

SUSTAINABLE TRADE AMID GLOBAL CLIMATE CHANGE 2024

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Introduction

Climate change has become one of the most pressing global challenges, with its impacts extending beyond the environment and affecting global economic, social, and political systems. The Paris Agreement, which aims to limit global temperature rise within 1.5°C, is a key international accord addressing climate change. Following this framework, governments around the world have formulated the Nationally Determined Contributions (NDCs) to achieve this target. However, there remains a significant gap between current actions and the actual efforts needed, posing severe challenges to achieving global climate goals.

This gap is not only evident in emissions reduction commitments but also in the rapid increase in global temperature that has exceeded expectations. According to the World Meteorological Organization (WMO), there is a 47 percent likelihood that the global temperature averaged over the entire five-year 2024-2028 period will exceed 1.5°C above the pre-industrial era, and the chance of at least one year exceeding the warmest year on record, 2023, in the next five years is 86%.

This continuous rise in global temperature exacerbates extreme weather events and also has profound effects on global economic and social stability. Climate change has significantly disrupted several major industries such as agriculture, energy, infrastructure, and global supply chains, with particularly severe consequences for developing countries that rely heavily upon natural resources to support their economies. Food security is under a dual threat from rising temperatures and extreme weather; supply chains are frequently disrupted, and infrastructure is damaged, further fuelling the precarious state of the global economy. The World Bank estimated that climate change could cause trillions of dollars in annual global damages. This is especially challenging for developing countries as they lack in funding and the technology to combat climate change.

Ensemble mean forecast 2024-2028

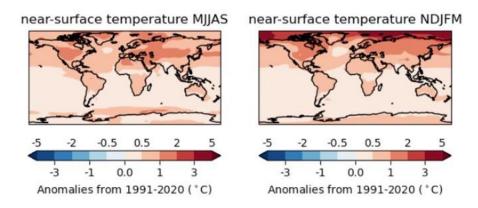


Figure 1. Predictions of ensemble mean for temperature (top, °C) for 2024-2028 May to September anomalies relative to 1991-2020 (left column). Predictions of ensemble mean for temperature (top, °C) for 2024/2025-2028/2029 November to March anomalies relative to 1991-2020 (right column). (Source: World Meteorological Organization (2024). WMO Global Annual to Decadal Climate Update).

To address the global crisis of climate change, governments, businesses, and all sectors of society need to collaborate on pushing for energy transition, application of clean technology, and the development of green finance. Dr. Henry Huiyao Wang, President of the Center for China and Globalization (CCG), suggested that substantial investments in clean energy are not only necessary but also crucial for achieving the climate goals set by the Paris Agreement. The International Energy Agency (IEA) calls for an annual investment of \$4.5 trillion in green energy. However, in 2023, only a fraction of the proposed amount was spent -a mere \$1.3trillion. This large gap between demand and actual progress highlights the urgency and necessity to develop cost-effective products, improve on resource allocation to increase efficiency, and advancement in technology to accelerate progress.

For example, solar panels present immense growth potential to be a key player in combating global climate change, with the International Energy Agency (IEA) forecasting that global demand for new photovoltaic installations will reach 820 gigawatts. Yet again, in 2022, production capacity was still insufficient, meeting only one-quarter of that target – far from overcapacity. Similarly, the electric vehicle (EV) market grew exponentially in 2023, with global EV sales rising by 35% year-on-year. However, while global demand for EVs is projected to reach 30 million units by 2027, China exported only 1.2 million EVs in 2023, underscoring a severe supply shortage.

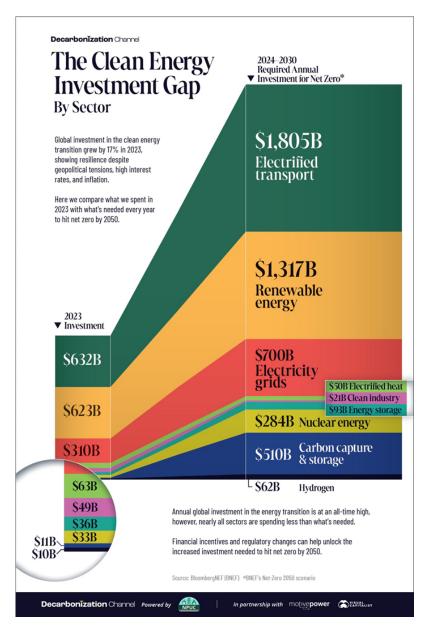


Figure 2. The Clean Energy Investment Gap, By Sector. Source: National Public Utilities Council, The \$3 Trillion Clean Energy Investment Gap.

This shortage primarily affects developing countries, whose transition to a lowcarbon economy and fight against climate change challenges urgently require funding and technological support from the international community. Therefore, countries should commit to promoting the usage and flow of green technology and green products through an open and inclusive international trading system and avoid politicization of climate issues or their use as economic tools. Any policies that hinder the global transition to a green economy, excessive trade restrictions in particular, will complicate global climate cooperation and weaken the collective power and response to climate change.

At such a critical moment, it is imperative that the world promote an economic transition towards a green and sustainable future through establishing and maintaining close international cooperation and multilateral mechanisms, ensuring that countries worldwide, especially developing ones, have a fair opportunity to participate in and benefit from an equitable green transition.

Section 1: The Positive Role of Sustainable Trade in Addressing Climate Change

To tackle the challenges of climate change, countries have committed to reducing carbon emissions and have implemented various international agreements and policies to push for a green transition. During this process, sustainable trade based on renewable energy industries is a crucial path to combat climate change. Furthermore, by promoting international trade in low-carbon products and clean technologies, countries can achieve economic growth while reducing carbon emissions, contributing to global environmental protection.

I. The Rise of Sustainable Trade

The rise of sustainable trade stems from the widespread adoption of the concept of "sustainable development." In 1987, the World Commission on Environment and Development (WCED) introduced the concept, defining it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This concept became the foundation for addressing global environmental issues, economic inequality, and social challenges. In 1992, the United Nations released Agenda 21, which further delineates global sustainable development goals and action plans. Under this framework, the relationship between international trade and sustainable development has become an increasingly focal point of global discussion.

International trade is a key driver of global economic growth, but it often comes with environmental costs. Under traditional trading models, issues such as over-exploitation of resources, widespread pollution, and high carbon emissions have become increasingly prevalent. Therefore, guided by the principles of sustainable development, the trading sector has begun pursuing greener, low-carbon transformation pathways. In 2016, 175 countries signed the landmark Paris Agreement, committing to reducing greenhouse gas emissions and promoting renewable energy to slow global warming. These international agreements laid the foundation for the development of sustainable trade, encouraging countries to integrate environmental protection with trade policies and promoting the cross-border flow of green products and technologies.

II. Defining the Concept of Sustainable Trade

Sustainable trade emerges at the intersection of sustainable development and international trade. While there is no universally consensual definition, its core value is the pursuit of environmental, social, and economic benefits through green economic means. According to the International Institute for Environment and Development (IIED), sustainable trade takes place when the international exchange of goods and services yields positive social, economic, and environmental benefits, reflecting the four core criteria of sustainable development:

1. It generates economic value. Trade activities should promote economic growth, particularly promoting employment and living standards in low-income countries.

