"14th Five-Year Plan" industrial green development plan

Ministry of Industry and Information Technology

eye record

1. Facing the situation

(1) Development foundation

Since the 13th Five-Year Plan, the industrial field has focused on the green transformation of traditional industries, supported by green scientific and technological innovation, and guaranteed by the construction of laws and standards, and vigorously implemented green manufacturing projects, and achieved remarkable results in industrial green development.

The industrial structure has been continuously optimized.

Initially establish a long-term mechanism for the withdrawal of backward production capacity, steel The iron industry has completed the target of 150 million tons of capacity reduction ahead of schedule, and the backward production capacity of the electrolytic aluminum and cement industries has basically withdrawn. The added value of high-tech manufacturing and equipment manufacturing accounted for 15.1% and 33.7% of the added value of industries above scale, respectively, an increase of 3.3% and 3.3% respectively

1.9 percentage points.

The efficiency of energy resource utilization has been significantly improved. The energy consumption per unit of

added value of industries above designated size will be reduced by about 16%, and the water consumption per unit of industrial added value will be reduced by about 40%. The comprehensive energy consumption and water consumption per ton of steel and the comprehensive AC power consumption of primary aluminum in key large and medium-sized enterprises have reached the world's advanced level. In 2020, the recycling of renewable resources for ten major varieties reached 3.8

100 million tons, and the comprehensive utilization of industrial solid waste is about 2 billion tons.

The level of cleaner production has been significantly improved. The coal-fired unit has fully completed the ultra-low emission transformation, and the crude steel production capacity of 620 million tons has been carried out with ultra-low emission transformation. The emission intensity of major pollutants in key industries has been reduced by more than 20%.

Green and low-carbon industries are beginning to take shape. By the end of 2020, our country has achieved energy conservation and environmental protection The industrial output value is about 7.5 trillion yuan. The cumulative promotion volume of new energy vehicles has exceeded 5.5 million units, ranking first in the world for

many consecutive years. Solar modules account for 71% of the global market share.

The basic construction of the green manufacturing system. Research and formulate 468 energy conservation and green development

Industry standards, 2,121 green factories, 171 green industrial parks, 189 green supply chain enterprises, and nearly 20,000 green products have been promoted, and the construction of green manufacturing system has become an important support for green transformation.

(2) Development environment

our country's efforts to achieve carbon peak by 2030 and carbon neutrality by 2060 are major strategic decisions made by the Party Central Committee with Comrade Xi Jinping as the core. The "14th Five-Year Plan" period is the critical period and window period for our country to cope with climate change and achieve the goal of carbon peaking, and it is also a key five years for industry to achieve green and low-carbon transformation.

At present, our country is still in the historical stage of in-depth development of industrialization and urbanization, the proportion of traditional industries is still high, strategic emerging industries and high-tech industries have not yet become the leading force of economic growth, the energy structure is biased towards coal and low energy efficiency has not been fundamentally changed, the pollution problem in key areas and key industries has not been fundamentally solved, resource

and environmental constraints have intensified, the time window for carbon peaking and carbon neutrality is tight, and the technical reserves are insufficient. The task of promoting the green and low-carbon transformation of industry is arduous. At the same time, green and low-carbon development is the direction of scientific and technological revolution and industrial transformation in today's era, and green economy has become the focus of global industrial competition. Some developed economies are planning or implementing green trade systems such as carbon border adjustment mechanisms, raising technical requirements, implementing preferential loans, subsidies and tariffs and other incentive policies, posing new challenges to economic and trade cooperation and industrial competition, and increasing the cost and difficulty of our country's green and low-carbon transformation.

In the face of the new situation, new tasks, and new requirements, it is necessary to improve our political position, face difficulties, overcome difficulties, and unswervingly follow the path of high-quality development that prioritizes ecology and is green and low-carbon .

2. General idea

(1) Guiding ideology

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, fully implement the spirit of the 19th National Congress of the Communist Party of China and the 2nd, 3rd, 4th, 5th, and 6th Plenary Sessions of the 19th Central Committee of the Communist Party of China, thoroughly implement Xi Jinping Thought on Ecological Civilization, and based on the new stage of development, it is complete, accurate, and Fully implement the new development concept, build a new development pattern, implement the strategy of manufacturing power and network power, take promoting high-quality development as the theme, supply-side structural reform as the main line, take carbon peak and carbon neutrality goals as the guide, and take pollution reduction and carbon reduction synergy as the general starting point, coordinate development and green and low-carbon transformation, deeply implement green manufacturing, accelerate the optimization and upgrading of industrial structure, vigorously promote industrial energy conservation and carbon reduction, comprehensively improve resource utilization efficiency, actively promote cleaner production transformation, and

improve green and low-carbon technologies, green products, Service supply capacity, build a modern industrial pattern in which industrial green and low-carbon transformation and industrial empowerment green development promote each other and are deeply integrated, and support the realization of carbon peak and carbon neutrality goals and tasks as scheduled.

(2) Basic principles

Goal-oriented. Adhere to the overall orientation of industrial restructuring and promoting the comprehensive green and low-carbon transformation of industry, and comprehensively lead pollution reduction and carbon reduction and efficient use of energy resources.

Efficiency first. Insist on putting the improvement of energy resource utilization efficiency in the first place, promote the scientific allocation and efficient use of energy resources, optimize the production process and process, improve the output efficiency of individual energy resources, and promote energy conservation and consumption reduction, quality and efficiency.

Innovation-driven. Adhere to innovation as the first driving force, strengthen scientific and technological innovation and institutional innovation, optimize the innovation system, stimulate innovation vitality, and

accelerate green and low-carbon technology

Revolution, cultivate and expand new momentum for industrial green development.

Market dominance. Adhere to the combination of effective market and promising government, give full play to the main role of enterprises, give full play to the decisive role of market mechanisms in allocating resources, stimulate new green demand with high-quality green supply, and guide new green consumption.

Systematic promotion. Adhere to green and low-carbon development as a multi-dimensional, three-dimensional, and systematic project, coordinate the relationship between industrial economic growth and low-carbon transformation, green production and green consumption , and promote green development in various industries and regions.

(3) Main objectives

By 2025, the green and low-carbon transformation of industrial structure and production methods will achieve remarkable results, green and low-carbon technology and equipment will be widely used, the efficiency of energy resource utilization will be greatly improved, and the level of green manufacturing will be comprehensively improved, laying a solid foundation for the carbon peak in the industrial sector by 2030.

