

"14th Five-Year Plan" for the development of raw materials industry

Ministry of Industry and Information Technology

Ministry of Science and Technology

Ministry of Natural Resources

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The raw materials industry is the foundation of the real economy and supports the development of the national economy.

Basic industries and key areas for gaining international competitive advantages are the key to industrial base reconstruction.

The main force of industrial manufacturing and the main battlefield of industrial green development.

The 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China2035Year Vision

This plan is formulated in accordance with the Outline of Standards for the Development of Raw Materials Industry, which aims to improve the quality and efficiency of

## I. Development Situation

### (1) Development foundation

Raw materials industry includes petrochemical, steel, nonferrous metals, building materials, etc.

Since the 13th Five-Year Plan, the transformation and upgrading of the raw materials industry has achieved remarkable results.

The country's strength has grown steadily and its international competitiveness has continued to increase.**The scale advantage has been further enhanced.**

2020In 2016, the added value of my country's raw materials industry accounted for 1.3% of the total value of industries above designated size.27.4%,thick

Output of steel, refined copper, electrolytic aluminum, methanol, urea, cement, flat glass, etc.

It has maintained the world's first place for many consecutive years. The material variety is more abundant, including steel, aluminum,

The self-sufficiency rate of photovoltaic glass exceeds98%, basically meeting the needs of the national economy and national defense forces

Work demand.**New progress has been made in structural adjustment.**Total supply and demand in industries with serious overcapacity

Basically restore balance,1.5The goal of reducing steel production capacity by 100 million tons was completed ahead of schedule, and electricity was strictly controlled

Significant progress has been made in increasing aluminum and cement production capacity.10Cement enterprise group industry

Concentration reached58%The company's strength is accelerating.2020my country (excluding Hong Kong

Macao and Taiwan) shortlisted for the world500Strong raw materials industrial enterprises34of the shortlisted companies

Quantity29.1%.**Innovation capabilities have reached a new level.**R&D investment intensity is determined by2015

years0.76%Increase to2020years0.9%About. Main equipment of key enterprises

The overall level has reached the international advanced level and has been built170Yujia State Key Laboratory and

Engineering (Technology) Research Center,26National key platform for new materials.**Green turn**

**The model presents a new look.**The comprehensive energy consumption per ton of steel in key large and medium-sized enterprises is relatively high.2015younger th

drop4.7%The comprehensive AC power consumption of primary aluminum is lower than the world average6.9%, tons of steel

Sulfur dioxide emissionsquantity,Carbon dioxide emissions per 10,000 yuan of industrial added value in the building materials industry

Comparison2015The annual decline46%、16.5%, and overall reached the world's advanced level.

The level of comprehensive resource utilization has been steadily improved, and the cement kiln co-processing system has been put into operation.

OK168The carbide slag is fully utilized and the comprehensive utilization rate of phosphogypsum reaches

40%.**Smart manufacturing reaches a new level.**Passed the assessment of the integration of information and industrialization management system

Raw materials companies2200Yujia, a large raw material enterprise with the level of integration of industrialization and informationization61.1,

Higher than the national average9.1%. CNC rate of key processes in the raw materials industry

65.7%, among which petrochemical enterprises73.8%, higher than the national average21.7One hundred

Points. Built60Smart manufacturing factories and digital workshops.

## (2) Development Environment

During the 14th Five-Year Plan period, the raw materials industry will enter a new stage of high-quality development.

The challenges we face are unprecedented, the opportunities and challenges are more severe, and there are many new changes.

**From the perspective of opportunities,**The new development pattern is being built at an accelerated pace, and the advantages of the domestic super-large-scale ma

The demand for high-end materials in emerging fields and consumption upgrades will be further exerted.

It provides broad space for the sustainable and healthy development of the raw materials industry.

The market system is becoming more and more perfect, especially the various resource elements are moving to advantageous fields and enterprises.

The industry cluster provides basic support for the raw materials industry to strengthen the resilience of the industrial chain.

A round of scientific and technological revolution and industrial transformation has reshaped the global economic structure, especially the new generation

The deep integration of information technology and manufacturing has forged a new path for the transformation and upgrading of the raw materials industry.

Advantages provide a source of motivation.**From the perspective of challenges,**Facing the countercurrent of economic globalization and new

The COVID-19 epidemic has had a widespread impact, and the security risks of the industrial chain and supply chain have become prominent.

The difficulty of the international market has increased significantly. Faced with the new situation in the new stage of high-quality development, steel

The demand for major raw materials such as iron, electrolytic aluminum, cement, etc. will gradually reach or

As the market approaches its peak plateau, the momentum for expansion in scale and quantity demand tends to weaken.

Strong constraints on resources, energy and ecological environment, the hard task of carbon peak and carbon neutrality,

The people's new expectations for safe production and the green and safe development of the raw materials industry

The task is more urgent.

At present, the shortcomings and bottlenecks in the raw materials industry are still prominent, and the low-end and medium-end

There is a serious oversupply of products and a shortage of high-end products.

The level of independent control of technology and equipment is not high, and there is still a long way to go for green and low-carbon development.

Digitalization level is difficult to effectively support high-quality development, key strategic resource guarantee capabilities

Facing new situations and new requirements, we must maintain a strategic

Strengthen strategic focus, strengthen bottom-line thinking, adhere to the system concept, and accelerate the promotion of raw material processing.

Optimization, opening up and high-quality development of the industrial system.

## II. Overall requirements

### (1) Guiding ideology

Adhere to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era,

Fully implement the spirit of the 19th CPC National Congress and all previous plenary sessions of the 19th CPC Central Committee, based on the new development sta

stage, fully, accurately and comprehensively implement the new development concept, and accelerate the construction of a new development pattern.

The Bureau takes promoting high-quality development as its theme and deepening supply-side structural reform as its

The main line is to take reform and innovation as the fundamental driving force to meet the people's growing aspirations for a better life.

Taking life needs as the fundamental purpose, coordinating development and safety, and focusing on improving the industrial foundation

Advanced and modernized industrial chains, focusing on optimizing traditional industries and product structures

Cultivate and expand the new materials industry, accelerate information technology empowerment, and complete the industrial chain

Short board, realize low carbon and recyclable, promote high-end industrial supply, rational structure,

Develop green, transform digitally, and make the system secure, in order to build a strong manufacturing nation.

We will take it to a new level and make a good start in building a modern socialist country in an all-round way.

Good steps provide strong support.