2. It reduces poverty and inequality. Sustainable trade should help narrow the wealth gap and improve social welfare.

3. It regenerates the environmental resource base. Trade should minimize the consumption of natural resources and maximize their sustainable use.

4. It is carried out within an open and accountable system of governance. Trade policies should be developed within a transparent and fair framework to ensure equal participation and fair competition.

Additionally, according to the 2018 International Chamber of Commerce (ICC) report, "Global Trade: Securing Future Growth," sustainable trade should aim to minimize environmental impact while achieving economic benefits. This includes promoting the production and export of green energy, facilitating the circulation of environmentally friendly products in the international market, and establishing unified international environmental standards. This comprehensive definition provides a clear direction for the development of sustainable trade, encouraging countries to adjust policies accordingly. Under the current global trade system, environmentally friendly products primarily include those that contribute to reducing carbon emissions and enhancing energy efficiency, such as electric vehicles and solar PV equipment.

III. Macro Policy Initiatives for Sustainable Trade

In promoting sustainable trade, countries have gradually established frameworks to ensure that economic growth and environmental protection proceed simultaneously. For example, since China's 11th Five-Year Plan (2006-2011), the country has been working to build a sustainable trade policy system. In 2010, the International Institute for Sustainable Development (IISD) released the report "Sustainable Trade in China: A Conceptual Framework" which combines China's scientific outlook on development with sustainable development goals The report offered several policy recommendations, including fostering green industries through innovation and technology transfer, drawing on Germany's and Japan's successful experiences in enhancing environmental efficiency, and cultivating sustainable productivity in renewable energy industries such as wind turbines.

The European Union's Green Deal is another example of promoting sustainable trade. Through a series of policy measures, the EU aims to achieve carbon neutrality by 2050 while advancing the development and export of renewable energy and technologies.

Driven by climate change policies, global sustainable trade has shown a clear upward trend. According to a July 2024 forecast by the United Nations Conference on Trade and Development (UNCTAD), by industry, green energy and AI-related products saw the strongest growth in the first quarter of this year. In particular, the total volume of trade in EVs increased by about 25%. An article from the Chinese Academy of International Trade and Economic Cooperation (CAITEC) highlights that the annual growth rate of global sustainable trade was 0.85% between 2013 and 2022. Furthermore, the total import and export volume of global sustainable trade reached 46.5 trillion in the first three quarters of 2023, in which green products and services consistently accounted for 20% to 23% of international trade. These figures indicate that green products, environmentally friendly technologies, and low-carbon services are steadily increasing their share of global trade.

IV. Opportunities and Prospects of Sustainable Trade

Sustainable development and international trade are closely interconnected and mutually reinforcing. Governments worldwide are increasingly recognizing that sustainable trade policies are crucial for achieving sustainable development goals. These policies not only facilitate the cross-border flow of environmentally friendly products and technologies but also provide new momentum for low-carbon economic transitions.

As global demand for environmental technologies and low-carbon products grows, sustainable trade is now becoming the new engine fueling economic growth. For instance, the booming renewable energy sector has created an abundance of job opportunities and is also pushing for a green, low-carbon global supply chain. According to the International Renewable Energy Agency (IRENA), global renewable energy market investments reached approximately \$500 billion in 2022, covering sectors such as solar, wind, and bioenergy. The development of these green energy technologies has generated jobs and positive economic growth for many countries worldwide.

FIGURE 3.3 Global annual financial commitments in renewable energy by technology, 2013-2022

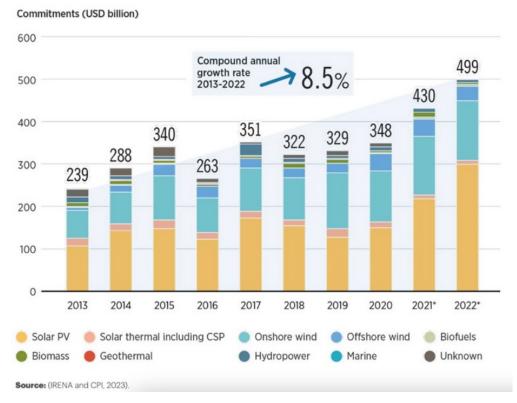


Figure 3: Global annual financial commitments in renewable energy by technology, 2013-2022. Source: International Renewable Energy Agency, World Energy Transitions Outlook 2023.

Sustainable trade has also driven industrial chains to adopt greener practices. By promoting the cross-border flow of environmentally friendly products and clean technologies, global supply chains are transitioning toward a more sustainable, environmentally friendly direction. For instance, the international trade of renewable energy products, such as electric vehicles and solar panels, not only boosts industry growth but also facilitates global energy sector reform. According to the IEA's "2024 World Energy Investment Report," total global energy investment this year will likely

exceed \$3 trillion for the first time, with \$2 trillion spent on clean technologies such as renewables, electric vehicles, and nuclear power, and \$1 trillion going to coal, gas, and oil.

Sustainable trade is an essential tool for the world to address climate exchange and will no doubt play an irreplaceable role in the future. Promoting the international flow of renewable energy products and clean technologies enables the global economy to advance its green transition and reduce carbon emissions. In this process, governments must develop and implement effective, sustainable trade policies, encourage the spread of green technologies, and establish fair international trade rules. Such policies not only address climate change effectively but also represent a vital pathway for a sustainable global economy.

Section 2: Attitudes and Actions of Various Countries on Climate Change and Sustainable Trade

China, the United States, and the European Union, the three largest economies in the world, not only have the greatest economic influence but also undertake significant responsibility for reducing global greenhouse gas emissions. According to relevant data, these three economies account for more than half of global greenhouse gas emissions, particularly in key sectors that contribute to emissions such as industry, energy, and transportation. Therefore, the climate policies and actions taken by these three economies are critical to the overall outcome of global climate governance. Whether through reducing carbon emissions, promoting green technology innovation, or advancing sustainable trade through international cooperation, their efforts are critical in the global response to climate change.

I. The European Union: An Advocate of Global Green Policies

The European Union has long been an active advocate for global climate policies, with achieving sustainable development and balance across the economic, social, and ecological spheres being the core goal of its climate governance. As the global climate situation grows increasingly challenging, the EU has embedded sustainable development into its policy-making framework, committing to carbon neutrality by 2050 along with several other forward-looking policies and goals. The EU not only promotes the green transition within Europe but also strives to steer the global economy towards low-carbon development through international cooperation and legislation.

1. Background and Targets of the EU's Climate Policy

The Rio Declaration on Environment and Development in 1992 marked the beginning of the European Union's leadership in climate policy. In the Rio Declaration, global leaders introduced a preliminary framework for sustainable development and defined environmental protection as a core issue of global concern. The EU has consistently advanced sustainable development within this framework, particularly in

the field of climate change, gradually adopting more stringent measures. Since then, the EU has utilized various international platforms to further promote global climate governance and played a pivotal role in the Paris Agreement, becoming a leading force in global efforts to address climate change.

