



ICAS BLUE CARBON & CLIMATE CHANGE PROGRAM

QUARTERLY

Quarter 2 - 2023



ICAS BLUE CARBON & CLIMATE CHANGE PROGRAM

The ICAS Blue Carbon and Climate Change (BCCC) Program explores new policy pathways for sustainably developing the blue carbon economy and combating climate change.

The goal of this program is to establish a platform for academic exchange between experts around the world to produce tangible policy recommendations for countries to follow together. Most prominently, the program endeavors to find new pathways for multilateral engagement and mediation in areas of competition to promote mutually beneficial cooperation on climate change where possible.

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ICAS BLUE CARBON & CLIMATE CHANGE QUARTERLY

April - June 2023

Contents

- 1 Theme of the Quarter: Electric Vehicle Popularization**
 - News on Electric Vehicle Popularization
 - Government Statements & Actions on Electric Vehicle Popularization
 - Third-Party Analyses & Data on Electric Vehicle Popularization
 - ICAS Commentary

- 13 This Season's Global Climate Affairs**
 - Issues & Updates on Blue Carbon
 - Multilateral Affairs & Climate Diplomacy
 - Domestic Activity & Climate Affairs

- 24 Blue Carbon Country Profile: Indonesia**

- 31 Scientific Research and Beyond**
 - Scientific Research Results & Releases
 - Major Government Statements & Actions
 - Third-Party Analyses & Commentaries

- 38 Images of the Month**

- 39 Climate-Focused Quotes of the Quarter**

- 41 Climate-Focused Conferences & Events**
 - Multinational Conferences & Global Forums
 - Public Events & Panel Discussions

- 45 ICAS BCCC Program Update**

Theme of the Quarter: Electric Vehicle Popularization

News on Electric Vehicle Popularization

Increases in Global Private and Governmental Financial Support for Electric Vehicles

The electrification of the global vehicle supply chain drastically took effect during 2023's second quarter. Dozens of car manufacturers from around the world have increased their total allotment of funds towards electric car production, and some governments have even begun allocating significant funding to support domestic electric car production. For instance, Japanese-based Toyota announced US\$7 billion in electric vehicle investments which will bring their total investment for 2023 to US\$37 billion. Alongside Toyota, South Korea's Hyundai raised their total annual electric vehicle investment to US\$28 billion; an increase of over 60% from that of 2022. The Ford Motor Co. received nearly US\$9.2 billion from the U.S. government to boost American manufacturing of electric vehicles. Such allocations are crossing borders as well, with Chinese electric car manufacturer Nio now scheduled to receive US\$738.5 million in new investment funding from the Abu Dhabi government.

Additionally, new deals between electric vehicle companies themselves are also underway to streamline the consumer experience. U.S. based General Motors Co., Ford Motor Co., and Rivian, as well as German-based Volvo, will have access to Tesla Inc.'s "North American Charging Standard" network for their electric cars. This cooperation initiative is the first of its kind to incorporate the three largest U.S. electric vehicle companies into one unified charging system. The move from Tesla to allow entrance from other car companies into their charging network will undoubtedly streamline charging infrastructure development and sales. Perhaps this streamlined charging infrastructure and increased funding could help alleviate what the Energy Policy Institute at the University of Chicago identified as serious challenges that the average electric vehicle consumer in the U.S. would encounter: the lack of charging options.¹

Electric cars, however, are not the only electric vehicles receiving large amounts of funding this quarter. In May, Virginia-based aeronautics and defense corporation General Dynamics received US\$1 billion in funding from the U.S. government to support their production of electric submarines. New, non-traditional electric vehicles are also starting production in Vietnam, including a five-seat electric vehicle which is only 3.1 meters long, compared to the average of 4 meters long for compact cars. VinFast, the creator of the vehicle, hopes that it can infiltrate the highly competitive domestic motorbike market. Another non-traditional electric vehicle development during this quarter has been the announcement from Hurtigruten Norway, a cruise ship developer, which has planned for a zero-emissions electric cruise ship with retractable solar panel sails to set sail in 2030. The increase in both smaller and larger non-traditional electric vehicles provides more options for consumers and niche markets to become more climate friendly.

International increases in electric vehicle investment were preceded by multiple factors, including the widespread increases in global demand; demand that appears will only grow. The International Atomic



¹ Image: A string of Tesla charging stations on the side of the road in Arlington, Virginia. (Source: Unsplash)

Agency released a report stating electric car sales are expected to increase by 35% in 2023, and announced, as a preliminary estimate, that 14 million electric vehicles will be sold in 2023. However, these drastic increases in the funding of electric vehicle production have not all been well received. The U.S. passage of the Inflation Reduction Act has both significantly increased domestic funding for electric vehicles and tax credit incentives, and driven U.S. domestic production to strike fear into allied countries rooted in potentially unfair subsidies and business practices. The drastic increases have led several European governments to question the rationale from the Biden administration to enact the IRA, as it discourages transatlantic cooperation on the production of electric vehicles, according to a former European trade commissioner. The increased subsidies for U.S. car manufacturers and battery producers has made the transatlantic electric vehicle market far more volatile. However, the Biden administration has reaffirmed that their subsidies, and European counter-subsidies, are driving electric car and battery prices down for car buyers and consumers. Some analysts have also argued that these new subsidies may lead to a new kind of transatlantic competition; one that benefits both the consumer and the environment.

Despite strong increases in international demand for electric cars, the U.S. market still lags behind in consumer demand, according to news and poll producer *Gallup News*. It seems that subsidies and investment increases still have not been enough to win over the American consumer. According to Consumer Reports, most new electric vehicles are still luxury vehicles with an average price of over US\$61,000; US\$12,000 more than the U.S. auto industry average. In comparison, *The New York Times* reported that the average price of a Chinese electric vehicle is only US\$35,000; nearly half of what it costs the consumer in the U.S. The intense competition in China between car manufacturers reportedly drove down the price along with heavy public interest and support, both of which the U.S. has yet to receive. The unification in infrastructure from Tesla Inc. and the heavy subsidies from the U.S. government may be able to decrease average prices, but without a strong change in consumer interest within the U.S. market, it may be difficult for the U.S. to increase its sales of electric vehicles to a fully effective point.

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Significant Changes in the International EV Battery Supply Chain and Development

The second quarter of 2023 was a landmark time for changes in electric vehicle batteries research and development. Within the Chinese market alone, electric vehicle producers have intensively spread battery production facilities across the globe. China's Great Wall Motor Co. finalized plans to invest US\$30 million into new battery factories in Thailand. China's Hozon NChina-based Gotion High Tech has prospects to build a new battery plant in Morocco, with an investment of up to US\$6.3 billion. Xiamen Hithium Energy Storage is looking to invest US\$900 million in a 30 hectare industrial field in Vietnam to produce new battery packs for electric vehicles. Also in Vietnam, Chinese Growatt New Energy looks to lease a pre-fabricated battery plant with around US\$300 million worth of investment. Additionally, European carmaker Stellantis has entered into a 50-50 joint venture partnership with Chinese goods manufacturer Foxconn to produce and produce semiconductors for the electric automotive industry. In the Philippines, Chinese electric motorcycle giant Yadea has planned to invest US\$1 billion in a new e-motorcycle facility. Chinese car producer BYD has also overtaken LG as the world's second largest electric battery supplier, second only to another Chinese company, Chinese Contemporary Amperex Technology (CATL). The drastic increase in global production initiatives from Chinese battery manufacturers—especially over the last quarter—echoes not only the extreme competition that the Chinese market expects to face but the extent of commitment that China has to becoming and maintaining the global lead in the electric vehicle industry. Moreover, Chinese battery manufacturers will face even further freight competition as the U.S. electric vehicle production ramps up as American companies grapple with ways to best utilize American subsidies and governmental support.



In Europe, electric vehicle manufacturers are also looking to diversify their production lines and are becoming more interested in gearing up for future competition with their U.S. counterparts.² European governments have become more invested in increasing subsidies to win over European car manufacturers to develop within their borders. Jaguar Land Rover recently changed course and abandoned a multi-billion-pound electric car battery plant in Spain, moving the development to London instead. Industry analysts have concluded that the move will be one of the largest investments in

vehicle production in the United Kingdom since the 1980s. The move from Spain to London was mediated by the UK's government and was notably encouraged by extensive subsidies. On the other side of the channel, Volkswagen is actively looking for a new supplier of critical resources to produce their electric vehicle batteries. The German carmaker is looking to change from being "100% dependent on China" to only

² Image: An ariel photo of the Tesla Gigafactory, located in Shanghai, Pudong, China. (Source: Getty Images/Royalty Free)

being around 50% dependent on Chinese resources to produce their batteries, according to Volkswagen board member Thomas Schmall. Volkswagen executives have said the main goal in reducing their dependence on Chinese sourced critical materials is to increase their ability to retain profits. In France, electric vehicle batteries are also a hot point of discussion and change, as French President Macron welcomed Taiwan's ProLogium's CEO Vincent Yang to Paris to showcase their new solid-state batteries and electric vehicle batteries. President Macron also signed a deal to allow ProLogium to build their first electric vehicle gigafactory near the French town of Dunkirk, a former coal mining area. As Europe and China both begin to find ways to strengthen their internal production of electric vehicle batteries through both subsidies and diplomatic agreements, they are gearing up to effectively compete with the Biden administration's new subsidies on electric vehicle production.

Yet, a serious concern still remains for electric vehicle manufacturers as they begin their search to solidify their production lines and secure their supply chains for batteries. Car manufacturers have touted progressively stronger lithium batteries and long-lasting charges, such as China's Greater Bay Technologies new Phoenix EV battery that has promised a 600-mile drive on only an eight-minute charge. However, global automotive producers still face huge challenges in recycling and ensuring the maximum lifetime for the batteries are reached. There have been movements within the reusable battery market, but it seems that intensive competition and no systematic approach to a reusable battery have made it challenging to bring the reusable battery to reality thus far. Without a concrete approach to reusable batteries or dead battery waste still remains a main concern for the industry, as well as for the consumer as climate-consciousness remains one of the largest concerns for electric vehicle consumers.

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Intense International Competition Plagues the Largest Global EV Market

As multiple global initiatives to increase electric vehicles have begun, markets have been flooded with new investment opportunities and chances for electric vehicle manufacturers to take hold of the new increased subsidies and demand. The world's largest electric vehicle market—China—has become especially volatile as both Chinese and international vehicle companies are attempting to take a strong foothold. In April, China held its first in-person auto show since the beginning of the COVID-19 pandemic, unveiling nearly a dozen new electric vehicles, and showcasing new brand entrances to the Chinese market. It was the first time since 2019 that international vehicle executives flew into China. In 2022, Chinese consumers bought 5.4 million pure-electric vehicles, which was two-thirds of the global total of 8 million pure-electric vehicles. The Chinese vehicle market has drastically shifted over the past few years and according to analysts consumers have seemingly lost interest in gas vehicles, making it difficult for gas-vehicle heavy international brands to adequately compete in China.

Within the U.S., auto manufacturers have raised concerns for how quickly the Chinese market has shifted their interests and how Chinese automakers have been able to quickly adapt. Ford Motor Co. CEO Jim Farley stated that Chinese electric vehicle producers are the American giant's main rivals and competitors in the industry, and stated that not even GM or Toyota can compare to the current pace Chinese automakers are developing new vehicles. German automaker Audi has also sought interest in the Chinese electric vehicle market, noting that developing their electric car foothold in the Chinese market is extremely important to their company success. American EV manufacturer Lucid Air also seeks to enter the Chinese market as a new luxury vehicle manufacturer, as well as German owned BMW which will begin production of their electric cars for the Chinese market in 2026.

Internationally, the Chinese market remains at the forefront of automakers' minds, and the electrification of the Chinese automotive industry has brought significant changes to international automaker strategies. Next door, Japan-based Mazda decided that consolidations were necessary amidst the heated competition, resulting in its joint venture 'FAW Mazda' being completely folded into another of its joint ventures with China's Changan Automobile. At the end of June, Tesla announced that it is reducing the price of premium cars in China by more than 4.5%.

However, for the Chinese automotive industry, the electric revolution has led to some major changes in industry makeup. Shenzhen-based BYD (short for 'Build Your Dreams') beat out America's Tesla to become the largest electric vehicle brand in the world. Both BYD and Tesla just beat sales records in Quarter 2, delivering 466,140 and 700,244 vehicles, respectively, over the last three months. However, despite being more successful internationally than Tesla, and being the largest electric vehicle producer, BYD has yet to successfully enter the American market. BYD has also been making huge strides in other international markets—most notably within Jordan as sales of the brand have drastically increased within the past year—with analysts, and car dealers, estimating it to become the



most popular vehicle brand in Jordan by the end of the year.³

Despite BYD's overwhelming success in China and abroad, it still faces intense competition from other domestic EV dealers. Chinese Li Auto Inc. successfully doubled their share values comparatively to last year, making them comfortably the highest valued Chinese electric vehicle producer. Moreover, BYD and other Chinese electric vehicle producers have already stated they have no plans to attempt to enter the U.S. market, a particularly difficult challenge. BYD's head of global expansion Stella Li stated that the issue with entering the U.S. market for foreign electric car producers are the new climate laws introduced by President Biden, including the Inflation Reduction Act (IRA). Li stated that the IRA, among other new laws, prevents American consumers from having access to cheaper electric vehicles and reduces the allowance for international competition. *The New York Times* reported that the average price of a Chinese electric vehicle is only US\$35,000; nearly half of what it costs the consumer in the U.S. The intense competition in China between car manufacturers reportedly drove down the price along with heavy public interest and support, both of which the U.S. has yet to receive.

Comparatively to China, however, U.S. domestic competition has been lackluster and, to many observers, not at all fierce. Yet, new U.S. subsidies from the Inflation Reduction Act and other methods have driven U.S. domestic production to strike fear into allied countries rooted in potentially unfair subsidies and business practices. The drastic increases have led several European governments to question the rationale from the Biden administration to enact the IRA, as it discourages transatlantic cooperation on the production of electric vehicles, as pointed out by a former European trade commissioner. In other words, the increased subsidies for U.S. car manufacturers and battery producers has made the transatlantic electric vehicle market far more volatile. However, the Biden administration has reaffirmed that their subsidies, and European counter-subsidies, are driving electric car and battery prices down for car buyers and consumers. Some analysts have also argued that these new subsidies may lead to a new kind of transatlantic competition; one that benefits both the consumer and the environment.