Carbon emission intensity continues to decline. Carbon dioxide emissions per unit of industrial added value are reduced 18%, and the total carbon emission control of key industries such as steel, non-ferrous metals, and building materials has achieved phased results.

The intensity of pollutant emissions has decreased significantly. The ability to control the source of harmful substances continues to increase The level of cleaner production has been significantly improved, and the emission intensity of major pollutants in key industries has been reduced by 10%.

Energy efficiency has been steadily improved. The energy consumption of industrial units above designated size is reduced 13.5%, and the unit consumption of key industrial products such as crude steel, cement, and ethylene has reached the world's advanced level.

The level of resource utilization has been significantly improved.

The resource output rate of key industries continues to increase

The comprehensive utilization rate of bulk industrial solid waste has reached 57%, and the main renewable resources are recycled

Reached 480 million tons. Water consumption per unit of industrial value added is reduced by 16%.

The green manufacturing system is becoming more and more perfect. The green manufacturing system in key industries and key regions has been basically completed, the industrial green and low-carbon standard system has been improved, and 10,000 green products have been promoted, and the output value of the green environmental protection industry has reached 11 trillion yuan. Lay out and build a number of standard and technical public service platforms.

3. Main tasks

(1) Implement carbon peaking actions in the industrial sector

Strengthen the top-level design of carbon peaking in the industrial sector, put forward the roadmap and timetable for carbon peaking in the industry as a whole and key industries, clarify the implementation path, and promote the implementation of carbon peaking goals and tasks in various industries.

Formulate a roadmap for industrial carbon peaking. Thoroughly implement the "Carbon Peaking Action before 2030 Plan", formulate the implementation plan for carbon peaking in the industrial field and key industries such as steel,

petrochemical and chemical, non-ferrous metals, and building materials, and plan the roadmap and timetable for carbon peaking. Strengthen the construction of standards, statistics, accounting and information systems, and improve the basic capabilities of carbon reduction. Combined with the current technological status and development trends of different industries, we will strive to take the lead in achieving carbon peaking in qualified industries .

Clarify the implementation path of industrial carbon reduction. Based on the difference between process and discrete manufacturing

Clarify the main carbon emission production processes or sub-industries of steel, petrochemical and chemical, non-ferrous metals, building materials and other industries, and put forward the implementation path of carbon reduction and carbon peaking. Promote the clean and efficient use of fossil energy such as coal and increase the proportion of renewable energy applications. Accelerate hydrogen energy technology innovation and infrastructure construction, and promote the diversified use of hydrogen energy. Support enterprises to implement fuel substitution and accelerate the conversion of industrial coal to electricity and coal-to-gas. For boilers and industrial kilns fueled by coal, petroleum coke, residue, heavy oil, etc., clean and low-carbon energy is adopted

Source substitution. Achieve carbon reduction in the production process through process carbon reduction, process carbon reduction, and raw material substitution. Develop green and low-carbon materials to promote carbon reduction throughout the life cycle of products. Explore active carbon reduction paths such as low-cost carbon dioxide capture, resource conversion and utilization, and storage.

Carry out demonstrations of major carbon reduction projects. Give full play to the demonstration of central enterprises and large enterprise groups

Fan has taken the lead in implementing a number of major projects with outstanding carbon reduction effects and strong driving force in major carbon emission industries, green hydrogen and renewable energy applications, new energy storage, carbon capture, utilization and storage. Promote low-carbon process innovation, implement carbon reduction and upgrading, support breakthroughs in low-carbon, zero-carbon, and carbon-negative technologies to carry out industrialization demonstration applications, and form a number of replicable and generalizable technologies and experiences.

Strengthen the control of non-carbon dioxide greenhouse gases. Carry out nitrous oxide and hydrogen oxide in an orderly manner

Control of fluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gas emissions. Implement the Kigali Amendment to the Montreal Protocol, launch the management plan for the elimination of HCFCs in key areas such as polyurethane foam, extruded styrene foam, and industrial and commercial refrigeration and air conditioning, strengthen production line transformation, research on alternative technologies, and alternative route selection, and promote the reduction of HCFCs.

Column I industrial
Demonstration of major carbon reduction projects. Carry out demonstrations of major carbon reduction projects such as non-blast furnace ironmaking, high-proportion fuel substitution in cement kilns, carbon dioxide coupling to chemicals, renewable energy electrolysis hydrogen production, and million-ton carbon dioxide capture, utilization and storage. **Promotion of green and low-carbon materials.** Promote green building materials such as low-carbon cementing, energy-saving doors and windows, environmentally friendly

Institution.

(2) Promote the high-end transformation of industrial structure

Accelerate the adjustment of industrial structure, resolutely curb the blind development of "two high" projects, promote the withdrawal of backward production capacity in accordance with laws and regulations, develop strategic emerging industries and high-tech industries, continue to optimize the industrial layout of key regions and river basins, and comprehensively promote the green and low-carbon transformation of industries.

Promote the green and low-carbon development of traditional industries. Accelerate steel, non-ferrous metals, and petrochemicals

Chemical, building materials, textile, light industry, machinery and other industries have implemented green upgrading and transformation, and promoted the relocation and transformation of hazardous chemical production enterprises in densely populated urban areas. Implement the "dual control" goal of energy consumption and the requirements of carbon emission intensity control, and promote the reduced, intensive, and green development of heavy chemical industry. For the "two high" projects that are saturated by the market, the design energy efficiency level of the main products

should be benchmarked against the advanced value of the industry's energy consumption quota or the international advanced level. Strictly implement the capacity replacement policy in industries such as steel, cement, flat glass, and electrolytic aluminum, strictly control the new production capacity of urea, ammonium phosphate, calcium carbide, caustic soda, yellow phosphorus, and other industries. Strengthen constraints on environmental protection, energy consumption, water consumption and other factors, and promote the withdrawal of backward production capacity in accordance with laws and regulations.

Expand strategic emerging industries for green environmental protection. Focus on energy resource consumption

A new engine for industrial development with low environmental pollution, high added value and strong market demand, accelerate the development of strategic emerging industries such as new energy, new materials, new energy vehicles, green intelligent ships, green environmental protection, high-end equipment, and energy electronics, and drive the green and low-carbon development of the entire economy and society. Promote the integration, clustering, and ecological development of strategic emerging industries in the field of green manufacturing, expand and strengthen a

number of leading backbone enterprises, and cultivate a number of specialized and new"little giant"enterprises and individual champion enterprises in the manufacturing industry.