The goals that the EU hopes to achieve through its climate governance policies are further clarified in the European Green Deal. This Deal sets out the ambitious target for the EU to become the first climate-neutral continent in the world by 2050. To accomplish this ambitious target, the EU has developed a series of mid-term and long-term climate governance policies and specific measures to significantly reduce greenhouse gas emissions, advance clean energy development, promote innovation in green technologies, and ensure the efficient use of resources. In addition to its long-term goal of carbon neutrality, the EU's mid-term target is to reduce greenhouse gas emissions by at least 55% by 2030, which is intended to ensure the success of its target in 2050.

2. The EU's Measures for Addressing Climate Change and

Promoting Sustainable Trade

In the process of achieving these goals and targets, the European Union has introduced a series of policies and new legislative measures to support the transition to a green economy and enhance climate governance.

i. Carbon Border Adjustment Mechanism (CBAM)

The European Union has introduced the Carbon Border Adjustment Mechanism (CBAM) to prevent carbon leakage and level the playing field. This mechanism requires carbon-intensive products entering the EU market, such as steel and cement, to pay corresponding carbon emission costs. The EU aims to ensure that the carbon costs of imported products align with the EU's internal carbon standards, preventing domestic companies from losing competitiveness due to bearing higher environmental costs. This mechanism also encourages other countries to adopt cleaner production methods and reduce carbon emissions, helping guide the international market towards more sustainable practices. The mechanism will be fully implemented in the upcoming years and is expected to have a significant influence on global trade.

ii. European Green Deal

The European Green Deal is the EU's flagship policy to address climate change, with a mid-term target of reducing at least 55% of greenhouse gas emissions by 2030. This comprehensive policy spans key sectors such as energy, industry, transportation, and agriculture. The Green Deal not only drives the EU's internal economic transition towards a low-carbon future but also serves as a reference for other countries in their policy-making. One of its core elements is the promotion of renewable energy, supported by legislation that fosters a circular economy to reduce waste, cut pollution, and optimize resource utilization. By advancing clean energy and a circular economy, the EU aims to significantly reduce its carbon footprint and position itself as a global leader in green technology.

iii. Net-Zero Industry Act

The EU has also passed the Net-Zero Industry Act, a legislative initiative aimed at promoting the development of clean technologies within the EU. Under this act, by 2030, 40% of the products utilizing net-zero technologies must be produced domestically within the EU. The goal of this legislation is to ensure the EU's competitiveness in the global green technology sector and reduce reliance on external supply chains. This act is expected to further stimulate investment and innovation within the EU in renewable energy, low-carbon technologies, and related fields, promoting the rise of the EU's own domestic clean technology industry.

3. The EU's Investments and Financial Support

The European Union has made significant financial commitments to achieve its ambitious climate goals. Within its 2021-2027 budget framework, the EU has allocated 30% of its funds specifically to climate-related projects. These funds are directed towards supporting the deployment of renewable energy technologies, upgrading infrastructure, and fostering innovation in green technologies. In addition, the EU also launched the European Green Deal Investment Plan, which is expected to mobilize $\notin 1$ trillion to drive sustainable economic activities over the next decade. These investments are not only aimed at promoting clean energy projects but also at upgrading the environmental industry, developing low-carbon transportation infrastructure, and supporting projects that enhance energy efficiency.

II. The United States: An Indecisive Player in Climate Governance

The climate governance policies of the U.S. exhibit significant fluctuations due to the differing stances of political parties. As the world's second-largest greenhouse gas emitter, the United States holds considerable influence in global climate governance. However, its climate policies often experience dramatic changes with shifts in political power. The Democratic Party typically advocates for proactive climate policies, supports international cooperation, and implements regulations and financial incentives to promote clean energy and emissions reduction measures. In contrast, the Republican Party prioritizes economic growth and energy independence, often opposing extensive government intervention and environmental regulations. This divergence in party ideologies leads to inconsistent climate policies, affecting the U.S.'s stability and leadership in global climate governance.

1. Trump Administration: Fossil Fuel Priority and Weakening of Clean Energy

The Trump administration's governing principle was "economy first," with a focus on achieving energy independence by increasing fossil fuel production. In contrast to the Obama administration's policies that encouraged clean energy, Trump's policies, to a certain extent, reduced support for renewable energy sources such as electric vehicles and solar power, instead promoting the development of traditional energy industries.

i. Policy Focus: Prioritizing Fossil Fuels to Achieve Energy Independence

Under Trump's promotion, the U.S. became a leading global oil and natural gas producer, aiming to reduce reliance on foreign energy and ensure American energy independence. U.S. oil and gas production saw a significant increase, driven by more oil and gas drilling permits on federal land and waters, along with the loosening of environmental regulations for these industries. This policy led to a period of rapid growth in the U.S. energy sector in the short term and enhanced its position in the global market. In 2020, the U.S. surpassed Saudi Arabia and Russia to become the world's largest oil producer.

ii. Policy Weakening: Marginalizing the Renewable Energy Industry

The Trump administration implemented policies that were unfavorable to the development of EVs. First, it reduced federal tax credits for EVs, which were originally designed to boost their adoption in the consumer market. This policy cut dampened the growth in market demand. Additionally, the Trump administration relaxed fuel economy standards set during the Obama era, reducing the compliance pressure on automakers regarding vehicle emissions. This, in turn, decreased investment in R&D and production within the EV sector.

In the solar industry, the Trump administration introduced tariffs on imported solar panels and related components to protect U.S. domestic manufacturers. While this policy provided short-term support for the domestic American solar industry, it significantly raised the costs of solar projects, slowing the speed of installation and deployment. The higher costs led to delays or cancellations of some large-scale solar projects, limiting the expansion of solar power in the U.S. energy structure.

iii. International Cooperation: Withdrawing from the Paris Agreement

One of Trump's most symbolic decisions regarding climate policy was announcing the U.S. withdrawal from the Paris Agreement in 2017. In Trump's perspective, leaving the agreement was necessary to reduce the economic pressure on the U.S. He believed the Paris Agreement placed unfair pressure on the American manufacturing and energy industry. However, this short-term economic focus neglected the long-term risks posed by climate change and, to some extent, diminished the U.S.'s influence in global sustainable development discussions.

2. Biden Administration: Rebuilding Climate Governance

Goals and Containing China's Green Industry

After taking office, the Biden administration quickly reshaped the U.S.'s role in global climate governance, in stark contrast to the Trump administration. In addition to rejoining the Paris Agreement, the Biden administration introduced a range of policies aimed at accelerating the clean energy transition. At the same time, it sought to contain China's rapid growth in the green industry by enhancing technological and market competition.

i. Policy Adjustment: Rejoining the Paris Agreement and Committing to Net-Zero Emissions After taking office, the Biden administration swiftly announced that the U.S. would rejoin the Paris Agreement, signaling its renewed commitment to global climate governance. This move aimed to reverse the negative impact caused by the Trump administration's withdrawal from the Agreement and reestablish America's role as a leader in the fight against climate change. The Biden administration also set a long-term goal of achieving net-zero emissions by 2050. This target is to be reached through reducing greenhouse gas emissions, promoting clean energy development, and strengthening international cooperation. These policy shifts reflect a more proactive and responsible stance by the U.S. on addressing global climate change, while also demonstrating efforts to restore international trust in its leadership.

ii. Policy Tools: Inflation Reduction Act and Clean Energy Investments

One of the key policies driving the green transition under the Biden administration is the Inflation Reduction Act (IRA). The act promises to provide \$369 billion in clean energy investments and incentives, with the ultimate goal of reducing U.S. greenhouse gas emissions by 50%-52% by 2030. Specific measures include tax credits, subsidies for electric vehicle buyers, and support for large-scale renewable energy infrastructure development. The Biden administration introduced these policies as part of its effort to reposition the U.S. in global climate governance. Through these measures, the U.S. aims to once again become a leading force in global action to counter climate change.

