouraging the application of artificial intelligence and biological feature recognition technologies in its security operations, and promoting in-flight connectivity.

More C919 prototypes ready for test flight (China Daily)

02-14-2019

COMAC says preparations for mass production will also be accelerated

C919 aircraft manufacturer Commercial Aircraft Corporation of China (COMAC) said that a further three prototypes of the aircraft will have their debut flights this year, and preparations for mass production of the nation's first homegrown narrow-body passenger plane will also be accelerated.

According to COMAC, three C919 aircraft are undergoing testing at the C919 assembly workshop in Shanghai's Pudong New Area - the second, third and the fourth prototypes of the C919, China Central Television reported on Wednesday.

The 102 prototype test aircraft completed its first flight in December 2017. It has recently returned to Shanghai from Dongying in Shandong province, and on Friday started two to three months of modification for a future test flight.

The 103, which had its maiden flight on Dec 28, and is undergoing flight test modification for the moment, will fly to Yanliang near Xi'an in Shaanxi province, where the Chinese Flight Test Establishment is located, for further flight tests.

"The 104 aircraft has entered the final assembly stage. The jet is about to make its first flight after rolling off the final assembly line," said Meng Jianxin, deputy director of the C919 division under Shanghai Aircraft Manufacturing Co Ltd, COMAC.

According to Meng, the 105 jet is in the process of part fabrication, and major parts of the 106 model are being manufactured in accordance with the plan.

"All of them will have flight tests by the end of this year," said Meng.

With the participation of another three new prototypes, a total of six C919 aircraft, including the 101, will be assigned different tasks to test the C919's flight performance.

"The year 2019 is key for the C919, and it is hoped that we can further optimize the flight tasks, enhance flight test efficiency, and complete all the tasks safely," said Lai Peijun, a flight test engineer with COMAC.

The aircraft's first flight only mark the beginning of their journey, and every flight made will provide technical support for a more steady flight the next time.

"There are quite a few test flight subjects that need to be accomplished before a commercial aircraft model acquires airworthiness certification, and it is necessary to split the tasks among five or six aircraft," said Lin Zhijie, an aviation industry analyst and columnist at carnoc.com, one of China's biggest civil aviation websites.

Lin said it is also an international convention for five or six aircraft to work together to complete a commercial aircraft model's flight tests. Chinanews.com reported that the C919's flight tests will include 729 items and may take as long as 4,200 hours.

The twin-engine, single-aisle C919, which is comparable with the updated Airbus 320 and Boeing's new generation 737 planes, made its maiden flight on May 5, 2017.

COMAC has received 815 orders from 28 Chinese and overseas companies, which include domestic aviation companies and financial leasing companies, as well as international companies such as GE Capital Aviation Services, the largest commercial airline leasing company in the world, German startup Puren Airlines, and City Airways of Thailand.

Before the delivery of the first C919, two key missions need to be fulfilled, to receive airworthiness certification from the US Federal Aviation Administration and the European Aviation Safety Agency, and to continuously improve its safety, reliability and economy, according to Lin.

"The former will guarantee entry to the US and European markets, and the latter is a guarantee for our homegrown aircraft to have most problems settled before its commercial flights," he said.

China becomes key dynamic force of global civil aviation: IATA director general (China Daily)

01-31-2019

China is becoming a key influencer of the global aviation industry, as well as a key dynamic force in powering the global civil aviation growth, said a senior official of the International Air Transport Association (IATA) in Beijing.

"We are optimistic about the future of China's civil aviation growth thanks to the constant efforts in planning, infrastructure construction and fleet and market growth," said Alexandre de Juniac, IATA's director general and CEO.

According to IATA's forecast, China will become the world's largest civil aviation market by 2024-2025, and the air passenger volume in the Chinese market is expected to reach 1.6 billion by 2037.

"China's civil aviation industry has gained sustainable growth over decades. It has the most member airlines of IATA, thus we highly value the market here and keep close cooperation with government authorities and industry partners," De Juniac told Xinhua.

Founded in 1945, IATA is a trade association of some 290 airlines from 117 countries and regions, representing about 82 percent of global air traffic.

"China has seen fantastic growth in the civil aviation industry," De Juniac said. Alongside the expanding passenger volume and fleet size, "China has a very strong safety performance. The jet hull loss rate for 100

consecutive months was zero, and China has gained significant progress in on-time flight performance," he said.

By the end of 2018, China's civil aviation has realized a zero-accident record in over 100 months. And the on-time flight in China reached 80.13 percent, according to the latest statistics from the Civil Aviation Administration of China (CAAC).

China sees over 12m air trips during Spring Festival holiday (China Daily)

02-11-2019

More Chinese traveled by air during the just-concluded week-long Chinese Lunar New Year holiday, official data showed Monday.

A total of 12.59 million air passenger trips were made from Feb 4 to 10, up 10.6 percent from last year's holiday, according to the Civil Aviation Administration of China (CAAC).

Around 111,000 flights were dispatched during the period, up 6 percent year-on-year.

Popular tourist destinations like Haikou, Lijiang, and Harbin saw busy airports. The national travel rush peaked on Feb 10 with daily air trips reaching a historic high of 2.03 million, according to the CAAC.

From Jan 21 to Feb 10, air travelers in China made 37.46 million trips, up 10.4 percent from the Spring Festival travel rush last year.

During the 40-day travel rush from Jan 21 to March 1, air travelers are expected to make 73 million trips, up 12 percent year-on-year, the CAAC said.

Traveling by air has become increasingly popular in China thanks to expanding air networks and rising household income.

Nantong among choices for third airport for Shanghai (China Daily)

02-15-2019

Speculation has been rife recently about the possible location of Shanghai's third airport, and the latest candidate is Nantong, a city in Jiangsu province and about 120 km north of Shanghai, according to Shanghai Securities Times.

Shanghai's third airport, taking up an area of 20 square kilometers and with a designed capacity of 50 million passenger trips per year, will be reportedly located in Haimen in Nantong, the Shanghai Securities News reported on Thursday, citing sources from a meeting of the local chamber of commerce held during the Spring Festival.

The report said that the airport will take the responsibility of facilitating the integration of the Yangtze River Delta region, which is one of Shanghai's key tasks for this year.

However, only a few hours later, Chinese financial news app Wall-streetcn said a source from the East China branch of the Civil Aviation Administration of China denied that a final decision had been made yet, and the CAAC will choose from options including Haimen, Suzhou in Jiangsu province, as well as Chongming and Fengxian in Shanghai and others.

"Shanghai's existing two airports have been saturated in recent years, and the closer connection across the Yangtze River Delta region requires a new airport to support the region's further integration and development," said Zuo Xuejin, a researcher from the Shanghai Academy of Social Sciences.

Shanghai's Pudong International Airport and Hongqiao International Airport received 117.7 million passenger trips throughout 2018, up 5.2 percent year-on-year; and handled 4.17 million metric tons of cargo.

The new airport would help Shanghai reach its goal of 180 million passenger trips and 6.5 million tons of cargo volume by 2035.

"In addition to its existing capacity, Shanghai is in need of another international airport that is equivalent to one-and-a-half times the size of Hongqiao airport, and a large general aviation airport," Jiang Huaiyu, director of the East China branch of the CAAC, said at a meeting last May.

An important task for the integration of the Yangtze River Delta region's civil aviation integration and development is to build an aviation hub across the city cluster with Shanghai as the centerpiece, said Jiang.

Over the past few years, there has been discussions of different destinations for Shanghai's third airport, including Nantong, Jiaxing in Zhejiang province and Kunshan in Jiangsu province.

"All the three locations have strengths and drawbacks. It is not a simple yes or no," said Jin.

"Taking the two options in Jiangsu province for example, Nantong, which is located north of the Yangtze River, has a shortage of aviation facilities. If the new airport is located in Nantong, it will be positive for the less developed northern and central areas of Jiangsu province," Jiang said.

But for economic and practical concerns, Kunshan in Suzhou, which is situated in the south of Jiangsu province, is a better choice as it is an economic engine of Jiangsu province, and an airport would be able to cushion the passenger and cargo pressure of this area, he said.

Routiers

China sees fast expansion of NEVs charging infrastructure (China Daily)
02-26-2019

China has built 853,000 charging stations for new energy vehicles (NEVs) by the end of January, surging 80.1 percent from a year earlier, the Securities Times reported, quoting an industry report.

A total of 44,000 charging stations for NEVs were built nationwide in January alone, up 231.6 percent year-on-year, said the paper.

Charging stations in metropolitans like Beijing, Shanghai and Guangdong province accounted for 76.4 percent of the national total.

China aims to substantially improve the technology and quality of charging facilities, speed up efforts to establish a better standardization system and optimize the distribution of these facilities within three years, according to a plan released by the National Development and Reform Commission in December.

China will also make the charging networks better interconnected, upgrade the charging services and create a better environment for the development of charging infrastructure, according to the plan.

NEVs are gaining popularity in China, the world's largest auto market, thanks to a string of supportive policies, as they help reduce fossil fuel consumption and address air pollution.

The annual sales of NEVs rose 61.74 percent year-on-year to 1.26 million in 2018.

Chinese lithium-ion battery maker CATL forecasts soaring profit (China Daily)

01-30-2019

Contemporary Amperex Technology Co Ltd (CATL), China's leading automotive lithium-ion battery maker, predicted net profit growth up to 33.7 percent in 2018.

The company's performance forecast showed net profit, excluding non-recurring items, could reach 3.18 billion yuan ($472 million) last year, thanks to China's booming new energy vehicle (NEV) market. CATL is a company listed at Shenzhen Stock Exchange.

Annual NEV sales soared last year with a 61.7 percent year-on-year growth to 1.26 million units, data from the China Association of Automobile Manufacturers showed.

The country unveiled new incentives to galvanize sales of new energy vehicles Tuesday as part of efforts to stabilize domestic consumption.

CATL had a NEV battery market share of about 41.8 percent in China, followed by BYD, the country's leading electric vehicle maker, according to a research note by Caitong Securities.

Its net profit is expected to grow 13.9 percent year-on-year to 4.1 billion yuan in 2019, with revenue rising 45 percent to 39.4 billion yuan, Caitong said.

Great Wall Motor bets big on hydrogen fuel cell vehicles (Xinhua)

02-26-2019

Great Wall Motor Co Ltd, one of the country's largest SUV and pickup manufacturers, is making hydrogen fuel cell electric vehicles a new focus for its business, expecting it to become a vital sector in the long term, according to a senior company executive.

The company's first fuel cell model based on a dedicated electric vehicle platform is scheduled to debut in 2020, and the first fuel cell fleet will be launched during the 2022 Winter Olympics, said Hu Shujie, senior vice-president of the Baoding, Hebei province-based automaker.

"Fuel cells are a mainstream (new energy) technology internationally, and the commercial application of fuel cells has already begun in China," said Hu.

He said Great Wall Motor has invested more than 1 billion yuan ($149 million) in research and development in hydrogen energy and fuel cell vehicles, and the company already owns a myriad of internationally prominent technologies.

Hydrogen fuel cell vehicles, which are powered by electricity produced by compressed hydrogen fed into fuel cells, are important in building a green energy future, as they are generally considered zero-emission and clean, according to Hu.

Such vehicles have long cruising ranges and can be refueled within three to five minutes.

In addition, the performance of fuel cell vehicles is not greatly affected by the change of seasons, he said, referring to winter's adverse effect on the life of lithium batteries.

In recent years, the company has made moves to advance in the field, as both the central and local governments are eyeing the potential of hydrogen fuel cells to upgrade the manufacturing industry, and to achieve green and sustainable development.

China had around 1,200 fuel cell vehicles on its roads and fewer than 20 hydrogen fuel stations by the end of 2017, ranking behind the United States, Japan, Germany and South Korea, according to the International Hydrogen Fuel Cell Association.

The Chinese government has set a goal to have 5,000 such vehicles on its roads by 2020, 50,000 by 2025 and 1 million by 2030.

Great Wall Motor's hydrogen energy technology center in Baoding started operation in the first half of 2018. It is capable of manufacturing fuel cell vehicles' core components, as well as vehicle integration and testing.

