

**Annex F21.B.**  
**(Non - Confidential version)**

Catalogue for the Guidance of Industrial Structure Adjustment 2019 (EN)

Annex to OFC Application Form

# Catalogue for the Guidance of Industrial Structure Adjustment

(2019 version)

## The first type of encouragement

### 1. Agriculture and Forestry

1. Farmland construction and protection projects (including high-standard farmland construction, farmland water conservation, efficient water-saving irrigation, farmland improvement, etc.), comprehensive land improvement

2. Construction of agricultural products and crop seed bases

3. Development of advanced technologies for the facility cultivation of vegetables, fruits and flowers (including soilless cultivation, development and application of high-quality, high-yield, high-efficiency standardized cultivation technology)

4. Development and application of standardized scale breeding technology for livestock and poultry

5. Prevention and treatment of major pests and animal diseases

6. Selection, breeding, conservation and development of fine varieties of animals and plants (including wild); Breeding; seed (seedling) production, processing, packaging, inspection, identification technology and storage, Development and application of transportation equipment

7. Dry farming and water-saving agriculture, conservation tillage, ecological agriculture construction, cultivated land consolidation, Development and application of technologies for rapid fertilization of cultivated land, water and fertilizer integration technology

8. Development and application of ecological planting (raising) technology

9. Demonstration and application of fully biodegradable mulch film on farmland and risk management and control of agricultural machinery repair

10. Feeds, feed additives, fertilizers, etc. that have obtained the green food production material mark

Pesticides, veterinary drugs and other high-quality, safe and environmentally friendly agricultural inputs and green food products

Food additive development

11. Inland watershed large lake resource enhancement and protection project
  12. Pelagic fishery, artificial reefs, fishery administration and fishing port projects
  13. Factory production of cattle and sheep embryos (in vivo) and semen
  14. Development and application of agricultural biotechnology
  15. Cultivated land maintenance management and development and application of soil, fertilizer and water saving measures
  16. Agricultural, forestry crops, livestock, poultry, and fishery germplasm resource protection areas and protection areas
- Collection, preservation, identification, development and application of animal and plant germplasm resources
17. Comprehensive utilization of crop straws (utilization of straws as fertilizers, utilization of straws as feeds, Utilization of straw as energy, utilization of straw as base material, utilization of straw as raw material, etc.)
  18. Comprehensive utilization and development project of rural renewable resources (biogas project, biological natural gas engineering, comprehensive utilization of "three marshes", biogas power generation, clean biomass energy supply, straw Chemical clean energy utilization project, waste fungus stick utilization, solar energy utilization)
  19. Grassland and forest disaster comprehensive management project
  20. Returning farmland to forest and grassland, returning grazing land to grassland and natural grassland vegetation restoration
- Artificial planting and processing of high-yield pasture
21. New diagnostic reagents, vaccines for animal diseases and low-toxicity and low-residue veterinary drugs (including Biological products) New process, new technology development and application
  22. Natural rubber and eucommia plantation production
  23. Development and application of monitoring technology for harmful elements of pollution-free agricultural products
- use

24. Development and application of harmless treatment of organic waste and industrialization technology of organic fertilizer
25. Development and application of pollution-free and green production technology for agricultural, animal husbandry

26. Storage and transportation, preservation, processing and comprehensive utilization of agricultural, forestry, animal

27. Shelterbelt projects, natural resource protection projects such as natural forests, forest tending, low

#### Quality and Low-Efficiency Forest Improvement Project

28. National reserve forest construction, characteristic economic forest construction, carbon sink forest construction, timber  
Grass engineering and forest and grass seedling engineering, construction of woody grain and oil bases such as oil tea and oil  
Oriented cultivation and industrialization of energy forests

29. Comprehensive control project of soil erosion, desertification and rocky desertification prevention and control, and  
engineering

30. Natural protection of oceans, forests, wild animals and plants, wetlands, deserts, grasslands, etc.

#### District construction and ecological demonstration project

31. Production of new materials for sand fixation, water conservation and soil improvement

32. Cultivation of salt-tolerant and drought-tolerant plants

33. Bamboo, rattan and flower base construction, product development and deep processing

34. Forest trees and grassland genetic resources protection project, wild economic forest tree species protection and in  
Development and utilization