## (2) Basic Principles

—— **Innovation leads.** Take technological innovation as the primary driving force and promote all kinds of innovation

New factors gather in enterprises, strengthen the horizontal cooperation between industry, academia, research and application, strengthen process technology,

Vertical coordination of processing equipment and information technology, improving the industrial innovation ecology, and strengthening

Provide common basic technologies, break through strategic key technologies, and promote technological innovation and

Integrate industrial development and accelerate the industrialization and large-scale application of results.

—— **Market-driven.** Take respecting market rules as the basic principle and give full play to

Give full play to the decisive role of the market in resource allocation, strengthen the role of enterprises in investment decisions,

The dominant position in technology selection and other aspects. Follow the development law of raw materials industry, more

Better play the role of the government, focus on strategic planning guidance, standard and regulation formulation, market

Maintaining order, ensuring industrial safety, etc., to create a good development environment.

—— **Supply and demand coordination.** Taking meeting domestic demand as a priority, we should base ourselves on new development

The new pattern requires stabilizing the reasonable proportion of raw materials industry, strengthening resource guarantee, and improving

High supply quality, promote the coupled development of raw materials industry, strengthen the connection between upstream and downstream,

Form a high-level dynamic balance in which demand drives supply and supply creates demand.

—— **Green and safe.** Taking green safety as the bottom line of development, focusing on carbon peak

Carbon neutrality goal, improve energy conservation and environmental protection level, strengthen the whole production

Green, low-carbon and safe development of the industry chain and the entire life cycle, focusing on improving the capacity of key industries

quality and safety level, and realize the organic integration of economic benefits, ecological benefits and social benefits

one.

### (3) Development goals

arrive2025In 2019, the raw materials industry ensured and led the high-quality development of the manufacturing industry

The capacity of the company has been significantly enhanced; the growth rate of added value has remained at a reasonable level, and it has

Focus on basic stability; the scale of the new materials industry continues to increase, accounting for a larger proportion of the raw materials industry

Significantly improved; initially formed higher quality, better benefits, better layout, more

A greener and safer industrial development pattern.

—— **The level of high-end supply continues to improve.**Advanced basic materials and high-end products

The quality stability, reliability and applicability have been significantly improved.

Mass production and typical applications are now underway. Breakthroughs have been made in a number of key basic materials in key strategic areas.

The collaborative innovation system is more efficient and complete, and the national new materials platform system is initially established.

The innovation capability of the new materials industry has been significantly improved, and the R&D investment intensity of key industries has increased significantly

achieve1.5%Above, master a number of key common cores with independent intellectual property rights

technology.

—— **The level of structural rationalization continues to improve.**Crude steel, cement and other key raw materials

It is expected that the production capacity of bulk products will only decrease and not increase, and the capacity utilization rate will remain at a reasonable level.

The industrial concentration in key areas has further increased, forming5~10Furniture has an ecological orientation

## The industrial layout and production factors are more

Add synergy and form in the field of raw materials5More than one world-class advanced manufacturing cluster.

The level of intensiveness of chemical parks has been significantly improved, forming a number of petrochemical industrial bases.

—— **The level of green development has been greatly improved.**Steel, non-ferrous metals, building materials

The total energy consumption and carbon emissions of key industries have achieved phased results.

The comprehensive energy consumption per ton of steel in the steel industry has been reduced2%, cement product unit clinker energy

Reduced consumption levels3.7%, carbon emissions from electrolytic aluminum decreased5%. Key industry units produce

The intensity and total amount of pollutant emissions have both decreased, and all industries have achieved stable compliance with standards.

## Emissions, new projects meet ultra-low emission standards.

The utilization rate is further improved.

—— **The effects of industrial digital transformation are highlighted.**Intelligent manufacturing capability maturity3

Enterprises at or above20%Above, the CNC rate of key processes70%Above, steel

The CNC level of key processes in key areas such as key industries has been further improved.

The level of digitization, networking and intelligence has been significantly improved, and the network security protection capabilities of enterprises have been greatly

Speed up construction, construction100More than 10 smart manufacturing demonstration factories,10Work at home

Industry Internet platform.

—— **The foundation for system security is more solid.**Strategic resource support capabilities have been greatly improved

## Improve and form a basically stable resource guarantee system.

The level of independent control of technology and equipment has been greatly improved, and the breakpoints and bottlenecks in the industrial chain have become o

## The inherent safety level of key industries has been greatly improved.

The relocation and transformation tasks of hazardous chemical production enterprises have been fully completed.

arrive2035In 2017, it became the world's important raw material product research and development, production,

Application highland, comprehensive improvement of new materials industry competitiveness, green and low-carbon development level

The industry is world-leading, and the system is safe, independent and controllable.

### 3. Promote high-end industrial supply

#### (1) Improve the innovation system

**Strengthen support for innovation platform carriers.**Encourage leading enterprises to actively participate in national key

Construction of key laboratories and system restructuring, construction of national manufacturing innovation centers in key areas

Support the establishment of provincial innovation centers. Support the transformation of institutions to integrate industrial chains and innovation

New chain, establish industry common technology research platform, improve green metallurgy, high-end processing

Support local governments to adopt multiple measures based on local conditions.

Build national key new material pilot platforms in various forms. Increase the metrology of new material industry

Build testing centers, platforms and alliances. Continue to organize national new material production and application

Demonstration, testing and evaluation platform construction, and jointly promote product design, development and production,

System verification and batch application. Improve the innovation service support system and establish a national new

Public platform for materials research facilities. Establish new materials data center to improve data services.

The ability to develop the service industry.

**Optimize and improve the innovation mechanism ecosystem.**Support raw material companies to increase investment and

Cooperate with downstream enterprises, universities and research institutes to explore new technologies, equipment and products.

Develop basic research and applied innovation. Formulate salary system for scientific and technological talents in state-owned enterprises.

Incentive policies, performance appraisal, R&D investment, total salary, talent benefits, etc.

Select a group of enterprises with good innovation foundations to pilot

Enjoy the same technology transfer policies as universities and research institutes, and open up employee stock ownership

Restrictions, increase the weight of relevant indicators such as innovation results transformation in performance appraisal,

Priority will be given to key personnel who have made outstanding contributions.

To attract key foreign companies and research institutions to invest in China, build factories and set up R&D centers

Center, encourage Chinese and foreign institutions to cooperate in material technology innovation research. Support enterprises

Establish overseas materials technology and equipment R&D institutions and carry out international technology innovation cooperation

do.

## (2) Overcoming key technologies

Strengthen the deep integration of industry, academia, research and application, and promote scientific research institutes, universities and enterprises

Optimize the allocation of R&D forces and resource sharing to overcome the challenges of complex ore deposits and ultra-deep mine safety.