The center has the country's first 104 MPa high-pressure hydrogen cycle test laboratory, first liquid-based hydrogen storage and hydrogen refueling station with 70 MPa refueling capability, and first fuel cell vehicle power system testing laboratory.

The first-phase investment of the project involved an investment of about 470 million yuan.

In February 2019, the construction of an electrolysis hydrogen production plant and a hydrogen liquefaction plant started to extend the company's operations along the value chain, ranging from hydrogen production and liquefaction, to hydrogen storage, transport, testing, refueling and applications.

The Baoding Great Wall Holdings Group Co Ltd, the indirect controlling shareholder of Great Wall Motor, said it plans to acquire all the shares of Shanghai Fuel Cell Vehicle Powertrain Co Ltd soon. That would enable Great Wall Motor to develop and deploy cost-competitive fuel cells for a variety of applications, according to the company.

Great Wall Motor has already established an internationally competitive R&D team of 240 technology experts.

With four R&D centers in Baoding, Shanghai, Munich in Germany and Yokohama in Japan, Hu said that Great Wall Motor will make full use of world-class professionals to promote the R&D and marketization of hydrogen fuel cell vehicles.

The company is set to play a leading role in technological innovation in the fuel cell vehicle sector in China, he said.

Fuel cell breakthrough brings hydrogen cars one step closer (China Daily)

02-18-2019

The University of Science and Technology of China revealed that a new type of catalyst has been developed to prevent hydrogen fuel cells from failure, which could play a major role in boosting the hydrogen fuel cell automobile industry.

The result was published in Nature - the world's leading multidisciplinary science journal - at the end of last month.

It said the newly-developed catalyst can protect hydrogen fuel cells from being poisoned by carbon monoxide, extend the battery life and allow the battery to work in cold temperatures.

"This result may greatly accelerate the advent of hydrogen fuel cell vehicles," said Lu Junling, one of the professors at the School of Chemistry and Materials Science of USTC who initiated the research, according to Anhui Daily.

The goal for Lu and his team is to develop a cheap, active and selective catalyst for the oxidation of carbon monoxide, which can protect fuel cells and offer a means for plants to produce high-purity hydrogen, Anhui Daily reported.

With a high energy conversion efficiency and zero emissions, hydrogen fuel cells are regarded as one of the main development directions of the new energy automobile industry by some insiders and experts.

It takes only several minutes for hydrogen fuel cell vehicles to "refuel", allowing the car to run up to 350 to 600 kilometers.

Meanwhile, electric vehicles take several hours to fully charge and have ranges of 200 to 300 km, which could be shorter in cold temperatures, according to China Business News Daily.

"By 2025, fuel cell technology will be mature. The number of fuel cell vehicles may have hit 50,000 to 100,000 units," said Ouyang Minggao, an academician of the Chinese Academy of Sciences and a new energy vehicle expert, according to Economic Daily.

A raft of domestic and overseas automakers have dashed into the hydrogen fuel cell automobile industry.

South Korean and Japanese giants have taken the lead in developing and applying hydrogen energy, Economic Daily reported.

South Korean automaker Hyundai rolled out the world's first mass-produced hydrogen fuel cell car in February 2013. Japanese carmakers Honda and Toyota have produced hydrogen fuel cell models on a large scale. Hyundai signed an agreement with German auto giant Audi last June to develop hydrogen energy technology and set up an industry chain of hydrogen energy automobiles. Honda and Toyota have gone into partnership with General Motors and Mercedes-Benz respectively in terms of hydrogen energy applications.

According to Economic Daily, South Korea is scheduled to increase its production capability of hydrogen fuel cell passenger cars to 100,000 units by 2025.

Chinese independent auto brand Great Wall Motor acquired a 51 percent stake in Shanghai Fuel Cell Vehicle Powertrain, aiming to unveil its first hydrogen fuel cell model in 2022.

Zhengzhou Yutong Bus and Foton Motor have put hydrogen fuel cell commercial vehicles into use. And China National Heavy Duty Truck Group has developed three hydrogen fuel cell models.

Hong Kong's richest man Li Ka-shing invested in a hydrogen fuel cell vehicle plant in Foshan, Guangdong province in early 2018.

With a total investment of 12 billion yuan ($1.77 billion), the plant is expected to go into production at the end of this year and has an annual production target of 160,000 units, China Business News Daily reported.

However, the development of hydrogen fuel cell vehicles still faces difficulties, including the storage of hydrogen energy and establishing hydrogen refueling stations.

By the end of 2017, there were 328 hydrogen refueling stations worldwide, of which 12 were in China.

They are used to serve the research and testing of hydrogen fuel cell vehicles to a great extent, according to Economic Daily.

'Smart mobility' needs data-sharing ecosystem (China Daily)

02-25-2019

Data-enabled smart transportation can reduce traffic jams, commuting time, and carbon-dioxide emissions. Data can leverage Hong Kong's efficient public transport. The routes and schedules of local and cross-boundary buses can be centralized for public online access. Cars need to find parking places. Oswald Chan investigates HK's 'Smart Mobility' potential.

Data-sharing vital

Hong Kong has a population of over 7 million. The number of licensed private cars has grown 44 percent over the last 10 years. "Smart mobility" solutions are required for commuters to navigate the routes, and for car owners to find parking places and evade jams. Technologies are available for real-time public transport information via digital connectivity. However, that requires open sharing of data within an ecosystem of public transportation, including carpark operators.

The government needs to play a facilitating role in the information flow for smart mobility optimization. It unveiled the "Smart City Blueprint for Hong Kong" in December 2017, opening up over 650 free datasets of information from over 80 government bureaus and departments. This will help private companies design more useful mobile applications for users, and also provide useful data for technology and policy research.

Cross-boundary travel can be frustrating when passengers cannot reach their destinations smoothly. Currently there are about 14 cross-boundary bus operators in Hong Kong but their schedules and routings are unreliable. Terminals and stops for these cross-boundary bus companies are scattered across different districts of Hong Kong. Several of these transport companies do not have websites for passengers to make online bookings.

Parking woes

Motorists in Hong Kong are frustrated by the shortage of public carparks during peak hours. We have half a million private cars registered in 2018. The ratio of parking spaces to cars was 1.5:1 in 2006. Ten years later, by 2016, that gap inched closer to 1.1:1. The super-rich and companies have drivers holding vehicles. Other motorists find a convenient spot where they are served tickets for illegal parking. That is not a solution. It just adds to mobility distress.

The government has committed to release vacant parking slots in its 11 car parks in June. But the private parking operators in the city do not share their data, which if aggregated within a central data hub, can help motorists find convenient parking by location. That is a daily challenge for drivers.

CO2 emissions

It is widely believed that diesel-fuel vehicles and harbor traffic congestion are the major contributors to CO2 emissions. However, the Hong Kong Environmental Protection Department's 2016 data show the major source of CO2 emissions were the coal-burning power stations which produce our electricity. They

generated 67 percent of the 42 million tons of annual CO2 emitted. Transport contributes the next highest at 18 percent.

Cross-boundary app

To improve the cross-boundary travel experience, Ken Yung and three partners launched online platform GoByBus at the end of 2017, to consolidate the data on bus terminals, routes, stops and updates for the cross-boundary bus industry. One partner visited all the cross-boundary bus stops in Hong Kong, to list their arrival and departure information. That data is now available to commuters online via the GoByBus application.

Since October 2018, GoByBus sells tickets for four cross-border bus companies, covering about 30 routes into Guangdong province. The startup hopes to include 100 routes for 14 cross-border bus companies by the end of this year. GoByBus will leverage its big data technology to install GPS (global positioning system) chip devices on cross-border buses for real-time arrival and departure information. "The government must push public transportation service operators to share data because they are granted the monopoly to operate the services. They should disseminate the data because it is good for the public," Yung told China Daily. "The administration must include data-sharing as criteria to evaluate license renewal for public transport operators."

Shortest route app

Annoyed by traffic congestion, Brian Hui and two partners founded the Pokeguide application, which uses big data analytics and artificial intelligence, to enable users to choose the shortest travel path from origin to destination. The system lists all the public transport mode combinations, with relevant fares. About 280,000 people in Hong Kong and Taiwan have downloaded Pokeguide. In addition to Hong Kong and Taipei, the startup will provide similar information for Macao and Tokyo, in the first half of 2019.

Minibus operators in Hong Kong do not release real-time travel information. Hui welcomes the government's initiative to provide an arrival information system for green minibuses by early 2022. The administration will fund and develop a data collection system and a mobile app, and install devices on green minibuses for this purpose. When available, Pokeguide will add the real-time data of green minibuses to its hub to provide more travel combinations to users.

"Releasing real-time information of arrival and departure can encourage more people to use public transport. Smart technologies can reduce traffic congestion in such a dense city," Hui told China Daily. Besides information sharing, Hui urges the government to consider more flexible and innovative public transportation options beyond taxis, buses and trains.

In the United Kingdom, transportation licenses are granted to app developers with mixed-fleets of travel vans, according to Hui. Covered by appropriate insurance policies, these technology startups provide the shortest travel paths to users by exploiting big data and GPS technology.

Open data law

Winnie Tang, adjunct professor at the University of Hong Kong's Department of Computer Science, urges the administration to be proactive in following up its smart city ambitions. "We lack legislation for open data or a dedicated department on geospatial data to develop policies and standards. The United States, Japan, Australia and Canada have developed policies, laws, standards, and departments to manage geospatial data, from collecting, disseminating to sharing with the public."

In New York, the Open Data Law was legislated in 2012 and implemented by the end of last year. The law requires data of public transport, private parking lots, as well as ride data of for-hire-vehicles, to be published on a single web portal for public access and use.

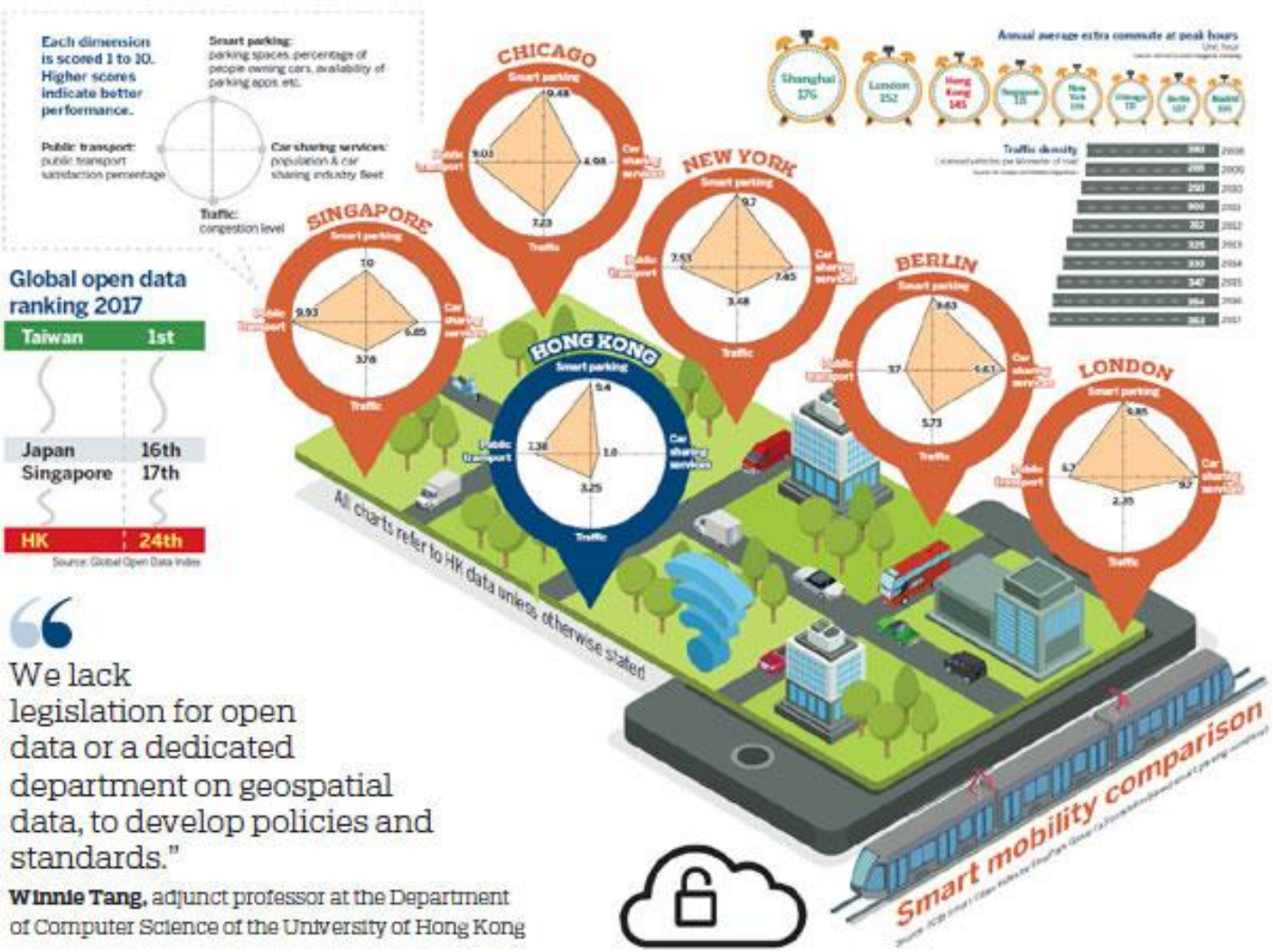
Tang suggests the SAR government should crowd-source information from the general public and build a central platform to integrate data from multiple sources, so that information sharing can be effective, efficient and powerful.

