The Right Way for China, U.S. to Get Along

By GONG Qian

Air China CA985 on its way flying from Beijing to San Francisco on November 11, 2023. (PHOTO: VCG)

Chinese President Xi Jinping met with U.S. President Joe Biden at the Filoli Estate, San Francisco, on November 15. The highly anticipated meeting produced many deliverables in such areas as political affairs and foreign policy, people-to-people exchanges, global governance, and military and security.

They discussed the right way for the two major countries to get along with each other and identified the joint responsibilities of China and the U.S. as major countries.

Together, they embraced a future-oriented San Francisco vision, and pointed the way and drew a blueprint for the sound, steady and sustained growth of China- U.S. relations, Chinese Foreign Minister Wang Yi told the press after the meeting concluded.

Signal of stabilized relations

The meeting sent a signal of stabilizing China-U.S. relations to the world, Gong Ting, an associate research fellow at the Beijing-based China Institute of International Studies, told *Science and Technology Daily(S&T Daily)*. As China and the U.S. are the world's two largest economies, their relations are not only about the two countries and their people, but also about world peace and development. Therefore, the meeting played an irreplaceable strategic role in guiding bilateral relations and injected more stability and certainty into world peace and development, Gong added.

The very fact that the two leaders sat down face-to-face to exchange their concerns and worries certainly is a positive step in the right direction, said Denis Simon, a distinguished fellow at the Institute for China-America Studies in Washington, D.C., in an exclusive interview with *S&T Daily*.

According to Simon, the decision of the two presidents to meet before the Asia- Pacific Economic Cooperation (APEC) Leaders' Summit reflects three considerations.

First, they are trying to build upon the good will established from the increased visits by senior officials from both countries.

Second, both leaders have recognized that the continuing downward spiral in bilateral relations benefits neither country and could lead to serious conflict without adequate guardrails.

Last, both China and the U.S. are trying to deepen and expand their influence in the Asia-Pacific region and the APEC meeting is a good platform for highlighting that both countries can work together to promote peace and prosperity across the Pacific Rim as well as the rest of the world.

People-to-people exchanges matter

During their meeting, the two leaders reiterated a commitment to increase the number of flights between the two countries. This will meet the needs of different communities from both sides such as international students, visiting experts and scholars and business executives in the post-COVID-19 era, said Gong.

Actually, the number of direct flights between China and the U.S. is increasing. According to Simon, the hope in both countries is that the restoration of more flights will support the increased flow of people and trade between the two countries. This will be a booster shot for tourism, for cultural and educational exchanges, and for business travel.

"People- to- people engagement is the best way to restore friendship and trust between the citizens of both countries, and it is the best way to facilitate science and technology cooperation—allowing more people working in science and engineering to travel for meeting counterparts, attending conferences and seminars, and simply getting to know the cultures and societies of their partners," said Simon.

Continuing talks and pragmatic actions

"Talk, talk, and keep talking," Simon said about furthering mutual understanding and cooperation. The best path forward for the U.S. and China involves a renewal of their high-level dialogues, continued on-going communication between their leaders, and expanded engagements involving all segments of their respective societies, said Simon.

According to Simon, the U.S. and China need some quick wins and key successes to serve as support for rebuilding trust and confidence. "These could come from a series of new initiatives with explicit shared benefits to both countries—more cultural exchanges, growing tourism, a series of new science and technology initiatives, and expanded student engagement. If there is a will, there is a way," he said.

In Gong's opinion, it is imperative for the two sides to implement the consensus reached between the two leaders in Bali last year and in San Francisco this time, so as to further promote the sound, stable and sustainable development of bilateral relations.

Voice of the World

China on Track with Emission Reduction Targets

Edited by QI Liming

According to the report *Analysis: China's emissions set to fall in 2024 after record growth in clean energy* released on Carbon Brief website on November 13, "China's carbon dioxide (CO_2) emissions are set to fall in 2024 and could be facing structural decline, due to record growth in the installation of new low- carbon energy sources." That's according to Lauri Myllyvirta, a lead analyst at the Centre for Research on Energy and Clean Air (CREA) and the author of the report.

Structural emissions to decline

According to *The Guardian*, in recent weeks, the International Energy Agency said that the worldwide emissions from all energy sources, including fossil fuels used for heating and fuels, could peak in 2025 before starting to decline in a historic turning point for the energy industry.

The findings of Myllyvirta's report support forecasts from energy experts that emissions from global electricity generation could reach a peak in 2023 before a peak in all energy emissions in 2024.

A report by climate think tank Ember, released in October, found that the growth of renewables was so rapid that it was close to the rate required for the world to triple its capacity by the end of the decade to meet climate targets.

According to Carbon Brief website's report, while China's CO_2 emissions have seen growth over the past 20 years, there have also been record additions of low-carbon capacity, setting up a surge in electricity generation in 2024.

With the power sector being China's second-largest emitter and other major sectors, such as cement and steel, already seeing CO_2 falling, this drop could drive a sustained, structural emissions decline for the country as a whole.

"This is because, for the first time, the rate of low-carbon energy expansion is now sufficient to not only meet, but exceed the average annual increase in China's demand for electricity overall," said Myllyvirta.

If this pace is maintained, or accelerated, it would mean that China's electricity generation from fossil fuels would enter a period of structural decline, which would also be a first.

Undisputable driver in renewable energy expansion

As Myllyvirta's report said, a historic expansion of low-carbon energy installations has been seen in 2023. The most striking growth has been seen in solar power, where expected installations in 2023 with some 210 gigawatts (GW), are twice the total installed capacity of solar power in the U.S. and four times what China added in 2020.