Optimize the green and low-carbon layout of key areas. On the premise of strictly protecting the ecological environment

Enhance the green supply capacity of energy resources in areas rich in energy resources, promote the increase in the proportion of clean energy utilization and resource recycling in key development areas, guide the development of characteristic industries and ecological industries suitable for resources and environment in ecologically fragile areas, and encourage areas rich in ecological products and resources to transform ecological advantages into industrial advantages.

We should accelerate the construction of green and low-carbon development highlands focusing on the Beijing-Tianjin-Hebei, Yangtze River Delta, Guangdong-Hong Kong-Macao Greater Bay Area and other regions, actively promote the Yangtze River Economic Belt to become the main battlefield for our country's ecological priority and green development , and solidly promote the ecological protection and high-quality development of the Yellow River Basin.

Column 2 Green transformation and upgrading projects in key areas

Beijing-Tianjin-Hebei region. Promote the coordinated development of comprehensive utilization of regional resources, and build large-scale tailings and waste rock production projects such as sand and gravel aggregates. Strengthen the efficient use of unconventional water such as wastewater, seawater and

reclaimed water in water-intensive industries. Encourage leading enterprises to open

Expand the management of green partners and suppliers, and integrate and optimize the regional green industry chain.

Yangtze River Delta. Promote the joint protection and governance of the ecological environment, coordinate the adjustment of regional industrial structure, promote the green upgrading and transformation of traditional industries, industrial transfer, cross-regional coordination of industrial chains, and efficient industrial agglomeration, promote the optimal allocation of regional energy resources, and build a high-level ecological green integrated development demonstration zone in the Yangtze River Delta.

Guangdong-Hong Kong-Macao Greater Bay Area. Promote the green transformation of traditional industries such as refining, papermaking, and building materials in the Guangdong-Hong Kong-Macao Greater Bay Area, implement the "Cleaner Production Partnership Program" in the Greater Bay Area, and increase the recycling of renewable resources. Promote the construction of green development demonstration zones, carry out green and low-carbon development evaluation, and strengthen exchanges and cooperation in green and low-carbon technologies.

Yangtze River Economic Belt. Strengthen the improvement and pollution control of chemical parks, strictly prohibit the construction and expansion of chemical projects within 1 kilometer of the main tributaries of the Yangtze River, and carry out water conservation and pollution reduction in industries along the river. The middle and upper reaches will strengthen the comprehensive utilization of phosphogypsum, smelting slag, fly ash, waste metal, waste plastic, waste tires

and other resources.

Yellow river. In accordance with the principle of water production, strictly control the blind expansion of coal chemicals, non-ferrous metals, iron and steel and other industries. Guide the coupling development of new coal chemical industries with petrochemical, steel, building materials and other industries. Promote steel, coal chemical and other industries

water resource recycling, making full use of municipal sewage and reclaimed

(3) Accelerate the low-carbon transformation of energy consumption

Efforts should be made to improve energy utilization efficiency, build a clean, efficient and low-carbon industrial energy structure, take energy conservation, carbon reduction and efficiency as key measures to control carbon dioxide emissions in the industrial sector , and continue to improve the low-carbon level of energy consumption.

Increase the proportion of clean energy consumption. Encourage hydrogen energy, biofuels, and garbage derivation The application of alternative energy such as fuel in steel, cement, chemical and other industries. Strictly control the consumption of coal in major coal-using industries such as steel, coal chemical industry, and cement, and encourage the implementation of coal reduction and substitution in new, renovated and expanded projects in areas where conditions permit. Improve the level of electricity and gasification of industrial terminal energy, and accelerate the promotion and application of electric kilns, electric boilers, and electric power equipment in qualified industries and regions. Factories and parks are encouraged to carry out the construction of industrial green and low-carbon microgrids, develop rooftop

photovoltaics, distributed wind power, diversified energy storage, high-efficiency heat pumps, etc., and promote the efficient and complementary utilization of multiple energy.

Improve energy efficiency. Accelerate the creation of energy-saving technology and equipment in key energy-consuming industries

New and application, continue to promote the optimization of typical process industrial energy systems. Promote energy-saving transformation of key energy-consuming equipment systems such as industrial kilns, boilers, motors, pumps, fans, and compressors. Strengthen the recycling of high-temperature bulk materials and liquid slag waste heat, dusty exhaust gas waste heat, low-grade residual energy, etc., and implement informatization and digital transformation and upgrading of key processes and energy-using equipment. Enterprises and parks are encouraged to build integrated energy management systems to optimize and control energy efficiency. Actively promote the green upgrading of new infrastructure such as networks and communications , and reduce the power consumption of data centers and mobile base stations.

Improve energy management and service mechanisms.

Accelerate the update of energy-saving standards and strengthen

new construction

Project energy assessment review. In accordance with energy-saving laws and regulations and mandatory energy-saving standards, it is determined

Supervision and inspection of various projects, especially the "two high" projects. Standardize energy conservation supervision and law enforcement, innovate supervision methods, strengthen the application of results, explore and carry out cross-regional energy conservation supervision, and achieve full coverage of energy-saving supervision of enterprises and key energy-using equipment in key energy-using industries. Strengthen energy demand-side management with electricity as the core, and guide enterprises to improve energy efficiency and demand response capabilities. Carry out energy-saving diagnosis and provide services for enterprise energy-saving management.

Column 3 Industrial energy conservation and energy efficiency improvement projects

Advanced processes are energy-saving. Focus on promoting the direct rolling of molten iron in the iron and steel industry, the direct production of chemicals and advanced coal gasification of crude oil in the petrochemical industry, and the suspension calcination and process reengineering of cement fluidized beds in the building materials industry

technology, glass melting kiln oxygen combustion, non-ferrous metal industry high current efficiency low energy consumption aluminum electrolysis, titanium alloy plasma cold bed furnace semi-continuous casting and other advanced energy-saving processes.

Key energy-saving equipment. Focus on promoting ultra-high-power high-voltage

inverter transformers, controllable heat pipe energy-saving heat treatment furnaces, etc

Triangular three-dimensional coiled iron core structure transformer, rare earth permanent magnet coreless motor, frequency conversion infinitely variable speed fan, magnetic levitation centrifugal fan, electric cylinder pumping machine, new generation of high-efficiency internal combustion engine, high-efficiency regenerative burner and other new energy-saving equipment.