Eric Yeung, president of the Smart City Consortium, said the fear of incurring financial responsibility may be a reason why private enterprises are reluctant to share data. "The government is on the right track by announcing its data-sharing programs for public uses. After that, it should provide incentives to public transport and utility companies for data sharing when renewing licenses. When these companies share their data, it creates an ecosystem to encourage more data sharing by other corporations," said Yeung.

The Global Open Data Index ranks Taiwan 1st, Singapore 17th and HK a poor 24th. That Taiwan tops the world in open data, is astonishing. Singapore is highly respected for its proactive citizen services and information access. Hong Kong is joining the smart city movement belatedly.

Rich mobile data

Sharing of anonymous mobile data to improve mobility is another issue the government needs to tackle, according to Tang. The license conditions of telecom operators in Hong Kong prohibit them from disclosing customer information other than that necessary for telecom services, even if it is aggregate and anonymous. This outdated policy freezes the treasure trove of data that telecom companies hoard. If the city can share mobile phone data after an anonymization process like Singapore, then smart travel value can be tremendously enhanced.



"We lack legislation for open data or a dedicated department on geospatial data, to develop policies and standards."

Winnie Tang, adjunct professor at the Department of Computer Science of the University of Hong Kong

Status for HK datasets 2017

Source: Global Open Data Index

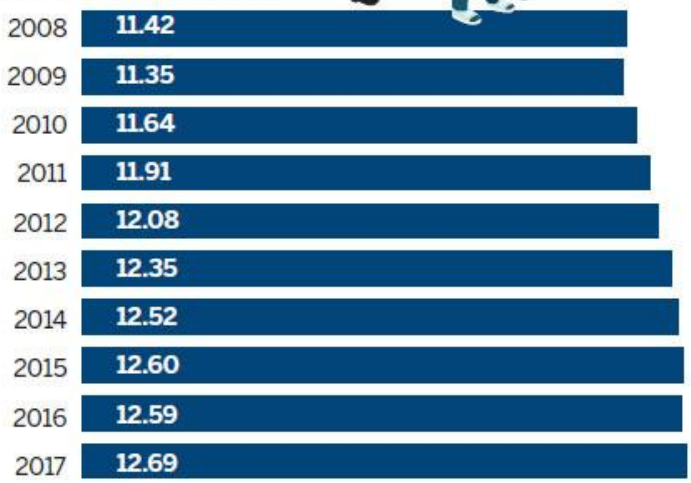
● Yes ▲ No

Dataset	Open licensed	Machine readable	Downloadable at once	Up-to-date	Available publicly	Available for free
National Statistics	●	●	●	●	●	●
Procurement	●	●	●	●	●	●
Air Quality	●	●	●	●	●	●
Government Budget	●	●	▲	●	●	●
National Maps	●	▲	●	●	●	●
Weather Forecast	▲	●	●	●	●	●
Election Results	▲	●	●	●	●	●
National Laws	●	▲	▲	●	●	●
Draft Legislation	▲	▲	▲	●	●	●
Water Quality	▲	▲	▲	▲	●	●
Administrative Boundaries	▲	▲	▲	▲	▲	▲
Company Register	▲	▲	▲	▲	▲	▲
Locations	▲	▲	▲	▲	▲	▲
Government Spending	▲	▲	▲	▲	▲	▲
Land Ownership	▲	▲	▲	▲	▲	▲

Average daily public transport journeys

Unit: million

Source: HK Census and Statistics Department



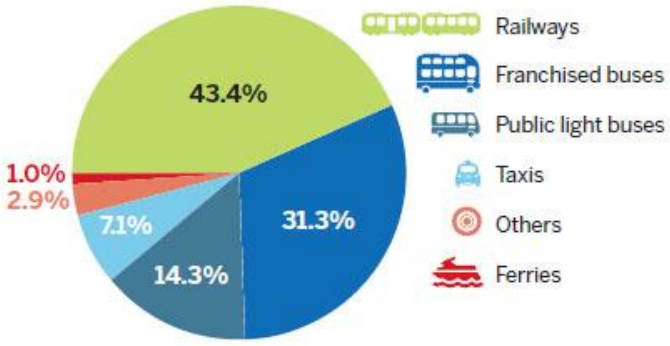
Steps to smart mobility

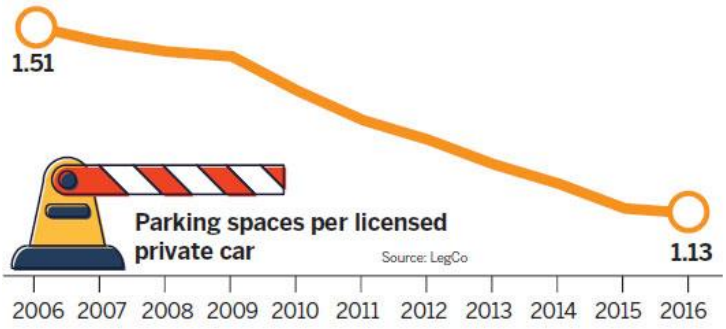
Source: Hong Kong Smart City Blueprint

2018	Integrated HKeTransport, HKeRouting and eTraffic News into an all-in-one mobile app Released real-time information of franchised buses through mobile devices
2019	Engage the public to develop a detailed Electronic Road Pricing Pilot Scheme in Central and its adjacent areas and its implementation strategy Install new on-street parking meters to support multiple payment systems Provide real-time parking vacancy information through the new on-street parking meters
2020	Complete the installation of about 1,200 traffic detectors in all strategic roads to provide real-time traffic information Release real-time information of franchised buses through information display panels at government public transport interchange and 1,300 covered bus stops
2021	Introduce pilot intelligent traffic signal systems with sensors for pedestrians and vehicles at road junctions Adopt an automatic tolling system without toll booths for the new Tseung Kwan O-Lam Tin Tunnel

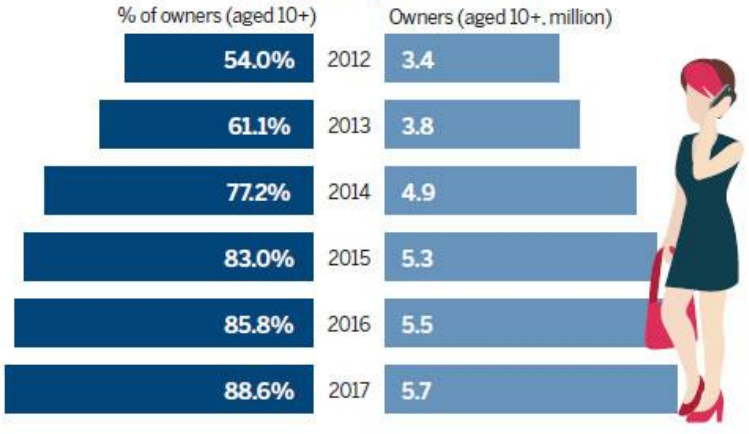
Percentage of passenger load by public transport in 2017

Source: HK Census and Statistics Department



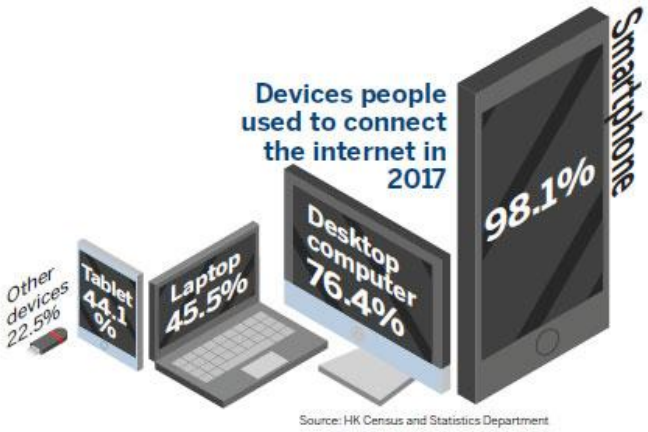


Smartphone penetration

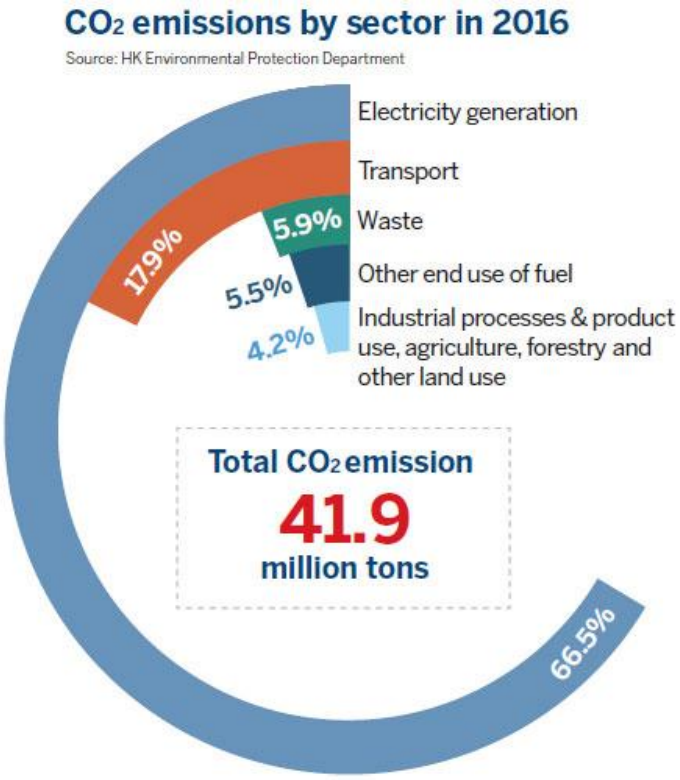


Source: HK Census and Statistics Department

Devices people used to connect the internet in 2017



Source: HK Census and Statistics Department



What's next?

- Consider legislation for mandatory data-sharing;
- Build a one-stop central public transport information platform;
- Incentivize a data-sharing ecosystem for private enterprises;
- Enable telecom companies to share anonymous mobile data;
- Improve connectivity of different transportation modes for users.

INFOGRAPHIC: OSWALD CHAN, DONG KAI, MOK KWOK-CHEONG / CHINA DAILY

Revolution for the roads (China Daily)
02-12-2019

Development of intelligent electric vehicles should be aligned with that of new energy, and the industry chain should be developed in an eco-friendly way

The development of electric vehicles has entered the stage of industrialization. However, we need to think outside the box to evaluate the profound implications of this vehicle revolution. Looking to the future, developing electric vehicles, energy, public transport and cities as an integrated whole will facilitate the vehicle revolution producing the maximum social benefits.