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³ Image: People exploring a BYD showroom in China in June 2022. (Source: UnSplash)

Government Statements & Actions on Electric Vehicles Popularization

Within the current electric revolution in the worldwide automotive industry, governments and officials have been not only advocating but also supporting legislation to increase the number of electric publicly owned vehicles. The United States, Europe, and China have all been phasing out the traditional gas public vehicles for more modern and climate-friendly electric options, and several governments—especially those of the U.S. and China—have begun to take action to make that process easier.

- The Chinese government announced a new US\$72 billion tax break package to lower the costs of electric vehicles through 2027. The new plan hopes to stimulate domestic demand and increase sales of electric vehicles.
- The Chinese government raised the emission standards for vehicles sold within China and as of July 1, 2023, China now prevents the production, importation, and sales of vehicles that do not comply with the stricter requirements on common pollutants such as carbon monoxide.
- In response to strong U.S. subsidies, in May the French government created new subsidies to increase the production and sales of European-made cars.
- The Biden Administration announced new public and private commitments to speed up the rate of electric vehicle usage within the United States. The investment project, announced in mid-April, has already received pledges from Uber, Zipcar, and other clean technology companies.
- India has been instigating various state-level subsidies and government initiatives in a continued major push for not only electric vehicle adoption by consumers but also to bring vehicle production to India.

Some government ministries and departments, especially those in the U.S., have been implementing more stringent rules based upon the global support for electric vehicles and subsequently instituting changes to green infrastructures.

- The U.S. Department of Transportation will award almost US\$1.7 billion in grants to states and territories to allow for school districts to purchase zero- or low-emission buses.
- The U.S. Department of Energy has proposed to reduce electric vehicle mileage ratings, a move that would help implement government fuel economy rules, and could force American automakers to have more low-emissions vehicles.
- The U.S. Treasury Department announced new plans for tax breaks on American made electric vehicles that will notably continue to exclude foreign automakers.
- The U.S. Environmental Protection Agency announced plans to implement the strictest vehicle pollution requirements in the world in an effort to ensure electric vehicles become more and more commonplace.

Meanwhile, multinational institutions and their representatives have also spoken out about the global efforts to increase electric vehicle sales, with most of the comments being positive and forward-looking.

- In June, UN Resident Coordinator in China Siddharth Chatterjee, spoke at the 2023 World Power Battery Conference, noting among other remarks that “[n]ew green power for the future and the rise of electric vehicles (EVs) are closely intertwined and have the potential to revolutionize our world.” Chatterjee also acknowledged the remaining challenges the EV market faces and various collaborative projects that the United Nations is actively running with China to get ahead of these challenges.
- The International Energy Agency released their annual report for EV outlooks for 2023, which predicts an “explosive” growth in the automotive industry and compiles the current policy stances and developments within the electrification of the automotive industry.
- The International Council on Clean Transportation also released their Global Automaker Rating for 2022 and concluded that American Tesla and Chinese BYD rank the highest based on their sales, actions, and Zero-Emission Vehicle (ZEV) strategies.

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Third-Party Analyses & Data on Electric Vehicle Popularization

Alongside the onset of the current global electric vehicle race, experts, analysts, and observers have been developing their own opinions, many of which believe that the increased competition and new government actions will lead to higher numbers of electric vehicle sales. However, there has also been contention over natural resources, cross-border comparisons, and whether or not governments—as well as private companies—are still doing enough to help convince consumers to buy into electric vehicles.

- The China Project has created a report exposing the ways in which Chinese companies utilize countries with free trade agreements with the U.S. to import their electric vehicle batteries.
- Writing for *The New York Times*, business and automotive industry analyst Jack Ewing stated that the move from Ford and G.M. to utilize Tesla's preexisting charging network places Elon Musk at the center of the American critical charging infrastructure.
- Writers at *POLITICO* outlined ways in which the U.S. and Europe are diverging on the ideas of Chinese electric vehicles, specifically highlighting the U.S. reluctance to accept foreign made EVs versus the European strategy of free trade specifically for Chinese battery-powered imports.
- Derk Roodhuyzen de Vries, CEO and Co-Founder of Netherlands-based Fixico, wrote an opinion piece in *euronews* on how far behind Europe's electric vehicle infrastructure is in light of the 2035 deadline.
- Electric vehicle analyst Ryan Fisher wrote in *Bloomberg* about the incredible increases in electric-car chargers in China, noting that the increase of more than 649,000 in one year was equivalent to nearly 70% of EV chargers currently installed globally.
- Opinion writer David Fickling wrote in *Bloomberg* on ways to recycle electric vehicle batteries and spoke on the possible consequences the world could face if governments and private organizations do not act responsibly on this issue quickly enough.
- Automotive industry specialist Gabrielle Coppola wrote in *Bloomberg* regarding the failed initial attempts to increase EV production in the United States and how consumers in the U.S. may have something to learn from the historical failures of companies like A123, an early American battery producer.
- In writing for *The Japan Times*, analysts exposed ExxonMobile for their response to the international

Energy Agency's Net Zero Emissions scenario for 2050, and called out the company's response as being unacceptable.

- The Editorial Board for the *Financial Times* suggested that British car makers should utilize this time to capitalize on the newly established electric vehicle craze, explaining that Brexit rules should not prevent companies from being able to further move towards a green transition.
- Ana Swanson, a reporter on trade and economics, wrote in *The New York Times* about the challenges the U.S. will face in finding adequate critical resources to support the furthering green transition as other countries struggle to locate the same resources.
- The Editors at *Bloomberg* encouraged readers to consider the fact that increase in electric vehicles alone will not solve the issue of climate change, and that policymakers should be more honest with constituents on the true cost of the electrification of the U.S. market.
- In a report with *The New York Times*, analysts argued that making an electric car battery without Chinese components seems more impossible than probable, and that it will take more than investments to change the imbalance of natural resources.
- In an opinion piece for Canada's *The Globe and Mail*, Eric Reguly calls Europe's electric vehicle situation "a car crash ready to happen" amidst China's sudden burst in the electric vehicle market.
- The Mercator Institute for China Studies, or MERICS, released a report stating that Chinese foreign investments in EV have dropped to a decade low and that increased European scrutiny of Chinese brands and producers have had serious consequences on the number of Chinese investments in Europe.
- A Mumbai-based article in *The Economist* points out how electric scooters, not cars, are spreading fast.
- Analysts at *POLITICO* have applauded U.S. President Joe Biden's new climate agenda and its effects on the electric vehicle and clean energy industries, specifically highlighting that Biden's new assertiveness within clean transitions could lead to great developments in the U.S. economy and within the automotive industry.
- Following the U.S. Environmental Protection Agency's increase in vehicle emission standards, the *Los Angeles Times* Editorial Board released an editorial explaining how the new jump in standards will all but force the vehicle industry to rapidly pick up its pace in releasing zero-emission models.

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ICAS Commentary

Think and Plan Ahead for The Problem of Scrapped Lithium Batteries in Electric Vehicles

By Zhangchen Wang

June 29, 2023

With the promises of reducing carbon emissions and contributing to a greener future, the popularity of electric vehicles is continuously growing, and both the government and private companies are paying more attention to and putting more investment in it. However, as the market of electric vehicles keeps expanding, a topic that once did not attract much attention is also becoming urgent to be resolved: How can the scrapped lithium batteries of electric vehicles be recycled in the most effective way?

Electric vehicles have witnessed a remarkable surge in adoption worldwide. According to a [recent report](#) published by the International Energy Agency, one in every seven passenger cars sold globally in 2022 was an electric vehicle. At the same time, vehicle manufacturers and battery makers plan to invest [\\$860 billion by 2030](#) in electric vehicles. Indeed, the electric vehicle offers a cleaner and more efficient alternative to traditional internal combustion engine vehicles, and it is both increasingly and widely accepted by the broad market.

However, new challenges arise with very new development, and these challenges have an impact on society as a whole. The lithium battery is the most important component that makes electric vehicles viable by providing considerable driving ranges comparable to traditional cars. However, just like any other electronic devices, lithium batteries are designed with a limited lifespan. The rapid increase in the number of electric vehicles has led to a corresponding rise in the number of discarded lithium batteries.

Although there is no unified regulation on the required battery life of electric vehicles yet, it is widely agreed that the average lifespan of electric vehicle batteries currently in use and on sale is approximately [15 years](#). Still, some people question that the life of the lithium battery may not exceed ten years while others argue that, if the battery is used reasonably, it can maintain normal operation for twenty years. Nevertheless, in any case, as a product that was introduced to the market about a decade ago, the lithium batteries of many of the earliest electric vehicles are already facing the end of their lifespans.⁴



The disposal and management of scrapped lithium batteries pose significant environmental concerns. The current way of recycling lithium batteries is to simply shred everything down into powder, and then either melt it down or use a solution to dissolve it before recovering the useful metals mixture in it. However, this method of decomposition has relatively large safety hazards because it can easily trigger an explosion if not operated properly; not to mention that only about [5%](#) of scrapped lithium batteries can be

⁴ Image: Employees recycle batteries from electric vehicles at a workshop of Paersen Environmental Technology Co., Ltd on May 16, 2023 in Weinan, Shaanxi Province of China. (Photo by VCG/VCG via Getty Images)

effectively recycled in this way globally. In addition, the waste generated during the recycling process is also pollutive. The [main components](#) of lithium batteries contain toxic heavy metals such as nickel, cobalt, and manganese. The electrolyte also contains fluorinated organic compounds that can be easily hydrolyzed in the air and produce harmful substances such as phosphorus pentafluoride and hydrogen fluoride. Improper disposal methods can lead to the release of toxic chemicals into the environment, contaminating soil and water sources, and eventually [posing threats to both the ecosystems and human health](#).

Recycling waste lithium batteries is not only of great significance to environmental protection, but also can generate considerable economic benefits. Extracting and refining raw materials for battery production is energy-intensive and costly. The metals in the battery usually account for more than [50%](#) of the total price of the lithium battery. This has not yet calculated the [losses caused to the local environment and ecosystem](#)—mainly African countries—during mining. Efficient recycling means will contribute to the overall sustainability of the battery industry and even help to lower the production costs of new batteries. Additionally, although it is not easy to quickly improve the techniques and efficiency of lithium battery recycling, scrapped batteries can find new life through [second-life applications](#). While these batteries may no longer be suitable for electric vehicles, they can still be utilized to store and supply electricity for various applications, such as residential energy storage, grid stabilization, and off-grid power solutions. This method effectively extends the lifecycle of batteries before eventual recycling.

Currently, the world's major economies—including China, the EU, and the U.S.—are all continuously promoting research and development in lithium battery recycling. Similar to China's [dominance](#) in lithium battery production, the player that takes the lead in the field of battery recycling will also have a decisive impact on the future of the electric vehicle market.

China has made significant progress by first establishing comprehensive regulatory frameworks to [set guidelines](#) for lithium battery recycling. Through overall leadership and planning, companies with relevant capabilities can collect, manage, and recycle scrapped batteries more efficiently, and can also discover the areas that still need to be improved more quickly. In this way, resources can be more effectively allocated through more targeted research and investment. However, there are not many professional recycling companies in China. Although some automobile and battery companies—including BYD and CATL—also have recycling capabilities, [GEM](#) is almost the only major company that specializes in lithium battery recycling.

In comparison, even though the Environmental Protection Agency (EPA) [recognizes the importance of battery recycling](#) and provides guidance on safe disposal practices, there is no federal legislation specifically targeting this field yet. Thus, there is an awkward imbalance within the U.S. lithium battery recycling industry. An analysis suggests that the industry [“has boomed too soon,”](#) leading to a situation where there are too many recycling capabilities and too few scrapped batteries. Moreover, with the continuous improvement of recycling technology, the existing recycling capacity in the U.S. may even face obsolescence before there are enough scrapped batteries to process.

Therefore, while no country has yet achieved the level of dominance seen in China's lithium battery production, every country still has the opportunity to take the lead in the battery recycling market. This vital role is still up for grabs. Both China and the U.S. have made some progress, but their industries in this field also have obvious shortcomings. After identifying the aforementioned problems and addressing the existing challenges, both countries stand a good chance of success in this area.

Notably, another logical possibility to resolve this issue is to work towards the US.-China cooperation in the field of lithium battery recycling. By focusing on this singular issue and combining their strengths and expertise, the two countries can unlock tremendous mutual—and global—benefits. In the short-run, the U.S. can benefit from China's extensive battery production and utilization, ensuring a steady supply of discarded batteries for the overexpanded recycling capabilities, and China can enjoy a more sustainable raw-material supply chain for new batteries. In the long-run, they can learn from the successes and failures together to advance battery recycling technologies to develop faster and make greater impacts. Currently, both countries have set high standards on certain aspects of recycling, including environmental regulations and product quality standards, which indicates the high level of commitment and attention that both governments are dedicating to the recycling process. The two countries could even set standards together for global recycling practices with their market influences to promote more efficient and sustainable battery recycling criteria, also operating as global leaders in this field. Admittedly, there would be obvious hurdles to cross given the current state of holistic bilateral relations; but hurdles can be overcome if both players want to reach the end goal and win the game.

This commentary was [originally released](#) on the ICAS website on June 29, 2023 as part of the ICAS Blue Carbon & Climate Change (BCCC) Program.

This season's Theme of the Quarter on Electric Vehicle Popularization was primarily researched and written by Skyler Standridge, Research Assistant Intern at the Institute for China-America Studies.

This Season's Global Climate Affairs

Issues & Updates on Blue Carbon

The Nature Conservancy And Planet Collaborate To Map Blue Carbon

Wednesday, April 5

Source: [businesswire](#)

[Global]

Planet Lab PBC, a provider of global satellite imagery and geospatial solutions, released a joint announcement with The Nature Conservancy (TNC), a global environmental organization dedicated to conserving the lands and waters, that they will work together to map blue carbon. The data of mangrove and seagrass coverage around the world will be collected by using the Blue Carbon Explorer, a mapping tool developed by TNC that leverages data collected from drones and satellites.