Data centers and base stations are energy-efficient. Promote the construction of data centers to be fully modular and prefabricated, and accelerate the development of liquid cooling systems

High-density integrated IT equipment improves the application level of high-efficiency refrigeration systems such as indirect evaporative cooling systems and inter-column air conditioners. Strengthen data center operation and maintenance and environmental regulation, and realize the synergy between mechanical refrigeration and natural refrigeration through intelligent means. Explore the construction of full-time natural cooling data centers relying on superior resources such as rivers, lakes, oceans, and geothermal. Build a three-level energy-saving system for base station equipment, sites and networks, and combine artificial intelligence, deep sleep, downlink power optimization, peak power consumption and other technologies to achieve base station saving

Yes.

(4) Promote the transformation of resource utilization and circularity

Adhere to the principles of total control, scientific

allocation, comprehensive conservation and recycling, and be strong

Efficient use of chemical resources in the production process, reduce the generation of industrial solid waste and wastewater, strengthen the comprehensive utilization of industrial resources, and promote the green circulation link between production and living systems.

Greatly improve the efficiency of resource utilization.

Promote the efficient and coordinated use of native resources. We should coordinate the two major sources of international and domestic resources, strengthen the optimal allocation of resources across regions and industries, comprehensively and rationally develop mineral resources such as iron ore, phosphate ore, and non-ferrous metals, and strengthen the development of vanadium-titanium resources in vanadium-titanium magnetite and fluorine resources in phosphate ore. Strengthen the matching of raw material supply and demand structure among steel, non-ferrous metals, building materials, and chemical enterprises, promote effective and coordinated supply, strengthen the circular link between enterprises, parks, and industrial clusters, and improve the level of resource utilization.

Promote the high-value recycling of renewable resources. Cultivate scrap steel, waste non-ferrous metals, waste plastics, waste tires, waste paper, waste electrical and electronic products, waste power batteries, etc Leading backbone enterprises in the recycling of major renewable resources such as waste oil and waste textiles, promote the agglomeration of resource elements to advantageous enterprises, and rely on the technology and equipment of

advantageous enterprises to promote the high-value utilization of renewable resources. Make overall use of both domestic and international resources, and rely on information technologies such as the Internet, blockchain, and big data to build a domestic and international dual-track, online and offline parallel renewable resource supply chain. Encourage the construction of industrial parks for high-value utilization of renewable resources, and promote the agglomeration of enterprises, resource recycling, and high-end industrial development. Coordinate the comprehensive utilization of emerging solid waste such as retired photovoltaics, wind power generation devices, and marine engineering equipment. Actively promote remanufactured products and vigorously develop high-end intelligent remanufacturing.

Promote the large-scale comprehensive utilization of industrial solid waste. Promote the comprehensive utilization of bulk industrial solid wastes such as tailings, fly ash, coal gangue, smelting slag, industrial by-products gypsum, red mud, and chemical slag. Promote the coordinated disposal of solid waste in steel kilns, cement kilns, chemical plants, etc. Relying on the comprehensive utilization base of industrial resources, explore the establishment of solid waste

concentrated generation areas, main coal producing areas, and basic raw material industry agglomeration areas based on regional characteristics

Industrial solid waste comprehensive utilization industry development model. Encourage qualified parks and enterprises to strengthen resource coupling and recycling, and create "waste-free parks" and "waste-free enterprises". Implement the evaluation of the comprehensive utilization of industrial solid waste resources, and promote the use of industrial solid waste in qualified regions to take the lead in realizing the exhaustion of new industrial solid waste and the orderly reduction of existing industrial solid waste.

Column 4 Efficient use of resources to promote projects

Recycling of renewable resources. Build a number of large-scale integrated green sorting, processing and distribution centers for scrap steel, waste non-ferrous metals, and waste paper. Increase the proportion of recycling of strategic metal resources such as recycled copper, aluminum, cobalt, and lithium, and promote a variety of valuable groups

Comprehensive recycling. Implement the requirements for plastic pollution control, implement industry norms for the comprehensive utilization of waste plastics, and encourage the chemical recycling of waste plastics. By 2025, strive to recycle scrap steel, waste paper, and waste non-ferrous metals to reach 320 million tons, 60 million tons, and 20 million tons respectively, of which the output of recycled copper, recycled aluminum, and recycled lead will reach 4 million tons. 11.5 million tons and 2.9 million tons.

Comprehensive utilization of industrial solid waste. Promote bulk industrial solid waste in building material production, infrastructure construction, and underground go-hung mining

large-scale application in areas such as area filling. Extract valuable elements from solid waste to produce fiber materials, silica, glass-ceramic, ultra-fine fillers, energy-saving building materials, etc. By 2025, the comprehensive utilization rate of smelting slag (excluding red mud) and industrial by-product gypsum will reach 73% and 73% respectively.

Recycling of waste power batteries. Improve the laws and regulations for the recycling of power batteries, and explore and promote "Internet + recycling" and other new business models, strengthen traceability management, encourage upstream and downstream enterprises in the industrial chain to jointly build and share recycling channels, and build a number of centralized recycling service outlets. Promote the large-scale cascade application of waste power batteries in the fields of energy storage, power backup, charging and swapping, and build a number of cascade utilization and recycling projects. By 2025, a relatively complete power battery recycling system will be built.

High-end intelligent remanufacturing. Revise the management measures for the identification of remanufactured products, and establish a combination of voluntary certification and self-declaration product conformity assessment system to standardize the development of remanufacturing industry. Promote the development of overseas high-tech in the National Pilot Free Trade Zone

remanufacturing of high value-added products.

Cultivate industry benchmarks. Select and release a list of renewable resource recycling enterprises that meet the requirements of industry norms, build 50 comprehensive utilization bases of industrial resources, and cultivate a number of

Promote the conservation and utilization of water resources.

In accordance with the principle of determining production by water, strengthen the control of high consumption The quota management of the water industry carries out water efficiency benchmarking. Promote the integration and optimization of water systems in enterprises and parks, and realize tandem water use, quality water, multiple use of one water and cascade utilization. Encourage key industries to increase the use of municipal sewage, reclaimed water, seawater, rainwater, mine water and other unconventional water, and reduce the amount of new water withdrawn. Promote enterprises to establish and improve water conservation management systems, establish smart water management platforms, and achieve efficient use of water resources. Carry out pilot demonstrations of industrial wastewater recycling, and guide key industries and key regions to strengthen the treatment and reuse of industrial wastewater.