First, the synergy between the vehicle revolution and energy revolution will significantly optimize the energy mix of China. While the nation's oil consumption has been on the rise, the output at home has been declining. A report by the research institute of China National Petroleum Corporation warned: "In China, imported oil will account for 70 percent of the total consumption in 2018, and the issue of energy security can no longer be ignored." Every 1,000 Chinese people own 160 vehicles, a number expected to grow for a long period to come. Energy security will become a big problem if we rely too heavily on oil. To fulfill Chinese people's dreams of driving, the only viable choice is developing electric vehicles.

The rapid development of renewable energy keeps abreast with that of electric vehicles. The large-scale development of electric vehicles requires massive power supply, while the large-scale development of renewable energy depends on the consumption and storage capacity of intermittent electric power supply. Linking up the two areas through the energy network will produce huge synergistic and complementary effects. For instance, the wind power wasted in 2016 alone was enough to charge more than 10 million electric vehicles in one year. In the future, the large number of electric cars will provide a massive storage and discharge capacity, and be able to support the development of renewable energy.

Around 2010, California first rolled out a zero emissions vehicle program, and shortly afterward China drew up a national-level strategy on developing new energy vehicles. In 2016, many European countries laid out timetables for a ban on fossil fuel vehicles. In 2017, the European Union proposed stricter emissions standards, and set the targets of reducing 15 percent of carbon dioxide emissions from new passenger cars and vans by 2025 and 30 percent by 2030, pushing for the transformation of the auto industry. In July 2018, the UK Department of Transport issued its 147-page Road to Zero Strategy, which aims to halt the sales of fossil fuel vehicles in the market by 2040.

The transformation of automobile power technology should have been a process driven by technological progress and the market. However, the intervention of government in many countries has become the primary driving force behind this automobile technology revolution.

It is the shared goal of governments around the world to realize green transportation so as to fulfill the promises made in the Paris agreement on climate change. Therefore, the development of electric vehicles should be aligned with that of new energy, and the industry chain of electric vehicles should be developed in an eco-friendly way. By around 2025, the cost efficiency of electric vehicles will surpass that of oil-fueled cars, and the costs of solar power and wind power will drop below fossil fuel energy. The strength of the market will greatly boost the development of electric vehicles and energy transformation, moving faster to the goal of zero emissions transport.

Today, the combination of electric vehicles, internet and automatic driving has brought new prospects for urban transport. Many reports show that internet-and intelligence-based electric vehicles will help cut down the cost of shared transport by 45 to 82 percent on average. At the same time, the sharing of traffic information in real time can increase travel efficiency.

In China, many internet-savvy consumers have started to embrace the idea of "own less, share more". Shared vehicles, which can meet the travel demand of a wide range of groups, are gaining growing

popularity among consumers. In 2018, Didi Dache, a leading car-hailing service company, offered more than 10 billion rides for 550 million people in 430 cities across the country, an equivalent of 27 million rides per day. Its service has been growing at a rate of around 40 percent for years. Against this background, some giants in the automobile industry have begun tapping into the car-sharing market.

Cross-industry technology and new vehicle manufacturers have injected new innovation impetus into the electric vehicle market. However, good mobility only makes for the 1.0 version of electric vehicles, and it requires innovation in internet-and intelligence-based transport services to fully unleash the potential of vehicles to benefit society in the future. To upgrade electric vehicles into "powerful mobile intelligent platforms", and an electronic and internet-based product poses a huge challenge to traditional car manufacturers. It cannot be realized by simply installing various hardware and software on a vehicle.

The younger generation in China has a strong preference and high demand for information technology, and the IT firms also have a strong will to meet their demand. Thus, internet-connected and intelligent vehicles can be realized in China. The internet-based vehicle manufacturers have ventured into this new market after seeing this opportunity. By redefining vehicles in the future with the participation of cross-industry technology and new auto manufacturers, we can ensure electric cars develop toward an internet-based and intelligent future.

By 2030, the sales of electric vehicles in China will exceed 15 million units, and autonomous cars are expected to be widely in use, with the ownership to reach 80 million. To fulfill this prediction, a profound industrial revolution involving the adjustment of energy structure, construction of the power grid, upgrading of transport infrastructure, support from new-generation mobile communications, adjustment and upgrading of industrial chains, change in standards and regulations, and transfer of job positions is required. The government should create top-level designs to prepare for the revolution.

Vehicles, energy, communication, transport and cities should be considered together from the very beginning to realize the synergy of technology, planning, policy and regulations in an orderly manner. It is particularly crucial to break barriers, open up the market, and enhance cross-discipline and cross-industry coordination and innovation.

China is anticipating the electric car revolution with greater enthusiasm than any other country. This revolution, based on renewable energy, is an integration of electric, internet, intelligent and sharing technologies, all emerging fields which have developed well in China over recent years and where we have comparative advantages. If we grasp the opportunity, we could become a winner.

The author is director of the Center for Industrial Development and Environmental Governance of Tsinghua University and director of China EV100. The author contributed this article to China Watch, a think tank powered by China Daily. The views do not necessarily reflect those of China Daily.

Logistique & fret

China's road freight volume grows in January (Xinhua)
02-23-2019

China's road freight transport registered a steady growth last month, according to official data.

Road freight volume increased 6.3 percent year-on-year to 3.19 billion tonnes in January, the Ministry of Transport said in a statement.

Ningxia Hui autonomous region saw the fastest growth in the index with a growth rate of 18 percent, followed by Hebei and Henan provinces.

Specifically, highway freight volume increased 10.6 percent year-on-year in the month, while waterway freight volume saw a 9.4-percent rise.

Fixed asset investment in road and waterway transport rose 9.2 percent to 128 billion yuan (about $19.06 billion) in January, the ministry added.

The data, added to a series of indicators, show resilience in the economy.

Government calls on delivery companies to go green (China Daily)

02-11-2019

Guideline from Post Bureau says sector should reuse more packaging materials

Concerns about the country's mounting trash problem prompted the State Post Bureau to publish a guideline for green development of the express delivery industry, aiming to reduce the generation of waste and to encourage recycling and green packaging.

China's booming express delivery industry used about 17.9 billion plastic bags, 8.6 billion cardboard boxes and 330 million rolls of adhesive tape in 2016, the bureau said.

That number is likely to have risen, given the number of deliveries in the country jumped from 31.35 billion in 2016 to more than 50 billion last year. This year it's expected to hit 60 billion.

Experts said making the industry green is necessary to curb pollution, because many of the materials currently used are not recyclable. But they also said the goal would be difficult to achieve without enhanced awareness of the importance of environmental protection among members of the public.

Express delivery enterprises should have containers to collect reusable packaging at their service outlets, according to the guideline, which was issued in December.

They should also avoid using single-use, woven plastic bags and increase the use of reusable bags and boxes. The big bags used in parcel transportation should be reused at least 20 times, it said.

About 3.2 billion such big woven bags were used in 2016.

The guideline also said green packaging materials, such as those printed with environmentally friendly, water-based ink should be given priority.

Disposal of waste remains a challenge for the express delivery industry, said Li Tianjiao, an expert on green action with Cainiao Network, Alibaba's logistics arm.

A green logistics report published by the China Environmental Protection Foundation last year said paper packaging, which had a recycling rate of about 90 percent in 2017, is the most-recycled waste generated by the express delivery sector. However, many of the plastic products it uses must be incinerated - generating power - or disposed of in landfills.

The State Post Bureau said waste from the express delivery industry accounted for about 93 percent of the growth in domestic waste in big cities.

"Under the circumstances, it's imperative to promote green packaging," Li said.

He also noted the importance of developing and researching cost-efficient green models. Although Cainiao and its partners had been piloting the application of different green packaging solutions since 2017, the increased cost associated with lowering environmental impacts remained a challenge.

The guideline also called for the increased use of biodegradable plastic packaging, saying consumers should be offered the option of using green packaging for their deliveries.

Ba Ning, executive deputy director of the China Post Research Institute's testing center, said this would help to greatly reduce the environmental impact of plastic packaging used in express deliveries.

Under natural conditions, it takes about 200 years for the common plastic packaging currently used in China to degrade. But more than 90 percent of the materials in biodegradable plastic packaging could degrade in just six months under certain conditions.

With favorable humidity and temperature, biodegradable plastic packaging could degrade into carbon dioxide and water within a year, Science and Technology Daily quoted Ba as saying.

However, Ba said, using biodegradable plastic bags could more than double the cost of plastic packaging, which would be a challenge to the development of the express delivery industry.

Increased environmental protection awareness among the public was needed to help address the cost challenge because consumers with such awareness would be willing to pay more for green delivery.

The cost of biodegradable plastic packaging could be 30 percent more than common plastic, Chen Shunfeng, general manager of a ZTO Express branch in Shandong province, was quoted as saying by China Economic Herald.

CSIC sees dual-fuel as big opportunity (China Daily)

01-29-2019

China Shipbuilding Industry Corp, or CSIC, the primary contractor for China's naval force, has completed the basic design and related research for a dual-fuel container ship that can carry 20,000 twenty-foot-equivalent-unit containers, said its top executive on Monday.

With a dual-fuel engine, the ship can use liquefied natural gas and regular fuel to convert chemical energy to mechanical energy. Thanks to LNG's cleaner burning properties, dual-fuel powered commercial vessels have become an option for shipping companies to comply with international environmental regulations.

In addition to producing high-end mega container ships, Hu Wenming, CSIC's chairman, said the group will launch a three-year action plan to focus on building high-end ships, offshore engineering products and brand awareness throughout the world, in particular in markets related to the Belt and Road Initiative.

"CSIC will no longer take orders that have no profit or may cause financial loss from the civil ship market and deploy more resources on producing high-end products such as deep-water semi-submersible drilling platforms, intelligent offshore ocean farming facilities, very large crude carriers and vehicle carriers," he said.

The Beijing-headquartered State-owned enterprise saw its sales revenue rise 4.9 percent year-on-year to 315 billion yuan ($46.77 billion) in 2018, while its net profit surged by 33.5 percent to 8.86 billion yuan.

Established in 1999, the company's marine sector covers both naval and merchant ships, and equipment manufacturing. It also designs, develops and manufactures a wide-range of non-marine products.

To better integrate its civilian and military businesses, Hu said the group will accelerate the cultivation and expansion of civil-military integration industry focusing on the strategic direction of national energy security, maritime defense, marine leisure tourism and ecological protection, as well as develop technologies and products in other fields including clean energy, smart ocean network, intelligent equipment, new materials, internet of things and low-altitude navigation.

"If you look at the global market for low-end ships and offshore engineering products, you can see declining signs in these areas everywhere," said Li Bo, a professor of shipbuilding at Shanghai Maritime University.

"Capable shipyards have already shifted a part of their business to maritime economy and other fast-growing businesses such as new materials, mechanical and electrical equipment, because, apart from higher profits, there is also less competition as not many shipbuilders are able to produce these sophisticated products," said Li.

The marine economy now includes sectors such as marine chemistry, biomedicine, ocean power, seawater use, marine tourism, ocean engineering and construction. A large variety of vessels serve these industries and sectors. Li said conventional vessels like bulk ships and ore carriers are no longer the kings of the marine economy transport system.

With a workforce of more than 170,000, CSIC operates more than 50 industrial subsidiaries and 29 research institutes, including Wuchang Shipbuilding Industry Co Ltd, Qingdao Beihai Shipbuilding Heavy Industry Co Ltd and Dalian Shipbuilding Industry Co Ltd. It has exported various types of vessels to more than 70 countries and regions such as Thailand, Malaysia and Norway.

Chinese chemical giant Wanhua and ADNOC plan LPG shipping joint-venture (Seatrade Maritime)

02-26-2019

Leading Chinese chemical industry player Wanhua Chemical Group has signed a Memorandum of Understanding with ADNOC Logistics & Service, a subsidiary of the Abu Dhabi National Oil Company (ADNOC) to jointly develop LPG shipping business.

The two parties are planning to set up a joint venture for owning and operating LPG tankers.