The IRA has greatly sped up the development of the U.S. domestic EV and renewable energy markets. Data shows that under the Biden administration, the U.S. EV market has rapidly expanded, with significant increases in both sales and market share. Additionally, renewable energy projects, such as wind and solar power, have received substantial federal financial support, accelerating the growth and adoption of renewable energy across the country.

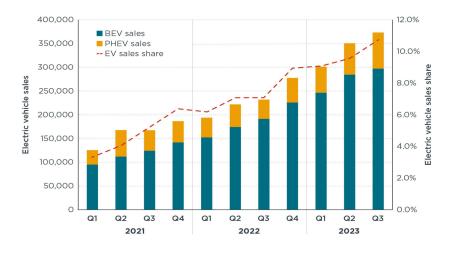


Figure 4. U.S. Electric Vehicle Sales and Sales Share, By Quarter (2021-2023). Source: Slowik and Isenstadt (2024). U.S Electric Vehicle Sales Soar into '24. Alliance for Automotive Innovation.

iii. International Cooperation: Restricting China's Green Industry

Although the Biden administration has taken active measures to promote clean energy development within the U.S., its policies clearly include an intention to curb the rise of China's green industry. For example, the End Chinese Dominance of Electric Vehicles in America Act of 2024 not only restricts the involvement of Chinese companies in supplying materials for EVs eligible for federal tax credits but also blocks companies seeking federal funding to build battery plants in the U.S. from sourcing raw materials from China or Russia.

In addition, the Biden administration launched the Build Back Better World (B3W) initiative through platforms like the G7 and other multilateral cooperation initiatives. The B3W initiative aims to provide developing countries with an alternative option of infrastructure and clean energy investments and reduce their dependence on Chinese technology and funding. B3W promises to invest trillions of dollars in sectors such as infrastructure, climate change, and digital technology, with the goal of increasing the influence of the U.S. and its allies in the global market.

III. China: An Emerging Leader in Global Climate Change Efforts

In recent years, China's climate policies have undergone a significant transformation, shifting from passive participation in global climate governance to taking on a responsible leadership role in combating climate change. President Xi Jinping launched the Global Development Initiative at the United Nations General Assembly, emphasizing the need to accelerate the transition to a green, low-carbon economy and achieve green recovery and development, while also improving global environmental governance to actively respond to climate change.

China has not only committed to achieving carbon neutrality by 2060 but also is advancing international green development cooperation through mechanisms such as the Belt and Road Initiative (BRI). By formulating the 3060 strategy, actively participating in international climate agreements, and promoting sustainable trade, China is gradually coming to the forefront of global climate governance. Former Vice Minister of Commerce and former WTO Deputy Director-General Yi Xiaozhun recently highlighted at a seminar at WTO headquarters that China's green policies not only have profound impacts on its domestic economy but also provide significant momentum for the Global green transition.

1. Key Concepts of 3060 Strategy

The introduction of the 3060 strategy—aiming to peak carbon emissions before 2030 and achieve carbon neutrality by 2060—is a key reflection of China's shift in climate policy direction. This strategy sets a clear timeline and roadmap for China's climate actions, marking a transition from the past sole focus on economic growth to a balanced approach that equally prioritizes economic development and environmental protection.

i. Carbon Peaking (By 2030)

Achieving carbon peaking means that China will work in the coming years to control and gradually reduce its total carbon emissions. To reach this goal, China is adjusting its energy structure, gradually reducing its reliance on fossil fuels like coal, and increasing the share of renewable energy in its energy structure. Since 2020, China has been actively developing clean energy sources such as wind and solar power,

aiming to ensure that carbon emissions will quickly decline after carbon emissions peak. In the meantime, China is accelerating the phase-out of high-energy-consuming, highpollution industries, while decoupling energy consumption from economic development through energy efficiency improvements and technological innovation.

ii. Carbon Neutrality (by 2060)

The carbon neutrality goal requires China to achieve "net-zero" carbon dioxide emissions by 2060 through a combination of reducing carbon emissions and increasing carbon sinks. This target involves not only cutting domestic emissions but also advancing negative emissions technologies, such as carbon capture and storage (CCS). Additionally, China plans to expand ecological projects like afforestation and wetland restoration to enhance natural carbon sinks, offseting some of the unavoidable carbon emissions.

iii. Promoting Energy Structure Adjustment and Green Technology Development

In the process of achieving the 3060 goals, China will focus on the clean and lowcarbon transformation of its energy structure. Currently, although coal remains China's dominant energy source, the country is actively reducing its reliance on coal by significantly expanding renewable energy and nuclear power. According to China's 14th Five-Year Plan (2021-2025), the total installed capacity of renewable energy, such as wind and solar power, is expected to exceed 1.2 billion kilowatts by 2030. Clean energy will become a core component of China's future energy structure.

iv. Accelerating Technological Innovation and Promoting Green Economic Development

China recognizes that the key to achieving the 3060 goals lies in green technology innovation. To this end, China has invested heavily in advancing renewable energy technologies, EV technologies, smart grids, energy storage systems, and other environmentally friendly technologies. Additionally, China is implementing a nationwide carbon trading market. This system aims to use market mechanisms to incentivize businesses to reduce their carbon emissions and drive high-emissions industries to accelerate technological upgrades and transition to greener practices. Furthermore, China is actively promoting the development of "new infrastructure," including 5G, artificial intelligence, and the Internet of Things, which, through widespread application, will improve energy efficiency and reduce the carbon footprint.

v. Strengthening International Cooperation and Promoting Global Climate Governance

China actively participates in global climate governance cooperation, promoting the BRI Green Development Cooperation Initiative to share clean energy technologies with other developing countries, helping them achieve low-carbon development. As one of the world's largest producers of clean energy, China is also exporting green technology products to other nations, such as photovoltaic and wind power equipment, which provides crucial support for global climate governance efforts.

vi. Enhancing Policy Mechanisms and Legal Frameworks

The implementation of the 3060 strategy requires a comprehensive policy framework and legal support. The Chinese government has already introduced a series of policy documents and measures that clearly outline the emissions reduction responsibilities of various industries and local governments. For example, the Action Plan for Carbon Peaking By 2030 specifies the emissions reduction pathways for key sectors such as steel, cement, chemicals, and electric power. Additionally, the central government encourages local authorities to develop their own carbon peaking plans based on regional conditions, gradually establishing a coordinated national mechanism for carbon reduction.