Column 5 Industrial water

Optimize the water intake structure. Guide enterprises, parks and municipalities to cooperate and increase the application of municipal domestic sewage and reclaimed water. Coastal areas are encouraged to directly use seawater as circulating cooling water and build desalination facilities. Encourage the construction of rainwater harvesting

Storage and comprehensive utilization facilities. Encourage water grading treatment and qualitative utilization of coal mines in energy bases such as Ningdong, Mengxi, northern Shaanxi, and western Shanxi.

Strengthen process management. Encourage enterprises or parks with annual water consumption of more than 100,000 cubic meters to set up water managers and take over regularly

Efficient recycling pilot. Build a number of wastewater recycling demonstration enterprises and parks.

Carry out water conservation evaluation. Strengthen the formulation and revision of industrial water-saving standards, carry out water efficiency benchmarking, and

(5) Promote the clean transformation of production processes

Strengthen the concept of systematic pollution reduction that combines source reduction, process control and efficient end-to-end treatment, vigorously promote green design, lead incremental enterprises to create cleaner production methods from a high starting point, promote the continuous implementation of cleaner production technology transformation by existing enterprises, and guide enterprises to actively improve the level of cleaner production.

Improve the implementation mechanism of green design.

Strengthen the concept of the whole life cycle, all-round The process promotes green design of industrial products. In industries with a large impact on the ecological environment, a wide range of products, and high industrial relevance, we will create green design demonstration enterprises, explore the green design path of the industry, and drive the green synergy of the industrial chain and supply chain. Build a green design platform based on big data and cloud computing

technologies, strengthen the supply of key technologies for green design and green manufacturing collaboration, and increase the application of green design. Focus on industrial products with outstanding green attributes and high consumption, formulate green design evaluation standards, and improve the standard acceptance mechanism. Guide enterprises to adopt self-declaration or voluntary certification to carry out green design evaluation.

Reduce the use of harmful substances at the source. Strictly implement electrical and electronics, automobiles, and ships

and other products, and reduce the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers, etc. Study and formulate management measures for the restriction of the use of hazardous substances in road motor vehicles, update the catalogue of the control scope of electrical and electronic products, and formulate and revise mandatory standards for the content limits of hazardous substances in electrical and electronic and automotive products

The list of hazardous substances and inspection guidelines for ships will continue to promote the control of hazardous substances in line with international standards. Strengthen the role of mandatory standards and vigorously promote coatings, inks, adhesives, cleaning agents and other products with low (no) volatile organic compound content. Promote the establishment of a departmental linkage supervision mechanism, establish a database of hazardous substances covering the upstream and downstream of the industrial chain , give full play to the role of e-commerce platforms, and innovate big data supervision.

Reduce pollution emissions from the production process.

Targeting key industries and key pollutant emissions

In the process of developing and promoting the process of pollution reduction and equipment, and carrying out application demonstrations. Focus on key regions such as Beijing-Tianjin-Hebei and surrounding areas, the Fenwei Plain, and the Yangtze River Delta region, and increase the intensity of cleaner production transformation in key industries emitting nitrogen oxides and volatile organic compounds to achieve fine particulate matter (PM2.5).) and ozone cooperative control. Focus on key river basins such as the Yangtze River and the Yellow River, as well as heavy metal-

related industry clusters, implement cleaner production level improvement projects, and reduce emissions of chemical oxygen demand, ammonia nitrogen, heavy metals, and other pollutants. Strictly implement the requirements of international environmental conventions and relevant standards, and promote the reduction of the generation and emission of new pollutants such as persistent organic pollutants and toxic and harmful chemicals in key industries. Formulate a list of backward production process equipment that eliminates industrial solid waste that causes serious environmental pollution within a time limit.

Upgrade and transform terminal treatment facilities. Promote advanced and applicable environmental protection in key industries

equipment, and promote the formation of stable and efficient governance capabilities. In the field of air pollution prevention and control, focus on key industries with large flue gas emissions, complex components, and difficult treatment, and carry out demonstrations of collaborative treatment of multiple pollutants. Deepen the transformation of ultra-low emissions in the steel industry, and steadily implement the transformation of ultra-low emissions in cement,

coking and other industries. Accelerate the recovery and treatment of organic waste gases (VOCs), and encourage the selection of low-consumption and high-efficiency combined processes for treatment. In the key areas of water pollution prevention and control, focus on heavy metals, high salt, and high possessions

Carry out in-depth and efficient treatment and application demonstrations for difficult wastewater such as organic materials, and gradually improve the level of wastewater treatment in industries such as printing and dyeing, papermaking, chemical APIs, coal chemical industry, and non-ferrous metals .

column 6 Cleaner production transformation projects in key industries

Steel industry. Implement technology and equipment transformation such as coke oven gas fine desulfurization, high-proportion pellet smelting, coking negative pressure distillation, and optimization of the whole process of coking. By 2025, 530 million tons of steel production capacity will be transformed into ultra-low emissions and 460 million tons of coking production will be completed

It can clean production and transformation.

Petrochemical and chemical industry. Implement process technology transformation such as high-efficiency catalysis, process intensification, and efficient distillation, as well as equipment transformation such as waste salt incineration and refining, waste sulfuric acid high-temperature cracking, advanced oxidation, micro-reaction, and coal gasification.

Non-ferrous metals industry. Implement efficient dissolution and reduction of red mud technology in the alumina industry, short-process smelting and continuous melting in the copper smelting industry, efficient clean electrolysis and oxygen pressure leaching in the zinc smelting industry, and vertical reduction of magnesium in the magnesium smelting industry

Equipment transformation. By 2025, about 4,000 non-ferrous metal kilns will be renovated for cleaner production.

building materials industry. Implement ultra-low emissions of desulfurization,

denitrification and dust removal in the cement industry, flue gas dust removal, desulfurization and denitrification in the glass industry, and waste heat utilization (power generation) "integrated" process technology and complete equipment transformation.

textile industry. Implement technology and equipment transformation such as small bath ratio dyeing, polyvinyl alcohol-free sizing weaving, regenerated cellulose fiber green pulping, supercritical carbon dioxide fluid dyeing, knitted fabric flat dyeing, polyester fabric low-water continuous dyeing, etc.