In November 2018, Wanhua and ADNOC entered into a long-term liquefied petroleum gas sales agreement. Under the terms of the 10-year agreement, Wanhua will purchase up to 1m metric tonnes of LPG annually.

In line with its strategy to maximize value from its downstream refining, petrochemical and gas processing operation, ADNOC produces up to 10.5m metric tonnes per year of LPG to be sold locally and internationally.

Wanhua Chemical Group is government owned and public-listed on the Shanghai Stock Exchange. The company is one of the world’s leading chemical companies and the largest user of LPG in China.

Cosco Shipping Investment (Dalian) set up to develop Northeast China business (Seatrade Maritime)

02-26-2019

China Cosco Shipping Corporation has officially established Cosco Shipping Investment (Dalian) with an aim to invest in and develop new businesses in Northeast China.

The inauguration ceremony on Thursday in Dalian was attended by Tan Cheng Xu, Mayor of Dalian, Xu Li Rong, chairman of China Cosco Shipping, and Yang Shi Cheng, chairman of Cosco Shipping Investment (Dalian) attended the inaugural ceremony in Dalian.

Mayor Tan Cheng Xu said the establishment of Cosco Shipping Investment (Dalian) is an important cooperation between Dalian and China Cosco Shipping.

Cosco Shipping Investment (Dalian) is a major move of the group's reform and restructuring and it will optimizse the group's layout in north China region, said Xu Li Rong. coscodalian1

As a direct-owned subsidiary of China Cosco Shipping, Cosco Shipping Investment (Dalian) will be a platform for the group to invest in and develop northeast China, and explore new business sector and new technology.

The predecessor of Cosco Shipping Investment (Dalian) is Cosco Dalian, which was established in 1978. Cosco Dalian owned a fleet of over 40 oil tankers and LPG ships, was the oil tanker operation arm of Cosco.

The company had been reformed by Cosco Shipping Energy Transportation in 2016 and changed the company name to Cosco Shipping Tanker （Dalian). All of its fleet had been handed over to Cosco Shipping Energy Transportation.

Cosco Shipping Investment (Dalian) currently owns and operates seven entities involved in the businesses of hotel, physical supply, liquid gas transportation, ship management, ferry and electronic engineering, plus a society organization of China Institute of Navigation (Liaoning) Branch.

The company plans integrate and optimise its resources and support Dalian in its development as a Northeast Asia shipping hub.

Rizhao port to build the fourth VLCC terminal (Seatrade Maritime)

02-27-2019

Rizhao port of Shandong province is to build an additional 300,000 tonnes class (VLCC) crude oil terminal to further improve its crude oil transportation service.

The terminal, will be jointly invested in and constructed by Rizhao port, Shandong Dongming Petrochemical Group and Shandong Transportation Industry Fund. Total project investment is RMB820m, with an annual handling capacity of 18m tonnes.

The newly developed terminal is the fourth 300,000 tonnes class crude oil terminal in Rizhao port. When the project was completed, the total crude oil handling capacity of Rizhao port will reach 100m tons.

The three parties also set up a jv, Rizhao Port Minggang Crude Oil Terminal Co. Ltd to operate this terminal. They had been co-operating on the operation of the 300,000 tons class crude oil terminal at Rizhao Lanshan port area.

Rizhao Port is an important crude oil and liquid chemicals distribution centre in North China.

Construction

Construction, urbanisme

Beijing unveils 300 major construction projects in 2019 (Xinhua)
02-28-2019

A total of 300 major construction projects in Beijing this year have been made public, according to local authorities Wednesday.

Beijing Municipal Commission of Development and Reform said that 300 projects included 100 infrastructure projects, 100 projects focusing on the improvement of people's livelihoods, and 100 projects for high-end technological industries.

The investment of the projects is expected to reach 235 billion yuan ($35 billion).

The commission said the projects would focus on the improvement of the functions of central downtown areas, the high-quality development of Beijing's subcenter in Tongzhou district, ecological environment, green development, infrastructure and the improvement of public services.

Chinese Vice Premier calls for Jing-jin-ji integrated development (China Daily)
02-28-2019

Chinese Vice Premier Han Zheng on Thursday urged more efforts to promote the integrated and coordinated development of Beijing, Tianjin and Hebei.

Han, also a member of the Standing Committee of the Political Bureau of the Communist Party of China Central Committee, made the remarks while presiding over a meeting.

Han called for new breakthroughs in the planning and construction of Xiongan New Area and Beijing subcenter in Tongzhou, ecological environment protection, and co-construction and sharing of basic public services in Beijing, Tianjin and Hebei.

Efforts should be made to relocate the non-capital functions of Beijing in an active, proper and orderly manner, he said.

He stressed high-quality and high-standard planning and development of the Xiongan New Area, and quality in the construction of the sub-center in Beijing.

He also urged intensified efforts to accelerate infrastructure construction in the area such as auxiliary projects of the Beijing Daxing International Airport which is set to open in 2019.

The country initiated a key strategy in 2014 to coordinate the development of Beijing, its neighboring port city Tianjin, and Hebei Province -- a regional city cluster called "Jing-jin-ji."

A prominent task of the "Jing-jin-ji" strategy is to move the non-capital functions out of Beijing to treat "urban ills" in the Chinese capital, such as traffic jams and pollution.

In April 2017, China announced the establishment of the Xiongan New Area, which, about 100 km southwest of Beijing, spans three counties in Hebei.

Voir l'infographie de *China Daily* retraçant l'historique de Xiongan

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Immobilier

Long-upward housing price trend cools (China Daily)

02-23-2019

Slight tick downward may signal new pattern that will persist, analyst says

The market for previously owned homes in China's first-and second-tier cities showed signs of cooling in January, as sale prices dropped for first time in 45 months, signaling a stable year for housing prices, experts said.

According to the most recent figures from the National Bureau of Statistics, Beijing, Guangzhou and Shenzhen saw month-on-month price drops for existing housing of 0.1 percent, 0.3 percent and 0.3 percent, respectively, from December. Thirty-one second-tier cities have also saw an average drop of 0.1 percent in previously owned property prices.

The rate of growth in the selling prices of newly constructed commercial residential buildings in first-tier cities slowed by nearly 1 percentage point from December. Commercial residential refers to residential buildings or homes sold at market prices, as opposed to government-subsidized housing for low-income residents.

A total of 35 third-tier cities saw a month-on-month sales price increase in both newly constructed commercial residential buildings and previously owned homes by 0.6 percent and 0.2 percent, respectively. Both growth rates were 0.1 percentage point slower than December's.

"In January, the local authorities continued to adhere to housing policies based on the situation of their own city to stabilize the land price, the housing price and market expectations, with the aim of promoting healthy and stable development of the housing market," said Liu Jianwei, a senior statistician at the NBS.

Zhang Dawei, chief analyst at Centaline Property Agency, suggested the price trend in previously owned property represents the real market situation better than that of newly constructed residential buildings.

"Nationally, previously owned property sales have dominated first-and second-tier cities, especially first-tier ones," Zhang said. "More than 90 percent of the deals made were for pre-owned homes."

Zhang saw the price dip in used property as a significant sign that the market is cooling.

"Secondhand property prices in first-and second-tier cities started to go down, signaling a down cycle after a 45-month period of rising housing prices," he said.

He predicted that the real estate market will maintain this trend if there are no significant changes in housing loan policies.

Lu Wenxi, an analyst with Shanghai Centaline Property, said, "The contract volume in January was only 10 percent lower than average, indicating a good start for 2019, but it doesn't necessarily mean volume will keep rising in the future.

"Newly constructed residential buildings entered the market at prices lower than market expectations, further depressing the prices of previously owned ones. There is a possibility that prices will keep going down."

Zhang said the keyword in the real estate market will continue to be "stable".

"Neither soaring prices or sliding ones bring stabilization," he said, predicting that at least 30 cities will make micro adjustments to their housing policies this year, which means more cities will see a slight loosening of regulations this year.

Hebei demolishes illegal villas on mountainside (China Daily)

02-20-2019

The government of Shijiazhuang, Hebei province, is tearing down illegal buildings on a mountain slope, after media reports disclosed problems with an unapproved villa project.

Covering an area of about 1.2 million square meters and including more than 700 villas and supporting facilities, the project had been built and villas sold without authorization, according to a report by China Real Estate Business on Monday.

The Shijiazhuang government had sent a team to investigate, Hebei Daily reported, and as of Tuesday afternoon, 10 of 24 illegal buildings covering 12,667 square meters had been demolished. The team will continue to remove illegal structures while the investigation moves forward.

The project is on the slopes of Fenglong Mountain in Luquan district in southwestern Shijiazhuang.

Making use of the mountain's natural resources as a selling point to attract buyers, the project's developer built the villas at the cost of destroying the mountain and its forest, the report by China Real Estate Business said.

The developer, Shijiazhuang Lihao Real Estate Development Co, got neither permission to build nor to sell, according to the report, quoting an employee with the local bureau of housing and urban-rural development in Luquan.

In 2017, the developer was fined about 6.24 million yuan ($920,000) for illegally constructing 109 residential buildings without permission. But the fine has not yet been paid, the report said.

An employee of the developer told China Real Estate Business that "the government had given us a green light".

After the matter was reported on Monday, Wang Dongfeng, Hebei's Party secretary, demanded an immediate and thorough investigation into the unapproved construction and punishment for the people involved in violating laws and regulations.

The Shijiazhuang government sent the investigative team to Luquan district on Monday night, with its own Party secretary and mayor leading the group.

Video reports by the news website Btime said the villa area had been sealed off by local authorities.

"Some corrupt officials might have taken bribes to help the developer obtain the land, and then turned a blind eye to illegal construction and selling," said Xing Shitian, a project manager at a construction company in Shijiazhuang, who is not involved in the matter.

Measures have been taken in some parts of the country to stop illegal construction of buildings and prevent destruction of the environment.

Last year, more than 1,000 illegal villas were demolished or confiscated at the foot of the Qinling Mountains in Shaanxi province, and many officials involved were held accountable for either corruption or failing to respond to the situation.

Sujets transversaux

Initiative Ceinture-Route (Belt and Road Initiative – BRI)

Keyu Jin: China in the New Era of transnational networks (Caixin)
02-26-2019

The world has reacted with scepticism to China's increasingly active efforts in the global arena, whether it is the Belt and Road Initiative, investments in Africa, or the China-Pakistan Economic Corridor. Many parts of the world see this as China's attempt to strive for "world domination." Such attitudes have significantly hampered many efforts that are charged with good intentions.

China should not seek to be another world hegemon. The world should not have an order ranking of powers, with China being No. 2 striving to compete with American the No.1. In this new age of global networks and linkages, the traditional concept of hegemon has changed. A hegemon is no longer a superpower who sets rules and all other countries adapt. In the world of networks, a superpower initiates, expands, propels global networks and ensures their protection. In this case, China should not seek power in the traditional sense, but should cast itself as the world's most connected component — the most successful global networker.

What has changed about the world today from that of yesterday is that we live in a world of networks: technology, firms, banks, global supply chains, and even the English language. Whether it is the Red Cross, agreement to tackle global climate change, or international financial systems and global supply chains, these efforts are of a transnational nature. Even concerns over the looming challenges such as technology driving away workers, or artificial intelligence outsmarting humans are issues not between states but among them.

The global economy is now more interlinked and interwoven than ever before. First, substitution and competition are giving way to complementarity and cooperation. Cheap labor in developing countries became an important asset when technology advanced and trade costs fell, oil from Middle Eastern countries was useless 150 years ago but is a critical input to the world's output today, rhodium and lithium are now valuable only because the world needs batteries to produces electric cars. The network and linkages make country-specific inputs and products more valuable, which in turn makes the networks and linkages more valuable. We are no longer in a world of zero-sum games, but one in which one country's welfare directly impacts that of another.

This means that connectivity is more important than ever before. Initiatives like the Belt and Road help build links across countries and help accelerate development. Without connectivity, Azerbaijanis would still be eating their own beluga caviar for protein. Now, they can lead more prosperous lives by selling it at exorbitant prices to the rest of the world.

