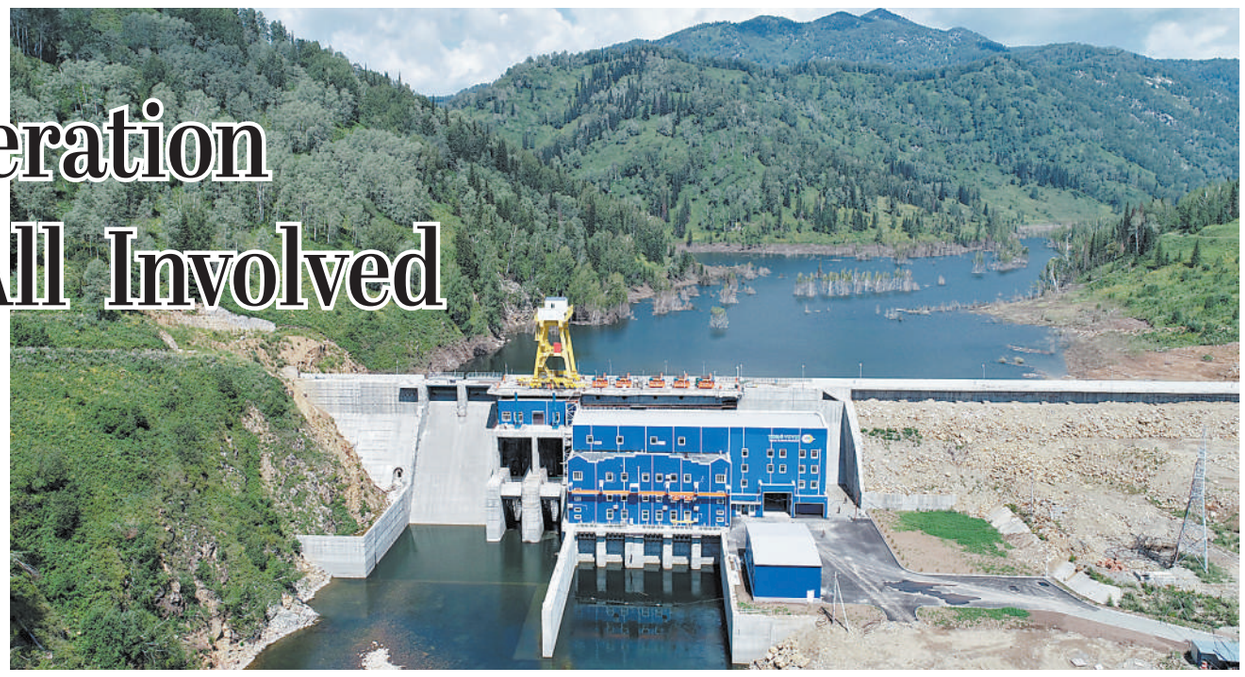
BRI Cooperation Benefits All Involved



The China-built Turgusun hydropower plant in Kazakhstan has been operating at full capacity since mid-July. (PHOTO: XINHUA)

Voice of the World

Edited by QI Liming

Since the launch of the Belt and Road Initiative (BRI) in 2013, the BRI has achieved tangible progress. With the goal of promoting the well-being of human society and achieving sustainable development goals, the BRI benefits the people of all participating countries.

Great undertaking benefiting all stakeholders

As *Helsinki Times* reported, the BRI raises living standards for people of participating countries. The Tana Beles sugar factory in Ethiopia has created tens of thousands of local jobs, farmers growing Chinese hybrid rice in Mozambique have embraced big harvests; and a series of training facilities has been built by China in Cambodia, Algeria and Djibouti to provide better career prospects for local workers.

Over the past nine years, livelihood projects under the BRI have brought clean drinking water, safe electricity, stable jobs and a happy life to more and more people in participating countries. As long as the countries continue their efforts, the BRI will be able to lift more people out of poverty and make global development more balanced.

According to a World Bank forecast, if all BRI transport infrastructure projects are carried out, by 2030, the BRI will generate 1.6 trillion USD in global revenue, or 1.3 percent of global GDP, and up to 90 percent of the revenue will go to partner countries.

Facts prove that the BRI is a road to common prosperity along with ensuring its developments become more environment-friendly and sustainable.

Green BRI driving low-carbon transition

On March 28, the Chinese government published a key policy document on the further greening of the Belt and Road Initiative, entitled *Opinions on the Joint Implementation of Green Development in the Belt and Road Initiative (the Opinions)*.

According to ClientEarth, an environmental charity using the law to create powerful change that protects life on Earth, it is key that the points/policies in the Opinions are fully implemented. The charity said that though they have no legal weight and cannot be enforced in court, the document will be carefully read, and implemented, by all key stakeholders, including project developers and financial institutions. Further policies and regulation implemention are likely to follow.

Given the current turbulent geopolitical environment, it is very promising to see that China isn't backsliding on its efforts to green the BRI: rather, the Opinions further clarify China's green BRI ambitions and provide comprehensive policy directions for future areas of "green" overseas engagement.