Light industry. Implement technology and equipment transformation such as short-process low-water consumption paper-saving synthetic leather manufacturing, closed circulation of leather dipping and chrome tanning waste liquid, biological tanning, efficient production of strains and green extraction and refining of bulk fermented products.

machinery industry. Continue to promote the green optimization and upgrading of basic manufacturing processes, implement green process material preparation, clean casting, precision forging, green heat treatment, advanced welding, low-carbon and pollution-reducing surface engineering, high-efficiency cutting and other process technologies

and equipment modification.

(6) Guide the green transformation of product supply

Increase the supply of green and low-carbon products and green environmental protection equipment, and guide green consumption.

Create new demand, cultivate new models, build new engines of green growth, and provide a solid guarantee for green and low-carbon transformation in all fields of economy and society.

Increase the supply of green and low-carbon products. Build an industrial field from basic raw materials to the end The green product supply system of the whole chain of consumer goods encourages enterprises to use green design methods and tools to develop and promote a number of high-performance, high-quality, lightweight, low-carbon and environmental protection products. Create green consumption scenarios and expand consumption of new energy vehicles, photovoltaic photovoltaic thermal products, green consumer electrical and electronic products, green building materials, etc. Advocate a green lifestyle and continue to promote energy-saving, water-saving, efficient and safe green smart home appliances. Promote the establishment of green and low-carbon product sales areas on e-commerce platforms, establish sales incentive and restraint mechanisms, and support new formats of "consumption as production" such as green credits.

Vigorously develop green environmental protection

equipment. R&D and promotion of the application of efficient heating and energy saving

Industrial energy-saving equipment such as power, waste heat and pressure recycling, industrial environmental protection equipment such as low energy consumption, modularization, intelligent sewage, flue gas, solid waste treatment, and process technology equipment such as source classification, process control, and end treatment. Accelerate the application of rural energy-saving and environmental protection equipment such as biomass gas supply, power supply, and agricultural film pollution control such as crop straw and livestock and poultry manure. Develop complete sets of equipment for intelligent crushing and sorting and comprehensive utilization of industrial solid waste such as integrated molding of new wall materials and copper and aluminum scraps, and intelligent dismantling and high-value recycling equipment for retired power batteries. Develop remanufacturing equipment such as construction machinery, heavy machine tools, and internal combustion engines.

Innovate the green service supply model. Create a number of key industries to peak and achieve carbon neutrality

The public service platform provides low-carbon planning and low-carbon scheme design, low-carbon technology verification,

carbon emission and carbon footprint accounting services for enterprises and parks. Establish a basic database of carbon emissions of key industrial products, and improve the measurement, collection, monitoring, and distribution of carbon emission data

Analyze the system. Promote service models such as contract energy management, contract water conservation management, and third-party treatment of environmental pollution. Actively cultivate professional green service institutions such as green manufacturing system solutions, third-party evaluation, and urban environmental services, provide green diagnosis, R&D and design, integrated application, operation management, evaluation and certification, training and other services, and actively participate in the formulation of international standards for green services and service trade rules.

Column 7 Green products and energy-saving and environmental protection equipment supply projects

Green products. Vigorously develop and promote new energy vehicles, and promote the promotion of alternative fuel vehicles such as methanol vehicles. Use "trade-in" and other methods to continue to promote green smart home appliances such as high-efficiency lighting, energy-saving air conditioners, energy-saving refrigerators, and water-saving washing machines

Products. Encourage the use of coatings and cleaning agents with low volatile organic compound content, and accelerate the development of new building materials such as biomass, wood, and gypsum. Increase the proportion of recycled material consumption. By 2025, develop and promote 10,000 green products.

Green environmental protection equipment. Focus on the development of pollution control robots and intelligent garbage sorting technology and equipment based on machine vision

Dry anaerobic organic waste treatment technology and equipment, high-efficiency and low-consumption refractory wastewater resource utilization technology and equipment, non-electric flue gas multi-pollutant collaborative in-depth treatment technology and equipment, efficient and continuous volatile organic compound adsorption-desorption, regenerative thermal oxidation/catalytic combustion technology and equipment.

New energy equipment. Develop large-size and high-efficiency photovoltaic modules, high-power offshore wind power equipment, hydrogen fuel gas turbines, etc

new energy equipment such as ultra-high pressure hydrogen compressors, high-efficiency hydrogen fuel cells, and integrated commercial small reactors. Promote the innovation and upgrading of intelligent photovoltaics and the application of industry characteristics.

(7) Accelerate the digital transformation of production methods

Digital transformation drives the transformation of production methods, adopts new generation information technologies such as the industrial Internet, big data, and 5G to improve the level of energy, resources, and environmental management, deepens the digital application of production and manufacturing processes, and empowers green manufacturing.

Establish a green and low-carbon basic data platform.

Accelerate the formulation of energy, resources, and

resources

Green and low-carbon basic data standards for carbon emissions, pollutant emissions and other data information. divide

The industry has established a green and low-carbon basic data platform for the whole life cycle of products, coordinated green and low-carbon basic data and industrial big data resources, established a data sharing mechanism, and promoted data aggregation, sharing, and application. Based on platform data, carry out carbon footprint, water footprint, and environmental impact analysis and evaluation.

Promote the integrated development of digital, intelligent and green. Deepen product research and development and design

Digital applications in manufacturing, application service, recycling and other links will accelerate the application of information technologies such as artificial intelligence, Internet of Things, cloud computing, digital twins, and blockchain in the field of green manufacturing, and improve the efficiency and effectiveness of green transformation and development. Promote the intelligent perception and control system of key process equipment in the manufacturing process, multi-objective optimization of the process, and optimization of business decision-making, so as to realize the collection and supervision, intelligent analysis and fine management of information such as material flow and energy flow in the production process. Create a digital twin system for the whole

life cycle of products, and use data as a drive to improve the industry's green and low-carbon technology innovation, green manufacturing, and operation and maintenance services. Promote the software-based packaging of green technology and promote the innovative application of mature green manufacturing technology.

Implement "industrial Internet + green manufacturing".

Encourage enterprises and parks to carry out energy Construct systems such as resource information control, online monitoring of pollutant discharge, and water leakage detection of underground pipe networks to achieve dynamic monitoring, precise control, and optimal management. Strengthen the intelligent collection, management and application of data on the whole life cycle of renewable resources. Promote the digital transformation of main energy-consuming equipment and processes and the use of the cloud. Support the use of information technology such as the Internet of Things and big data to carry out information collection, data analysis, flow monitoring, and financial management, and promote the new model of "industrial Internet + recycling of renewable resources".