But building linkages on an international scale is difficult. A host of cross-border frictions and distortions abound — be they political, informational, or incentive issues. Also, smaller and poorer countries may not have the capacity and finances to build these linkages. In this case, a large country can step in to absorb some of these risks and mitigate these distortions. China should step up to label itself as a supporter and leader of global networks.

A historical example illustrates why being the central component of a network is sometimes better than being the most dominant. The Medici family in 14th century Florence was by no means the wealthiest nor the most political powerful. But it was the most connected component of the network of family intermarriages, economic relationships and political patronages. They eventually surpassed everyone else and became the "fathers of the Renaissance."

There is reason to become that most connected component in the modern world of networks. First, China derives perhaps more benefits from anyone else in a world of interweaving and open networks. It likes to see open trade, open IT infrastructures that uses Chinese technology, and the ability to influence global cooperative initiatives, such as multilateral banks and global climate change.

Moreover, by enmeshing itself as an indispensable component in the global system, it can have a more secure position — devoid of threats of being ousted by the global system simply because the U.S. is threatened by China's rise. By being a network leader, China will have more effect power and security than by engaging in traditional competition and rivalry with America.

But this means that China has to bear a greater burden and cost in supporting the global networks, just as the U.S. bears the brunt of burden for NATO defense spending. As the U.S continues to pull back from critical responsibilities in the world, China should do the opposite. Its destiny should not only to become the largest economy — and a rich one to boot — but also to recognize the duties and rewards in designing such an architecture that enables others to flourish as it has flourished, that permits greater integration and mobilization as it has integrated and mobilized, and where one country's success begets another's.

Keyu Jin is a professor of economics at the London School of Economics, a member of the World Economic Forum's Forum of Young Global Leaders, and a member of the Richemont Group Advisory Board.

Opinion: China is not trying to catch Africa in a debt trap (Caixin)

02-25-2019

Imagine if you could, a world in which Africa is completely beholden to China — a world in which China is so obsessed with controlling Africa that it is willing to risk billions of dollars by trapping African countries in debt. As an African, it is a world hard to imagine for several reasons. For starters, what would China gain that it already is not getting from Africa by impoverishing it?

Apparently, that would allow China to influence decisions of African states. There are at least also two reasons why this would be politically suicidal. Firstly, it would discredit the "Beijing Consensus" as an alternative to the Washington consensus. Secondly, although Africa is a small player globally, it has the largest voting block at the U.N. general assembly. It's therefore likely that an Africa feeling hard done by China would unnecessarily complicate Beijing's attempts at global leadership at the multilateral level possibly making the isolation of China easier.

Interestingly, Africa debt statistics also don't support the accusation. The globally accepted debt ceiling for developing countries is a debt-to-GDP ratio of 40%. Africa's current debt-to-GDP ratio stands at 50%. While loans from China grew at a very fast rate especially between 2011 and 2016, the reality is that Chinese loans account for an insignificant portion of Africa's total debt stock (5%). Additionally, only three of the 12 African countries under high debt distress have borrowed heavily from Beijing. They are Angola, Djibouti and Zambia. Loans to Djibouti are all toward the construction of bulk infrastructure aimed at reducing the cost of doing business and fostering regional integration such as a railway and water pipeline linking Ethiopia and Djibouti and the expansion of the country's main port enabling the country to handle more cargo as well as meet sanitary and phytosanitary standards for exporting livestock.

In Zambia, there is sufficient evidence showing that its debt distress primarily emanates from the issuance of bonds denominated in foreign currencies. Over the last five years, the yield on Zambia's bonds has increased from 6% to 17% forcing the country to borrow an extra $750 million to service bond payments, according to a Bloomberg report. Zambia is probably the country where the biggest form of Sino-phobia has raised its head when it comes to talk of Chinese loans. Clearly false claims have been peddled that China is about to take over some national assets such as the international airport and the national electricity utility company. It is inconceivable that China or any lender, would want to take ownership of assets that are not profitable. In the case of Zambia's airport for example, on a busy day, the airport handles a total of about 13 passenger flights and an average of 10 flights a day. A big part of the airport's lack of profitability is simply the lack of enough traffic numbers — something that can't be solved by just changing management or ownership. Similarly, there are policy and structural issues affecting the national electricity utility company which would still render it loss making even after any takeover. That leaves Angola as the only country where Chinese loans are greater than non-Chinese loans — one country out of 54!

That said, Angola has its nuances. For example, senior Angolan officials privately admit that China pre-conditioned continued loans on the country securing a program with the IMF — hardly the actions of a country hellbent on holding Angola captive to its wishes and demands. More controversial has been China's "resources-for-infrastructure" approach in which countries pay for infrastructure using commodities; popularly known as 'Angola-mode' has been routinely frowned on. One can only guess that this is because it is seen as a new Chinese way of doing things that is out of sync with the Washington Consensus. While the practice is indeed different, it is not necessarily new. China or rather, Japan used the same approach with China many years ago. At the time, China was poor but had natural resources that Japan needed. Chinese loans have also been accused of promoting bad governance in Angola even though the World Bank World Governance Indicators have consistently shown an improvement in government effectiveness, regulatory quality and the rule of law since 2000.

What external factor or player then is the cause of spiraling African debt? Before answering that, it is important to accept that a genuine concern about Chinese loans to Africa is the opaqueness of the loan conditions — especially in countries where the process of the state securing a loan is subject to constitutional oversight. This doesn't make China responsible for Africa's debt as available data strongly points to the fact that access to concessional lending to African countries diminished remarkably after the 2008 financial crisis as the main reason. This coupled with the fact that several African countries (such as Zambia and Ghana) graduated into middle-income status and therefore lost access to concessional funding. Confronted by the absence of concessional financing, African countries have resorted to private debt at high interest rates which are frankly unsustainable, as the Zambia example shows. In fact, according to S&P, private loans from non-Chinese sources account for 72% of Africa's debt stock. The concessional nature of Chinese loans are hence attractive and pretty much a rational option.

Chinese loans are attractive for African governments because of at least three other reasons. Firstly, Africa is confronted by a huge infrastructure gap estimated at around $170 billion annually. To correct this, African leaders launched the Programme for Infrastructure Development in Africa (PIDA). The PIDA naturally dovetails with China's focus on infrastructure assistance and the Belt and Road Initiative, providing an opportunity for Africa to reduce its infrastructure deficit. Coupling this, as several senior African

government officials have told me, is the fact that China's broader assistance to Africa breaks away from past development assistance models to Africa that were based on stringent austerity measures and is not like the approach of other partners who market themselves as experts in African development problems. The new U.S.-Africa strategy for example has been criticized for not consulting with African countries and for its focus on China and not African development initiatives.

Inevitably what will matter for Africa's development is not where the loans come from but the extent to which Africa can use loans to enhance economic productivity in general and their ability to us use the assistance to protect national economies from exposure to commodity price fluctuations. This requires collaboration by Chinese and non-Chinese development partners to assist Africa to reduce the cost of doing business and create employment which will in turn broaden African governments' revenue base. Furthermore, greater transparency in loan agreements would also facilitate a collaborative approach to assisting Africa by reducing the default risk for all parties (Chinese and non-Chinese).

George Lwanda is a policy adviser at the UNDP Africa Centre, and a 2018 Asia Global Fellow at the Asia Global Institute, The University of Hong Kong.

Exclusive: China to combine Africa, Latin America investments funds (Caixin)

02-19-2019

China will combine the management of two funds linked to the country's foreign exchange regulator that specialize in investment in Africa and Latin America, to better meet the needs of Chinese companies operating in these regions, Caixin has learned.

The China-Africa Fund for Industrial Cooperation (CAFIC) and the China-LAC Industrial Cooperation Investment Fund will continue to operate under separate names, but their project appraisal and investment decisions will be unified under the management of a single new company to be set up by the Investment Center of the State Administration of Foreign Exchange (SAFE), sources with knowledge of the matter told Caixin. Han Hongmei, CAFIC executive director and a former SAFE chief accountant, will become the new company's chairwoman.

The CAFIC was announced by President Xi Jinping in December 2015 and officially launched the following January with an initial cash injection of $10 billion. SAFE holds 80% of it through its wholly-owned arm Wutongshu Investment Platform and policy lender The Export-Import Bank of China takes the remaining 20%.

The China-LAC Industrial Cooperation Investment Fund started operating in June 2015 with a first-phase cash infusion of $10 billion, which was gradually increased to $30 billion. SAFE owns 85% of the fund, again through Wutongshu, and another policy lender — the China Development Bank — has the remaining 15%.

Sources familiar with the two organizations' operations told Caixin that the government decided to combine their management with the goal of boosting the funds' synergy to better serve Chinese companies, as most Chinese firms that invest in Africa also conduct business in Latin America and vice versa.

"The two funds don't have many staff, and the market isn't large either — this merger was always likely," one said.

SAFE's investment center currently owns three overseas investment funds including the Africa and Latin America programs. All the funds are meant to support investment in projects under the Belt and Road Initiative, President Xi's signature program.

The third program is the Silk Road Fund, which deals with worldwide investment. It is 65% owned by Wutongshu, 15% by the Export-Import Bank of China, 15% by sovereign wealth fund China Investment Corp., and 5% by the China Development Bank.

The China Development Bank also has two of its own funds targeting investment in Africa and Latin America. But the funds under SAFE focus more on implementing government strategy. For example, the Greater Bay Area plan, released by the Chinese central government on Monday, specifically pointed out that authorities support Macau cooperating with the Silk Road Fund, the CAFIC, the China-LAC Industrial Cooperation Investment Fund, and the Asian Infrastructure Investment Bank, to serve Belt and Road projects. The ambitious Greater Bay Area plan aims to better connect city clusters in Guangdong province with Hong Kong and Macau.

Chinese companies invested $15.64 billion last year in non-financial sectors in 56 countries along the Belt and Road including Singapore, Laos and Vietnam. This was up 8.9% from 2017, according to data from the Ministry of Commerce.

Autres

China unveils development plan for Guangdong – Hong Kong – Macao Greater Bay Area (Xinhua)

02-18-2019

Chinese authorities unveiled the outline development plan for the Guangdong-Hong Kong-Macao Greater Bay Area on Feb 18, aiming to develop the region into "a role model of high-quality development."

The plan was released by the Central Committee of the Communist Party of China and the State Council.

Promoting the development of the Greater Bay Area is a major decision made by the CPC Central Committee with Comrade Xi Jinping at the core, said an official in charge of the office of the leading group for developing the area.

"It is a national strategy General Secretary Xi Jinping has planned for, made decisions about and promoted in person," the official said.

STRATEGIC ROLE

The bay area consists of the Hong Kong Special Administrative Region (HKSAR), the Macao Special Administrative Region (Macao SAR), as well as nine cities in Guangdong province — Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing.

Covering a total area of 56,000 square kilometers, the bay area had a combined population of about 70 million at the end of 2017 and its gross domestic product reached around 10 trillion yuan ($1.48 trillion) in 2017.

"As one of the most open and economically vibrant regions in China, the Greater Bay Area plays a significant strategic role in the overall development of the country," says the plan.

The development of the area is hailed not only as a new attempt to break new ground in pursuing opening-up on all fronts in a new era, but also a further step in taking forward the practice of "one country, two systems."

The plan covers the period from now to 2022 in the immediate term and extends to 2035 in the long term.

The plan has 11 chapters: the background, the overall requirements, the spatial layout, developing an international innovation and technology hub, expediting infrastructural connectivity, building a globally competitive modern industrial system, taking forward ecological conservation, developing a quality living circle for living, working and traveling, strengthening cooperation and jointly participating in the Belt and Road Initiative, jointly developing Guangdong-Hong Kong-Macao cooperation platforms, and the implementation of the plan.

WORLD-CLASS CITY CLUSTER

The plan says the bay area will be turned into a vibrant world-class city cluster, a globally influential international innovation and technology hub, an important support pillar for the Belt and Road Initiative, a showcase for in-depth cooperation between the mainland and Hong Kong and Macao, and a quality living circle for living, working and traveling.

Efforts should be made to build on the four core cities of Hong Kong, Macao, Guangzhou and Shenzhen as core engines for regional development, continue leveraging their comparative advantages in striving for excellence and achievements, and strengthen the radiating effect in leading the development of nearby regions.