With the world facing increasing pressure from climate change and biodiversity loss, this is extremely timely. As the main finance and trade partner in most of the developing countries along the BRI, China can play a key role in their green and low-carbon transition.

Sustainable mobility connecting the world

With the implementation of the BRI, the delivery time of goods from China to Europe has been significantly reduced. Currently, the average delivery time of container cargo by sea is 45-60 days, but it only takes about 10 days if goods from China to Europe are delivered by train.

According to *Modern Diplomacy*, analysts predict that all regular goods trains from China to Europe, via Eurasia, will be fully loaded in the coming years. It is estimated that the elasticity of demand for "convenience" (including speed, regularity and accuracy of delivery) in rail container transportation between China and Europe is 98 percent.

Data shows that Chinese investment in railway infrastructure has led to the railway becoming a viable alternative to both sea and air for trade between the Far East and Europe. It is expected that goods currently transported by sea and air (white shipping line) between Europe and China will switch to rail transport in the future, due to improved services provided by BRI.

As for the environmental challenges, this means that if maritime services lose their most time-sensitive cargo in favor of the railway, it will be able to sail more slowly in practice, increasing transit times, but reducing fuel costs and therefore prices, as well as reducing CO_2 emissions.

Comment

Chanting Slogans Without Action Is Not Enough

By Tang Zhexiao

The U.S. Senate has ratified a global climate treaty that would formally phase out the use of hydrofluorocarbons, or HFCs, which is the industrial chemicals commonly found in air conditioners and refrigerators.

The treaty, known as the *Kigali Amendment* to the *1987 Montreal Protocol*, is expected to help U.S. industries remain the global leader in development, manufacturing, production, and deployment of HFC alternatives, according to U.S. Office of the Spokesperson.

In a vote prior to the U.S. Senate's ratification of the *Kigali Amendment*, Republican Senators Mike Lee and Dan Sullivan introduced the amendment, declaring China is not a developing country and should not be treated by the UN or other intergovernmental organizations as such.

The amendment would also require the Secretary of State to propose the removal of China's designation as a developing nation.

The U.S. claims that treating China as a developing country under the treaty gives it an unfair advantage in the existing HFC market. Furthermore, it allows China to continue production and undercut the HFC market well into the 2040s.

According to *The Washington Post*, Sen. John Barrasso also said that "This treaty is especially bad because it doubles down on the practice of treating China as a developing country."

Like all other developing countries, under the treaty China gets a grace period before it must reduce HFCs, said *The Washington Post*.

But the U.S. itself has not done well. It has previously withdrawn from the *Paris Agreement* in 2017 and the *Kyoto Protocol* in 2001, which were both international agreements on climate change.

Though Biden administration has committed to halve greenhouse gas emissions by 2030 and develop a carbon-neutral power sector by 2035, an analysis of the U.S. 100 largest electric power producers showed in 2021, carbon dioxide emissions from the power sector were up seven percent.

According to a United States Environmental Protection Agency's report *Fast Facts: U.S. Transportation Sector GHG Emissions*, the transportation sector generates the largest share (27 percent) of greenhouse gas emissions. And more than 90 percent of the fuel used for transportation is petroleum based, being primarily gasoline and diesel.

On the other hand, according to the Ministry of Public Security, the number of China's on-road new energy vehicles has reached 10.01 million by the end of June.

As the largest developing country, China is a country committed to real action on global climate governance and has resolutely followed a path of green and low-carbon development, Foreign Ministry Spokesperson Wang Wenbin said at a regular press conference in August.

In this process, China has made tangible contributions to global climate governance and the fight against climate change, said Wang.

Official data showed in recent years that China has allocated about 1.1 billion RMB for South-South cooperation on climate change, donated energy conservation and new energy products and devices to almost 40 countries, helped relevant countries to launch meteorological satellites, and trained nearly 1,500 officials and technical personnel working in the climate response sector of 120 developing countries.

To tackle the global climate challenge, it is not enough to just chant slogans without taking action.

The U.S. should earnestly deliver on its historical responsibilities and due obligations on climate change and stop looking around for excuses for its inaction, Wang stressed.

Future Revving Up for China's NEVs

Edited by QI Liming

China's new energy vehicle (NEV) output reached a new high of 617,000 units this July, surging 117.3 percent year-on-year and 4.5 percent higher month-on-month, according to the China Association of Automobile Manufacturers (CAAM).

Leading role in the NEV industry

After more than a decade of evolution and development, China's NEV industry has been the leader in the world's vehicle electrification revolution, said insurance giant Swiss Re.

The world's vehicle electrification revolution is progressing rapidly, and China has been at the forefront of it, not only from a production and technology viewpoint, but also from the broader definition of NEV, including but not limited to battery EVs, hybrids and fuel-cell vehicles. China is on the path to cut carbon emissions in a safe yet efficient way.

Along with China's NEV production and sales hitting records, local NEV technology has significantly advanced, and all core components such as batteries, electric motors, and electronic controls units can now be supplied through local manufacturers.