(8) Build a green and low-carbon technology system

Promote the rapid and large-scale application and iterative upgrading of new technologies, and pay close

attention to the deployment of cutting-edge technologies

Improve the industrial technology innovation system and strengthen the supporting role of scientific and technological innovation in the green and low-carbon transformation of industry.

Accelerate breakthroughs in key common technologies. For basic components and parts

Implement a number of energy conservation and carbon reduction research projects for basic processes and key basic materials. Concentrate advantageous resources to carry out key core technologies such as carbon reduction, zero-carbon and negative carbon technology, carbon capture, utilization and storage technology, zero-carbon industrial process reengineering technology, harmless utilization technology of complex and difficult solid waste, new energy-saving and new energy material technology, and high-efficiency energy storage material technology, and form a number of original scientific and technological achievements. Carry out research and development of common technologies such as clean and efficient utilization of fossil energy , renewable resource classification and grading utilization technology, high-end intelligent equipment remanufacturing technology, and high-efficiency, energy-saving and environmental protection

equipment technology, and strengthen the supply of green and low-carbon technologies .

Strengthen industrial basic research and cutting-edge technology layout. Strengthen basic theories and foundations

methods, cutting-edge disruptive technology layout, and promote research on cutting-edge green and low-carbon technologies such as carbon neutrality, carbon dioxide removal, and low-cost utilization. Carry out basic research on intelligent photovoltaics, perovskite solar energy cells, green hydrogen development and utilization, carbon monoxide fermentation to alcohol, carbon dioxide negative emission technology, ozone pollution, persistent organic pollutants, microplastics, free pollutants and other new pollutant control technologies and equipment, and steadily promote the integration and innovation of technologies such as agglomeration and microwave dust removal.

Increase the promotion and application of advanced and applicable technologies. Regularly compile and release low-carbon, energy-saving,

Select a number of advanced technology, good economy, great promotion potential, and urgently needed process equipment and technology in the market, and encourage enterprises to strengthen equipment renewal and large-

scale application of new products. Focus on promoting short-process steelmaking, highly selective catalysis, and efficient recovery of waste heat in all-scrap electric arc furnaces

Utilization, multi-pollutant collaborative treatment of ultra-low emissions, heating furnace low nitrogen combustion, dry granulation dust removal, industrial wastewater deep treatment and reuse, efficient extraction and separation, high-efficiency membrane separation and other process equipment technologies. Organize the formulation of major technology promotion plans and supply and demand docking guidelines. Optimize and improve the insurance compensation mechanism for the first (set) of major technical equipment and the first batch of key new materials, and support the application of qualified green and low-carbon technology and equipment and green materials. Encourage all localities and industries to explore new mechanisms for the promotion of green and low-carbon technologies.

Column 8 Green and low-carbon technology promotion and application projects

Carbon reduction technology. Promote low-carbon metallurgy, clean steel smelting, green hydrogen refining, new low-carbon cementitious materials, and carbon dioxide

The promotion and application of technologies such as coupled methanol production, high-efficiency low-carbon aluminum electrolysis, high-parameter gas power generation, carbon dioxide oil displacement, and flameless combustion of ultra-low nitrogen porous media.

Pollution reduction technology. Promote ion exchange method desulfurization and

denitrification, phosphorus-free water treatment agent circulating cooling water treatment, and nano-ceramic membranes

The promotion and application of technologies such as sewage treatment, collaborative treatment of industrial kilns, in-situ thermal desorption soil remediation, low-temperature vacuum drying treatment of sludge, and catalytic oxidation treatment of high-salt wastewater.

Energy-saving technology. Promote the integration of casting and rolling, headless rolling, medium and low temperature waste heat utilization, clean and efficient water and coal slurry gasification, and high

Promote the application of technologies such as calorific value solid waste fuel substitution, microgrid energy storage, indirect condensation evaporation (data center), and special carbon electrode replacement electrode paste for ferroalloy smelting.

Water saving technology. Promote circulating cooling water air cooling and water saving, high-salt water desalination tubular membranes, and residual energy low-temperature multi-effect seawater desalination

Chemical and coking wastewater advanced catalytic oxidation deep treatment and reuse, solid alkali evaporation alkaline condensate treatment and reuse, MBR+ reverse osmosis printing and dyeing wastewater reuse and other technologies are popularized and applied.

Efficient use of resources. Promote the efficient production of green concrete and steel slag from solid waste without burning cementitious materials and solid waste

Steam grinding, red mud harmless environmental protection bricks, industrial by-product gypsum production of high-strength gypsum powder and its products, thermal cracking of low-value waste plastics, refined automatic dismantling of

retired power batteries and other technologies are popularized and applied.

Stimulate the innovation vitality of various market players.

Market-oriented, encourage green low

Carbon technology research and development, implement green technology innovation research actions, cultivate and build a number of manufacturing innovation centers, industrial innovation centers, engineering research centers, technology innovation centers and other innovation platforms in the green and low-carbon field, and strive to solve key common technical problems across industries and fields. Strengthen the main position of enterprises in innovation, and support enterprises to integrate scientific research institutes, universities, industrial parks and other forces to establish market-oriented green technology innovation consortiums. Accelerate the transformation of scientific and technological achievements, and support the establishment of green technology innovation project incubators and innovation and entrepreneurship bases. Accelerate breakthroughs in the engineering and industrialization of green and low-carbon technologies, give full play to the supporting and leading role of large enterprises, and cultivate new advantages in green competition in the manufacturing industry. Support innovative small, medium and micro enterprises to grow into important birthplaces of innovation.

(9) Improve the green manufacturing support system

Improve the green and low-carbon standard system, improve the green evaluation and public service system, strengthen green service guarantees, build a complete and integrated green supply chain, and comprehensively improve the basic capabilities of green development.

Improve the green and low-carbon standard system. Based on industrial restructuring and green and low-carbon technology

Improve the evaluation standard system for green products, green factories, green industrial parks, and green supply chains, and formulate and revise a number of standards for low-carbon, energy-saving, water-saving, and comprehensive utilization of resources, as well as standards for key process technology and equipment. Encourage the formulation of local, group, and enterprise standards that are higher than the current standards. Strengthen the implementation of advanced and applicable standards, and expand the effective supply of standards. Promote the establishment of a green and low-carbon standard acceptance mechanism, promote the evaluation of the technical level and implementation effect of key standards, and smooth the channels for iterative optimization. Promote the internationalization of standards in key areas such as green design, product carbon footprint, green manufacturing, new energy sources, and new energy vehicles.