Setting development objectives, the plan says by 2022 the framework should essentially be formed for an international first-class bay area and world-class city cluster that is vibrant and highly innovative with an optimized industrial structure, a smooth flow of various factors and a pleasant ecological environment.

By 2035, the bay area should have an economic system and a mode of development mainly supported by innovation, with its economic and technological strengths vastly increased and its international competitiveness and influence further strengthened, it adds.

By then, the markets within the Greater Bay Area should basically be highly connected, with a very effective and efficient flow of various resources and factors of production; the coordination of regional development should remarkably improve, with the influence on neighboring regions further strengthened.

The people should become wealthier; the level of social civility should reach new heights, with cultural soft power demonstrably strengthened, Chinese cultural influence broadened and deepened, and exchange and integration between different cultures further enhanced, the plan says.

Meanwhile, the levels of conservation and efficient use of resources should be significantly improved, the ecological environment should be effectively protected, and an international first-class bay area for living, working and traveling should be fully developed.

PLAN HAILED

The People's Daily hailed the plan, saying the Greater Bay Area facilitates the enrichment of the implementation of the "one country, two systems," creates more opportunities for the socio-economic development of the two special administrative regions and for Hong Kong and Macao compatriots wishing to develop careers on the mainland.

We must "free our minds, make active explorations and bold trials, and strive to play a pioneering role," the article says.

Both HKSAR and Macao SAR governments issued statements welcoming the promulgation of the plan.

An HKSAR government spokesperson said the Greater Bay Area will help Hong Kong find new drivers for economic growth and advance the diversified development of local economy and industries, as well as expand the living and development space of Hong Kong residents.

“Bay areas play a big role in global economic powerhouses such as the United States and Japan,” said Liang Haiming, head of China Silk Road iValley Research Institute. “China’s bay area will become a world-leading one and demonstrate the vitality of our systems.”

Lin Jiang, vice-dean with the Center for Studies of Hong Kong, Macao and Pearl River Delta at Sun Yat-sen University, noted the complexity of building this bay area because different social and legal systems, three separate customs territories and three currencies are involved.

“Such uniqueness brings challenges,” Lin said, but adding that they can be overcome by improving the unified mechanism of regional public goods.

Ip Kuai Peng, pro-rector of the City University of Macau, said he is confident that the Greater Bay Area will evolve into a vibrant, innovative world-class area with high efficiency, rich resources, a strong economy, and good opportunities.

“The high degree of resource flow and integration in the area will truly enhance the well-being of Macao residents,” he said. “For example, the ‘one-hour living circle’ will greatly facilitate the life and employment of bay area residents.”

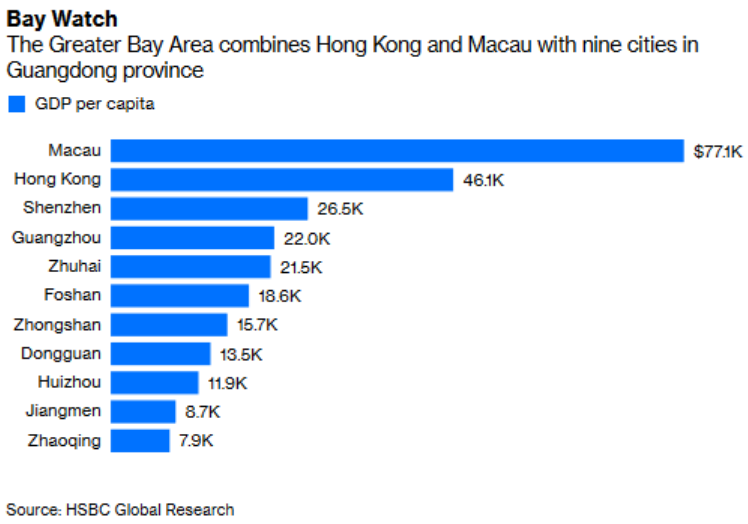
Fang Zhou, research director of the Hong Kong-based One-Country-Two-Systems Research Institute, said developing the bay area will provide young people with new opportunities.

It will allow Hong Kong residents to further enjoy the benefits of the country’s economic development and sustain Hong Kong’s long-term prosperity and stability, he said.

Opinion: China's Silicon Valley blueprint has plenty of holes (Bloomberg)
02-19-2019

We got the plan. Where's the road map?

Late Monday, the official Xinhua News Agency released details of the State Council's Greater Bay Area plan — a project to knit together Hong Kong and Macau with nine mainland cities into a global innovation hub to rival California's Silicon Valley. The trouble is, there's little new on how authorities plan to make this grand vision into a reality.



Announced by Premier Li Keqiang in March 2017, the Greater Bay Area forms part of China's push for supremacy in technology, while also binding the former European colonies more tightly into the country. Hong Kong residents struggling with high housing prices will have the opportunity to move across the border and work in state-owned companies while people moving the other way will gain access to the city's education and health systems.
Bay Watch

Under the 11-chapter blueprint, Hong Kong will focus on international finance, navigation and trade; Macau will be an international tourism destination; Guangzhou will serve as an administrative center and "gateway city"; and Shenzhen will be a technology hub. In other words, the cities will continue to do more or less what they already do. Hong Kong is already the key initial public offering venue for Chinese firms, and an offshore yuan trading center (another role assigned to the city in the Bay Area plan).
Listing Crown

There are some extra gimmicks here and there, such as the curious idea of turning Macau into a trading platform for Portuguese-speaking countries such as Brazil. The city is a former Portuguese colony, but use of the language has faded and it's spoken by only a small minority. Hong Kong will set up a financing and investment platform for the Belt and Road Initiative, though the city's banks already have the capability to fund such projects if they are commercially attractive. There will be support to develop cross-border yuan reinsurance businesses, and so on.

The fundamental obstacles to the integration of Hong Kong and Macau into a mainland Chinese economic cluster go largely unaddressed. These include vastly different political and economic structures, as we wrote in September. The cities have their own, freely convertible currencies, separate passport and customs controls, and legal systems.

Hong Kong looks to be the likely loser. In the same breath as the blueprint pledges to uphold the "one country, two systems" framework that governed the city's return to Chinese sovereignty, it talks of creating "an international and market-oriented business environment based on rule of law, under the jurisdiction and legal framework of mainland China." The plan was released in Chinese and not in English, one of the two official languages of the former British colony.

For Hong Kong entrepreneurs thinking of setting up over the border, there's no word on whether they'll continue to enjoy the city's 17 percent maximum income-tax rate. The mainland rate is 45 percent for those earning more than 85,000 yuan ($12,500) a month.

There are undoubtedly advantages to being part of a bigger economic entity. The Bay Area region would have more than 67 million residents, a trillion-dollar economy and bigger exports than Japan, HSBC Holdings Plc has estimated. At the same time, the uncomfortable reality is that Hong Kong's attractions for international business — such as rule of law and free flow of information — rest on its distinctness from the mainland system. The blueprint doesn't explain how these advantages will be preserved while integrating the city more closely with its Chinese counterparts.

Preparations for the Greater Bay Area have already started to erode Hong Kong's autonomy, particularly through the siting of a Chinese border post at the city's new high-speed rail terminus. To facilitate immigration clearance, mainland law enforcement officers are stationed there and mainland laws apply. The plan was opposed by Hong Kong democracy activists and was ratified only when China's national parliament got involved. Meanwhile, the opening last year of a $15 billion, 55-kilometer bridge linking Hong Kong with Macau and the mainland city of Zhuhai has spurred protests from Hong Kong residents angry at their neighborhood being inundated with mainland tourists.

The blueprint's failure to delineate clearly how Hong Kong's status will be protected suggests either that the Bay Area plan is more hype than practical program, or that political objectives will trump economic considerations. Neither conclusion is comforting.

14th Meeting of China-EU joint steering committee on science and technology cooperation held in Beijing (Communiqué du Ministère chinois des sciences et technologies)

02-28-2019

In order to deliver on the agreement reached at the 20th China-EU Leaders'Meeting and deepen pragmatic China-EU cooperation in science, technology and innovation (STI), the 14th Meeting of China-EU Joint Steering Committee on Science and Technology Cooperation was held in Beijing on December 13, 2018. The meeting was co-chaired by Zhang Jianguo, Vice Minister of the Ministry of Science and Technology (MOST) and Administrator of the State Administration of Foreign Experts Affairs, and Jean-Eric Paquet, Director-General of Research & Innovation of the European Commission.

At the meeting, Vice Minister Zhang Jianguo pointed out that China-EU STI cooperation is increasingly characterized by equality and mutual benefit, multi-party participation, and improvement in both quality and quantity, contributing to the comprehensive strategic partnership between China and EU. He remarked that the Joint Steering Committee has focused on practical cooperation and expressed the hope that the two sides will further review existing achievements, summarize experience and push forward the implementation of 2018-2020 China-EU Flagship Initiative in Research and Innovation, while exchanging views on future cooperation and jointly planning a roadmap for China-EU STI cooperation. Director-General Jean-Eric Paquet appreciated China's achievements in STI since its reform and opening up. Given that the two sides reached agreement on STI in the Joint Statement of the 20th China-EU Leaders'Meeting, Director-

General Jean-Eric Paquet hoped that China and the EU will push their cooperation in depth through this meeting.

Representatives of the two sides exchanged views on topics such as the reform of China's research programs, the implementation of the EU's Horizon 2020, the overall planning of Horizon 2020 and the reciprocal opening of science and technology programs, reported on the evaluation and implementation of the China-EU joint funding mechanism, reviewed cooperation achievements and talked about future cooperation plans in civil aviation, agriculture, food and biotechnology, microbial technology, environment and sustainable urbanisation and multilateral cooperation, discussed the overall framework of the roadmap for China-EU cooperation in research and innovation, and deliberated on future cooperation in water resources, artificial intelligence, basic research, health, ocean, space, personnel exchanges and new modalities of cooperation.

The meeting was attended by representatives from the Ministry of Science and Technology, the Ministry of Industry and Information Technology, the Ministry of Water Resources, the National Natural Science Foundation of China, the Chinese Academy of Agricultural Sciences, China Science and Technology Exchange Center, National Remote Sensing Center, National Center for Science & Technology Evaluation, China Association for International Exchange of Personnel, Chinese Aeronautical Establishment, the Chinese Mission to the European Union, DG for Research and Innovation of the European Commission, the delegation of the EU Mission to China, etc.

Chinese-built railways foster friendship, development in Africa over last four decades 2018 (Xinhua)

02-27-2019

The Chinese-built Tanzania-Zambia Railway (TAZARA) started operation in 1976 and has become an economic catalyst for eastern and southern African nations, which also turns into a symbol of friendship between the peoples of China and Africa.

Some 40 years on, the China-funded Mombasa-Nairobi Standard Gauge Railway (SGR) is serving as a new engine of Kenya's economic growth and makes the whole eastern African region more dynamic.

The two railways not only transformed people's lives, but also witnessed the development of China-Africa cooperation.

FRIENDSHIP AND DEVELOPMENT

Benedict Henry Mkanyago, a 69-year-old Tanzanian who retired from TAZARA in 2002, has witnessed changes brought by the railway, for the country and also for himself.

Mkanyago was born in the region of Mbeya in southwestern Tanzania. Before TAZARA passed through, the landlocked town was impoverished and poorly accessible.

However, upon the completion of TAZARA, the small town began to attract farming migrants and entrepreneurs and became a regional business hub in a few years. Mbeya City is now a growing metropolis and business center for Tanzania's southern regions and the neighboring countries of Malawi and Zambia.

"The railway also changed my life," said Mkanyago, who joined the TAZARA construction team in 1970 in his early 20s, where he made friends with his Chinese counterparts and got trained in different positions. Benefiting from his rich working experience, Mkanyago was later promoted to chief of the Mbeya station.

According to official statistics, TAZARA has transported more than 30 million tons of cargo and more than 40 million passengers since operation began.

Former Tanzanian Minister of Communication and Transport Mark Mwandosya said: "Those of us who are fortunate enough to have witnessed the construction of TAZARA will forever be grateful to China."