35. Protection project of rare and endangered wild animals and plants and ancient and famous trees

36. Deep processing and product development of sub-small fuelwood, sand shrubs and three leftovers

37. Wild animal and plant cultivation, domestication and breeding bases and epidemic source disease monitoring and  
Construction

38. Cultivation of authentic Chinese medicinal materials and high-quality, high-yield, endangered or scarce animal and

(Cultivation), artificial cultivation and development of understory resources such as spices and wild flowers

39. Technical development of wood, bamboo, grass (including straw) man-made panels and their composite materials  
application

40. Pine resin forest construction, deep processing of forest chemicals

41. Development and application of artificial weather influencing technologies such as artificial rain enhancement and

42. Development and application of digital (information) agriculture, forestry and grass technology

43. Development and application of agricultural and rural environmental protection and governance technologies

44. Freshwater and seawater healthy aquaculture and deep processing of products, freshwater and seawater fishery res

Proliferation and protection, marine pasture

45. Construction of ecologically clean small watersheds and prevention of non-point source pollution

46. Grain and oil drying and energy-saving equipment, farmers' green food storage biotechnology, rodent repellent tec

New granary storage silos for farmers (color steel plate combination silo, steel frame rectangular silo, steel mesh drying silo

Hot-dip galvanized steel silo, etc.) popularization and application

47. Development and application of automatic monitoring technology for crop and forest pest density

48. Meteorological satellite engineering (satellite development, production and supporting software systems, ground c

Processing equipment, satellite remote sensing application technology) and meteorological information services

49. Digital transformation of agricultural production and smart agricultural engineering

50. Collection and treatment of waste water from rural toilets and kitchen waste and ecological agriculture

Joint operation

51. Rural domestic wastewater, domestic waste, livestock and poultry manure, agriculture for resource utilization

Synergistic and comprehensive treatment of waste and farmland non-point source pollution

52. Leisure agriculture and rural tourism boutique projects

4

53. Livestock and poultry breeding waste treatment and resource utilization (livestock and poultry manure fertilizer, ei

Source, base and litter utilization, harmless treatment of sick and dead livestock and poultry)

54. Digital rural construction and information entering villages and households

55. "Internet +" agricultural products leaving the village and entering the city project

56. Development and development of energy-saving, material-saving and environmentally-friendly processing technol

use

57. Application of wet alcohol grains (WDGS), application of biomass liquid organic fertilizer

2. Water conservancy

1. Construction of rivers, lakes and sea dikes and river treatment projects

2. Cross-basin water transfer project

3. Urban and rural water supply and source engineering

4. Rural drinking water safety project
5. Construction of flood storage and detention area
6. Rivers, lakes and reservoir dredging projects
7. Reinforcement projects for dangerous reservoirs and sluices
8. Development and application of monitoring and repairing technology for hidden dangers of dams
9. Urban waterlogging warning and flood control projects
10. Renovation project of entrance to sea
11. Comprehensive utilization of water conservancy project
12. Silt dam project
13. Development and manufacturing of geosynthetics and new materials for water conservancy projects
14. Construction and renovation of irrigation areas and supporting facilities

5

15. Promotion and application of efficient water transmission and distribution and water-saving irrigation technologies
16. Renewal and reconstruction project of irrigation and drainage pumping station
17. Water conservancy schistosomiasis control project
18. Mountain torrent geological disaster prevention project (monitoring and forecasting of mountain torrent geological  
The construction of the police system and the treatment of mountain flood ditch, debris flow ditch and landslide, etc.)
19. Water ecosystem and groundwater protection and restoration project
20. Water source protection project (division of water source protection area, isolation protection, soil and water conse  
Support, water resources protection, water ecological environment restoration and related technology development and pror
21. Development and application of automatic monitoring and forecasting system for soil erosion
22. Development of automatic flood control system, technology and application of flood risk map compilation (large  
Flood disaster information in specific areas such as the middle and lower reaches of the river and key flood control areas an  
Thematic map)
23. Construction of water resources management information system
24. Hydrological station network infrastructure and hydrological and water resources monitoring capacity building
25. Development and utilization of unconventional water sources
3. Coal