Create a green public service platform. Optimize self-evaluation, social evaluation, and government

Strengthen the supervision and management of social evaluation institutions by guiding and combining green manufacturing evaluation mechanisms. Cultivate a number of green manufacturing service providers and provide system solutions such as the integration of green product design and manufacturing, the green improvement of factory digitalization, and the greening of other industries. Improve the public service platform for green manufacturing, innovate service models, and provide a package of services such as consulting, testing, evaluation, identification, auditing, and training for key areas .

Strengthen the benchmarking and leadership of green manufacturing. Focusing on key industries and important areas, continue

Promote the construction of green products, green factories, green industrial parks and green supply chain management enterprises, and select and publish green manufacturing lists. Encourage localities and industries to create a list of green manufacturing benchmark enterprises in their regions and industries. Implement dynamic management of the green manufacturing list, explore green certification and star evaluation, strengthen effect evaluation, and establish a dynamic

adjustment mechanism with entry and exit. Mandatory disclosure of environmental information will be included in the green manufacturing evaluation system, and green manufacturing enterprises will be encouraged to prepare annual reports on green and low-carbon development.

Integrate green supply chain management. Encourage industrial enterprises to carry out green manufacturing commitment machines

Advocate suppliers to produce green products, create green factories, create green manufacturing processes, promote green packaging, carry out green transportation, and do a good job in the recycling and treatment of waste products, so as to form a green supply chain. Promote the coordinated development of green industrial chains and green supply chains, encourage automobiles, home appliances, machinery and other production enterprises to build a green supply chain management system with data support, network sharing, and intelligent collaboration, and improve resource utilization efficiency and supply chain greening.

Build a green and low-carbon talent team. Promote the construction of relevant professional disciplines and industrial colleges

Strengthen the training of professional and cross-field

compound talents. Give full play to the role of enterprises, scientific research institutions, universities, industry associations, training institutions, and other parties, and establish and improve many things

Hierarchical talent cooperation training mode. Relying on various knowledge and intelligence introduction plans, we will build a green and low-carbon scientific research and innovation highland that gathers leading scientific and technological talents and innovation teams at home and abroad. Establish a diversified talent evaluation and incentive mechanism. Promote major national talent development projects to support the construction of green and low-carbon talent teams.

Improve green policies and market mechanisms. Establish a suitable for green and low-carbon development Investment and financing policies, strictly control investment in "two high" projects, and increase investment and financing support for energy conservation and environmental protection, new energy, carbon capture, utilization and storage. Give full play to the role of the national industry and finance cooperation platform, build an industrial green development project library, and promote the innovation of green financial products and services. Promote the use of policy tools such as targeted RRR cuts, special re-lending, and mortgage supplementary loans to guide financial institutions to expand green credit investment. Improve the government's

green procurement policy and increase the procurement of green and low-carbon products. Policies such as punitive electricity prices, differential electricity prices, and differential water prices should be further improved. Promote the construction of national carbon emission rights and national energy use rights trading markets, and strengthen the overall connection between carbon emission rights and energy use rights trading.

4. Safeguard measures

(1) Strengthen the organization and implementation of planning

Strengthen coordination and cooperation between ministries, provinces, and central and local governments, and establish a work system with clear responsibilities, orderly coordination, and strong supervision. Strengthen communication and coordination, strengthen cross-departmental and cross-regional cooperation, and all localities should formulate and introduce supporting policies in light of actual conditions, implement the overall requirements, goals, and tasks of the plan, and play a good role in the "combination of policies." Carry out dynamic monitoring and evaluation of the implementation of the plan and promote the implementation of the plan. Give full play to the role of industry associations, think tanks,

and third-party institutions as bridges to help green and low-carbon development in key industries and important areas. Organize and carry out activities such as National Energy Conservation Publicity Week, National Low Carbon Day, and China Water Week

Strengthen the guidance of public opinion in various media and public welfare organizations, and publicize policies and regulations, typical cases, and advanced technologies for industrial green development.

(2) Improve laws, regulations, and policies

Promote the revision of laws and regulations such as the Energy Conservation Law, the Circular Economy Promotion Law, and the Cleaner Production Promotion Law. Implement the Law on the Prevention and Control of Environmental Pollution by Solid Waste and improve supporting policies. Formulate management measures for industrial energy conservation supervision, comprehensive utilization of industrial resources, recycling of new energy vehicle power batteries, and construction of green manufacturing systems. Improve the management of binding indicators for energy conservation and emission reduction. Establish a green credit rating mechanism for enterprises, and increase the application of assessment results in finance, credit, and pilot demonstrations. Improve the enterprise information disclosure system and promote enterprises to better fulfill their social responsibilities such as energy conservation and water

conservation, pollution reduction and carbon reduction, and employee responsibility care.

(3) Increase fiscal and tax financial support

Encourage local finances to increase support for the development of green and low-carbon industries and technology research and development, innovate support methods, and guide more social resources to invest in industrial green development projects. Expand the scope of preferential corporate income tax catalogues for environmental protection, energy conservation and water conservation. Carry out innovation in green financial products and tools, improve green finance incentive mechanisms, and promote green insurance in an orderly manner. Strengthen the cooperation between industry and finance, introduce special policies for industry-finance cooperation to promote the green development of industry, promote the improvement of the green finance standard system and information disclosure mechanism to support the green development of industry, support the listing and refinancing of green enterprises, reduce financing costs, and study the establishment of a mechanism for determining the attributes of green science and technology.

(4) Deepen green international cooperation

Promote the establishment of international partnerships for green manufacturing and further expand multilateral and bilateral

Establish cooperation mechanisms and strengthen cooperation and exchanges with relevant international organizations in the field of green manufacturing. Encourage qualified localities to build green industrial parks for Sino-foreign cooperation, and promote the transformation and implementation of green technology innovation achievements in China. Vigorously build the green "Belt and Road", expand green trade, jointly build a number of green factories and green supply chains, and accelerate the internationalization of green product standards, certifications, and labels. Rely on key scientific research institutes, universities, and enterprises to explore the establishment of international green and low-carbon technology innovation cooperation platforms and training bases. Encourage overseas project contracting and labor export based on green and low-carbon technology and equipment.