First Carbon Credit Methodology for Seagrass Developed in France

Tuesday, April 11

Source: [Carbon Credits](#)

[France]

EcoAct, Digital Realty France, Schneider Electric France, and the Calanques National Park worked together and created the first carbon credit methodology in Europe for seagrass beds. Approved by the French Directorate General for Energy and Climate (DGEC), the new methodology would allow French companies to use the credits to offset emissions of up to 24,000 tCO_{2e} per year.

Large seagrass bed discovered in Cornish bay

Monday, April 17

Source: [BBC](#)

[the UK]

By using acoustic surveys, which focus on historically under-recorded habitats of seagrass, a seagrass bed nearly 360 hectares in size was discovered in St Austell Bay in Cornwall, England. A total of 122 different species of plants and animals have been found within the seagrass and maerl beds, suggesting that this site has particularly high biodiversity and significance.

Blue Carbon Lab trials novel mangrove restoration methods

Tuesday, May 9

Source: [the fish site](#)

[Australia]

Scientists at Australia Deakin University's Blue Carbon Labis trialing the use of biodegradable structures to enhance the growth of coastal wetland species, including mangroves. The structures, made from potato starch, are already deployed at Port Phillip Bay and Western Port Bay in Australia. Since these structures can break down over time, they will provide seedlings with protection without limiting their growth.

Hyundai Motor Signs Partnerships to Protect South Korea's Blue Carbon Ecosystems -- OPIS

Wednesday, May 10

Source: [Dow Jones Newswires](#)

[South Korea]

Hyundai signed a memorandum of understanding with the Ministry of Oceans and Fisheries and the Korea Fisheries Resources Agency to help protect South Korea's blue carbon ecosystem and generate carbon credits. According to the company's release, it will strive to combat climate change and protect the natural environment. It also aims to take a leading role in achieving carbon offset through marine ecosystems.

Mekong Delta shrimp farmers' enthusiasm for working with mangroves is waning

Friday, May 12

Source: [The Third Pole](#)

[Vietnam]

The "integrated shrimp-mangrove" ponds along the Mekong Delta in Vietnam, that guaranteed stable and organic shrimp farming without damaging mangroves, are becoming less effective this year due to unexpected weather conditions. Farmers are becoming less enthusiastic in the win-win shrimp farming model as economic benefits begin to decrease.

Endangered seagrass the star of new Eden and Natural England animation

Sunday, May 14

Source: [Yahoo](#)

[the UK]

The Eden Project and Natural England worked together and created an animated film including the UK-based ReMEDIES restoration project. Among other notes, the film increases awareness on seagrass and provides tips about how to make a difference.

AECOM celebrates launch of new reef resilience strategy for Belize in partnership with Resilient Reefs Initiative

Monday, May 15

Source: [Webwire](#)

[Belize]

Infrastructure consulting firm AECOM and the Belize Coastal Zone Management Authority and Institute jointly released the "Strategy for Reef Resilience." The strategy outlines the threats facing the Belize Barrier Reef System and practical actions to build resilience. The strategy aims to accelerate reef restoration and protection, develop a national blue carbon framework, and develop diverse livelihoods for coastal communities.

Indigenous-led blue carbon regime secures \$4mil

Wednesday, June 7

Source: [Te Ao Maori News](#)

[New Zealand]

Seven iwi (indigenous tribe) members of Hinemoana Halo Ocean Initiative have helped secure US\$4 million financial support for their work on an indigenous-led blue carbon regime. The investors, Conservation International and Blue Green Futures, who champion sustainability, economics and nature-based solutions, will fund the Initiative to promote indigenous protection and monitoring of New Zealand's rivers, coastal areas and high seas.

Bahamas in multi-billion blue carbon credit boost

Thursday, June 22

Source: [The Tribune](#)

[the Bahamas]

The Bahamas received a multi-billion dollar boost to efforts to monetise its blue economy assets. The boost came after research was conducted by the University of Michigan which estimated that the Bahamas' seagrass meadows could provide total ecosystem services worth US\$156 billion annually, and its total environmental value could be 15 times greater than the Bahamas' Covid-era GDP.

Volunteers tackle blue carbon emissions in the Hennops River

Saturday, June 24

Source: [Rekord](#)

[South Africa]

ASEZ (Save the Earth from A to Z), an environmental volunteer organization, worked together with several organizations and cleaned up a 2-kilometer-long area along the Hennops River in South Africa to protect the blue carbon ecosystems of the region. The activity was organized by ABC (ASEZ Blue Carbon) Movement, and hopes to prevent carbon captured by carbon sinks from being released back into the atmosphere again by protecting salt marshes and mangrove forests.

Researchers Lock Up Carbon By Turning Seaweed Into Biocoal

Monday, June 25

Source: [The Maritime Executive](#)

[Norway]

Researchers in Norway are currently testing a new method for carbon capture and storage involving the conversion of cultivated, dried coastal seaweeds into biocoal using pyrolysis; a process involving heating the seaweeds to about 600 degrees in an oxygen-free atmosphere. The biocoal, which is "resistant to degradation by fungi and microorganisms," can reportedly improve soil quality and porosity, among other important aspects of agriculture.

Multilateral Affairs & Climate Diplomacy

Climate Change is Endangering the Global Food Supply

The Short Story: Food crises caused by climate change are gradually becoming a wider reality, and more voices are calling on people in charge to pay attention to this issue.

Why It Matters: According to the World Economic Forum, at least 345 million people from 82 different countries have been affected by global food insecurity since 2022, and climate change is a direct and very significant impacting factor. Since this summer season began, extreme weather, accompanied by a series of problems such as the global economic downturn, natural disasters, and the war between Russia and Ukraine, is making the food crisis even worse. The international community must therefore pay greater attention to this international challenge that will not go away if left alone.

The Full Feature Story: In East Africa, someone dies of hunger every 30 seconds. In China, this year's rice yield is expected to fall again. While China has to import more food from its neighbors in Southeast Asia, countries like Vietnam and India are limiting their grain export and preparing more arable lands. Even in Europe, countries are preparing funds to support farmers to guarantee stable food production. Food security is a problem that has been discussed every year, but this year the problem is clearly more serious due to stronger changes in climates. Resolving the problem requires the international community to come up with both immediate and long-term solutions and work together in the same direction for the global good.

Sometimes the impacts of climate change on food security are not immediate, and people do not intuitively feel the impacts because the period from planting to harvesting of food is relatively long. Additionally, cases of extreme weather can appear suddenly and with minimal warning. For example, severe floods in Pakistan last year and drought in California forced local farmers to reduce planting or even to fallow their fields, which directly reduced part of the food production. Nevertheless, in most other cases, extreme weather conditions caused by climate change can be devastating to large amounts of crops in a short period of time. Back-to-back hurricanes Fiona and Ian decimated many crops and livestock along the southeastern coast of the United States during the latter half of September 2022. Since this April, abnormal drought and heavy rainfall started to occur all around the world. In Europe, many places—including Provence-Alpes Côte d'Azur of France and Andalucía of Spain—have experienced months of drought since April and after almost three months the situation still has yet to significantly improve.

Thanks to more developed agricultural technologies, farmers in Europe are normally able to maintain normal crop yields despite extreme weather conditions. However, this also means that they are often forced to pay higher costs. Some governments have already introduced several policies to subsidize farmers. For example, Spain approved a drought response plan, and the vast majority of the €2.2bn fund will be given to farmers. Nevertheless, rising food prices may still be unavoidable. In comparison, many countries in Africa are in a much more critical condition. According to the United Nations, many sub-Saharan African countries, including Nigeria, Kenya, and Somalia, will be at risk of food insecurity in the next few months. Food shortage is mainly caused by climate change, violent conflicts, and inflation. Taking Nigeria as an example—a country where two-thirds of its population depends on agriculture for their livelihood—any change that impacts agriculture yields could be devastating to the country as a

whole. Last year's heavy rain as well as the drought and land degradation that happened recently in Nigeria are posing significant challenges to food security. Moreover, for a country whose economy is mainly dependent on agriculture, the food security crisis also means that it will face greater economic difficulties.

In the meantime, the international community is actively looking for solutions to mitigate the impacts of climate change on food security. International organizations are calling on developed countries to provide developing countries with technologies that could help their crops withstand extreme weather—such as better irrigation systems. Furthermore, countries are also investing in researching and developing climate-resilient crops. The European Union is currently debating whether the gene-edited crops that are capable of surviving the often unpredictable, punishing conditions are a viable solution for ensuring food security in changing climates without causing unnecessary extra damage to the environment.

It is also worth noticing that contemporary agriculture models themselves also contribute to climate change. For instance, rice farming itself produces methane gas, which further deteriorates climate health. In addition, even though technologically improved crop seeds generate a higher yield, they can easily overuse or misuse the land, making the land more vulnerable to extreme weather conditions. Thus, while the importance of promoting advanced technological means to combat the threat of extreme weather to agriculture and food security cannot be denied, it is equally important to be aware of and mitigate the negative impacts of agricultural practices themselves on climate change. Otherwise, the situation may become stuck in a never-ending cycle of self-deterioration.

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- [Rice Gets Reimagined, From the Mississippi to the Mekong](#), *The New York Times*, May 20, 2023
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- [A deadly duo: Climate change and conflict are fuelling Nigeria's food insecurity crisis](#), *The Conversation*, June 6, 2023
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Difficult Transitions from Fossil Fuels to Renewables Taking Place Around the Globe

The Short Story: The world is undergoing a transition from fossil energy to renewable energy and, although there are already some remarkable achievements, many challenges and barriers still exist.

Why It Matters: Transitioning from fossil fuels to renewable energy is crucial to address climate change and environmental concerns, but existing infrastructure dependencies, higher costs, and resistance from

the fossil fuel industry are some of the biggest obstacles facing this transition. Despite these challenges, the ever-present urgency to combat climate change and the recognition of its long-term benefits have driven efforts to continually develop the renewable energy sector.

The Full Feature Story: The world is currently undergoing a significant transition from fossil energy to renewable energy sources, driven by the pressing need to address climate change and environmental concerns. As a major obstacle to the development of renewable energy, increasing pressure is being exerted on fossil companies to honestly contribute in a meaningful way. The ongoing investigation regarding the honesty of Chevron's climate pledge and the environmental activists gathering to protest against Shell's annual shareholder meeting indicate that neither the governments nor the individual citizens believe that these companies are properly doing their part.

However, no one is willing to simply hand over the interests and goods that belong to them. This is understandable and should be an expected response; especially from massive corporations who also must keep the interest of their stockholders in mind. Thus, the transition from fossil fuels to renewable energy sources faces significant resistance from the fossil fuel industry, who have a vested interest in maintaining their dominance and profitability. While a study suggests that "fossil fuel firms owe climate reparations of \$209bn a year," oil companies deny responsibility for their greenhouse gas emissions. Chevron's reliance on "junk" carbon offsets and Occidental's dedication on carbon capture techniques that will allow it to keep pumping oil are both examples of their protectionist tendencies. Furthermore, the fossil fuel industry's economic and political influence, as well as concerns about financial losses, likely contribute to their resistance. The world's energy systems have been built around the extraction, production, and distribution of oil, gas, and coal, making it challenging to seamlessly transition to renewable alternatives. Despite the efforts to reverse environmental back-sliding, as emphasized by President Lula in Brazil, the tension between prioritizing economic growth and protecting the environment remains a significant challenge. Similarly, observers have been repeatedly questioning the role of Sultan Al Jaber, a person who is heavily connected to the fossil fuel industry, as the upcoming COP28 president-delegate, might leading some to outwardly question how detrimental his connections could be to the success of COP28, specifically in relation to making new achievements in controlling fossil fuels.

Nevertheless, despite these challenges, the global community appears to have fully recognized and accepted the urgency of the transition to renewable energy. The growth of wind and solar power installations worldwide and the replacement of coal with cleaner sources of power indicate a growing global commitment to renewable energy and provide encouraging signs of a transition away from fossil fuels. Moreover, even some of the traditional oil giants are seeking to make changes to fit the new conditions. For instance, Shell's investments in low-carbon energy and renewable sources demonstrate the company's recognition of the shifting energy landscape and its commitment to diversifying its portfolio. Despite the challenges posed by the fossil fuel industry, the world at large appears to be settling on a better track towards realizing the greater good.

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More on Multilateral Affairs & Climate Diplomacy:

- Leaders in Ho Chi Minh City, Vietnam plan to cooperate with businesses and partners from the Republic of Korea (RoK) in environmental protection such as wastewater, solid waste, and air pollution treatment. ([Vietnam News](#), April 1)
- The International Finance Corporation, the private sector arm of the World Bank, has pledged to stop supporting new coal projects. ([Climate Home News](#), April 6)
- Following French President Emmanuel Macron’s visit to China: China and France issued a joint statement and confirmed that climate, biodiversity, and combating land degradation are priorities for both countries. ([CGTN](#), April 7)
- At the spring meeting of the World Bank, U.S. Treasury Secretary Janet Yellen urged other member states to advocate for new ambitious climate finance reforms. ([Climate Home News](#), April 13)
- Climate experts are disappointed with the Group of Seven’s progress on climate issues as it fails to commit to tougher action on fossil fuels due to disagreements from Germany and Japan. ([Financial Times](#), May 21)
- The European Union’s Green Deal is putting great pressure on some member countries’ governments with the potential to negatively impact their voters, forcing some countries, including France and Germany, to soften the climate package. ([The Japan Times](#), May 27)
- Rio Tinto Group of Australia and China Baowu Steel Group Corp. agreed to collaborate on projects to cut carbon emissions in the highly pollutive steelmaking sector. ([Bloomberg](#), June 12)
- The European Union tightened its criteria for what count as ‘green investments’ after the original proposal prompted backlash for being “too black and white,” and the amended criteria still makes allowances for fossil fuel-intensive industries. ([Financial Times](#), June 14)
- After nearly 20 years of effort, the United Nations has marked a milestone by adopting the world’s first treaty to protect the high seas and preserve marine biodiversity in international waters. ([Reuters](#), June 19)
- Speaking at a summit in Paris, Ugandan climate activist Vanessa Nakate urged that the rich countries, as polluters, should pay the most vulnerable countries that did not create climate crises through canceling debts and direct climate financing. ([AP News](#), June 23)
- Deputy Prime Minister Tran Hong Ha and Dutch Minister of Infrastructure and Water Management Mark Harbers co-chaired the eighth meeting of the Vietnam-Netherlands Inter-Governmental Committee on climate change adaptation and water management, and they conducted a strategic policy dialogue on climate change response and water management. ([Vietnamplus](#), June 28)

Domestic Activity & Climate Affairs

China is Leading Green Energy Development

Country/Region: China

The Short Story: China's renewable energy capacity is surging domestically, and China is also influencing the rest of the world with its capabilities in green energy.

