

INSIGHTS

Sci-tech Empowering Carbon Reduction of Maritime Shipping

Voice of the World

Edited by QI Liming

As the ocean covers 75 percent of the earth's surface, reducing carbon emissions in ocean development is becoming more and more important to protect the earth. This is evident by the ascendancy of China in the maritime space over the past decade, while the country's efforts and resolution to reduce carbon emissions cannot be overlooked.

The world's first hydrogen-powered and 5G intelligent port

As the traffic volume continues to increase, the port's carrying capacity limitations has become a bottleneck that limits further development.

It quickly became evident that deploying a 3D intelligent, green and low-carbon transportation system is the way of the future. Qingdao Port is now one of the world's leading automated container terminals equipped with state-of-the-art technologies. It is also the first fully automated container terminal in Asia.

The port has achieved productivity of 36.2 containers per ship per hour on average, peaking at 52.76 containers per hour, a production efficiency that is 50 percent higher than other ports with similar automated terminals.

Meanwhile, Qingdao Port is the world's first "hydrogen + 5G" smart ecological terminal, pioneering hydrogen-powered crane technology and systems by developing a hydrogen energy-driven solution for the fueling of equipment



Freighters are busy loading and unloading containers at various berths, Qingdao Port in Shandong province. (PHOTO: VCG)

needed for the operation of a large port.

According to Port Technology, the system reduces carbon emissions by some 3.5 kilograms and sulfur dioxide emissions by 0.11 kilograms per twenty-foot equivalent unit (TEU). Calculated on the basis of an annual capacity of three million TEU, 21,000 tons of carbon dioxide and 640 tons of sulfur dioxide emissions are estimated to be cut annually.

Net-zero ambitions for shipping

Given that 90 percent of the world's goods travel across the ocean to reach their destination, maritime shipping also plays pivotal role in tackling climate change, especially cutting carbon emissions.

At last year's COP26 climate summit in Glasgow, 22 countries signed up to the *Clydebank Declaration*, announcing their intention to establish various zero-emissions shipping routes known as "green corridors".

As the world's largest shipbuilder, China plans to reduce maritime emissions under the International Maritime

Organization (IMO) and it is participating in the first green corridor.

Isabelle Gerretsen, a freelance journalist covering climate and environmental issues, reported that the ports of Los Angeles and Shanghai agreed in January to work on developing a plan for a zero-emission routes by the end of 2022. The Trans-Pacific corridor, as it is known, is the world's busiest cargo route.

Shipping companies are increasingly adopting new technologies that reduce the carbon footprint of their fleets, in response to concerns about climate change, said Hing Chao, chairman of Hong Kong-based Wah Kwong Shipping Agency Co. Ltd.

"I'd say the default position [of industry players] is compliance which, if we take into account the emission reduction targets set by [IMO] and other international regulatory bodies, requires everyone in the industry to take proactive steps towards improving energy efficiency," said Chao.

Adding shipping to emissions reduction scheme

According to *Splash 247*, Singapore's exclusive maritime news platform, the world's largest emissions trading scheme (ETS) kicked off in 2021, and shipping has been warned that it could be included in future.

While the European Union bid to include shipping in its emissions trading scheme, further east, China has had its own scheme underway as early as in February 2021, and has outlined criteria for other industries to be included.

Tim Huxley, chairman of Hong Kong-based Mandarin Shipping, said that the new scheme impacting shipping is viewed as "inevitable".

In view of this, a new market-based measure to cut shipping emissions has been put forward to the IMO by a powerful grouping led by China and supported by Argentina, Brazil, South Africa and the United Arab Emirates in early 2022. The proposal is both a predictable pathway for international shipping towards decarbonization, and ensuring sufficient transport supply for international trade.

Opinion

Don't Underestimate the Risks by COVID-19

Edited by GONG Qian

As the number of reported COVID-19 deaths around the world has fallen sharply since the outbreak of the pandemic, many suggest that we are out of the woods. Even President Joe Biden declared last month that the "pandemic is over," which received a backlash from U.S. media and medical experts.

There is no doubt that the COVID-19 virus is now less deadly. But evidence suggests that loosening restrictions in the West have exerted negative impacts, particularly in the areas of people's health and socio-economic development. So, this is not the time to throw vigilance out of the window.

According to the WHO, globally, as of October 17, there have been over 621 million confirmed cases of COVID-19, including over 6.5 million deaths.

Data from U.S. Centers for Disease Control and Prevention (CDC) shows the U.S. has been averaging around 400 deaths per day for months. It is "not an acceptable number," said Dr. Anthony Fauci, President Biden's chief medical advisor, at the Atlantic Festival in September.

The U.S. had a far higher COVID death toll than other wealthy countries, said *The New York Times*. Life expectancy in the U.S. continues on a historic decline since 2020. According to CDC, life expectancy in 2020 declined to 77 years - the lowest national average since 1996, and 2021 showed another drop to 76.1 years. The COVID-19 is one of the main reasons behind the decline, according to CDC.

But the situation may worsen. The CDC said it will stop reporting daily updates of COVID-19 cases and deaths, instead issue weekly data, starting from October 20. The move is largely due to "underfunding public health systems," and experts "worry [that] pulling resources away from COVID-19 surveillance could delay pandemic efforts and send the wrong message to the public," said *USA Today*.

Currently, many people are suffering the long-term effects of COVID, known as long COVID, which is becoming a new and ongoing health problem.