High-efficiency mining and other mining process technologies; overcome the control of component structure uniformity, raw materials

Material homogenization and purification and other process equipment technologies to improve product performance and stability;

Mercury-free production of polyvinyl chloride by calcium carbide method, low-temperature and low-concentration flue gas desulfurization and denitrification,

Fine particulate matter chemical agglomeration enhanced dust removal, solid waste (hazardous waste) coordinated disposal and resource

Pollutant prevention and control and comprehensive resource utilization technologies such as chemical utilization to improve resource and energy utilization

utilization rate and ultra-low emission level; overcome the problems of online detection and control, rapid identification of raw material properties

Identification and evaluation, equipment life cycle management, fault diagnosis and predictive maintenance, etc.

Intelligent manufacturing technology improves total factor productivity. Organize the promotion of advanced and applicable technologies.

Rollingly formulate and publish catalogues of advanced and applicable technologies for key industries.

Column1Key directions of technological innovation
<p><b>Petrochemical industry.</b>Promote the research and development of technologies such as highly selective catalysis, high-efficiency membrane separation, and intrinsically safe hazardous processes; specialty metallocene polyolefins, high-end lubricants, high-purity/ultra-high-purity chemicals and industrial specialty gases, and methane coupling to olefins. Promote the engineering of clean and efficient coal utilization, short-process coal-to-chemicals, and the full industrial chain preparation of bio-based materials; low-cost, harmless treatment and resource utilization of phosphogypsum; and carbon dioxide capture, storage, and comprehensive utilization. Promote the industrialization and application of technologies such as new microchannel reactor equipment and continuous flow processes, safe storage and transportation of hazardous chemicals, industrial internet and intelligent manufacturing, and low-global warming potential refrigerant alternatives.</p>
<p><b>Steel industry.</b>Promote the engineering of key common technologies such as high-efficiency, low-cost clean steelmaking, energy conservation and environmental protection, and the production of general and specialized equipment and components, including advanced electric arc furnaces and their manufacturing processes, near-net-shape manufacturing, specialty smelting, and high-end testing. Promote the industrialization and application of technologies such as backfill mining, low-grade and difficult-to-carry ores, sintering flue gas recycling, mechanized raw material yards, blast furnace gas fine desulfurization, high-efficiency desulfurization and denitrification, waste heat recovery, medium- and low-temperature waste heat utilization, and high-value-added resource utilization of steel slag.</p>
<p><b>Non-ferrous metals industry.</b>Promote the research and development of new technologies such as mechanical tunneling and continuous mining, green and efficient mining of ion-adsorption rare earth ores, efficient utilization of associated resources of rare earth and polymetallic ores and salt lake lithium, material recycling in the extraction and separation process, and the preparation of ultra-high-purity metals and targets. Promote technologies such as high-cleanliness and high-homogenization metallurgy, short-process preparation of high-performance alloys, precise penetration of selected areas of high-performance rare earth permanent magnet materials, and the engineering of intelligent manufacturing technologies such as intelligent unmanned mining, Internet of Things and cloud services for mine safety management, artificial intelligence batching and production scheduling, virtual simulation of key processes, online monitoring of smelting and separation, intelligent process control, and online quality detection using machine vision. Promote the industrialization of technologies such as efficient sorting and pre-selection of low-grade complex ores, efficient and comprehensive utilization of tailings and red mud, harmless disposal of hazardous waste containing harmful components such as fluorine and arsenic, and balanced utilization of high-abundance rare earth elements.</p>

application.

**Building materials industry.** Promote the research and development of new technologies such as deep desulfurization and denitrification of cement, enhanced dust removal through chemical agglomeration, and high-efficiency, low-carbon, and energy-saving technologies. Promote the engineering application of technologies for non-metallic mineral classification and purification, crystal protection, and particle shape and morphology control; specialty glass melting and forming technologies; advanced ceramic powder preparation technologies; high-temperature solid oxide fuel cell powder and component co-firing and forming sintering technologies; large-scale artificial crystal preparation technologies; integrated manufacturing of structurally and functionally integrated refractory materials; and in-service diagnostics and maintenance. Promote the industrialization and application of mining and material processing technologies, including fully unmanned operations in underground mines, 3D simulation of open-pit mines, unmanned blasting, and online ore monitoring; efficient graphite dissociation, large flake protection, and fluorine-free purification; and intelligent continuous furnace drawing of high-performance fibers such as specialty glass fiber and basalt fiber.

### (3) Breakthrough in key materials

Adhere to the material first and demand-driven equal emphasis, focus on national defense construction, people's livelihood

In order to meet the major needs of building a strong manufacturing country, a catalog of key materials products will be formulated on a rolling basis.

Formulate and publish a technical roadmap. Implement key short board material research and development actions, adopt the

Support material production and application companies to jointly conduct scientific research

Position, develop wide bandgap semiconductor and display materials, integrated circuit key materials,

Collaborative research on material-based materials, carbon-based materials, biomedical materials, etc.

Basic materials consolidation and improvement actions to guide enterprises to optimize production processes

In terms of advanced manufacturing, we will use the new generation of information technology such as the Industrial Internet to enhance the foundation of advanced

Steel for parts, high-strength aluminum alloys, rare and precious metal materials, special engineering plastics

materials, high-performance membrane materials, new fiber materials, composite materials, etc.

Implement the forward-looking layout action of cutting-edge materials, support scientific research units to cooperate with enterprises, and grasp

The integration and development trend of new material technology, information technology, nanotechnology, and intelligent technology

To develop superconducting materials, intelligent bionics, additive manufacturing materials, etc., and promote new

Systematically develop the backbone materials and strengthen support and guidance in application areas.

Material genetic engineering plan to explore the pilot application of new material R&D models.

Key material application promotion action, optimize insurance compensation for the first batch of key new materials applications

Mechanism, through the first (set), green building materials promotion and other measures to promote the application of new materials

use.

Column2New Materials Innovation and Development Project
<p><b>Breakthrough in key varieties.</b>Focusing on key application areas such as large aircraft, aero engines, integrated circuits, information and communications, bio-industry and energy industry, we will conquer a number of key materials such as high-temperature alloys, aviation light alloy materials, ultra-high purity rare earth metals and compounds, high-performance special steels, degradable biomaterials, special coatings, photoresists, targets, polishing fluids, industrial gases, bionic synthetic rubber, artificial crystals, high-performance functional glass, advanced ceramic materials, special separation membranes, and high-performance rare earth magnetic, catalytic, optical functional, and hydrogen storage materials.</p> <p><b>Improve public platforms.</b>Build manufacturing innovation centers for high-end polyolefins, rare metals, powder metallurgy, advanced glass, and advanced ceramics. Build demonstration platforms for the production and application of information and communications equipment, energy conservation and environmental protection, and robotics equipment materials. Build regional centers for new material testing and evaluation platforms and new material data centers.</p> <p>arrive2025In 2018, the key material guarantee capability was enhanced, the public service capability was significantly improved, and new10More than one new material platform.</p>

#### (IV) Improving product quality

**Strengthen quality management and process control.**Continue to improve the quality of raw materials industry

Promote the stability, reliability and applicability of product quality.