Why It Matters: Replacing highly-polluting traditional energy with greener energy is gradually becoming a worldwide consensus and an objective of joint efforts between most countries in the world. China—both its government and its private enterprises—are putting significant, rising levels of investments in green energy infrastructure to facilitate growth, making China a leader in global green energy development. While China hopes to use its technology and capital to also accelerate the development of green energy in many other countries, in an effort to realize mutual benefits, some countries worry that China will hinder the development of their own green technologies and even threaten their national security.

The Full Feature Story: The Chinese National Energy Administration released data on China's first-quarter clean energy new installations in April 2023. This fresh data shows that China's renewable energy capacity surged in the first quarter of 2023, with wind and solar power installations surging by 380 million kilowatts and 430 million kilowatts, respectively. The growth rate more than doubled compared to the growth rate during the same period in 2022. According to an analysis published by *The Wall Street Journal*, China will keep increasing its renewable power generation capability, and more than 17% of China's power consumption in 2023—excluding hydropower—will be provided by renewable sources. Since China has set the development of green energy as a national strategic goal in the 14th Five-Year Plan, its developments and achievements in this field have been tremendous. In particular, the top-down management model of the Chinese government has the power to unite large forces to serve the same goal in a short period of time compared with many other countries. Even the Chinese oil giants will effectively invest in green energy when required; the three state-owned energy companies will invest more than ¥100 billion (US\$14.5 billion) in renewable energy through 2025.

Meanwhile, China's green energy related exports are also booming worldwide. For example, according to the International Energy Agency in 2022, more than 80% market share of all key manufacturing stages for solar panels is controlled by Chinese enterprises. Among all the exports, Europe is the biggest importer of Chinese green energy related productions. Almost half of the Chinese exports were bought by European countries, and the amount of total exports from China to Europe is still increasing in absolute terms. Correspondingly, many European countries are also actively seeking to cooperate with China in the field of green energy research and development. During French President Macron's state visit to China, the Elysee Palace announced that France and China signed several deals, including a partnership on nuclear and wind energy. Similarly, China and Germany agreed to conduct a new "Dialogue and Cooperation Mechanism on Climate Change and Green Transition."

Outside of Europe, China has been expanding its green energy presence as well. For example, Brazil aims to increase the proportion of renewable energy in total energy consumption to 45% by 2030, but it does not have the needed capabilities to achieve the objective alone. Therefore, Brazil invited Chinese technology and financial capital to facilitate its wind and solar energy advancement. Similarly, China also

extends its influence in green energy to Central Asia. During the China-Central Asia Summit concluded this past May, Chinese renewable energy companies signed contracts with Central Asia countries. Universal Energy, a Chinese renewable energy company, signed an agreement with Uzbekistan to build a 500 MW wind power plant there.

However, not everyone is happy about China's rapid development and expansion on green energy globally, with some actors feeling threatened by China's solid position. Since China's green energy technology research started earlier and developed at a comparatively faster rate, the United States has already fallen behind in competition with China. At the same time, there are some voices accusing China of making its products more competitive in the international market through government subsidies. Nevertheless, some experts believe that healthy competition between major powers—especially that between the United States and China—in green energy is beneficial to the rapid development of the field that concerns the future of mankind.

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Wildfires from Canada Blanket the North American Continent

Country/Region: [North America]

The Short Story: Since the end of May, severe wildfires caused by heat and drought have affected many parts of Canada as the resulting smoke has also drifted into and coated many parts of the United States.

Why It Matters: Extreme heat and dry weather hit Canada in late May. Under the dual effects of climate change and human activities, a fire that eventually took more than one month to be extinguished began to spread throughout Canada. The smoke of the fire has also had a considerable impact on the daily life and health of people in both Canada and the United States, leading to sudden drops in air quality and visibility. As droughts and extreme heat appear to become a new normal, similar fires may only become more frequent in the future, both in this region and elsewhere.

The Full Feature Story: Since late May, Canada has been facing an unprecedented wildfire crisis. By early June, about 200 wildfires were burning across the country and more than half were out of control. Although the fires were usually ignited by lightning, they were fueled by extreme heat and dry weather, both of which were exacerbated by the effects of climate change. At the same time, it is also very unfortunate that the boreal forests in northern Canada are particularly vulnerable to fires. Thus, during the

past month, the fires have been difficult to extinguish and have spread across the country, impacting the daily lives and health of many people.

The smoke from the fires has also spread across the United States, blanketing the sky of several metropolitan areas, especially those in the North like New York and Boston, with an orange haze. The band of smoke has drifted as far east as Norway and into Western Europe, as reported by several regional climate institutes and, though it remains visible, it has faded enough to not severely risk the region's air quality. A *New York Times* map tracker displays that smoke has even reached as far south as Mexico. While also compromising air quality and impacting public health, this situation is demonstrating that the effects of climate change know no borders. Stanford University climate scientist Marshall Burke directly emphasizes the role of climate change in these fires, stating, "they have a human component...We should not think of these as a random occurrence."

Furthermore, the consequences of these wildfires extend beyond the immediate impact on daily activities and ecosystems. These fires have released substantial amounts of carbon dioxide into the atmosphere, further exacerbating global warming. The Copernicus Atmosphere Monitoring Service has reported that Canada set records for wildfire-related carbon dioxide emissions during May and the beginning of June. The release of greenhouse gasses from these fires creates a dangerous feedback loop, as the increased warming can further fuel heat waves and wildfires. The wildfire-related carbon emissions in Canada underscore the urgent need to deal with the fires in the short-run and address climate change in the long-run.

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[Maps: Tracking Air Quality and Smoke From Canada Wildfires](#), *The New York Times*, Updated July 3, 2023

More on Domestic Activity & Climate Affairs:

- **United Kingdom:** British climate activists have argued that a proposed new oilfield within the North Sea would single handedly be enough to far exceed UK carbon budgets to reach net zero emissions. ([The Guardian](#), April 1)
- **Laos:** The 4th Mekong River Commission (MRC) successfully completed a conference focused on climate challenges faced by those living in Laos Mekong region, and included plans to construct hydropower dams along the Mekong river. ([The Phnom Penh Post](#), April 4)
- **Japan:** Prime Minister Fumio Kishida has announced plans to increase Japanese-owned hydrogen by sixfold by 2040 in-order to promote renewables. ([The Japan Times](#), April 4)
- **United States:** The Biden administration looks to make US\$450 million available for green technology grants and other clean energy projects, which would occupy sites of former coal mines. ([AP News](#), April 5)

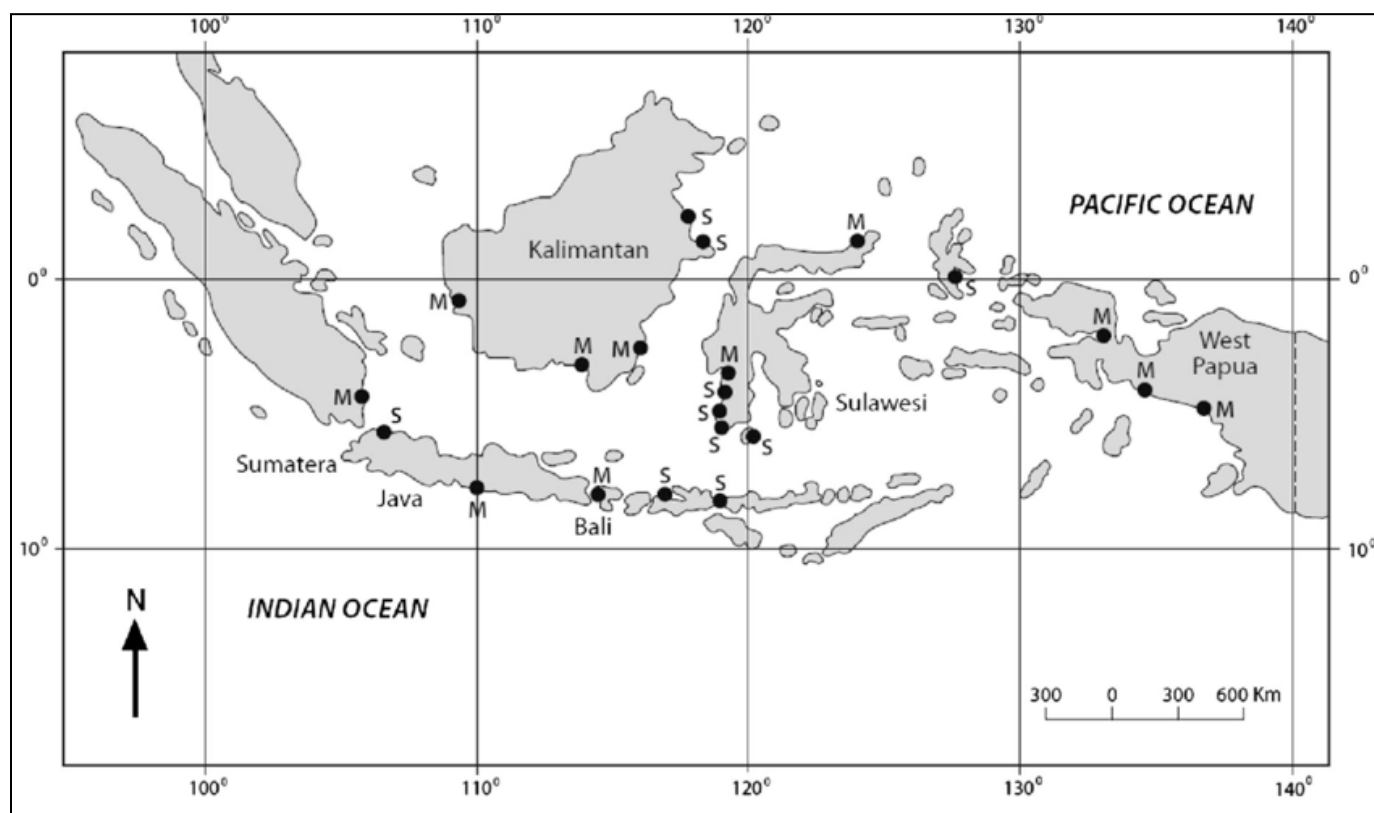
- **United States:** Cities along the Colorado River Basin are facing dire options around farming following a U.S. federal review of the two-decade drought in the region. ([The Washington Post](#), April 12)
- **Germany:** Germany introduced a radical plan that aims to ban the installation of most oil and gas heating systems starting in 2024. ([The Guardian](#), April 20)
- **United States:** National Climate Advisor Ali Zaidi hosted a meeting with sustainability executives and business leaders from companies that are experiencing benefits from the President's Investing in America agenda, including the Inflation Reduction Act. ([The White House](#), May 18)
- **France:** France has banned domestic flights between places that can be reached in less than two-and-a-half hours by train in order to reduce greenhouse gas emission. ([Le Monde](#), May 23)
- **United States:** The deal to raise the U.S. debt ceiling has sparked controversy as it fast-tracks a contentious gas pipeline while also limiting environmental reviews for future developments, raising concerns about the impact on climate and nature. ([The Guardian](#), May 30)
- **India:** India decided to not consider any proposals for new coal plants for the next five years in order to focus on growing its renewable sector. ([AP News](#), June 1)
- **Germany:** Germany is launching a US\$53 billion programme for firms facing substantial energy costs to help the challenged industrial sectors to shift toward carbon-neutral production techniques. ([Reuters](#), June 5)
- **Brazil:** Brazil unveiled its new plan to eliminate deforestation in the Amazon rainforest by 2030 by implementing strengthened law enforcement against environmental crimes, among other measures. ([Reuters](#), June 6)
- **United Kingdom:** British energy regulators—including the Office of Gas and Electricity Markets (Ofgem)—will now be legally required to help to push forward net zero carbon emission goals. ([Financial Times](#), June 7)
- **Japan:** The Tokyo Stock Exchange will begin to trade carbon credits around October 2023 and will begin to accept applications for firms to join the exchange's carbon credit market. ([The Japan Times](#), June 9)
- **United Kingdom:** The UK's advertising regulator bans the advertisements from the fossil fuel giants that are accused of greenwashing due to overemphasizing renewables. ([The Japan Times](#), June 10)
- **China:** China's installed capacity of non-fossil energy power generation reached 50.9%, which has exceeded the installed capacity of fossil energy power generation for the first time. ([Xinhua](#), June 13)
- **China:** China's Sinopec has commenced production of green hydrogen at its plant in Xinjiang by using solar power to electrolyze water, and it is now the largest green hydrogen facility in China. ([Reuters](#), June 30)

Blue Carbon Country Profile: Indonesia

A. Potential of Indonesia in Blue Carbon Affairs

Indonesia, the largest archipelagic country, is home to approximately 17% of the world's blue carbon stocks, making it a crucial member in the realm of blue carbon. Different kinds of blue carbon ecosystems—mangroves, seagrasses, and tidal marshes—can all be naturally found in Indonesia, and in large amounts. In fact, Indonesia has the largest mangrove forest area in the world. Although these ecosystems face significant threats of degradation due to climate change and human activities in recent years, efforts from different levels of the countries are now working together to protect, restore, and develop Indonesia's blue carbon ecosystems. Safeguarding these valuable blue carbon ecosystems is essential for mitigating climate change and enhancing coastal resilience in Indonesia.⁵

- Amount of seagrass: 30,000 km² (2016)
- Amount of mangroves: 33,640 km² (2021)
- Key Institutions of Study on Blue Carbon: the Ministry of Environment and Forestry, the Ministry of Marine Affairs and Fisheries
- Key Regions of Interest: Indonesia does not have specific key regions of interest for blue carbon in the traditional sense, because every island (such as Sumatra, Sulawesi, and Nusa Tenggara) in this archipelago is essentially surrounded by blue carbon ecosystems, and all of these blue carbon ecosystems are worthy of attention and protection in their own right.