A recent study in Scotland led by the University of Glasgow showed that one in

20 people suffers from long COVID, after recovering from COVID-19 between six and 18 months after infection. The common symptoms included breathlessness, chest pain, palpitations, and confusion or brain fog. Researchers found that some long-term effects of the disease could cause severe infections and even require hospitalization.

"There are lots of different impacts going beyond health to quality of life, employment, schooling and the ability to look after yourself," Jill Pell, a professor who led the research, told *The Washington Post*.

In reality, the pandemic is directly threatening the socio-economic development. Pell's research again verified an outcome of a report by the U.S. Government Accountability Office in March. It revealed that, "Long COVID has potentially affected up to 23 million Americans, pushing an estimated one million people out of work. The full magnitude of health and economic effects is unknown but is expected to be significant."

In fact, no aspect of our lives is immune to the "unprecedented crisis". The way to tackle the crisis is to take restrictive measures until it is over.

Putting people's lives first, China has been implementing a dynamic zero-COVID policy. The country has managed the coronavirus outbreak effectively.

"In terms of morbidity and mortality, China is the least affected by the COVID-19 in the world," said Wu Zunyou, chief epidemiologist at the Chinese Center for Disease Control and Prevention, at a news briefing on October 13. China only occupies 0.16 percent of COVID-19 cases and 0.08 percent of related deaths worldwide, Wu added.

On the other hand, life expectancy in China increased from 77.9 years in 2020 to 78.2 years in 2021, according to China's National Health Commission. What's more, China's economic growth while maintaining its active response to the COVID-19 has also verified the correctness of its overall strategy.

Fighting against COVID-19 is just like taking part in a marathon race. We are all runners. We may get tired and frustrated about it, but we have to hold on to cross the finish line ahead of the race.

Goodbye SIM Card, Hello eSIM

Hi! Tech

Edited by TANG Zhexiao

When bought a new phone, we probably have to handle a SIM card, a small plastic card that can be slotted into our mobile phone as subscriber identity module.

But as technology advances, SIM

cards are getting change. The next time we buy a phone, it might not have a SIM card at all - instead, it'll have an Embedded-SIM (eSIM).

eSIMs are the digital version of SIM cards. As a small chip embedded in the handset - an eSIM can't be removed and put in another phone.

However, information on an eSIM is rewritable, which means users can change their network without removing their SIM card and inserting a new one.

At present, eSIM technology can be used in a wide range of applications, including wearable devices, tablets, PCs and other terminals such as smart speakers and POS machines, covering various scenarios such as sports, entertainment, education, etc.

Users can also access two or three operators at the same time, and use them for voice and data storage respectively.

Detachable traditional SIM cards have a short service life and occupy a

large space. The volume of an eSIM is only 10 percent that of a traditional SIM card, while also having strong resistance against external force and high temperature.

Of course, eSIMs will not completely replace traditional SIM cards immediately.

With the rollout of eSIMs, the main carrier of future communication may be wearable devices and the functions of mobile phones will be gradually phased out.

Drones Dramatically Changing Farming Practices

By LIN Yuchen

Agricultural drones today are no longer a luxury for farmers. The buzzing of small propellers can now be heard more widely across China as they assist in driving the country's agricultural efforts forward with more intelligent options.

One such instance are the villagers in Yajiang county, Sichuan province, who are now using drones to transport delicate wild mushrooms collected from nearby hills. Previously when transporting 10 mushrooms manually down to the valley, for example, only two or three would remain undamaged. Now with the drones, almost all mushrooms collected arrive at the collection point in good condition.

In 2016, China had a stock of only about 4,000 agricultural drones. In 2021, however, the agricultural drone's industry witnessed the largest quantitative leap, with this figure rising to over 100,000. The drones operated across



Agricultural drones operate in farmland. (PHOTO: VCG)

more than 93 million hectares of farmland with up to 200,000 technicians surveying data from their remote missions.

Relevant drones were also exported to facilitate agricultural work in Southeast Asia and Switzerland including

crop protection, spreading fertilizer, and livestock feed.

Leading manufactures of agricultural drones like Da-Jiang Agriculture and XAG are also accelerating their innovations. XAG's upgraded products, for example, can operate steadily and efficiently even in areas without strong Internet connection.

"China has become a leader in the drone industry worldwide," said Wang Zhiguo, chairman of National Aviation Plant Protection Science Technology Innovation Alliance, adding that the country leads the world in flight control and ultra-low altitude spraying technologies of drones.

Many new models of agricultural drones are being developed to suit extreme geographical scenarios. According to Da-Jiang Agriculture, "Drones are particularly suitable for scenarios where it is difficult to get down on the ground with manual and ground machinery, such as paddy fields, tall straw crops, and mountainous terrain."



A medical worker takes a swab sample from a resident for nucleic acid test in Hohhot, Inner Mongolia Autonomous Region. (PHOTO: VCG)

Protecting Our Common Home

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The Kunming Declaration was adopted at the 15th meeting of the Conference of the Parties to the UN Convention on Biological Diversity (COP15), held in Kunming, southwest China's Yunnan province in October 2021, launching a new journey towards the full realization of the 2050 Vision of "Living in Harmony with Nature."

China also announced that the country would invest 1.5 billion RMB to establish the Kunming Biodiversity Fund to support biodiversity protection in de-

veloping countries.

China's efforts in creating a better environment for all have been widely recognized. As early as 2013, the UN Environment Program (UNEP) passed a draft decision on promoting China's notion of ecological civilization and released a report named *Green is Gold: The Strategy and Actions of China's Ecological Civilization* in 2016.

The Earth is the common home of humankind, and China is becoming a world leader in promoting biodiversity and protecting its environment.