When it comes to charging infrastructure, China has also created the world's largest system of charging facilities, which effectively supports the promotion and adoption of NEVs. It is expected that the NEV industry will continue to grow at high speed in the next 5-10 years.

Driverless electric car display at 2022 World Intelligent Connected Vehicles Conference. (PHOTO: VCG)

Robust surge in NEV market

NEVs comprised 24.5 percent of China's total vehicle sales in July. This was for the fifth straight month of NEV's market share in total vehicle sales, which has remained above 20 percent, according to S&P Global Commodity Insights.

The China Passenger Car Association raised its forecast for electric passenger car sales to six million units in 2022, from its previous estimate of 5.5 million units made at the end of 2021. The CPCA expected its forecast to be further raised early in the fourth quarter.

Industry sources anticipated that China's vehicle output and sales will both continue to see fast growth in the months ahead, as production by automakers is recovering from the impact of the pandemic.

According to Alexander Treves, an investment specialist at J.P. Morgan Asset Management, in the electric vehicle space in China, J.P. Morgan looks for companies with the most pricing power, usually the battery makers rather than specific auto brands.

Fund manager, Edmund Harriss, head of Asian and emerging market investments at Guinness Asset Management, is also optimistic about China's EV sector.

Harriss said Chinese companies in the electric vehicle sector, factory automation, and sustainable energy field would likely outperform their global peers over the next five to 20 years.

Big efforts to meeting climate change

According to PBS NewsHour, the *Intergovernmental Panel on Climate Change (IPCC)* report, released on April 4, concludes that falling costs for renewable energy and for electric vehicle batteries, in addition to policy changes, have slowed the growth of climate change in the past decade. Costs are falling for key forms of renewable energy and EV batteries, and adoption of these technologies is rising.

As CBS News reported, electric vehicles are essential in limiting global warming. Sam Houston, a senior vehicles analyst for the clean transportation program at the Union of Concerned Scientists, said, "It's super important to keep working on the progress of cleaning the grid as we adopt electric vehicles. The more we can do, the sooner we do it, it's going to help alleviate those things, or at least not let them get any worse."

With the development of NEVs, it will, no doubt, help China to reach the target of carbon peaking and carbon neutrality.

Picture taken on September 12, 2022 showed the thick ice layer that has covered a Swiss mountain between Scex Rouge glacier and Tsanfleuron glacier since at least the Roman era has melted away completely. (PHOTO: VCG)

Digital Mask Protects Patient Privacy

By Staff Reporters

Chinese researchers have developed a new technology called the digital mask (DM), which is based on deep learning and real-time 3D reconstruction to remove patients identifiable features, while retaining their disease-relevant features needed for diagnosis. The technology was revealed by *Nature Medicine* recently.

They found that with the DM, examination videos of patients with manifestations of eye diseases can be precisely reconstructed from 2D videos containing original faces.

The technology is a result of joint efforts by various scientific research institutions including Sun Yat-sen University and Tsinghua University. The researchers did an experimental study which focuses on four pathological manifestations of eyes, that is, thyroid-associated orbitopathy, strabismus, ptosis and nystagmus.

Deep learning achieved feature extraction from different facial parts, and 3D reconstruction automatically digitalized the shapes and motions of 3D faces eyelids and eyeballs based on the extracted facial features.

The reconstruction consisted of three main stages: face reconstruction, eyelid reconstruction and eyeball reconstruction.

During the process, DM technology can retain the clinical attributes, while minimizing access to nonessential biometric information for added personal privacy in clinical practice.

A clinical diagnosis comparison showed that there is a very high diagnostic consistency between the use of original and reconstructed facial videos.

New Alloy Harmonizes Mechanical, Soft Magnetic Properties

Hi! Tech

By Staff Reporters

Soft magnetic materials (SMMs) serve in electrical applications and sustainable energy supply, allowing magnetic flux variation in response to changes in applied magnetic fields, at low energy loss.

The electrification of transport, households and manufacturing leads to an increase in energy consumption owing to hysteresis losses. Therefore, minimizing coercivity, which scales these losses, is crucial.

Yet meeting this target alone is not enough: SMMs in electrical engines must withstand severe mechanical loads; that is, the alloys need high strength and ductility. This is a fundamental design challenge, as most methods that enhance strength introduce stress fields that can pin magnetic domains, thus increasing coercivity and hysteresis losses.

To assist in overcoming this challenge, the research team from Central South University of China has designed a Fe – Co – Ni – Ta – Al multicomponent alloy with ferromagnetic matrix and paramagnetic coherent nanoparticles (about 91 nm in size and around 55 percent volume fraction). They impede dislocation motion, enhancing strength and ductility.

Their small size, low coherency stress and small magnetostatic energy create an interaction volume below the magnetic domain wall width, leading to minimal domain wall pinning, thus maintaining the soft magnetic properties.

The alloy has a tensile strength of 1,336 MPa at 54 percent tensile elongation, extremely low coercivity, moderate saturation magnetization and high electrical resistivity, which is expected to be widely used in the fields of photovoltaic power generation, new energy vehicles and charging piles, data centers and electronics in the future.