2. China's Exploration: The Dual Driving Forces of Policy and Market

The realization of China's 3060 strategy relies not only on policy initiatives but also on market-driven forces to facilitate the green transition. This approach ensures that climate goals are aligned with economic growth. As Yi Xiaozhun emphasized, the green transition must comply with WTO rules, and the development of China's renewable energy sector is driven more by market competition and technological innovation rather than relying on government subsidies.

i. Green Economic Transition in Compliance with WTO Rules

By establishing a carbon trading market, China has set strict emissions standards for high-emissions industries such as power generation, chemicals, and steel, thereby enhancing the role of market mechanisms in reducing carbon emissions. Firmly following WTO rules has become an important principle in China's green transition. Yi Xiaozhun recently emphasized at a WTO seminar that "green economic transition should not come at the cost of sacrificing WTO rules." He noted that the success of China's renewable energy industry is not based on long-term government subsidies but rather "more about fostering market competition, rapid technological innovation, and its super large market scale."

In the process of developing a green economy, China has established a national carbon emissions trading market, creating a market-based mechanism for emissions reduction to ensure transparency and fairness in carbon trading. It not only helps China control its total carbon emissions but also safeguards fair competition in international trade, providing a more equitable environment for Chinese enterprises to engage in global markets. Through these measures, China promotes its green economic transition while also upholding the stability of the multilateral trading system, demonstrating its commitment to international sustainable development.

Government subsidies helped China's renewable energy industry achieve rapid growth at the early stages. However, in recent years, China has gradually reduced subsidies in sectors such as photovoltaics, wind power, and EVs. For instance, the "Notice on Matters Relevant to Photovoltaic Power Generation in 2018" significantly reduced photovoltaic subsidies and limited the scale of new photovoltaics projects. As these subsidies decreased, Chinese photovoltaics companies improved their competitiveness by enhancing technology and reducing production costs, gradually lowering the price of electricity. This transition has enabled them to secure a dominant position in the global market.

In the EV sector, the Chinese government's subsidies began to gradually decrease in 2017 and the subsidies for EV buyers were completely cancelled in 2022. The withdrawal of these subsidies accelerated the marketization of the industry, pushing EV companies to compete through technological innovation and cost control. In 2018, China had as many as 480 EV manufacturers, but due to intense market competition, only about 50 companies remain today. This competitive pressure has driven companies to continuously improve their technology and reduce production costs, allowing them to secure a more advantageous position in the international market.

By reducing subsidies, enhancing market competition, and complying with WTO international rules, China has made significant progress in its green economic transition. This approach has not only optimized the domestic industrial structure but also provided valuable insights for other developing countries.

ii. Market-Driven Prosperity of the Renewable Energy Industry

China's success in the renewable energy sector is not only attributed to the initial support from government policies but increasingly to fierce market competition and technological advancement. According to the McKinsey Global Institute (MGI) report, "The China Effect on Global Innovation," if Chinese companies in a particular industry generate more than 12% of global revenue—equivalent to China's share of global GDP—then the industry is considered highly innovative. China's renewable energy industry meets this requirement, having achieved innovation through economies of scale.

For example, China's photovoltaic industry not only dominates the global market but also drives the development of the global photovoltaic sector by significantly reducing the cost of solar power generation through technological innovation and largescale production. Similarly, in the EV industry, market competition has led to remarkable progress. Yi Xiaozhun pointed out that, according to Wright's Law, every time the production volume of China's EV industry doubles, production costs decrease by over 20%. By 2023, China's EV ownership had reached nearly 42 million vehicles, accounting for 61% of the global total, further solidifying its leadership in the global EV market.

In conclusion, the prosperity of China's renewable energy industry is the result of the dual forces of policy support and market engagement. Market competition has driven technological advancements and increased production efficiency, positioning China as a key player in the global clean energy supply chain. By exporting green technologies and promoting international market cooperation, China has not only facilitated the green transformation of its domestic industries but also made a significant contribution to the global efforts to achieve carbon reduction goals.

Section 3: Challenges in Developing Sustainable Trade

Although sustainable trade represents the development trend of the global economy, it also faces unprecedented challenges. In recent years, due to the combined effects of geopolitical tensions, rising economic protectionism, and the COVID-19 pandemic, the trend of deglobalization has intensified. This has led to profound changes in the global trade landscape, particularly in renewable energy and green technology, where heightened competition among countries has exacerbated the instability and unsustainability crisis of the global trading system.

Global trade growth has been one of the key drivers of economic growth and technological advancement. However, with the rise of trade protectionism, particularly the "local-first" policies adopted by major economies in recent years, the openness and fairness of international trade have faced unprecedented challenges. In response to competition in renewable energy products, countries have implemented measures that conflict with free trade policies, such as tariffs and other green barriers. These policies have not only sparked widespread controversy globally but also intensified conflicts in international efforts to address climate change and coordinate trade policies.

Moreover, the weakening of global cooperation mechanisms, particularly the dysfunction of multilateral systems represented by the WTO, has significantly limited the international community's ability to address these challenges. The paralysis of the WTO's dispute resolution mechanism, the outdated nature of international trade rules, and the divergences in global climate change governance have left the sustainability of the global trading system in a precarious state.

I. Trade Protectionism in the Context of Deglobalization

Deglobalization has become a significant trend in the global economy in recent years, characterized primarily by countries implementing policies to protect their domestic markets and reduce dependence on international markets. This trend is the result of several factors acting in concert, including the global financial crisis, geopolitical conflicts, and supply chain disruptions caused by the pandemic. Particularly after the outbreak of the COVID-19 pandemic, many countries recognized the vulnerability of relying too heavily on global supply chains and began taking measures to strengthen domestic manufacturing and reduce dependence on external resources. This reversal of globalization has directly driven the rise of trade protectionism, with countries introducing a range of policies to protect domestic industries, especially in sectors like renewable energy and technology-intensive sectors.

1. Impact of Trade Protectionism on the Renewable Energy Industry

The renewable energy industry is highly globalized, relying heavily on international cooperation and resource sharing between countries. However, the rise of deglobalization and trade protectionism has had a significant impact on this sector. These effects are not only limited to supply chain disruptions and rising product costs but also extend to deeper changes in technological innovation and the competitive landscape of the industry.

i. Supply Chain Disruptions and Rising Costs

The renewable energy sector, including solar power, wind energy, and EV industries, depends on highly integrated global supply chains. Core components and raw materials for these industries often require cross-border procurement. For instance, the production of solar panels relies on imports of polysilicon and other raw materials from China, while EV batteries require key mineral resources such as lithium, cobalt, and nickel sourced from multiple countries. As countries adopt trade protectionist measures to safeguard their domestic industries, these global supply chains have been severely disrupted, leading to inefficiencies and bottlenecks in the supply of critical resources and materials.