And advanced production management models such as performance excellence, quality diagnosis, and continuous quality improvement.

Guide enterprises to strengthen comprehensive quality management, increase product testing and evaluation, and equipment maintenance

Guarantee, personnel job training, supplier quality control, user complaint feedback,

Strengthen the digital innovation and application of quality management

Guide enterprises to make full use of cloud computing, big data, blockchain, artificial intelligence,

New generation information technology means such as industrial Internet will promote advanced forming and processing methods.

Methods, online testing, intelligent manufacturing, etc., to establish a production process that meets application needs

Control and quality control system, improve fertilizer, cement, waterproof materials, thermal insulation

Quality control and traceability mechanism for the entire life cycle of products such as temperature-controlled materials.

**Promote product standards and brand building.**Based on international advanced quality standards

Rod, strengthen the construction of material standard system, improve and revise the "14th Five-Year Plan" raw materials

Industrial standard system, to establish standards covering the entire product life cycle and upstream and downstream collaboration

Standard system to promote resource conservation and rational use of materials. Focus on major technical equipment,

To meet the needs of major projects, we need to cultivate a batch of weathering steel, bearing steel, aviation aluminum, high

Group standards for high-end materials such as performance concrete, artificial crystals, and composite materials.

Focusing on consumption upgrading and green development, the government will revise and improve the quality of steel and copper used in construction.

(Gas) pipes, waterproof and thermal insulation materials, decorative and finishing materials, bio-based materials, etc.

Deeply participate in international standardization work and take the lead in formulating

Guide enterprises to strengthen brand development strategies and encourage them to formulate

Set enterprise standards that are higher than the relevant technical requirements of recommended standards.

Industry associations and professional organizations such as steel, nonferrous metals, and building materials develop brands

Cultivate the promotion and implementation of management system industry standards, quality benchmarks and brand evaluation activities, and strengthen

Strengthen industry self-discipline, increase the cultivation and promotion of industrial cluster quality brands and corporate brands, etc.

Spread the power and enhance brand influence.

**Improve the quality evaluation and certification system.**Establish a public foundation for quality improvement technology

Service platform to improve the production of mineral products, smelting products, sintered products, processed materials, etc.

Product stability test verification, environmental adaptability evaluation, failure and defect analysis,

## Improve the quality evaluation system and promote process capability

Evaluation. Carry out the action of improving the measurement capacity of raw material industry enterprises and encourage them to complete

Improve the measurement management system, strengthen the measurement equipment confirmation and measurement process control, and establish

Enterprise measurement guarantee system. Promote the development of industries such as steel, nonferrous metals, and building materials.

Quality grading evaluation, strengthen the effective connection with product standards, measurement and testing technology

Continue to carry out green building material certification. Establish a new material certification system to support the city

The construction of a third-party high-end quality certification agency with a focus on the market and professionalism promotes quality compliance.

## The whole industry chain, the whole life cycle, the whole

domain evaluation demonstration, build an international certification brand, and actively promote international certification agencies

Mutual recognition of certification results and evaluation standards.

### IV. Promote the rationalization of industrial structure

#### (1) Consolidating the achievements of capacity reduction

**Strictly control new production capacity.** Improve and strictly implement the steel, cement, flat glass,

Relevant policies on capacity replacement in the electrolytic aluminum industry to prevent blind

Disorderly development, new construction, renovation and expansion projects must meet the energy consumption limit standard advanced value,

Ultra-low pollutant emission values. Strictly control urea, ammonium phosphate, calcium carbide, caustic soda, yellow phosphorus, etc.

For new capacity added in the industry, new projects should implement capacity replacement with equal or reduced capacity.

All regions will expand the scope of capacity replacement in the raw materials industry and improve the elimination of outdated standards.

Standards should be used to promote the withdrawal of obsolete production capacity in accordance with laws and regulations.

Restricted and eliminated projects in the Guiding Catalogue for Industrial Restructuring.

**Establish a sound long-term mechanism.** Research and establish the application of carbon emissions, pollutant emissions, energy

The constraint mechanism of curbing the expansion of excess production capacity by means of total consumption and other means.

Emission requirements, urban steel mills with weak competitiveness, and key areas for air pollution prevention and control

Urban steel mills have adopted measures such as complete closure, transformation and development, on-site transformation, relocation and transformation, etc.

Implement normalized staggered production of cement and explore the establishment of

Staggered production mechanisms in industries such as steel. Strengthen planning for petrochemical and modern coal chemical industries.

and planning environmental impact assessment, combined with the implementation effect of the 13th Five-Year Plan and the carbon peak and carbon neutrality

and requirements, scientifically determine the reasonable scale of industry development. Implement energy-saving review and strictly

Control the fuel coal consumption of major coal-consuming industries such as petrochemicals, steel, and building materials.

Improve the long-term working mechanism to prevent overcapacity, open up reporting channels, and strengthen joint

Enforce law, strengthen industry early warning, and make full use of satellite monitoring, big data and other technical tools

During this period, we will intensify the investigation and punishment of illegal and irregular new production capacity additions, and continue to maintain high pressure

Attack posture.

## (2) Guiding rational layout

**Optimize the layout of new production capacity.** Implement major national regional strategies and regional coordination

Development strategy, main functional area strategy, based on national land space planning, promote raw materials

Adjust and optimize the spatial layout of the petrochemical industry. Implement the petrochemical industry planning and layout plan, strictly

It is forbidden to build new non-planned paraxylene and ethylene projects. Optimize the production layout of hazardous chemicals.

The Bureau prohibits the construction and expansion of hazardous chemical production projects outside chemical parks.

The external safety protection distance of hazardous chemical production projects must comply with relevant requirements.

Chemical enterprises in key river basins will be relocated and renovated to enter compliant chemical parks.

The iron smelting project is built on the basis of the existing iron and steel smelting production plants with the necessary conditions.

Coastal areas should orderly arrange alumina and other projects that utilize overseas resources.

Release the mining rights of sand and gravel resources and rationally arrange a number of large-scale machine-made sand and gravel production bases.

Support local governments to combine their own advantages and industrial bases to make reasonable layout in line with the strategy

New materials project in the classification catalog of emerging industries.