⁵ Image: Distribution map of Indonesia's mangrove forests and seagrass meadows. The locations of the references are highlighted as 'M' for mangrove and 'S' for seagrass. (Source: Alongi, Daniel & Murdiyarto, Daniel & Fourqurean, James & Kauffman, John & A, Hutahaean & Crooks, Stephen & Lovelock, Catherine & J, Howard & Herr, Dorothee & Fortes, Miguel & E, Pidgeon & T, Wagey. (2015). Indonesia's blue carbon: a globally significant and vulnerable sink for seagrass and mangrove carbon. *Wetlands Ecology and Management*. 24. 10.1007/s11273-015-9446-y.)

Indonesia has rich blue carbon resource reserves and blue carbon development potential. Thus, it is a country that can never be ignored on the topic of blue carbon. Another feature of Indonesia that is different from other countries with rich blue carbon resources or emphasis on blue carbon development is that as an archipelagic country, blue carbon determines this country's future to an extent. As described above, Indonesia does not have specific key regions of interest for blue carbon. Any of its coastlines is the key region of interest for this country. Indonesia's blue carbon ecosystem is far from reaching its full potential due to pollution and other environmental damages. Given Indonesia's many natural resources, through adequate protection and development, blue carbon is able to make great contributions to Indonesia—and even the whole world—in many aspects such as environment, climate, economy, and culture.

Simultaneously, Indonesia is recognized as one of the world's largest emitters of greenhouse gasses, primarily due to deforestation and land-use change. By highlighting Indonesia, this country profile aims to display the country's efforts to mitigate climate change through nature-based solutions. In fact, Indonesia has already demonstrated some notable successes in blue carbon protection, restoration, and development. The country has implemented effective policies, integrated blue carbon considerations into national climate change strategies, and adopted blue carbon based approaches to coastal ecosystem management.

B. Domestic Government Actions and Activities on Blue Carbon in the United States

National Legislations

Currently, although Indonesia does not have specific national legislation specifically focused on blue carbon, there are both Presidential and Ministerial Regulations that serve as a legal basis for Indonesia's carbon economy and indirectly cover aspects of blue carbon conservation and management. Additionally, it is important to note that the Indonesian government demonstrates a strong commitment on the conservation and protection of blue carbon ecosystems in recent years. Thus, the world can expect Indonesia to further strengthen blue carbon protection at the national legislative level in the near future.

National Agencies and Government Actions

- **Presidential Regulations:**
 - **Regulation of the President of the Republic of Indonesia NO.98 of 2021:** This presidential regulation outlines the implementation mechanisms for the economic valuation of carbon, encompassing the ocean sector that includes blue carbon. It clearly establishes the Ministry of Marine Affairs and Fisheries as the responsible authority for climate mitigation activities related to blue carbon and the marine sector.
 - **Regulation of the President of the Republic of Indonesia NO.120 of 2020:** This Presidential Regulation establishes the Peat and Mangrove Restoration Agency. The regulation serves as a framework to support and facilitate the world's largest mangrove rehabilitation target—to rehabilitate 600,000 hectares of mangrove forests by 2024.
 - **Regulation of the President of the Republic of Indonesia NO.23 of 2014:** This law determines the governance structure for mangrove conservation and management in which mangroves

within forestry areas are under the jurisdiction of the Ministry of Forestry and Environment, while those in coastal areas fall under the responsibility of regional governments.

- **Works by Government Agencies:**

- In January 2023, the Minister of Environment and Forestry and the Minister of Marine Affairs and Fisheries of Indonesia delivered keynote speeches at a seminar on the launch of a study titled “Blue Carbon Ecosystem as Critical Natural Capital: Blue Carbon Ecosystem Governance in Indonesia.” They highlighted the potential of blue carbon, including mangrove forests and seagrass beds, in mitigating climate change and supporting coastal communities. The ministers also stressed the need for coordination, collaboration, and strong governance to realize the potential of blue carbon.
- **Regulation of the Minister of Environment and Forestry of the Republic of Indonesia NO.21 of 2022:** This ministerial regulation, along with the Presidential Regulation No.98 of 2021, serves as a legal basis for Indonesia’s carbon economy.

Local Government Actions

Local governments in Indonesia—made up of 38 different provinces which collectively have more than 7,200 districts—have taken various initiatives and actions regarding blue carbon protection and management. Given its archipelagic nature, many of Indonesia’s government projects are handled at the provincial, district, or even city levels rather than at the national level.

- In July 2020, The provincial government of West Kalimantan established the West Kalimantan Mangrove Ecosystem Restoration Agency (BPSMB) to oversee the conservation and restoration of mangroves. The agency works closely with local communities to implement sustainable practices and raise awareness about the importance of mangrove ecosystems.
- Berau District has implemented a community-based mangrove management program. The program engages local communities in mangrove restoration and sustainable use, promoting livelihood opportunities, and creating incentives through sustainable shrimp cultivation.

C. Private, Commercial Third-Party Research & Projects

Private Corporations and Investment Groups

Although the ultimate objective of private corporations and investment groups is to make profit, they still contribute to Indonesia’s blue carbon initiatives through providing financial support, technological assistance, and solutions to sustainable business models. Their engagement also often involves collaboration with other stakeholders, fostering an inclusive and participatory environment to blue carbon management. At present, it appears that much of the private, commercial, and third-party research projects being conducted in Indonesia are sourced and supported by non-domestic parties.

- Started in 2011, Danone, a Paris-based multinational food and beverage company, has partnered with local communities in Indonesia to restore mangroves as part of their commitment to environmental sustainability for more than a decade. Their contributions include financial and technical support for mangrove restoration. As reported in their 2016 report “Climate Policy: Target Zero Net Carbon through Solutions co-created with Danone’s Ecosystem,” Danone subsidiaries, like Aqua in Indonesia, “have helped restore more than 1,500 hectares of mangroves and forests and protect 80,000 hectares of ecosystems in partnership with local NGOs” worldwide.

- The Blue Natural Capital Financing Facility (BNCF) of the Switzerland-based International Union for Conservation of Nature and Natural Resources is currently assisting Forest Carbon in assessing the feasibility of a long-term mangrove conservation plan in West Kalimantan that spans more than 15,000 hectares. BNCF can provide catalytic capital that will lead to the launch of long-term efforts to protect the coastal ecosystems of Western Kalimantan as well as eventually facilitate the trade of carbon credits.

Universities and Research Institutes

Several universities and research institutes in Indonesia are actively involved in studying and researching blue carbon ecosystems. They help by enhancing society's understanding of the blue carbon ecosystem, such as exploring their potential carbon sequestration and analyzing their potential economic values. During the collaboration with government agencies, non-governmental organizations, and private enterprises, they also used their research findings to provide effective scientific guidance for the design of conservation strategies and policies and regulations.

- Bogor Agricultural University (IPB University) conducts research on mangrove ecology and restoration techniques. Besides conducting scientific research and publishing papers on blue carbon-related topics, this university is also working with local communities to participate in the practical works of mangrove restoration. For example, in 2019, undergraduate students used to plant a thousand mangrove seedlings to simultaneously learn about their functions and contribute to the conservation of coastal ecosystems.
- The Center for International Forestry Research (CIFOR), a non-profit, scientific institution headquartered in Bogor, Indonesia, conducts research on forest ecosystems, including on mangroves and blue carbon research. After studying the environmental, economic, and social values of blue carbon, they have already contributed by providing policy recommendations on the further conservation of mangroves.
- The Jakarta-based Research Center for Oceanography's Indonesian Institute of Sciences (RCO-LIPI) mainly contributes to Indonesia's blue carbon studies by generating valuable scientific data as guidance to create the most effective management strategies.

Non-Government Organizations and Non-Profit Organizations

There are many NGOs and NPOs in Indonesia that work on blue carbon conservation and research initiatives. They play a vital role in advancing blue carbon conservation, research, and community engagement in Indonesia. Among the various contributions they have made, the financial assistance they provided fundamentally boosted the development of Indonesia's blue carbon. Their efforts are not only meaningful to the protection and restoration of blue carbon ecosystems but also beneficial to the wellbeing and harmony of local communities as a whole.

- The World Bank has supported the sustainable management of oceans and coastal areas in developing countries, including Indonesia, through a variety of projects. For example, the Mangroves for Coastal Resilience Project started in 2022 "focus on strengthening the policy and institutions for mangrove management and rehabilitation, promoting sustainable mangrove management, as well as improving the livelihood opportunities for Indonesian coastal communities living around mangrove forests in selected areas" in Indonesia. The World Bank is also conducting economic valuation studies and providing technical assistance to assist both coastal communities and the national government.
- Through a partnership with Indonesia, the World Economic Forum (WEF) aims to offer help by supporting and ramping up Indonesia's blue carbon initiatives. The partnership involves addressing the

growing demand for blue carbon credits and supporting Indonesia's national road map on blue carbon. Indonesia is the first national government to have a blue carbon partnership with the WEF.

D. Public, Governmental International Engagements on Blue Carbon

Treaties & Agreements

In recent years, Indonesia signed several treaties and agreements in an attempt to continue protecting its blue carbon ecosystem as well as making full use of its blue carbon resources. Thus, in terms of international cooperation on blue carbon, Indonesia is arguably at the forefront of the world already, especially since the topic of 'blue carbon' is often being addressed directly rather than as part of larger climate change actions.

- In June 2023, the Indonesian government reached a purchase agreement with the Carbon Market Exchange Ltd. (CMX) to create high-quality carbon offsets by converting over 270,000 acres of tropical forest and peatlands into a conservation area in West and East Kalimantan. The agreement also includes protecting over 80,000 acres of blue carbon ecosystems, including mangrove forests and coral reefs in Sumatra and North Sulawesi.
- In October 2022, the Indonesia Climate Change Trust Fund (ICCTF) and the France Agence Française de Développement (AFD) Group signed a grant agreement that aims to better integrate blue carbon ecosystems in Indonesia's climate and biodiversity policies. The AFD will offer a €620,000 support grant to implement this blue carbon strategy.

Statements at International Conferences

- In November 2022, Coordinating Minister for Maritime Affairs and Investment, Luhut Binsar Pandjaitan, expressed Indonesia's readiness to develop a blue carbon ecosystem during the Conference of the Parties 27 (COP27) Summit. He emphasized the importance of partnerships and investments in blue carbon development by saying that "Indonesia is more than ready to develop a blue carbon ecosystem through comprehensive investments, with effective partnerships from all stakeholders and integrated financial mechanisms."
- In August 2022, during the G20 Development Working Group side-event "Blue Carbon: Enabling Conservation and Financial Capital," the Ministry of National Development Planning/Bappenas' Chief of Planner Arifin Rudiyanto emphasized the importance of coordination. She explained that "Implementing the national strategy and managing the enormous potential of the blue carbon ecosystem in Indonesia cannot be done without coordination and integration with ministries and other key stakeholders related to blue carbon management."
- In November 2021, on the first day of COP26 in Glasgow, Indonesian President Joko "Jokowi" Widodo stated that Indonesia is committed to rehabilitate 600,000 hectares of mangrove forests by 2024. Notably, this was the largest mangrove rehabilitation target in the world at that time.

Cross-Border Joint Projects & Partnerships

- In April 2023, the Philippines, Indonesia, and Japan collaborated on a joint project called BlueCARES to enhance conservation efforts for blue carbon ecosystems, enhance disaster resilience, and mitigate climate change. The project conducted joint research in the Coral Triangle region, where the waters of

Indonesia, Malaysia, and the Philippines are all included, and it is particularly focusing on sites in the Philippines and Indonesia. As explained in initial announcements, BlueCARES is expected to “serve as a guide for stakeholders in conserving blue carbon ecosystems and improving its resilience.”

- In October 2022, a group of Indonesian scientists and Ministry of Marine and Fisheries’ technical officers joined United Nations Development Programme’s (UNDP’s) blue carbon training program. Organized by UNDP Indonesia’s Climate Promise-JSB (Japan Supplementary Budget) project, the training aimed to enhance the skills and knowledge of government stakeholders in climate change mitigation, with a focus on the maritime sector.

E. Keeping An Eye On...

Indonesia has made significant strides in blue carbon protection, restoration, and development, positioning itself as a global leader in safeguarding these coastal and marine ecosystems. Despite its developing country status and other potential political, technical and economic barriers, Indonesia has been very successful in terms of collaborating with international organizations, countries with experience in blue carbon, and other non-government actors to secure technical support and funding for blue carbon projects. For more than a decade, Indonesia—in both private and public sectors—has always been paying close attention to blue carbon ecosystems. Furthermore, the Indonesian government’s emphasis on blue carbon appears to be continually rising. Not many countries have as many investment and international cooperation projects specifically focused on the blue carbon ecosystem as Indonesia. Although the blue carbon ecosystem of Indonesia faced serious degradation in the past due to a series of reasons such as pollution and lack of public awareness, through careful mangrove reforestation and seagrass conservation efforts, Indonesia has effectively restored, protected, and even better developed this valuable ecosystem.

While Indonesia has achieved notable progress in blue carbon projects, there are areas where further improvement is needed. Indonesia should enhance its blue carbon measurement and verification techniques. On the one hand, it is important to accurately assess the effectiveness of conservation efforts, which is essential to timely and accurately determine the future direction and strategy of blue carbon development. On the other hand, it is crucial to Indonesia in terms of getting a clear understanding of their carbon sequestration potential and capabilities. Relevant data can help investors better understand the income-output ratio of blue carbon projects. Especially under the premise that blue carbon may bring huge benefits in carbon credit trading in the future, this information will contribute to the sustainable development of blue carbon resources.