Many countries are strengthening their domestic supply chains and reducing reliance on external resources in response to the uncertainties brought by climate change. However, this approach conflicts with the principles of global trade liberalization. The tension between localization and globalization has created greater challenges for the international community in aligning climate change efforts with trade policies. The implementation of localization not only increases costs for the renewable energy sector but also heightens the complexity and uncertainty of supply chains. Countries like the United States and European nations are encouraging the development of local resources and investing in resource extraction in third countries to reduce dependence on specific nations, such as China. However, these policies often require higher investment and long-term infrastructure development, leading to a significant rise in costs in the short term.

ii. Restricted Technology Exchange and Impeded Innovation

The rapid development of the renewable energy sector heavily relies on global technology exchange and cooperation. However, the implementation of trade protectionist policies has restricted technological exchange, particularly in areas such as R&D collaboration and technology transfer within the renewable energy field. Technological innovation is a core competitive advantage of the renewable energy industry, and international cooperation and knowledge sharing play crucial roles in this process. Countries, through various policy tools such as technology export restrictions and intellectual property protection, have hindered the global flow of technology.

(1) Restrictions on technology exports and intellectual property disputes

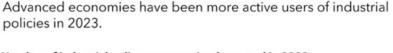
To protect their leadership positions in technology, many countries have implemented strict restrictions on the export of key technologies. For example, the U.S. CHIPS Act and regulations on EDA (a specialized software tool used for chip design), both involved in the R&D and production of automotive chips, impose numerous barriers on the supply chain of high-end process chips for China's EV industry. At the same time, intellectual property disputes between China and the U.S. have further limited global technology circulation, which not only affects technological innovation in the renewable energy sector but also undermines the integrity of the global innovation ecosystem.

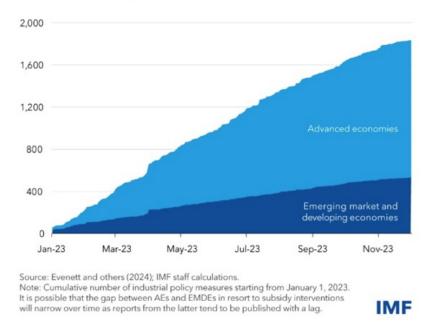
(2) Slowing pace of innovation

The restrictions on technology exchange and intellectual property disputes have slowed the pace of technological innovation in the renewable energy industry. As the latest technological achievements and R&D progress cannot be shared globally, countries are forced to conduct research and development in silos, which greatly limits the scale effect of innovation. The enclosure of technology and the erection of trade barriers have made the technological advancement of the global renewable energy industry progress more slowly.

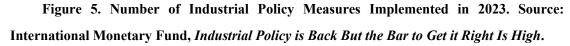
iii. Reshaping the Competitive Landscape of the International Market

Trade protectionism has not only impacted supply chains and technology flows but has also significantly reshaped the competitive landscape of the global renewable energy market. Through subsidies, tax incentives, and other means, countries are supporting their domestic renewable energy enterprises in an effort to capture a larger share of the international market. Research by the International Monetary Fund (IMF) has found that, over the past year, developed countries have introduced more industrial policies than developing countries to protect their domestic industries. This intensified competition has led the global renewable energy sector into a "subsidy race."





Number of industrial policy measures implemented in 2023



(1) Subsidy War and Tariff Barriers

Take the United States as an example. The IRA strongly supports domestic EV, renewable energy, and battery manufacturing industries by providing substantial subsidies and tax incentives to renewable energy companies. This has not only sparked a renewable energy investment boom in the U.S. but also had a profound impact on global competition in the global renewable energy industry. U.S. allies such as the EU and South Korea have expressed dissatisfaction with U.S. subsidies, arguing that they create unfair competition for non-American companies. In addition to industrial policies, the United States has attempted to block Chinese EVs from entering its market by imposing a 100% tariff. Similarly, the European Union has launched anti-subsidy investigations against non-EU car companies to protect its domestic renewable energy enterprises, raising the entry barriers for foreign automakers into the EU market.

(2) Shrinking market share for international companies

Due to the renewable energy subsidies and tariff barriers of the U.S. and the EU, some renewable energy companies that traditionally rely on exports, particularly Chinese solar and EV battery manufacturers, are facing a reduction in their international market share. The competitiveness of Chinese companies in global markets has been hit by a combination of tariffs, subsidy barriers, and technological restrictions, leading to a decline in exports. At the same time, these measures have prompted some multinational companies to reevaluate their global supply chain strategies, opting to invest in the U.S. or European markets to take advantage of the favorable policies offered by local governments.

iv. Challenges of Localization and Conflicts with Global Cooperation in the Renewable Energy Industry

The trend of localization in the renewable energy industry reflects the tension between self-sufficiency and global cooperation. Many countries are attempting to protect their domestic renewable energy sectors through localization policies, which, while potentially boosting domestic green economic growth in the short term, also exacerbate unfair competition in global trade and weaken incentives for international cooperation.

(1) The Impact of Localized Production on Global Cooperation

In developed countries such as the United States and the European Union, governments are encouraging localized production in the renewable energy sector, attempting to attract more renewable energy companies to move their production lines domestically through policy measures such as government subsidies and tariffs. However, the widespread implementation of these localization policies has weakened the momentum of global cooperation. To obtain government subsidies or to bypass tariff barriers, companies are shifting parts of their production to countries with favorable policies, which not only disrupts the existing global supply chain layout but also leads to the breakdown of previous models of multinational cooperation.

(2) Fragmentation of the Global Renewable Energy Market

Against the backdrop of localization policies and protectionist measures implemented by various countries, the global renewable energy market is becoming increasingly fragmented, with significantly fewer opportunities for international cooperation. Due to different technical standards and conditions for market access in different countries, global renewable energy companies are facing growing compliance pressures. Companies must adapt to different policy environments, leading to increased operational costs and affecting their global competitiveness. The fragmentation of the global renewable energy market makes it harder for technology to flow within the industry, slows down innovation, and hinders efforts to address the challenges posed by global climate change.

II. Challenges of International Cooperation

The trend of deglobalization and protectionism has severely tested international cooperation in sustainable trade. The WTO, as the primary body for establishing and coordinating global trade rules, has seen its role significantly weakened. In response, countries are increasingly turning to regional cooperation and bilateral agreements to address trade and climate change issues, but these efforts have failed to create a unified force.