**Promote standardized and clustered development.** Formulate chemical park certification conditions and provide guidance

Local governments have designated a number of chemical parks to guide the clustering and standardized development of chemical companies.

The petrochemical industry explores the integration of modern coal chemical industry with traditional refining industry and renewable energy

The complementary development of energy-generating and hydrogen-producing industries will guide the steel industry to rely on urban mine construction.

Distributed short-process steel mills promote the layout of the electrolytic aluminum industry from "coal-electricity-aluminum"

Shifting to "clean energy such as hydropower, wind power, etc. - aluminum" and promoting the building materials industry to move towards collaboration

The development of a circular economy model for waste disposal. Promote the development of the national raw materials sector.

Construction of new industrialization demonstration bases to promote the transformation of industrial agglomeration into clusters

Focus on industry segments with a good industrial foundation, outstanding comparative advantages, and leading technologies

fields or key products, give full play to the leading role of leading enterprises in the industrial chain, and promote

Factor aggregation and value enhancement, strengthening professional collaboration and supporting capabilities, and creating a

Batch of petrochemicals, steel, non-ferrous metals, rare earths, green building materials, new materials production

Timely release of capacity warnings to prevent blind duplication of construction at the local level.

### (3) Optimizing organizational structure

**Make leading enterprises bigger and stronger.** Adhere to the combination of market-led and government-driven

Remove obstacles to cross-regional mergers and reorganizations, and clear restrictions such as market segmentation and regional blockades.

Coordinate and resolve major issues concerning cross-regional mergers and reorganizations of enterprises, and support enterprises in accelerating cross-regional mergers

regional and cross-ownership mergers and reorganizations to increase industrial concentration and conduct international operations.

## Cultivate a group of talents with

A leading enterprise in the industry chain with ecological dominance and core competitiveness, strengthening and expanding rare earth

**Enterprise groups, encourage rare metal enterprises to accelerate integration.**

Leading enterprises in the industry play a leading role in promoting enterprise restructuring and reform.

Mergers and reorganizations of steel and other industries will be supported by capacity replacement policies.

Standardize the management of the industry and promote the concentration of market elements to dominant enterprises. Encourage financial institutions

In accordance with the principles of controllable risks and sustainable business, we will implement mergers and reorganizations, transformation and upgrading.

Provide comprehensive financial services to high-quality raw material enterprises.

**Cultivate and expand small and medium-sized enterprises.** Improving the innovation capabilities of small and medium-sized enterprises in the raw materials

and professional level, and encourage leading enterprises to incorporate supporting SMEs into common production

Industry chain management, quality management, standard management, cooperative R&D management, etc., to establish a stable

Establish a certain supply, production, sales and other cooperative supporting relationship to achieve financing of large, medium and small enterprises

Focus on the advanced basic technology of raw material industry chain, core basic parts

Components, etc., cultivate a group of specialized and innovative "little giant" enterprises and manufacturing units

Champion enterprise.

(IV) Promoting industrial collaboration

**Expand domestic demand for medium and high-end materials.**For new infrastructure construction, high-end equipment

major projects such as infrastructure construction, new urbanization, transportation and water conservancy, and the people's well-being

life requirements, accelerate the upgrading of traditional materials, and break the hidden problems that restrict the application of materials

Revise and improve design and application specifications, expand green

Building materials and other mature products in the domestic demand market, promote the application of green building materials and pilot urban construction

Promote prefabricated buildings and steel-structured houses, and explore high-end materials such as high-performance aluminum.

Material consumption potential. Vigorously develop new markets and new uses for traditional products, and continuously improve

Improve the competitive advantage and efficiency of traditional industries. Strengthen the supply and demand structure of raw materials industry.

Matching, reducing ineffective supply, expanding effective supply, and improving the supply structure to meet demand

The adaptability of the structure promotes the formation of a high level of demand driving supply and supply creating demand.

Horizontal dynamic balance.

**Strengthen upstream and downstream linkages.**Raw material companies strengthen cooperation with upstream and downstream companies

Symbiosis and coupled development, extending to the production of parts and components, and providing a

The transformation of integrated material system solutions.

Continuously improve the cooperation model to promote business model innovation and format innovation, and promote

Transform production-oriented manufacturing to service-oriented manufacturing. Support industry associations to build supply and demand linkages

Platform. Establish and improve aviation materials, heavy gas turbine materials, integrated circuit materials

Materials, rare earth permanent magnet materials for new energy vehicle drive motors, biomedical materials,

Upstream and downstream cooperation mechanisms such as hot-rolled steel for construction.

Support third-party organizations to organize and carry out the "One

"Dragon" application demonstration promotion work.

V. Accelerate the greening of industrial development

(1) Actively implement energy-saving and low-carbon actions

Focusing on the carbon peak and carbon neutrality target nodes, we will strengthen the concept of carbon efficiency development.

Comprehensively implement carbon emission reduction actions, incorporate carbon emissions into environmental impact assessments, and give full play to the role of

Synergistic effect of pollution reduction and carbon reduction. Formulate petrochemical, steel, nonferrous metals, building materials, etc.

Carbon peak implementation plan for key industries to ensure2030Achieve peak before the end of the year, encourage

Industries and enterprises with conditions will reach peak production first. Support enterprises to implement raw material and fuel substitution.

The new era will accelerate the industrial coal-to-electricity and coal-to-gas conversion, increase renewable resources and clean

Energy use ratio. Support enterprises to use waste heat and waste pressure to generate electricity and connect to the grid. Support steel

Key industries such as iron and cement will establish statistical accounting and monitoring of carbon emissions throughout the production process

Accelerate the energy-saving and low-carbon transformation and upgrading of raw material enterprises, and encourage

The company established an energy management center and implemented energy cascade utilization.

Trade structure, encourage the increase of imports of primary processed products, strictly control high energy consumption,

Export of low value-added products. Strengthen energy conservation supervision in key industries and implement mandatory

Establish energy consumption quota standards for certain products. Carry out industrial energy conservation diagnosis services. Strictly implement

The tiered electricity price policy for key industries such as iron, cement, and electrolytic aluminum will be improved to promote green development.

Differentiated electricity price policy for low-carbon development.

Column3Low-carbon manufacturing pilot project
Implement technical breakthroughs.Organize research and development of heavy and inferior oil processing and efficient conversion and utilization, large-scale high-efficiency energy-saving advanced

Technologies such as coal gasification, production of chemical products using carbon dioxide as raw materials, hydrogen-rich carbon circulation blast furnaces, hydrogen energy kilns, and hydrogen-based direct reduction.