In addition, community engagement is also lacking in the development of blue carbon in Indonesia. Local communities often depend on these coastal and marine habitats for their livelihoods, including fishing, agriculture, and tourism. Balancing conservation objectives with the needs of communities requires a participatory approach that involves engaging stakeholders in decision-making processes. Empowering communities with alternative sustainable livelihood opportunities, such as eco-tourism, sustainable aquaculture, or mangrove-based enterprises, can alleviate pressure on blue carbon ecosystems and promote economic resilience. By recognizing the intrinsic link between blue carbon ecosystems and the well-being of coastal communities, Indonesia can strengthen the social fabric while protecting critical habitats for climate change mitigation and adaptation. However, it has to be

admitted that, as an archipelagic country with more than 700 different local languages and more than 7,000 large and small islands, it will be very difficult for all local communities in different places to actively participate in blue carbon projects. The Indonesian government is therefore inevitably required to be more actively involved in this regard.

Main Sources & Expanded Reading

- [Blue Carbon](#), The Center for International Forestry Research, last visited on June 26, 2023
- [The Carbon Brief Profile: Indonesia](#), Carbon Brief, March 27, 2019
- [Indonesia's 'blue carbon credits' are crucial for global climate mitigation. Here's how to help them flourish](#), *The Conversation*, December 21, 2022
- [Regulation of the Minister of Environment and Forestry of the Republic of Indonesia NO.21 of 2022](#), Minister of Environment and Forestry of the Republic of Indonesia, October 28, 2022
- [Blue Carbon Ecosystem Governance in Indonesia: Threats And Opportunities](#), Indonesia Ocean Justice Initiative, January 24, 2022
- [Indonesia's blue carbon: a globally significant and vulnerable sink for seagrass and mangrove carbon](#), Wetlands Ecology and Management, July 2015
- [Strengthening Blue Carbon Ecosystem Governance in Indonesia](#), Indonesia Ocean Justice Initiative, January 30, 2023
- [Collaborative Action to Protect Mangroves in Berau District](#), Konservasi Alam Nusantara (Archipelago Nature Conservation), November 30, 2021
- ["If you cut down a mangrove tree, you must replace it with ten seeds"](#), Global Mangrove Alliance, December 2021
- [Network analysis of blue carbon governance process in Indonesia](#), Marine Policy via Science Direct, March 2022
- [Indonesia ready for blue carbon ecosystem development: Minister](#), *Antara*, November 8, 2022
- [Launch of a new Livelihoods Carbon Fund](#), Danone, June 30, 2021
- [Target Zero Net Carbon: Through Solutions Co-created with Danone's Ecosystem](#), Danone, May 18, 2016
- [WEF and Indonesia Join Hand to Boost Blue Carbon Credits](#), *Carbon Credits*, February 2, 2023
- [Mangrove Conservation and Restoration: Protecting Indonesia's "Climate Guardians"](#), The World Bank, July 26, 2021
- [New Project will Support Large-Scale Mangrove Conservation and Restoration in Indonesia](#), The World Bank, June 8, 2022
- [IPB Students Plant 1000 Mangrove Seeds on Pramuka Island](#), IPB University, May 19, 2019
- [Indonesian Carbon Offset Agreement to Protect 350,000 Acres of Blue Carbon and Tropical Forest](#), *EIN Presswire*, June 1, 2023
- [Bappenas Prioritizes Blue Carbon Ecosystem Conservation](#), Bappenas, August 9, 2022
- [WITH A FIFTH OF THE WORLD'S MANGROVES, INDONESIA IS BOOSTING ITS BLUE CARBON STRATEGY](#), France Agence Française de Développement, October 28, 2022
- [Blue Carbon in Indonesia](#), Blue Nature Capital, last visited on June 27, 2023
- [Philippines, Indonesia and Japan lead efforts in blue carbon conservation to address climate change](#), Japan International Cooperation Agency, April 4, 2023
- [Unearthing the wonder of Indonesia's mangroves through 'Blue Carbon Sink' initiative.](#), United Nations Development Programme, October 26, 2022

This season's Blue Carbon Country Profile on the United States was primarily researched and written by Zhangchen Wang, Part-Time Research Assistant at the Institute for China-America Studies.

Note: This study was conducted primarily in the English language rather than in the native language(s) of Indonesia.

Scientific Research and Beyond

Scientific Research Results & Releases

April 2023

- Report: [Boom and Bust Coal 2023: Tracking the Global Coal Plant Pipeline](#), *Global Energy Monitor* (April 2023)
- Report: [Digitalization Drives Offshore Wind](#), *Sea Technology* (April 2023)
- Study: [Moving towards 3 degrees of warming – the phasing out of coal is too slow](#), Chalmers University of Technology (April 6, 2023)
- Journal Article: [Acceleration of U.S. Southeast and Gulf coast sea-level rise amplified by internal climate variability](#), *Nature Communications*, Vol. 12, No. 1935 (April 10, 2023)
- Journal Article: [Assessing the impact of the global subsea telecommunications network on sedimentary organic carbon stocks](#), *Nature Communications*, Vol. 14, No. 2080 (April 12, 2023)
- Journal Article: [Changes in permafrost and snow cover in the Boreal and Arctic zones \(BAZs\) and their impacts](#), *Advance in Climate Change Research*, Vol. 14, No. 2, p. 157-163 (April 2023)

May 2023

- Report: [The 2023 IUCN Situation Analysis on Ecosystems of the Yellow Sea with Particular Reference to Intertidal and Associated Coastal Habitats](#), International Union for Conservation of Nature (May 2023)
- Journal Article: [Financial liabilities and environmental implications of unplugged wells for the Gulf of Mexico and coastal waters](#), *Nature Energy*, Vol. 8, p. 536-547 (May 8, 2023)
- Journal Article: [Review of Vulnerability Factors Linking Climate Change and Conflict](#), *Climate*, Vol. 11, No. 5 (May 9, 2023)
- Journal Article: [Abrupt expansion of climate change risks for species globally](#), *Nature Ecology & Evolution* (May 18, 2023)
- Commentary: [Time to pay the piper: Fossil fuel companies' reparations for climate damages](#), *One Earth*, Vol. 6, No. 5, p. 459-463 (May 19, 2023)
- Journal Article: [Quantifying the human cost of global warming](#), *Nature Sustainability* (May 22, 2023)
- Journal Article: [Stakeholder alliances are essential to reduce the scourge of plastic pollution](#), *Nature Communications*, Vol. 14, No. 2849 (May 22, 2023)

June 2023

- Journal Article: [Indicators of Global Climate Change 2022: annual update of large-scale indicators of the state of the climate system and human influence](#), *Earth System Science Data*, Vol. 15, No. 6 (June 8, 2023)
- Journal Article: [Relationships of temperature and biodiversity with stability of natural aquatic food webs](#), *Nature Communications*, Vol. 14, No. 3501 (June 14, 2023)
- Journal Article: [Widespread diversity deficits of coral reef sharks and rays](#), *Science*, Vol. 380, No. 6650, p. 1155-1160 (June 15, 2023)
- Journal Article: [Climate change through the essentials -nature's offering and humankind's sine qua non](#), *Frontiers*, Vol. 5 (June 26, 2023)
- Journal Article: [Hydrological and Precipitation Extremes and Trends over the Paraiba do Sul River Basin, Brazil](#), *Climate*, Vol. 11, No. 7 (June 27, 2023)

Major Government Statements & Actions

Key Government Speeches on Climate Issues

- April 5, Senior Former Officials of the Government of Australia: [Former defence leaders urge government to release report into national security risks posed by climate change](#)
- April 15, Government of India, Prime Minister Narendra Modi: [PM Modi's remarks at World Bank's programme titled 'Making it Personal: How Behavioral Change Can Tackle Climate Change'.](#) [In Hindi]
- April 21, U.S. White House: [Remarks on Building Healthy Communities and Advancing Environmental Justice](#)
- April 21, U.S. Department of Justice Environment and Natural Resources Division, Assistant Attorney General Todd Kim: [Remarks in Commemoration of Earth Day](#)
- April 24, Government of the United Kingdom, Sir Patrick Vallance: [Speech at the Natural History Museum](#)
- May 10: Government of Scotland, First Minister Humza Yousaf: [All Energy Conference: First Minister's speech](#)
- May 11, U.S. Federal Reserve, Governor Christopher J. Waller: [Climate Change and Financial Stability](#)
- May 11, U.S. Environmental Protection Agency, Administrator Michael Regan: [Remarks on Proposed Power Plant Regulations to Tackle the Climate Crisis](#)
- May 15, Government of Germany, Chancellor Olaf Scholz: [Speech at the Global Solutions Summit in Berlin](#)
- May 20, Government of Brazil, President Lula da Silva: [Speech at the second G7 working session](#)
- June 7, Government of China, President Xi Jinping: [Speech given at a symposium in Bayannur, Inner Mongolia on strengthening the comprehensive prevention and control of desertification and promoting the construction of crucial ecological projects](#)
- June 8, United Nations, Secretary-General António Guterres: [Message on World Oceans Day 2023](#)
- June 8, Government of the United Arab Emirates, Minister of Industry and Advanced Technology and incoming COP28 President Sultan Al Jaber: [Address given at an event on the sidelines of the UN climate talks in Bonn](#)
- June 13, United Nations, Under-Secretary-General for Peace Operations Jean-Pierre Lacroix: [Remarks at a UN Security Council high-level open debate on climate, peace, and security](#)
- June 13, U.S. Mission to the United Nations, U.S. Special Presidential Envoy for Climate John Kerry: [Remarks at a UN Security Council High-Level Open Debate on Climate, Peace, and Security](#)
- June 22, United Nations, Secretary-General António Guterres: [Remarks at Sciences Po University \[bilingual\]](#)
- June 23, U.S. Department of State, Acting Assistant Secretary of the U.S. Bureau of Oceans and International Environmental and Scientific Affairs Jennifer Littlejohn: [Remarks at Thai NGO Roundtable on Plastic Pollution and Marine Conservation](#)
- June 23, European Central Bank, President Christine Lagarde: [Remarks at the Summit for a new global financing pact](#)
- June 26, Government of Indonesia, Finance Minister Sri Mulyani: [Remarks at the 2023 Paris Summit, June 21-23](#)
- June 29: Government of New Zealand, Minister of Climate Change Hon James Shaw: [Speech to He Kaupapa Hononga \(Otago's Climate Change Research Network\) Science-based Policy School](#)

Government Reports & Regulations on Climate Issues

- April 2023: The U.S. Environmental Protection Agency [announced](#) new updates to limit mercury from being included in coal power and other power industries; the only official update released since 2012.
- April 2023: The U.S. Environmental Protection Agency [announced](#) that 17 new technical assistance centers across the nation will receive US\$177 million to help underserved and overburdened communities across the country access funds to advance environmental justice.
- April 2023: The U.S. Oceanic and Atmospheric Administration [released](#) a report stating that carbon dioxide, methane, and nitrous oxide are continuing to reach record-breaking levels.
- April 2023: The U.S. Environmental Protection Agency [announced](#) new restrictions on auto emissions to accelerate the transition to electric vehicles.
- May 2023: The U.S. Department of State [released](#) the “Reporting on Whole-of-Government Approaches to Stopping International Deforestation,” which provides insights and options for addressing global deforestation and land conservation.
- May 2023: The Ministry of Ecology and Environment of China [said](#) it will implement a stricter set of emissions standards for motor vehicles nationwide from July.
- June 2023: Zhao Chenxin, deputy director of the National Development and Reform Commission of China, made an [explanation](#) on the topic of "Decision on Establishing a National Ecological Day (Draft)" at the third meeting of the Standing Committee of the Fourteenth National People's Congress. [In Chinese]
- June 2023: While visiting the Bahamas, U.S. Vice President Kamala Harris [announced](#) more than US\$100 million in funding from the United States Agency for International Development (USAID) will go towards climate, energy, food security, and humanitarian assistance in the Caribbean.
- June 2023: The Honourable Steven Guilbeault, Canada’s Minister of Environment and Climate Change, [released](#) Canada's first National Adaptation Strategy, which outlines comprehensive plans for climate change adaptation and resilience.
- June 2023: The U.S. Department of Treasury’s Federal Insurance Office [released](#) a report titled *Insurance Supervision and Regulation of Climate-Related Risks*, specifically in response to President Biden’s Executive Order on Climate-Related Financial Risk.

Government Hearings & Meetings on Climate Issues

- April 14, The United States, U.S. Senate, Committee on Environment & Public Works: [Cleaner Vehicles: Good for Consumers and Public Health](#)
- April 18, The United States, House of Representatives, Committee on Science, Space and Technology: [Full Committee Hearing - Establishing an Independent NOAA](#)
- April 20, The United States, The White House: [President Biden to Catalyze Global Climate Action through the Major Economies Forum on Energy and Climate](#)
- May 10, The United States, U.S. Congress: [H.R.1715 - Advanced Weather Model Computing Development Act](#) (Passed House, Received & Read in Senate)
- June 1, The United States, U.S. Congress: [H.R.2989 - Save Our Sequoias Act](#) (Introduced)

Cross-National Meetings & Engagements on Climate Issues

- On April 4, the tenth meeting of the United States-European Union Energy Council was [held](#) in Brussels, during which the parties issued a joint statement confirming their commitment to achieving net-zero emissions by 2050 and keeping global temperature rise to within 1.5 degrees Celsius.
- On May 5, the Ministers of the Environment of Latin America and the Caribbean (LAC) and the European Union (EU) [met](#) at the Ministerial Meeting on Environment and Climate Change, intending to be an

- opportunity to exchange points of view on areas to strengthen collaboration between both regions.
- On May 20, Australia and the United States [agreed](#) that the two countries will enhance bilateral cooperation under a Climate, Critical Minerals and Clean Energy Transformation Compact (the Compact), and establish climate and clean energy as a central pillar of the Australia-United States Alliance.
 - On May 20, the leaders of G7 countries [reaffirmed](#) their unwavering commitment to the Paris Agreement and confirmed they will enhance cooperation to address the climate crisis and accelerate the global clean energy transition to reach net zero emissions by 2050 at the latest
 - From June 6-16, delegates representing more than 100 Parties to the Paris Agreement [met](#) in the Bonn Climate Conference in Germany to pave the way to some key decisions for the UN Climate Conference (COP 28).
 - On June 13, coinciding with the Bonn Climate Conference, the Ocean and Climate Change Dialogue 2023 was also [held](#) in Bonn, Germany. The dialogue focused on how to step up action to build resilience to climate change and to cut emissions within the ocean-climate nexus.
 - On June 16, the U.S. and Singapore [agreed](#) to strengthen climate partnership and reaffirm the U.S.-Singapore Climate Partnership that was signed in August 2021, which “advances and strengthens both countries’ collaboration on climate action, environmental governance and standards, sustainable development, R&D, and low- and zero-emission solutions.”
 - On June 21, leaders of thirteen different countries and international organizations [co-authored](#) a commentary on the topic of “Climate Change and Poverty Are Our Era’s Existential Battles,” emphasizing that it is the time now to marshal finance and policy globally to promote economic growth and equality.
 - On June 22, India and the U.S. [signed](#) a memorandum of understanding to strengthen climate and clean energy cooperation, specifically related to India’s railway system.
 - On June 28, the European Commission and the High Representative of the Union for Foreign Affairs and Security Policy [adopted](#) a Joint Communication to the European Parliament and the Council laying out how the EU will address the growing impact of climate change and environmental degradation in the fields of peace, security, and defense.