The newly installed solar, wind, hydro and nuclear capacity added in 2023 alone will generate an estimated 423 terawatt hours (TWh) per year, equal to the total electricity consumption of France.

In addition to the electricity generated by this newly added capacity, China is likely to see a large year-on-year increase in output from its massive hydropower fleet in 2024.

"All in all, 210GW of solar, 70GW of wind, 7GW hydro and 3GW of nuclear are expected to be added in China in 2023," Myllyvirta concluded.

According to CNBC, China is recognized as the undisputable global leader in renewable energy expansion, adding new projects to the grid of almost as many as the rest of the world combined in 2022.

There is no doubt that China's progress in scaling up clean energy contributes to the structure adjustment of global energy. "When we look around the world today, we can firmly see that the energy transition is in progress," said Mike Hemsley, deputy director at the UK Energy Transitions Commission.

Practical Cooperation Required in Addressing Climate Change

By TANG Zhexiao

China- U.S. climate talks have yielded positive results ahead of the 28th United Nations Climate Change Conference (COP28) in Dubai.

During climate talks between Chinese and US officials in California earlier this month, the two sides "engaged in a comprehensive and in-depth exchange of views" and "achieved positive results on developing bilateral cooperation and operations on climate change," said China's Ministry of Foreign Affairs, adding that they would jointly push for the success of COP28.

China-U.S. cooperation is a key to the world's ability to address climate change, and is considered a crucial part of any consensus at COP28, the BBC reported.

With extreme heat, floods, drought and sea-level rise becoming rife, both countries are concerned about the devastating effects of climate change.

In a three-day climate talk held this July, Beijing expressed its willingness to work with Washington on reducing global warming.

"This is not a one-off meeting," Washington's climate envoy John Kerry said, remarking that reducing non-CO_2 emissions like methane and moving away from coal dependence were crucial too.

Methane is a hydrocarbon that can affect the earth's temperature and climate system. It is the second most abundant anthropogenic greenhouse gas after CO_2, accounting for about 16 percent of global emissions, according to the U.S. Environment Protection Agency.

During the talks this month, China's Ministry of Ecology and Environment published a methane reduction plan, which vows to promote methane control in agriculture and strengthen it in industry, agriculture and city waste.

The UAE's special envoy for climate change and Minister Sultan Al Jaber, who is also president-designate of this year's COP28 climate summit, has welcomed the plan as a critical step for global climate action, saying he was delighted to see China taking part in global efforts.

Following the California talks, the two countries advanced climate cooperation by releasing the Sunnylands Statement on Enhancing Cooperation to Address the Climate Crisis.

According to the statement, China and the U.S. have decided to operationalize the Working Group on Enhancing Climate Action and engage in dialogue and cooperation to accelerate concrete climate actions in the 2020s. The Working Group will focus on energy transition, methane, circular economy and resource efficiency, low carbon and sustainable provinces/states and cities, and deforestation, as well as other agreed-on topics.

Both China and the U.S. are both increasingly investing in renewable technologies. Kerry said: "Like any other country in the world, [China] benefits from a new technology. We're trying to develop that... Every country I've heard from Germany and France, and other countries, do the same thing. We need to all move faster."

Climate change doesn't care about ideological divides, said Wu Changhua, a policy analyst specializing in China's environment. According to Wu, collaboration instead of competition is the key to avoid climate catastrophe.

No country can shield itself from the impacts of a global crisis such as climate change. The global community favors and hopes for cooperation between the two biggest economies in the world.

Hydrogen storage tank installation area in Aksu, Xinjiang Uygur autonomous region. (PHOTO: VCG)

Hi! Tech

From Fruit to Eco-friendly Leather

By QI Liming

Most fruits inevitably suffer from some blemishes, such as scratched skin, bruises or unappealing appearance caused during the process of production, storage and transportation. This affected produce can easily go rotten, and is therefore often disposed of as food waste.

To help achieve the targets of environmental carbon neutrality and reduce food waste, the defective or substandard fruit can be used to make 100 percent bio-based eco-friendly leather. The affected fruits are used as a nutrient source, and mixed with mushroom mycelium. After a series of cultivation and fermentation processes, eco-friendly leather is produced.

In keeping with the green theme, clean energy is used throughout the production process of "fruit to leather", and a unique bacterial and algal system is used to achieve the goal of producing zero carbon emissions.

Bio-based leather is not only environmentally sustainable, but also has excellent durability, which reduces the killing of animals. This has achieved new breakthroughs in the field of sustainable development and environmental protection.

Sunflower Extract Helps to Keep Vegetables Fresh

Sunflowers blossom in Nantong, east China's Jiangsu, on October 21, 2023. (PHOTO: VCG)

By TANG Zhexiao

As an oil crop, sunflower is grown around the world, and its containers are a by-product that is often considered agro-industrial waste. Chinese scientists have found that compounds from sunflower crop waste can fight gray mold.

Botrytis cinerea, a common fungus, causes fruits and vegetables to rot, reducing their quality and shortening their shelf life.

Using methanol and ethyl acetate to prepare extracts from sunflower stems, researchers isolated four new compounds that could destroy the plasma membrane integrity of fungi and cause suspension of their biofilm formation ability, significantly preventing rotting in blueberries.

In another experiment, the researchers briefly wet blueberries with the stem extracts, then dried the fruits and injected them with mold spores (one of the structures that certain fungi can form). Over six days, the stem extracts protected almost half the berries from mold growth.

The finding suggests that sunflower extracts might be a bio-control agent for preventing post-harvest diseases in vegetables.