**Promote advanced technology.**The petrochemical industry will promote low-carbon technologies such as direct production of chemicals from crude oil, intelligent micro-reactions and continuous production of fine chemicals, and bio-fermentation of ethanol from industrial exhaust gases containing carbon monoxide. The steel industry will promote low-carbon technologies such as the use of recycled steel materials, near-net-shape short-process casting and rolling, and biometallurgy from low-grade resources. The non-ferrous metals industry will promote low-carbon technologies such as high-current-density, low-energy aluminum electrolysis, continuous blowing of hot copper matte, and low-carbon raw material substitution. The building materials industry will promote low-carbon technologies such as co-processing, low-carbon and high-performance cement, carbon capture and purification, full-oxygen and oxygen-enriched combustion, full electric melting and electric boosting, raw material and fuel substitution, and forming and sintering.

**Build pilot projects.**Organize and implement low-carbon smelting pilot projects such as hydrogen metallurgy and non-blast furnace ironmaking, carry out pilot projects for the promotion and application of carbon dioxide capture and storage technologies in industries such as cement and coal chemical industry, promote the application of carbon dioxide in oil recovery and synthesis of organic chemicals, and carry out pilot projects for low-carbon cement, hydrogen kilns and carbon-fixing building materials.

arrive2025In 2018, phased results were achieved in controlling total carbon emissions in key industries such as steel, non-ferrous metals, and building materials.

## (2) Promoting ultra-low emissions and clean production

Promote the implementation of ultra-low emission transformation in the steel industry, research and promote the chemical, coking, Electrolytic aluminum, copper smelting, lead and zinc smelting, cement, glass, refractory materials, graphite Deep processing, ceramics and other key industries implement ultra-low emissions. Petrochemical and chemical companies are encouraged to Carry out initial rainwater collection and treatment, and organize enterprises in petrochemical, chemical, steel and other industries to start Carry out internal water-saving renovations. For enterprises that produce, use and discharge priority controlled chemicals industry, implement mandatory clean production audits, promote petrochemicals, nonferrous metals, Key industries such as building materials have formulated clean production transformation and upgrading plans, and innovated raw materials.

## Strengthen the centralized planning of tail gas resources in industrial parks.

Management and water cascade utilization, centralized treatment, promote the recycling and cleaning of industrial tail gas

## Strengthen the management of heavy metal pollution in the nonferrous metals industry,

Chemical treatment of hazardous wastes such as arsenic-containing smelting slag and aluminum ash. Restrict and gradually eliminate highly toxic, Highly polluting and high environmental risk chemical products and process technologies are prohibited from illegal production,

Use of persistent organic pollutants and prohibit the illegal production of mercury-added products. Support enterprises

Research, develop, promote and apply technologies to reduce the amount of industrial solid waste generated and reduce the hazards of industrial solid waste

Harmful production processes and equipment. Strengthen the green development concept of the entire product life cycle

concept, vigorously promote green technology and green products. Guide enterprises and parks to carry out

Improve environmental performance management, strengthen intelligent management and integrated governance, and comprehensively build green

Factories and green parks. Strengthen mine ecological restoration and build green mines.

Establish a number of key standards for environmental emissions, water conservation, etc.

### (3) Improving the level of comprehensive resource utilization

Support efficient resource utilization and continuously improve key technologies and process management levels

level, improve the efficiency of primary resource utilization, and reduce resource and energy consumption from the source.

Comprehensively promote the comprehensive utilization of industrial solid waste of raw materials, focusing on tailings, waste rock,

Fly ash, red mud, smelting slag, electrolytic manganese slag, industrial by-product gypsum, chemical waste

slag, waste fiber and composite materials, etc., and build a number of industrial resource comprehensive utilization bases

In key areas, comprehensive utilization of tailings waste, phosphogypsum, electrolytic manganese slag, etc.

Co-processing of zinc-containing secondary resources with steel and nonferrous metals, as well as coal gasification furnaces,

Cement kilns, large-scale sintered brick tunnel kilns and other demonstration lines for the coordinated disposal of waste will accelerate

Achieve harmless, reduced and resource-based disposal. Encourage implementation nationwide

Phosphogypsum "production is determined by slag". Accelerate the treatment of plastic pollution and plastic recycling, promote

Promote the industrialization and application of biodegradable plastics. Develop and improve the comprehensive utilization of resources.

Promote the priority use of recycled raw materials in the industrial production process.

Unconventional water such as raw water and seawater can reduce the amount of new water used.

Deep treatment and recycling of wastewater from steel and other industries, creating a number of industrial wastewater recycling

Environmental utilization demonstration enterprises and parks. Encourage regions with conditions to promote petrochemical,

The coupled development of industries such as steel, nonferrous metals, building materials, and electricity will establish a raw material

Industrial coupling development park to achieve cascade utilization of energy resources and industrial cycle connection

Next, improve the resource price formation mechanism.

6. Accelerate the digital transformation of industries

1. Accelerating the intelligentization of manufacturing processes

**Promote the construction of digital infrastructure.** Encourage enterprises to combine production process conditions

Transformation to accelerate the digitalization of smart sensors, processors, gateways, instruments, etc.

Deployment of tools and equipment to improve production processes such as ore mining, smelting, and chemical reactions.

Real-time perception and data collection capabilities of production sites. Establish unified data integration and

Management platform to realize the whole process data set of R&D, production, operation, maintenance, etc.

Encourage qualified enterprises to apply 5G New generation information technology for the Internet

Upgrade the network and build a ubiquitous sensing and interconnected factory operating environment.

**Improve the level of intelligent production.** Encourage enterprises to develop applications based on data-driven

Advanced process control systems based on dynamic, mechanism, empirical and simulation models,

Optimize the operating parameters of production equipment. Establish a system for raw material feeding, reaction process,

Key links such as smelting process, quality control, pollutant emissions, and energy consumption

Real-time monitoring, abnormal working condition warning, full-process dynamic scheduling, and intelligent disposal.

Build digital twins for major production scenarios, process flows, and key core equipment

Model. Encourage high labor intensity, bad working environment, high safety risk, and precision

**Establish an integrated customer service, business management,**

An enterprise management and operational decision-making system that collects information such as production execution and process control.

**Accelerate the transformation of enterprise management system.** Support enterprises to carry out the integration of industrialization and information

The system is to carry out pilot demonstration and graded standard implementation assessment.

Assessment, clarify the development focus and improvement path of enterprises with different integration levels, and guide enterprises

Improve the level of information technology integration and application step by step or across levels. Support the two-industry integration of leading enterprises.