In April last year, Tanzania's Minister of Foreign Affairs Augustine Mahiga said the construction of TAZARA formed a solid foundation of friendship and cooperation between Tanzania and China.

He made the remarks at a commemoration event to salute the loss of more than 60 Chinese workers and technicians who died during the construction of TAZARA.

TAZARA was constructed as a turnkey project between 1970 and 1975 through an interest-free loan from China, with commercial operations starting in July 1976, covering 1,860 km from Dar es Salaam in Tanzania to New Kapiri Mposhi in Zambia.

DEEPENING REGIONAL INTEGRATION

Kenya's SGR launched operation in May 2017, becoming the newest addition to the list of Chinese-built railways in Africa.

The 480-km railway cuts the journey from Kenya's capital to the Mombasa Port, the biggest port in East Africa, from 12 hours to just over four hours.

While the railway brings about much-awaited convenience and efficiency, it also succeeds in accommodating wildlife movement needs, thus causing minimal interference to animals.

The China-funded modern railway is estimated to have boosted the African country's GDP by 1.5 percent and has provided 46,000 jobs to locals. About 300 domestic enterprises were subcontracted during its construction, according to official figures.

Raphael Tuju, secretary general of the ruling Jubilee Party, said in an interview with Xinhua that Kenya and other African countries regard China as a strategic partner in their quest to boost trade and infrastructure development.

"If you ask any Kenyan about China, the first thing that crosses their mind is the standard gauge railway linking Mombasa and Nairobi, and Guangzhou, where Kenyans go to buy clothes and other items," Tuju said.

Kenya's budding entrepreneurs agreed that the SGR has not only promoted China's image in the country but has also been instrumental to transforming regional commerce.

Shadrack Kimeu, a 30-year-old owner of a hardware shop, said his revenue streams have expanded thanks to faster, cheaper and more efficient means of transportation for construction materials guaranteed by the SGR.

Lilian Awinja, executive director of the East African Business Council, said traders from Kenya, Uganda, South Sudan and northern Tanzania are now able to import and export goods without a hitch thanks to the SGR.

"The SGR has reduced the travel time for imports and exports out of the East African region," said Awinja at a recent business roundtable in Nairobi.

The SGR has improved logistics while reducing the cost of transporting bulk goods in the region, she added.

The mega infrastructure project, which was implemented by China Road and Bridge Corporation, affiliated with China Communications Construction Company, is also deemed as an early result of the China-proposed Belt and Road Initiative aiming to build trade and infrastructure networks connecting Asia with Europe and Africa along the ancient Silk Road routes.

Gerishon Ikiara, an international economics lecturer at the University of Nairobi, said the modern commuter and cargo trains will promote growth, prosperity and cohesion in the larger eastern African region.

La France et la Chine renforceront leur coopération dans sept domaines, notamment l'environnement et l'espace (Xinhua)

02-26-2019

Dans le cadre de l'Année franco-chinoise de l'environnement et du succès de la Chine dans le domaine de l'espace, l'environnement et l'espace seront les deux premiers axes du développement de la coopération entre la France et la Chine, a déclaré lundi la ministre française de l'enseignement supérieur, de la recherche et de l'innovation, Frédérique Vidal, lors d'une conférence de presse à Beijing.

La France et la Chine ont une longue tradition de coopération scientifique et technologique, a indiqué Mme Vidal, qui a rencontré lundi matin Wang Zhigang, ministre chinois des Sciences et des Technologies. Les deux ministres ont coprésidé la commission mixte sciences et technologies entre la Chine et la France. Cette commission mixte est un élément important qui marque la reprise des échanges au plus haut niveau entre les ministères en charge des sujets scientifiques.

La réunion nous a permis de faire un bilan des réalisations de nos coopérations, et a fixé 7 grandes priorités de recherche entre nos deux pays pour les 3 ans à venir, soit l'environnement et le changement climatique, le spatial, la santé, l'agriculture, la physique des particules, les matériaux avancés, et l'intelligence artificielle, a déclaré Mme Vidal, soulignant que l'environnement et le spatial étaient deux thématiques phares de la coopération, comme l'a illustré le lancement du satellite CFOSAT de surveillance des océans en octobre 2018.

Dans le secteur de l'environnement, sa préservation et l'impact qu'il peut avoir sur la santé, et les relations entre la protection de l'environnement et l'agriculture sont deux sujets importants, a-t-elle ajouté.

Afin de mieux mettre en oeuvre les consensus, nous allons accroître le nombre de laboratoires mixtes de recherche, favoriser la mobilité des étudiants et des chercheurs entre les deux pays, renforcer le partenariat en termes d'innovation, a-t-elle présenté.

Mme Vidal a également rencontré lundi le ministre chinois de l'Education, Chen Baosheng, ainsi que des étudiants intéressés par des études en France, afin de promouvoir la stratégie d'attractivité des universités françaises annoncée par le gouvernement fin 2018.

Nous souhaitons accueillir davantage d'étudiants chinois dans les établissements français, renforcer leur apprentissage du français, et fournir davantage d'enseignements supérieurs en langue anglaise, a-t-elle ajouté.

Russia, China back nuclear as a clean-power fix for Africa (Reuters)
02-07-2019

In a damp office at Ethiopia's Addis Ababa University, doctoral student Hailu Geremew fantasizes about working on the nuclear reactor his country is now pondering building.

"Oh that is my dream, my dream, my dream," said the nuclear physicist, 32, wearing rectangular glasses and a cardigan.

Geremew is part of a new generation of African scientists whose prospects are expanding as their governments team up with foreign powers on a potential fast-track to electrification.

For now, South Africa is the only country on the continent operating a nuclear power plant.

But in recent years, at least seven other sub-Saharan African states have signed agreements to deploy nuclear power with backing from Russia, according to public announcements and the World Nuclear Association (WNA), an industry body.

Geremew first heard about the ambitious nuclear deal Ethiopia had struck with Moscow on the television news two years ago. The next day, his university department was buzzing with talk about it.

Ethiopia's memorandum of understanding on nuclear cooperation with Russia paves the way for the construction of a nuclear power plant and a research reactor in the long term, said Frehiwot Woldehanna, Ethiopia's state minister for the energy sector.

The East African country has been electrifying rapidly to meet rising energy demand and its own goal to become the biggest power exporter on the continent, while sticking to pledges to remain a low emitter of planet-warming greenhouse gases.

Under a 2015-2020 development plan, Addis Ababa wants to raise power generation to more than 17,000 megawatts (MW) from current capacity of just over 4,200 MW, mainly by harnessing hydro, wind and geothermal sources.

Its most ambitious project under construction is the Grand Renaissance Dam on the Nile river that will churn out 6,000 MW at full capacity when completed within the next four years, according to Ethiopian Electric Power, the state-owned utility.

But Woldehanna worries about betting on an abundance of water for the country's main source of electricity, as droughts become more frequent.

With rivers sometimes drying up, "you cannot fully rely on hydropower", he said, adding that nuclear technologies have "environmental" advantages over others.

Plans for a nuclear power plant in Ethiopia remain at the "pre-feasibility stage", but the country is serious about building one, he emphasized.

'ATOMS FOR AFRICA'

With sub-Saharan Africa's 48 countries generating the same amount of power as Spain, despite a population 18 times larger, the option to bring electricity access to their people on a bigger scale using nuclear energy is gaining momentum.

Nearly six out of 10 sub-Saharan Africans still lack access to electricity, according to World Bank data.

Like Ethiopia, emerging nuclear states Sudan, Kenya, Uganda, Nigeria, Rwanda, Zambia and Ghana have signed agreements with Russia's state nuclear corporation, ROSATOM - most since 2016.

Their content ranges from language on the construction of nuclear reactors to assistance with feasibility studies and personnel training, press statements show.

ROSATOM's solutions for managing spent fuel and radioactive waste vary from country to country, but are normally worked out at the later stages of a nuclear new-build program "in the strictest compliance with international law", a spokeswoman told the Thomson Reuters Foundation.

Chinese state-owned nuclear firms have also taken the lead in the region, sealing deals with Kenya, Sudan and Uganda, WNA data shows.

South African student Masamaki Masanja, 23, won a ROSATOM competition for young people to make videos about Africa's nuclear potential, and got to visit the Novovoronezh nuclear power plant in western Russia in 2017.

"It was mind-blowing," said the second-year mechanical engineering student, via Skype.

The experience left him with a strong sense that nuclear power should be adapted quickly for Africa's needs.

Sub-Saharan African nations have shown an interest in nuclear because coal is scarce, while large volumes of natural gas in Nigeria and Tanzania tend to be exported for profit, said Jessica Lovering, co-author of a 2018 report, "Atoms for Africa", from the U.S.-based Center for Global Development.

Booming populations and international pressure to curb greenhouse gas emissions also play a role, she added.

Ethiopia, for instance, has pledged under the Paris Agreement on climate change to curb its already meager emissions by two-thirds from business-as-usual projections by 2030.

The Paris accord, agreed in 2015 by about 195 nations, seeks to wean the global economy off fossil fuels in the second half of this century, limiting the rise in average temperatures to "well below" 2 degrees Celsius (3.6 Fahrenheit) above pre-industrial times.

Ramping up nuclear power may be a carbon-neutral option, but presents dilemmas such as the high cost of building a plant and setting up supporting infrastructure, including safe management of nuclear fuel, said Lovering.

Yet gaining access to large amounts of cheap electricity from nuclear plants that run 24/7 could boost domestic manufacturing, as well as lighting up homes, she said.

REBEL RISK

Some political observers, however, are concerned about the prospect of nuclear reactors backed by Russia in some countries with rebel groups and weak government institutions.

An Africa-based Western diplomat, who asked to remain anonymous, doubted Russia's assurances it would collect nuclear waste from projects it helped establish.

"You could end up with very unfortunate situations in parts of Africa ... if you have a decaying nuclear power plant overrun by rebels, with waste that's not going away," he said.

Multiple requests for an interview with Russia's ambassador in Ethiopia were declined.

So-called dirty bombs can combine conventional explosives like dynamite with radioactive material such as nuclear waste.

Noel Stott, a South Africa-based researcher with VERTIC, a non-profit that tracks the implementation of international treaties, highlighted an array of agreements in place to control the weaponization of nuclear technology.

The Treaty on the Non-Proliferation of Nuclear Weapons, to which all African countries but South Sudan are party, mandates safeguards to secure nuclear material, for example.

And 40 nations have joined the Treaty of Pelindaba that creates a nuclear-weapon-free zone in Africa.

HALF-BAKED?

At family-run cookie factory Mo-Ya, which towers over surrounding homes in Addis Ababa, chief executive officer Sara Zemui said Ethiopia's plans to grow and modernize its energy production would mean better-powered businesses - and more jobs.

Frequent electricity cuts have long disrupted baking at the factory, spoiling batches of the cookies whose sugary scent perfumes Sunday mass at a nearby church.

A few months ago, Mo-Ya forked out more than $100,000 to purchase equipment that, in a blackout, enables a seamless transition to generator power, Zemui said.

Here, as in the nearly two-thirds of Ethiopia with access to an electricity connection, power cuts - and associated costs - are caused mainly by overloads on the ageing grid, said Tilahun Legesse, a director at the Ethiopian Electric Utility.

In other parts of Africa, however, similar daily outages are due to insufficient power production, said Lovering.

At Addis Ababa University, assistant professor Tilahun Tesfaye cannot wait for his country to reap the benefits of a nuclear reactor.

"It's long, long overdue," he said. "The need is very high."

But the road will be a long one, he said, pointing to out-of-order machinery in his nuclear physics laboratory, the largest such facility in this country of 105 million people.

It could take 20 years for Ethiopia to build a nuclear power plant, estimated Hong-Jun Ahn, a Korean electrical engineer who advises the Ethiopian government on its nuclear plans.

Yonas Gebru, director of Addis Ababa-based advocacy group Forum for Environment, said green activists could prove another hurdle amid debate over whether nuclear power is "clean" energy.

"It would be good, and it would be wise also ... to better capitalize on already started initiatives such as hydropower, wind energy (and) solar energy," said Gebru.

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