1. Weakening of the WTO Mechanism

As the core multilateral institution for global trade, the WTO's dispute resolution mechanism and multilateral negotiation framework have played a crucial role in maintaining global trade order, promoting trade liberalization, and reducing trade barriers. However, in recent years, the effectiveness and authority of the WTO have been increasingly undermined, particularly in addressing emerging fields such as climate change and the renewable energy industry. The current WTO rules have become outdated and insufficient to meet the demands of these new challenges.

i. U.S. Obstruction of the WTO Mechanism

In recent years, the U.S. has notably undermined the WTO's functioning, particularly during the Trump administration. The U.S. blocked the appointment of judges to the WTO's Appellate Body, rendering it unable to operate effectively. The dispute resolution mechanism is one of the WTO's key functions, as the Appellate Body's rulings carry legal authority in resolving trade disputes between member states. However, since 2019, the Appellate Body has been unable to hear cases due to an insufficient number of judges, causing the dispute resolution system to nearly collapse. This has led to a growing number of trade disputes being settled through bilateral negotiations or regional agreements, weakening the effectiveness of the WTO's multilateral coordination function.

ii. The Decline of Multilateralism and Outdated Rules

The dysfunction of the WTO, evident in the paralysis of its dispute resolution mechanism, also reflects the overall decline of multilateralism. As globalization is increasingly questioned and trade protectionism rises, more countries are opting for unilateral actions or regional trade agreements to safeguard their national interests. This trend is particularly pronounced in the renewable energy and technology-intensive industries. Many developed countries, through unilateral policies or bilateral agreements, are advancing their green economic transitions and seeking to dominate the global renewable energy industry. The WTO's existing trade rules have failed to adapt to these new dynamics, especially in addressing issues like climate change and the development of the renewable energy sector. For instance, emerging trade and climate policies such as green subsidies and carbon tariffs fall outside the traditional scope of WTO regulation, leaving the current framework ill-equipped to manage these new trade barriers and policy interventions.

2. The Rise of Regional Cooperation and the Replacement of

Multilateral Mechanisms

As multilateral mechanisms like the WTO weaken, an increasing number of countries are turning to regional cooperation to address global climate change and trade issues. Regional trade agreements not only fill the gap left by multilateral mechanisms but also serve as key platforms for international trade and climate cooperation. However, these regional cooperation mechanisms also face the challenge of balancing trade liberalization with climate change policies.

i. Advantages and Limitations of Regional Cooperation

The rise of regional cooperation frameworks such as the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) reflects a shift towards more flexible regional mechanisms for addressing climate change and promoting trade liberalization. These regional frameworks are often able to respond more quickly to the needs of member countries, facilitating trade and fostering green technology cooperation within the region. For example, RCEP, which includes major economies in the Asia-Pacific, promotes regional economic integration by lowering tariffs and eliminating non-tariff barriers. Similarly, CPTPP provides its member countries with a freer trade environment, enhancing regional technological exchange and sustainable development.

However, despite some progress in addressing climate change and trade liberalization, the limitations of regional cooperation agreements remain evident. First, regional agreements are usually confined to cooperation among member countries, making it difficult to establish consistent rules on a global scale. Climate policies and environmental standards within these agreements often fall short of global climate goals, particularly in areas such as technical standards, carbon emissions, and green subsidies, making it challenging to achieve global coordination. Moreover, regional cooperation frameworks tend to focus excessively on short-term economic interests while overlooking long-term environmental benefits when addressing climate change. For instance, some countries may exploit flexibility clauses within regional agreements to secure more exemptions in implementing green policies, which can, to some extent, weaken the international community's collective efforts to combat climate change.

ii. The Relationship Between Regional Agreements and Multilateralism

Although regional cooperation fills some gaps left by multilateralism, its limitations highlight the reality that regional agreements cannot fully replace multilateral mechanisms. Global climate change is a worldwide issue, and cooperation within regions alone cannot resolve challenges like global carbon emissions, energy transitions, and climate governance. Regional agreements tend to prioritize the interests of member states, often overlooking the imbalances between the Global North and South in terms of climate finance, technology transfer, and emissions reduction targets. Therefore, while regional cooperation provides a supplement to global climate action, in the long term, only the revival and restructuring of multilateral cooperation mechanisms can effectively address global climate and trade issues.

Section 4: Strategic Recommendations for Promoting Sustainable Trade

In the context of addressing climate change and achieving sustainable development, international trade policies are gradually transitioning toward green and low-carbon models. CCG President Henry Huiyao Wang emphasizes that maximizing green production capacity is crucial for combating climate change. Rather than resorting to protectionism, the focus should be on fostering cooperation among all stakeholders. Governments, businesses, and international organizations should work together to develop and implement sustainable trade policies, promoting the global circulation of green products and technologies to achieve a win-win situation for economic growth and environmental protection. Below are the recommended measures:

I. Formulate Sustainable Trade Policies and Optimize

the Structure of Green Products

Sovereign nations should develop trade policies from the perspective of sustainable development, encouraging the export of sustainable products while restricting the export of raw materials with high energy consumption and high emissions. This will help optimize the global structure of green products and services trade.

By leveraging regional industrial advantages and strengths in green development, countries should accelerate the transformation towards green energy, promote the application of green technologies, and encourage businesses to prioritize low-carbon, energy-efficient, environmentally friendly, and green materials and technologies in their design and manufacturing. This will enhance the competitiveness of green product exports.

Governments should support the trade of technologies, equipment, key components, and raw materials in green supply chains, increase the trade of environmentally friendly, renewable energy, and other low-carbon products, and promote the trade of green consumer goods. In addition, active engagement in the trade of energy-saving technologies, low-carbon technologies, green designs, environmental services, and other knowledge-intensive, eco-friendly services should be encouraged.

II. Deepen Multilateral, Bilateral, and Regional Cooperation

Countries should collectively uphold the international system with the United Nations at its core, and work towards the full implementation of the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement. Countries should actively advocate for the inclusion of sustainable trade as a cross-cutting issue linked to existing investment, production, and consumption in the UN Sustainable Development Goals (SDGs) policy framework. The WTO, as a platform, can be leveraged to foster global governance consensus, update rules, and promote the establishment of a new sustainable trade mechanism. This would involve improving the institutional framework supporting sustainable trade and exploring the creation of a sustainable trade evaluation system. Countries should also promote policies that encourage sustainable trade, use multilateral negotiations to reduce or even exempt tariffs on sustainable products, and offer trade facilitation measures for their customs clearance. These actions will help promote the development of global sustainable trade.

III. Cooperation and Coordination Among Major Global Economies

Major global economies, such as China, the United States, and the European Union, should move beyond the geopolitical narratives surrounding sustainable trade and collaborate on sustainable trade policies. This would help balance the global supply of green products and reduce the use of unilateral trade protectionist measures. Effective coordination of their trade policies through global platforms and organizations (such as the WTO, G20, and UNFCCC) will allow these economies to minimize the use of unilateral sanctions and protectionist policies. China, the U.S., and the EU could reach a consensus on lowering tariffs on sustainable products, reducing non-tariff barriers, and establishing unified green product standards. Additionally, encouraging greater cooperation and technology transfer in the green economy sector among other countries and making joint efforts to promote carbon footprint standards and green certification systems would ensure the sustainability of traded products.

IV. Advancing Low-Carbon Regulations and Strengthening International Cooperation

Countries should strengthen international cooperation and advance low-carbon regulations within major global institutions. In 2012, APEC members reached the world's first substantive agreement on a list of environmental products aimed at promoting trade liberalization in such products, covering 54 customs tariff codes. In 2021, the IMF recommended that the world's major carbon-emitting countries increase carbon prices under the G20 framework in consideration of development stages and historical emissions responsibilities, and establish a carbon price floor. The OECD has long emphasized the importance of carbon pricing, identifying it as the most crucial policy tool to address climate change. Countries should effectively leverage existing multilateral collaboration platforms to promote policy coordination in sustainable trade and green finance, setting unified standards under an inclusive framework. Additionally, efforts should be made to enhance supply chain transparency and foster technological innovation cooperation.