Integrate the promotion and replication of advanced practical experience and incorporate supporting enterprises into the common supply chain

In the management system of supply chain collaboration, quality control, cooperative R&D, etc., it drives the development of the industrial chain

The intelligent level of downstream enterprises is improved, and the security of the industrial chain and supply chain is enhanced.

Small businesses are accelerating transformation and upgrading, promoting the use of new generation information technology in R&D, design, production,

Popularization and application of technology in manufacturing, business management, product services and other aspects, and collaborative innovation.

## (2) Promoting the empowerment of the Industrial Internet

Accelerate the construction of secondary nodes for raw materials industry Internet identification resolution and promote the

The exploration of knowledge analysis in supply chain collaboration, product tracking and tracing, inventory management, etc.

Encourage leading enterprises to build network collaboration platforms among enterprises

To realize resource sharing and collaborative manufacturing among multiple production bases.

Leading enterprises build enterprise-level industrial Internet platforms to achieve integrated industrial chain and supply chain

tion, building characteristic industrial Internet platforms for specific industries and regions, and

Professional and technical industrial Internet platform. Encourage enterprises to connect their end-users based on the platform.

Based on user-side data and downstream customer needs, we will make adjustments to product structure and manufacturing

Restructure the process to achieve a shift from large-scale batch production to large-scale customized production

Transformation. Build a cross-industry and cross-field industrial Internet platform and explore the raw materials industry

Cross-sector integration with logistics, urban construction, energy and other industries. Encourage the subdivision of raw materials

Leading enterprises in the industry and third-party institutions take the lead in creating professional and distinctive original

Materials Industry Internet Platform promotes the digital transformation and cloud migration of key equipment

Focus on key links to cultivate and promote a group of process management industriesAPP reconciliation

Solutions, providing R&D design, software application, production and manufacturing,

Equipment operation and maintenance, business management, warehousing and logistics services. Accelerate the exploration of raw material processing

Industry and5G+The integrated development of "Industrial Internet" will create more typical application scenarios.

Empower enterprises to improve quality, reduce costs and increase efficiency.

(3) Strengthening the foundation for digital support

Promote the construction of intelligent manufacturing standard system by industry.

Test and verification platform to accelerate standard pilot and promotion in key industries and fields

Support the establishment of industry intelligent manufacturing alliances and expert committees.

Cultivate a group of raw material intelligent manufacturing system solution suppliers, industrial

Internet service providers, select and publish supplier lists.

Industry characteristics, forming a number of digital intelligent system solutions.

Combined with professional compound talents and team training, a group of raw materials

Leading team for digital and intelligent development of raw material industry. Deepen the implementation of raw material production enterprises

Classify and grade the network security of the industrial Internet and promote the application of commercial cryptography technology

Use it to enhance the industrial Internet security protection capabilities of enterprises in key industries.

Column4Digital empowerment project
<p><b>Carry out pilot demonstration.</b>Formulate guidelines and action plans for the digital transformation of intelligent manufacturing in key industries, and promote pilot demonstrations of intelligent mines and intelligent factories (workshops) that integrate intelligent production, intelligent operation and maintenance, and intelligent management. Promote the research and development and application of industrial Internet and intelligent equipment in mines, and encourage5GThe promotion and application of big data in mines and factories provides safe and convenient network connections for the digital construction of enterprises.</p> <p><b>Build a service platform.</b>Formulate an "Industrial Internet + Key Industries" action plan to support leading industry enterprises and digital service providers in building industrial internet platforms that connect consumption and production, supply and manufacturing, and products and services, with characteristics specific to the raw materials industry. Support local governments and industrial park management departments in building regional industrial internet platforms to promote the modernization of governance systems and industry management methods.</p> <p><b>Improve the standard system.</b>A number of smart manufacturing-related standards will be formulated around the smart factory reference architecture, data exchange technical specifications, data collection specifications, etc.</p> <p>arrive2025In the field of raw materials100More than 10 smart manufacturing demonstration factories,10Industrial Internet platforms for key industries of more than 100 countries.</p>

7. Ensure the security of the industrial system

(1) Improving resource guarantee capabilities

**Rationally develop domestic mineral resources.**Increase the shortage of iron ore, copper, potassium, etc.

We will intensify our exploration efforts for mineral resources and actively carry out prospecting in the deep and peripheral areas of existing mines.

Implement preferential tax policies to encourage the adoption of advanced technologies to reduce the generation of mining solid waste.

technology and equipment, to make efficient and intensive use of low-grade ores, and to encourage the comprehensive utilization of complex co-existing

When delineating ecological protection red lines and other control lines, it is necessary to

Mineral resource regions are fully connected. Appropriately build high-standard mines and strengthen domestic mining

The “ballast stone” role of production resources and basic guarantee capabilities. Optimize the annual total mining volume control

Establish an indicator management mechanism to scientifically regulate the scale of mining of rare earth, tungsten and other mineral resources.

Improve the mineral resource royalty policy.

**Expand diversified resource supply channels.**Develop "urban mine" resources and support

Advantageous enterprises have established large-scale scrap steel and recycled aluminum, copper, lithium, nickel, cobalt, tungsten, molybdenum

Recycling bases and industrial clusters, promote the recycling, dismantling, processing,

Integrated development of classification and distribution. Build a joint national and enterprise participation, product storage

A mineral resource reserve system combining resources and land reserves. Improve ore trading

Market system, forming an open, transparent, fair and reasonable pricing mechanism.

International cooperation in the field of resources should be carried out in accordance with the principles of equality, mutual benefit and win-win cooperation to optin

Foreign investment structure and layout, standardized and orderly participation in overseas resource development, and enhanced mineral resources

Global resource management capabilities. Encourage the import of low-carbon petrochemical raw materials such as light hydrocarbons. Strictly enforce

Implement import standards for recycled resources and promote the import of high-quality recycled resources.

Column5Strategic Resource Security Project
Implement the relevant planning requirements for strategic mineral resources, carry out domestic prospecting activities for strategic minerals, and achieve

Increase reserves. Support the construction of key domestic mines for iron ore, copper, and rare earth minerals, and select and build a number of high-efficiency development and utilization bases for important inorganic non-metallic mineral resources. Develop renewable resource recycling projects that comply with industrial policies. Encourage enterprises to conduct standardized overseas resource exploration and development, and build comprehensive resource bases that integrate mining, beneficiation, and smelting.

arrive2025In 2017, the resource guarantee capability was significantly improved, a stable and open resource guarantee system was established, a number of domestic first-class large-scale key mineral development enterprises were formed, and the construction15More than 10 key non-metallic mineral efficient development and utilization bases. Substantially increase the domestic self-sufficiency rate of iron metals, and the scrap steel ratio reaches30%The above figures show that the output ratios of recycled copper and aluminum are35%、 20%.