[Third-Party Analyses & Commentaries](#)

Outlooks on Renewable Energy Progressions

- Opinion: [China may meet solar, wind goals five years earlier](#) by Hou Liqiang (*China Daily*, April 3, 2023)
- Argument: [Europe’s Energy Crisis That Isn’t](#) by Adam Tooze (*Foreign Policy*, April 5, 2023)
- Analysis: [Could Hokkaido be the key to Japan’s renewable ambitions?](#) by Eric Johnston (*The Japan Times*, April 9, 2023)
- Analysis: [The World Bank Is Getting a New Chief. Will He Pivot Toward Climate Action?](#) by David Gelles and Alan Rappeport (*The New York Times*, April 9, 2023)
- Analysis: [America needs clean electricity. These states show how to do it](#) by Harry Stevens (*The Washington Post*, April 12, 2023)
- Commentary: [Time to pay the piper: Fossil fuel companies’ reparations for climate damages](#) by Marco Grasso and Richard Heede (*One Earth*, May 19, 2023)
- Commentary: [Europe Wants Cleaner Gas. Can the United States Provide It?](#) by Ben Cahill (Center for Strategic & International Studies, June 5, 2023)
- Analysis: [PV firms energized to add installed solar capacity](#) by Zheng Xin (*China Daily*, June 8, 2023)
- Analysis: [China expected to be world’s largest importer of clean hydrogen, Deloitte says as it urges world to scale up production capacity by 2050](#) by Yujie Xue (*South China Morning Post*, June 8, 2023)

- Report: [Transatlantic Efforts to Cut Methane Emissions](#) by Ben Cahill and Allegra Dawes (Center for Strategic & International Studies, June 23, 2023)

Debate and Questions on Future Energy Development

- Analysis: [The Age of Energy Insecurity](#) by Jason Bordoff and Meghan L. O'Sullivan (Foreign Affairs, April 10, 2023)
- Opinion: [Emissions from global electricity generation may have now peaked](#) by Madeleine Cuff (NewsScientist, April 12, 2023)
- Analysis: [How China plans to get in on US subsidies for clean energy manufacturing](#) by Mary Hui (Quartz, April 18, 2023)
- Commentary: [The United States Needs More than Mining Engineers to Solve Its Critical Mineral Challenges](#) by Thomas Hale (Center for Strategic & International Studies, May 8, 2023)
- Analysis: [China's CO2 emissions hit Q1 record high after 4% rise in early 2023](#) by Lauri Myllyvirta and Qi Qin (Carbon Brief, May 12, 2023)
- Opinion: [How to Secure Critical Minerals for Clean Energy Without Alienating China](#) by Zongyuan Zoe Liu (Council for Foreign Relations, May 25, 2023)
- Commentary: [What Exxon won't tell you about climate costs](#) by Mark Gongloff and Liam Danning (*The Japan Times*, May 26, 2023)
- Analysis: [Factcheck: Why banning new North Sea oil and gas is not a 'Just Stop Oil plan'](#) by Daisy Dunne (Carbon Brief, June 8, 2023)
- Opinion: [The Biodiesel Defect](#) by Ella Apostoae (*The Wire China*, June 25, 2023)
- Commentary: [Bridging the Gap: Climate Change Underestimation in Fossil Fuel Reliant Countries](#) by Kaleigh Harrison (*Environmental Leader*, June 26, 2023)

Fresh Thoughts on Climate Change in the Maritime Domain

- Analysis: [The Case for Capping Sea-Level Rise](#) by Alice C. Hill and Rafe Pomerance (*Foreign Affairs*, April 3, 2023)
- Opinion: [Black carbon: The 'low-hanging fruit' for cleaner shipping](#) by Isabelle Gerretsen (China Dialogue, April 4, 2023)
- Analysis: ['Devastating' melt of Greenland. Antarctic ice sheets found](#) by Seth Borenstein (*AP News*, April 20, 2023)
- Opinion: [World could face record temperatures in 2023 as El Nino returns](#) by Kate Abnett (*Reuters*, April 21, 2023)
- Commentary: [Beyond Trees: Using Blue-Green Algae for Natural Carbon Capture and Sequestration](#) by Tina Casey (Triple Pundit, May 17, 2023)
- Commentary: [Montreal Protocol has slowed loss of Arctic sea ice, say scientists](#) by Ayesha Tandon (Carbon Brief, May 22, 2023)
- Analysis: [Arctic Summer Could Be Practically Sea-Ice-Free by the 2030s](#) by Raymond Zhong (*The New York Times*, June 6, 2023)
- Analysis: [The race to map the world's seagrass — before it disappears](#) by Allyson Chiu (*The New York Times*, June 8, 2023)
- Commentary: [Why Hong Kong's taste for an endangered reef fish is a problem, and how to eat seafood sustainably](#) by Kylie Knott (*South China Morning Post*, June 8, 2023)
- Analysis: [The melting Arctic is a crime scene. The microbes I study have long warned us of this catastrophe – but they are also driving it](#) by Arwyn Edwards (*Arctic Today*, June 27, 2023)

Facing the Realities of Rising Global Heat Levels

- Commentary: [Is there a 'lighter side' to our possible environmental apocalypse?](#) by David Helvarg (*Mongabay*, April 12, 2023)
- Analysis: [Global heating will push billions outside 'human climate niche'](#) by Damian Carrington (*The Guardian*, May 22, 2023)
- Analysis: [Explained: How climate change worsens avalanches in the Himalayas](#) by Humaira Nabi (*The Third Pole*, May 29, 2023)
- Opinion: [How the U.S. wants to pressure China to help avert climate catastrophe](#) by Michael Birnbaum and Christian Shepherd (*The Washington Post*, May 30, 2023)
- Opinion: [Turbulence on planes worse than ever 'due to climate change'](#) by Adam Vaughan (*The Times*, June 8, 2023)
- Opinion: [Chartbook 219 The triple inequality of the "global" climate problem.](#) by Adam Tooze (*Chartbook*, June 10, 2023)
- Commentary: [Orange skies are the future. Prepare yourself.](#) by Stuart Palley (*National Geographic*, June 10, 2023)
- Opinion: [How misfiring environmentalism risks harming the world's poor](#) (*The Economist*, June 29, 2023)

Efforts of Private Enterprises to 'Clean Up' their Systems

- Analysis: [Clean, Lean, Online Machine](#) by Bibek Debroy, Bjørn Lomborg and Aditya Sinha (*The Economic Times*, April 15, 2023)
- Analysis: [Green Data Centres is New Buzzword for Cos](#) by Urvi Malvania (*The Economic Times*, April 15, 2023)
- Opinion: [Carbon Capture Is Set to Take Off. These Companies Are Ahead of the Game](#) by Evie Liu (*Barron's*, April 24, 2023)
- Commentary: [Time to pay the piper: Fossil fuel companies' reparations for climate damages](#) by Marco Grasso and Richard Heede (*One Earth*, May 19, 2023)
- Opinion: [CCC: Net zero can deliver 725,000 net jobs increase for the UK](#) by Michael Holder (*Business Green*, May 24, 2023)
- Brief: [Voluntary Carbon Markets: A Review of Global Initiatives and Evolving Models](#) by Allegra Dawes, Cy McGeady and Joseph Majkut (Center for Strategic & International Studies, May 31, 2023)
- Analysis: ["Blue Carbon Catchers" Find Nature-based Solutions from the Ocean to Offset Carbon Emissions](#) (*Tencent*, June 8, 2023)
- Commentary: [Carbon Storage in Caribbean Seagrass is Worth \\$88 Billion a Year](#) by Jennifer L (*Carbon Credits*, June 21, 2023)

Critiques Sent to Governments Around the World

- Observation: [New oilfield in the North Sea would blow the UK's carbon budget](#) by Fiona Harvey (*The Guardian*, April 1, 2023)
- Analysis: [Logging Plan on Yellowstone's Border Shows Limits of Biden Greenhouse Gas Policy](#) by Marianne Levelle (*Inside Climate News*, April 7, 2023)
- Commentary: [What is India bringing to the G20 table on climate?](#) by Joydeep Gupta (*The Third Pole*, May 1, 2023)
- Analysis: [Why Montana is emerging as a must-watch climate battleground](#) by Scott Dance (*The Washington Post*, May 19, 2023)
- Opinion: [The Supreme Court just gutted the Clean Water Act. It could be devastating.](#) by Richard Lazarus (*The Washington Post*, May 25, 2023)
- Analysis: [Last-minute climate deal hiccups expose EU concerns over political costs](#) by Ewa Krukowska

(*The Japan Times*, May 27, 2023)

- Analysis: [The Debt Limit Deal and Climate Action](#) by Manuela Andreoni and Brad Plumer (*The New York Times*, June 2, 2023)
- Analysis: [China's new Great Wall: The country is building barriers to protect millions of people from rising seas](#) (*The Economist*, June 5, 2023)
- Analysis: [The Pacific Is Becoming a Testing Ground for Green Geopolitics](#) by Christopher Cottrell (*Foreign Policy*, June 15, 2023)
- Analysis: [Climate Talks Ahead of COP28 Raise Concerns of Weak Outcome](#) by John Ainger and Akshat Rathi (*Bloomberg*, June 16, 2023)
- Opinion: [The green transition won't happen without financing for developing countries](#) by Martin Wolf (*Financial Times*, June 20, 2023)
- Opinion: [Paris climate finance summit unlocks billions, but hard work is ahead](#) by Andrew Freedman (*Axios*, June 26, 2023)

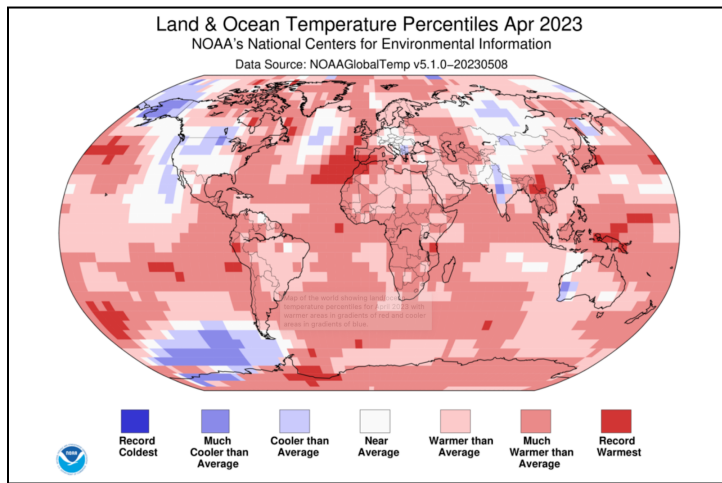
Images of the Month

April 2023

A map displaying global temperature departure percentiles in April 2023 from the typical average.

Behind the Image: Globally, April 2023 was the fourth-warmest April in the 174-year NOAA record. As ocean temperatures set a record high for the month of April, NOAA's Climate Prediction Center announced an El Niño Watch alert status.

Source: [National Oceanic and Atmospheric Administration \(NOAA\)](#)



May 2023

Volunteers help residents to clear the muddy street after torrential rains in Sant'Agata Sul Santerno, near the Italian province of Ravenna.

Behind the Image: After receiving record high heavy rains for several consecutive days, some areas of the Emilia-Romagna region of Italy flooded. Before the heavy rain, the area had already suffered a long drought, which limited the soil's water absorption.

Source: [Bloomberg](#) (Photo by Emanuele Cremaschi/Getty Images)

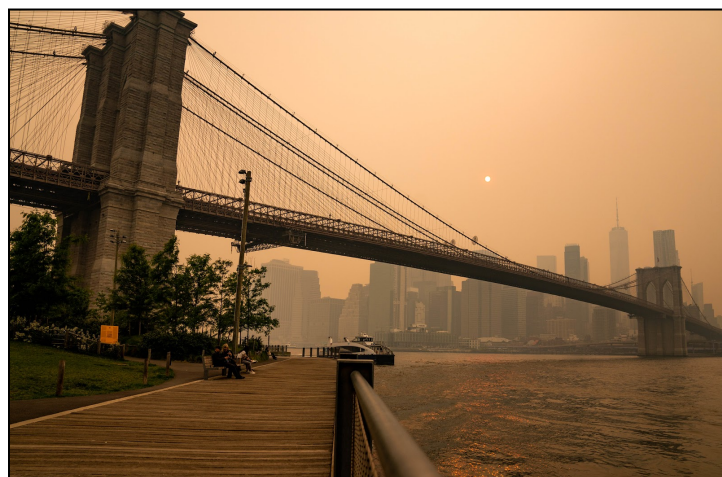


June 2023

The skyline of New Jersey and New York City consumed by smoke from wildfires burning in Quebec, Canada, plummeting air quality and visibility, on June 7 2023.

Behind the Image: Canada experienced the worst wildfire season on record due to unusually hot and dry weather. Significant wildfires occurred in every Canadian province and territory produced a pollutive, smokey haze that eventually reached dozens of U.S. states.