V. Expanding Green Product Imports and Promoting Market Diversification

China should expand the import of sustainable products and diversify import markets to create opportunities for global sustainable trade. Actively increasing imports is a major initiative in China's efforts to further open its economy. China's vast market and high-level opening up offer significant opportunities for the rapid development of global sustainable trade. With a population of over 1.4 billion and a middle-income group exceeding 400 million, expected to reach 800 million in the coming decades, the demand for green products in China is substantial, providing important growth opportunities for global low-carbon products. It is recommended to continue leveraging the China International Import Expo (CIIE) platform by hosting exhibitions focused on sustainable import, supporting the expansion of green product imports, and positioning China's large market as a key driver of global sustainable trade opportunities.

VI. Strengthening International Cooperation in Green Industrial Chains

China should leverage sustainable trade to drive low-carbon development in upstream and downstream industries, as well as related sectors. International cooperation in green manufacturing should also be strengthened to promote the establishment of a cooperation system for green, low-carbon industrial and supply chains, ensuring the efficient integration of high-end resources with the real economy. Other measures include enhancing technical exchanges and cooperation, reducing the market entry costs for green products and technologies to accelerate their global adoption, and improving the top-down design for addressing climate change. Additionally, China can increase innovation efforts in energy-saving, environmental protection, clean production, and clean energy technologies, while promoting international scientific research cooperation and technical exchanges to achieve breakthroughs in green, low-carbon technological innovation.

VII. Deepening International Cooperation in Green Finance

China should promote practical cooperation in climate investment and financing, such as encouraging the development of green credit, green bonds, green insurance, and other financial products can provide financing support for energy conservation, environmental protection, clean production, clean energy, ecological environment, green infrastructure, green services, and other key areas. China should also improve mechanisms for international cooperation in green finance by enhancing alignment in assessment standards, environmental and governance information reporting, and disclosure, in addition to actively exploring and developing international green finance standards and strengthening global coordination within a standard green finance framework. It is recommended that China's multilateral banks such as the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank (NDB) provide credit services for sustainable trade, issue sustainable bonds, invest in carbon reduction initiatives and green economies in developing countries, and help underdeveloped economies establish carbon markets.

VIII. Promoting International Mutual Recognition of Green Product Certification and Labeling

China should advance certification of carbon labels for import and export goods across countries and promote the coordination and mutual recognition of carbon footprint methodologies for products such as batteries. International cooperation on green electricity certification should be strengthened to support the establishment of an international green electricity certificate system and explore international standards for green electricity certificate issuance, measurement, and trading. China is also recommended to actively promote the development of international technology and quality standards and regulations, continuously improve the international cooperation system for inspection, testing, and certification, and reinforce international cooperation on green standards.

IX. Promoting South-South Cooperation for Joint Development of Sustainable Trade

China is recommended to enhance South-South cooperation and actively encourage countries of the Global South to participate in sustainable trade development. In November 2023, China signed 48 South-South cooperation agreements on climate change with BRI partner countries. Designing and promoting sustainable trade construction plans within economic and trade cooperation zones along the BRI route is recommended to help address the needs of BRI countries in transforming traditional industries and upgrading energy infrastructure. China can increase the export of green technologies and green production capacities, using its experience to expand sustainable trade cooperation with BRI countries.

X. Strengthening Capacity Building for Sustainable Trade and Promoting Coordinated Development

China can enhance capacity building in sustainable trade by fostering collaboration and communication among key stakeholders, such as think tanks, professional associations in sustainable trade, relevant third-party service agencies, and ³⁴

regulatory bodies. Industry training can be conducted to continuously increase enterprises' awareness and capacity for green, low-carbon development. Think tanks, government departments, industry associations, and specialized agencies should work together to establish a public consultation platform for sustainable trade services.

Conclusion

The development of sustainable trade is a crucial step in achieving emissions reduction targets as outlined in the Paris Agreement and facilitating the transition of global economies toward more sustainable, green, and low-carbon growth. Major global economies should work together to establish a more open, inclusive, and equitable global sustainable trade system. Formulating trade policies that encourage the flow of green products and technologies, enhancing multilateral cooperation, and promoting the harmonization of international standards will allow countries to advance their own low-carbon development goals while providing new momentum for global sustainable trade.

The development of sustainable trade is not simply about economic growth and transformation. At its core, it concerns the future of all humanity. It is a collective choice of the global community and signifies the balance point between economic prosperity and environmental protection. Only through joint efforts and global cooperation can current challenges posed by climate change be overcome, leading towards a greener, sustainable, and low-carbon international trade system. The international community must recognize the broader implications of sustainable trade and integrate it into the core agenda of global governance. Through cooperation, openness, and innovation, the world can move toward a greener, brighter, and more sustainable future.

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Appendix: Theories and Models Related to National Industrial Chain Resilience

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Appendix 2: About CCG and Our Team

About CCG

The Center for China and Globalization (CCG) is a prominent international think tank based in China. Founded in 2008, it holds the distinction of being the sole Chinese think tank to achieve consultative status at the United Nations. CCG also holds the distinction of being the first Chinese social think tank to be listed among the top 100 global think tanks. It has consistently been ranked as the No.1 social think tank in China by reputable domestic and international rankings.

CCG has received the designation of a postdoctoral research workstation by the Ministry of Human Resources and Social Security, granting it the authority to independently recruit postdoctoral fellows. It is also a member institution of the Think Tank Alliance for the Belt and Road Initiative established by the International Liaison Department of the Central Committee of the CPC. CCG serves as the National Talent Theory Research Base for the Coordination Group for Talent Development under the Central Personnel Work Coordination Group. Additionally, it houses the International Talent Professional Committee of the China Talent Research Association, operating under the Ministry of Human Resources and Social Security. CCG is a founding member of the "U.S. Research Think Tank Alliance" initiated by the Ministry of Finance. Moreover, it holds the position of Vice President Unit in the China Public Relations Association and serves as the Secretariat for the "Global Young Leaders Dialogue (GYLD)" project. In 2021, CCG's "Global Young Leaders Dialogue (GYLD)" project received a reply letter from President Xi Jinping.

CCG is headquartered in Beijing and has multiple branch institutions and overseas representatives both domestically and internationally with a team of more than 100 fulltime researchers and professionals. CCG is dedicated to its professional positioning of "Internationalization, Prominence, Constructivity" and its motto of "Global Vision for China, Chinese Wisdom for the World". The organization is committed to conducting comprehensive research in various fields, including globalization, global governance, international relations, international trade and investment, international talent and corporate globalization, the Belt and Road Initiative, and think tank development.

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CCG's Research Fellow Wu Mengqi, Editor Cao Qian, as well as Research Assistants Cao Jiaming, Zhao Jiayi, Bu Xiaoqing, Feng Wenyuan, Han Yujie, Jiang Jingrong, Liu Siyang have made significant contributions to the data collection, discussions, translation, editing, design of this report.

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