## (2) Enhance supporting capabilities

**Expand supporting supply channels.**Sort out the industrial chain and supply chain of key raw material industries

Short board, carry out the supply and security of key equipment, parts, instruments and meters, raw materials, etc.

Comprehensive assessment, formulate supporting supply guarantee work plan. Promote the establishment of key industry leading

The information sharing platform of the regional industrial chain and supply chain will strengthen the supply and demand of key supporting products

Support enterprises to establish a working mechanism to deal with the security of the industrial chain and supply chain, and establish

Improve the reserve system and enhance the emergency supply capacity. Encourage enterprises to formulate and implement "spare tire"

Plan to promote the diversification of supply channels. Support industrial clusters to develop the third

Spare parts and raw materials supply services.

**Strengthen the development and application of equipment with shortcomings.**Focusing on ground pressure monitoring equipment and collaborative

Technical equipment, large-scale melting and casting equipment, new rapid solidification smelting equipment and other special production equipment

Equipment, high-precision bearings, special valves, high-pressure pumps and other key components, non-destructive testing

Testing equipment and other precision instruments and meters, supporting upstream and downstream enterprises, research institutes and supporting

Enterprises carry out joint research to accelerate the breakthrough of bottlenecks and strengthen the industrial chain and supply chain

Independent and controllable capabilities. Utilize the insurance compensation mechanism for the first major technological equipment.

Encourage enterprises to actively develop and use innovative equipment. Timely adjust major technical equipment and

Product import key parts and raw materials catalog to create a fair and competitive market

Field environment.

Column6Chain filling and strengthening project
<p><b>Organize collaborative research.</b>Encourage innovation and integration among upstream, midstream and downstream enterprises in the industrial chain, as well as large, medium and small enterprises, organize collaborative research on high-end special production equipment, core components, precision instruments for testing, core raw and auxiliary materials, and industrial basic software, and clear bottlenecks and breakpoints in the supply chain.</p> <p><b>Expand supporting channels.</b>Promote the establishment of an information-sharing platform for the industrial chain and supply chain in key industries, strengthen the connection between supply and demand of key supporting products, establish industrial chain and supply chain alliances in key areas, support the formation of consortia between enterprises, and build an independent and controllable ecosystem through industrial collaboration. Research and establish a reserve system that takes into account both strategic and commercial reserves, support enterprises in formulating emergency reserve systems and work plans for important materials, key equipment, spare parts, etc. to respond to major emergencies, rationally plan reserve varieties and reserve cycles, and enhance enterprises' ability to resist risks.</p> <p>arrive2025In 2019, the breakpoints and bottlenecks in the major industrial chains and supply chains were effectively alleviated, and the safety level was significantly improved.</p>

(3) Improving production safety standards

**Strengthen the inherent safety of the enterprise.**Adhere to the people first, life first, strengthen security

Strengthen all-round technical transformation and eliminate technical equipment that does not meet the safety production requirements.

Promote source control in enterprises, reduce safety risks, and improve the inherent safety level of enterprises.

Implement the Industrial Internet + Safety Production Action Plan and use information technology to

Build a safe production perception, monitoring, early warning, disposal and

Evaluation system, research and formulate implementation guidelines for Industrial Internet + Safety Production in key industries

South, carry out pilot demonstration. Promote the construction of smart chemical parks, promote urban population

Relocation and transformation of hazardous chemical production enterprises in densely populated areas.

**Promote enterprises to fulfill their main responsibilities.**Guiding enterprises to implement safety production laws and regulations

Strengthen safety risk prevention awareness and fulfill the main responsibility of safe production

Support and encourage enterprises to promote safe production

Standardization construction, strengthening the role of safety technology and management team, and ensuring safe production

Training. Guide enterprises to improve the monitoring of key areas, key links and major hazards.

Detection and early warning mechanisms, establish and improve safety production risk classification management and hidden danger investigation and treatment

Management system.

## VIII. Safeguard Measures

### (1) Strengthening the implementation of the plan

Strengthen departmental coordination and top-down linkage.

All localities should strengthen the connection with this plan and make the plan

The main contents and major projects are included in the key work arrangements of the region.

Key industries such as steel will formulate specific

Implementation opinions. Establish a mid-term evaluation mechanism to review the completion of the plan and the implementation process.

Strengthen dynamic tracking of new problems and new situations that arise during the process, and make corrections according to procedures when necessary.

The industry organizations play a vital role in connecting enterprises and the government.

The beam plays a role in providing timely feedback on planning implementation issues and suggestions.

### (2) Strengthening policy coordination

Give full play to the guiding role of planning, strengthen finance, taxation, investment, import and export

Import, energy, ecological environment, natural resources, price and other policies and industrial policies

Coordinate and cooperate. Investment departments and natural resources departments at all levels should make planning

It is an important basis for the approval and filing of investment projects and the approval of land and sea use.

The layout and construction of chemical parks, bases, demonstration projects, major projects, etc. involved in the plan

The requirements of regional "three lines and one list" ecological environment zoning control should be implemented, and relevant development and construction

Environmental impact assessments should be conducted for planning and construction projects in accordance with the law.

Funding channels to support major projects involved in the plan. Deepen industrial and financial cooperation and give full play to

The national industrial and financial cooperation platform plays a role in

Actively support projects that are in line with the plan. Actively apply international common rules to create a fair

Create a level playing field for competition and strengthen intellectual property protection and services.

### (3) Strengthening talent support

Guide colleges and universities to optimize their discipline layout according to the development needs of the raw materials industry,

Expand the scale of professional talent training in disciplines such as mining, metallurgy, materials, and chemistry.

Deepen the construction of new engineering disciplines and optimize the professional structure in related fields. Develop the raw materials industry

Survey talent needs in key areas, build industry talent big data platform and expert information

Strengthen the training of urgently needed engineers and technical personnel, and implement vocational

Education quality improvement and excellence training plan. Increase the introduction and service of overseas high-level teams and talents.

Implement new materials talent training plan and continuously organize new materials field

Talents going abroad and domestic training.

### (4) Intensify publicity and guidance

Make full use of various media and adopt various forms to strengthen the planning content,

Publicize and report on implementation progress and typical experiences. Formulate refined industrial policies,

In addition to the misunderstanding that the raw materials industry is "one size fits all" classified as a "two highs and one capital" industry,

Effectively enhance industry confidence, guide the integrated development of industry and city, and provide high-quality raw materials industry

To create a good atmosphere of public opinion for the development of quality.

Use it to strengthen the dissemination and implementation of the plan.