Source: [Credit to Anthony Quintano via Flickr \(CC 2.0\)](#)



Climate-Focused Quotes of the Quarter

“We need a major course correction and a massive effort to reignite progress. This cannot be done by governments alone...The scale of the problem requires everyone working in solidarity. We need partnerships, not polarization, and we need to approach this with a clear-eyed rationale and executable plan of action.”

- Sultan Al Jaber, the president-designate of the COP28 summit, [speaking](#) to *The Guardian* in his first interview with a global newspaper since becoming the president-designate, on April 7, 2023

“It is unconscionable that Somalis, who have done almost nothing to create the climate crisis, are suffering its terrible impact.”

- António Guterres, the United Nations Secretary-General, [speaking](#) to reporters after visiting a camp in Baidoa in southwest Somalia, on April 12, 2023

“Our task is to shape the course of future events, not succumb to fatalism. And we must face the inescapable reality that no significant global problem—from climate change to pandemic prevention, from economic instability to nuclear proliferation—can be solved without China.”

- James Cleverly, the Foreign Secretary of the United Kingdom, [speaking](#) at Mansion House in London outlining the UK government’s position on China, on April 25, 2023

“Rhetoric and more promises of great things to come in a second term are not enough, Biden needs to start acting with true boldness and urgency today.”

- Kieran Suckling, President of the Center for Biological Diversity Action Fund, [said](#) in a media statement, in April 2023

“This has to be cooperative, notwithstanding other differences that do exist. This is not a bilateral issue. This is a universal global threat to everybody in every nation. The two biggest economies, biggest contributors to that problem need to be able to come together and work to try to help resolve it.”

- John Kerry, the U.S. Special Presidential Envoy for Climate, [talking](#) about U.S.-China Climate Cooperation during an interview with Reuters, on May 3, 2023

“What is very clear is that our climate ambition increasingly goes hand-in-hand with energy security. We will stay the course, whatever happens in the world; in the very changing, volatile world.”

- Kurt Vandenberghe, director general for climate at the European Commission, [said](#) in a conference hosted by the European University Institute in Florence, on May 3, 2023

“Whatever we do to help protect and preserve our climate, our oceans and our coastal communities, it is clear that seabed mapping is a critical part of the infrastructure we need.”

- Sally-Ann Hart, Member of Parliament (MP) [speaking](#) at a UK Centre of Seabed Mapping (UK CSM) showcase event in London, United Kingdom, on May 12, 2023

“When I grew up here, the land was higher than the sea. Now, the sea is higher than the land. I don’t think that’s natural.”

- *Emi, a resident of Jakarta, Indonesia [talking](#) about the impacts of sea level rising in Indonesia during an interview with *The New York Times* on May 16, 2023*

“In particular, we acknowledge climate change remains the single greatest threat to the livelihoods, security and wellbeing of the peoples of the Pacific and applaud Pacific island countries’ global leadership on climate action.”

- *[Quad Leaders’ Joint Statement](#), during the third in-person Quad Leaders’ Summit, in Hiroshima, Japan on May 20, 2023*

“Such high temperatures [outside the niche] have been linked to issues including increased mortality, decreased labor productivity, decreased cognitive performance, impaired learning, adverse pregnancy outcomes, decreased crop yield, increased conflict and infectious disease spread.”

- *Chi Xu, Professor at China’s Nanjing University, [talking](#) about his research on “human climate niche” during an interview with *The Guardian* on May 22, 2023*

“I’m on a mission to go and reduce greenhouse gases worldwide because I’m into having a healthy body and a healthy Earth. That’s what I’m fighting for. And that’s my crusade.”

- *Arnold Schwarzenegger [talking](#) about climate change on CBS’ “Sunday Morning” show on May 30, 2023*

“I think it is completely crazy that Western media are running around looking for everything that can be criticized about China. The historical per capita carbon emissions of the United States are eight times that of China, and 25 times that of India. But Western media criticize China and India as if they were to blame for carbon emissions.”

- *Erik Solheim, a former chief of the United Nations Environment Programme, [talking](#) about China’s climate efforts in an exclusive interview with *China Daily* on June 5, 2023*

“As the current El Niño continues to develop there is good reason to expect periods in the coming twelve months during which the global-mean air temperature again exceeds pre-industrial levels by more than 1.5C.”

- *Samantha Burgess, deputy director of the Copernicus Climate Change Service (C3S), [talking](#) about the impact of the El Niño climate phenomenon on extreme weather conditions, on June 15, 2023*

“How can we ask countries in Africa not to develop oil? How can we ask other nations not to expand the fossil fuel production if we start doing it ourselves”

- *Lord Deben, Chairman of the Climate Change Committee (CCC), [criticizing](#) the United Kingdom’s government policy on new coal and oil projects, on June 28, 2023*

Climate-Focused Conferences & Events

Multinational Conferences & Global Forums

[Ocean and Climate Change Dialogue 2023](#)

United Nations Framework Convention on Climate Change

June 13-14, 2023

Bonn, Germany

- From the Organizer: “The Conference of the Parties, at its twenty-sixth session, requested the Chair of the Subsidiary Body for Scientific and Technological Advice (SBSTA) hold an annual dialogue, starting at the fifty-sixth session of the SBSTA (June 2022), to strengthen ocean-based climate action. At COP 27, Parties decided that future dialogues will be facilitated by two co-facilitators, who will be responsible for deciding the topics for and conducting the dialogue, in consultation with Parties and observers, and preparing an informal summary report to be presented in conjunction with the subsequent session of the Conference of the Parties.”
- The Topics of the Event:
 - Coastal ecosystem restoration including blue carbon
 - Fisheries and food security
- Relevant Sessions:
 - Topic 1 Coastal ecosystem restoration including blue carbon
 - Topic 2 Fisheries and food security
- [Event Recording Available](#)

[Climate and Clean Air Conference 2023: Air Quality Action Week](#)

United Nations Conference Centre (UNCC)

May 29-June 2, 2023

Bangkok, Thailand

- From the Organizer: “[The event] brings together experts and government representatives and decision-makers, intergovernmental bodies, donors, civil society organizations, and other stakeholders from the Asia-Pacific region and beyond to identify new opportunities, develop capacities and facilitate cooperation and knowledge exchange to address air pollution and its adverse impacts on public health, development, environment, and climate. The week-long event, in collaboration with numerous partners, will showcase a series of plenary and breakout sessions that highlight the latest insights, proven solutions, and new progress in addressing air pollution and its impact on climate change.”
- The Topics of the Event:
 - Integrated planning and multi-stakeholder cooperation.
 - Stories of success and priorities for clean air at cities, national and regional levels, including inter-governmental leadership.
 - Scientific underpinnings and best practices to support policy, promote pollution-free economy and increase stakeholder awareness.
 - Technological and industrial solutions for air quality management.
- [Event Recording Available](#)

Public Events & Panel Discussions

Upcoming Events

[Low-Carbon Hydrogen: Tax Credits & Emissions Intensity](#)

Event by Center for Strategic and International Security

July 6, 2023 - Online

[Engaging youth in curriculum design for climate action](#)

Event by Columbia Climate School

July 10, 2023 - Online

[Beyond Green Jobs](#)

Event by Columbia Climate School

July 12, 2023 - Online

[Climate Change Challenges to Nuclear Weapons](#)

Event by Carnegie Endowment for International Peace

July 12, 2023 - In-person

[Cutting Methane Emissions from Oil and Gas: U.S. and EU Cooperation](#)

Event by Center for Strategic and International Studies

July 12, 2023 - Online

[No Water, No Food – Glacier Loss Threats to US and Chinese Agriculture](#)

Event by Wilson Center

July 13, 2023 - Online

[Harvard Climate Forum](#)

Event by Harvard University Center for the Environment

July 14, 2023 - In-person

[Monthly overview of IRI's Global Seasonal Climate Forecasts and ENSO status and forecast.](#)

Event by Columbia Climate School

July 20, 2023 - Online

[The 12th Annual Green Shiptech China Congress](#)

Event by the Nautical Institute

September 7, 2023 - In-person

[Connecting Green Hydrogen Japan 2023](#)

Event by Leader Associates

17 - 18 October 2023 - In-person

Past Events

[United Kingdom Coastal Research Conference](#)

Event by National Oceanography Centre

July 4, 2023 - In-person

[Redefining Hong Kong 2023](#)*Event by South China Morning Post*

June 29, 2023 - In-person

[Assessing insurance regulation and supervision of climate-related financial risk](#)*Event by Brookings*June 27, 2023 - Hybrid ([Event Recording Available](#))**[Post G7 Summit: Advancing industrial decarbonization & climate-aligned trade](#)***Event by Atlantic Council*June 27, 2023 - Online ([Event Recording Available](#))**[Press release image Climate Governance Initiative supporting inaugural International Conference on ESG and Climate Governance](#)***Event by Centre for Climate Engagement & Climate Governance Initiative*

June 26-28, 2023 - In-person

[WMU@40: Conference on Maritime & Ocean Sustainability](#)*Event by The Nautical Institute*

June 20, 2023 - In-person

[Book Talk | Cooperating for the Climate with Joanna Lewis](#)*Event by Wilson Center*June 20, 2023 - Hybrid ([Event Recording Available](#))**[Protecting Antarctica: Argentine-Chilean Environmental Diplomacy in the Southern Ocean](#)***Event by Wilson Center*

June 14, 2023 - Online

[Water @ Wilson | The Significance of the Coming El Niño: Understanding the Science and Preparing for Its Impacts](#)*Event by Wilson Center*June 12, 2023 - Online ([Event Recording Available](#))**[Ocean Policy to Strengthen the Resilience of Marine Ecosystems](#)***Event by Wilson Center*June 6, 2023 - Online ([Event Recording Available](#))**[EXTERNAL EVENT | Antarctica Today: Shared Challenges for Science and Environmental Protection in the Final Frontier](#)***Event by Wilson Center*

May 29, 2023 - Online

[Financing U.S. Decarbonization: A Conversation with Jigar Shah](#)*Event by Center for Strategic and International Studies*May 23, 2023 - Hybrid ([Event Recording Available](#))

[Tackling Climate Super Pollutants in China](#)

Event by Wilson Center

May 9, 2023 - Hybrid ([Event Recording Available](#))

[45V and Defining Green Hydrogen](#)

Event by Center for Strategic and International Studies

May 8, 2023 - Hybrid ([Event Recording Available](#))

[China's Biodiversity Action at Home and Overseas](#)

Event by Wilson Center

May 3, 2023 - Hybrid ([Event Recording Available](#))

[Powering a Clean Energy Future](#)

Event by The Hamilton Project

April 28, 2023 - Hybrid ([Event Recording Available](#))

[Addressing the Converging Risks of Climate, Insecurity, and Migration in Central America](#)

Event by Wilson Center

April 26, 2023 - Hybrid ([Event Recording Available](#))

[FP Climate Summit 2023](#)

Event by Foreign Policy

April 26, 2023 - Hybrid ([Event Recording Available](#))

[US Environmental Diplomacy: A Conversation with Assistant Secretary of State Monica Medina](#)

Event by Wilson Center

April 24, 2023 - Hybrid ([Event Recording Available](#))

[John Kerry on the Climate Challenge](#)

Event by Foreign Policy

April 23, 2023 - Online

[Whose Grass is Greener? The American and Chinese Climate Challenge](#)

Event by the China Project

April 20, 2023 - Online

[The Future of U.S. Natural Gas: A Conversation with Charif Souki](#)

Event by Center for Strategic and International Studies

April 20, 2023 - Online ([Event Recording Available](#))

[Make Room | Study Session: National Security in the Era of Climate Change](#)

Event by Center for New American Security

April 18, 2023 - Hybrid

[China's Climate Security Vulnerabilities](#)

Event by Wilson Center

April 11, 2023 - Hybrid ([Event Recording Available](#))

ICAS BCCC Program Updates

Expert Voices Initiative Interview

Expert Voices Initiative Interview with André Aquino on
 “Cooperation Between Developed and Developing Countries on Blue Carbon Projects”

Thursday, May 25, 2023



Expert Voices Initiative Interview
 - Mr. André Aquino -
 Lead Environmental Specialist and Sustainable Development
 Program Leader for Indonesia and Timor-Leste - *The World Bank*

ICAS
 Institute for China-America Studies
 Washington DC

BCCC ICAS BLUE CARBON &
 CLIMATE CHANGE PROGRAM

On May 25, 2023, the Institute for China-America Studies (ICAS) Expert Voices Initiative (EVI) conducted an interview with Mr. André Rodrigues de Aquino, a Lead Environmental Specialist from the World Bank, on the theme of “Cooperation Between Developed and Developing Countries on Blue Carbon Projects.” The interview was hosted out of Washington, D.C. by Zhangchen Wang, ICAS Blue Carbon and Climate Change (BCCC) Program Research Assistant, while Mr. Aquino spoke remotely from Jakarta, Indonesia.

During the nearly one-hour interview, the host asked Aquino for his views and insights on issues regarding blue carbon damage and degradation in developing countries, challenges facing blue carbon protection, the sustainability of blue carbon development, and the future of blue carbon projects. Aquino responded to all the questions of interest that ICAS and its global audiences submitted while sharing his insightful assessments and valuable experiences. Through this interview, the audience can have a deeper understanding of the current status of blue carbon protection in developing countries, especially in Indonesia, where Aquino resides. Additionally, Aquino talked about the protection and development of blue carbon ecosystems in general, especially mangroves, in developing countries, the problems they are specifically facing, and potential solutions to those problems.

Watch the Interview: <https://youtu.be/HrxwpCZghqA>

Explore the ICAS Export Voice Initiative: <https://chinaus-icas.org/media/expert-voices-initiative-archive/>

The Institute for China-America Studies (ICAS) is an independent think tank in Washington D.C. ICAS focuses on the evolving dynamics in the U.S.-China relationship to promote greater collaboration and mutual understanding through sincere exchanges of fresh ideas, objective policy-oriented research, and fair assessments of this critical bilateral relationship.

We aim to provide a window into the worldviews of both the United States and China, and thereby serve as a vehicle to promote greater understanding between these two countries and societies.

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