1. Coal field geology and geophysical exploration
2. Mine disasters (gas, coal dust, mine water, fire, surrounding rock, ground temperature, impact Ground pressure, etc.)
3. Development and application of briquette and coal water slurry technology
4. Processing and comprehensive utilization of co-associated resources of coal
5. Exploration, development and utilization of coalbed methane and extraction and utilization of coal mine gas

6

6. Comprehensive utilization of low-calorific value fuels such as coal gangue, coal slime and washed coal
  7. Pipeline coal transportation
  8. Development and application of clean and efficient coal washing technology
  9. Treatment of ground subsidence areas, protection and utilization of mine water resources
  10. Integrated construction of coal and electricity
  11. Coal mining method, process development and application to improve resource recovery rate
  12. Used in mine goafs, under buildings, railways and other infrastructures, and under water bodies
- Development and application of coal mining technology filled with gangue and other materials
13. Development and application of underground rescue technology and special equipment
  14. Development and application of comprehensive monitoring technology and equipment for coal mine production process
  15. Construction of large coal storage and transportation centers, coal trading markets and environmental protection measures
- Make
16. Development and application of new type of self-rescue equipment for miners
  17. Coal mine intelligent mining technology and coal mine robot R&D and application
  18. Coal clean and efficient utilization technology
4. Electricity
  1. Large and medium-sized hydropower and pumped storage power stations
  2. Construction of ultra-supercritical unit power stations with a single unit of 600,000 kilowatts and above
  3. Adopt back pressure (back-pumping) type cogeneration, cogeneration, 300,000 kilowatts
- And above ultra (super) critical combined heat and power units

4. Construction of large-scale air-cooled power plants with a single unit of 600,000 kilowatts and above in water-scarce areas
5. Natural gas peak shaving power generation projects in important power load centers and areas with sufficient natural gas resources

7

6. Circulating fluidized bed of 300,000 kilowatts and above, pressurized fluidized bed, integrated coal gasification unit  
Clean coal power generation such as combined cycle power generation

7. A single unit of 300,000 kilowatts and above adopts a fluidized bed boiler and uses coal gangue, Chinese coal, coal slime and other power generation

8. AC and DC transmission and transformation of 500 kV and above

9. Ultra-low emission technology for coal-fired generating units

10. Power grid transformation and construction, incremental power distribution network construction

11. Development and application of relay protection technology and power grid operation safety monitoring information system

12. Intensive design and automation technology development of large power stations and large power grid substations  
application

13. Development and application of cross-regional grid interconnection engineering technology

14. Promotion and application of energy-saving and environmental protection technologies for power transmission and distribution

15. Development and application of technologies for reducing transmission, transformation and distribution losses

16. Popularization and application of distributed power supply and grid connection (including microgrid) technology

17. Coordinated treatment of multiple pollutants from coal-fired generating units

18. Thermal power generation waste flue gas denitration catalyst regeneration and low temperature catalyst development

19. Technical development of low-temperature water restoration measures and fish-passing measures in hydropower  
And application

20. Development and application of large-capacity electric energy storage technology

21. Electric vehicle charging facilities

22. Ventilation gas power generation technology and its development and utilization

23. Complete sets of waste incineration power generation equipment

8



24. Distributed energy

25. Efficient electric energy substitution technology and equipment

26. Coal-fired coupled biomass power generation

27. Flexibility transformation of thermal power generating units

28. Smart Energy System

5. New energy

1. Development of integrated technologies for solar thermal power collection systems and solar photovoltaic power generation  
Development and application, inverter control system development and manufacturing

2. Development and application of complementary system technologies for hydrogen energy, wind power and photovoltaic

3. Design and manufacturing of integrated solar building components

4. High-efficiency solar water heater and hot water project, solar energy medium and high temperature utilization technology  
Development and equipment manufacturing

5. Biomass cellulosic ethanol, biofuel (diesel, gasoline, aviation kerosene)

Development and application of non-grain biomass fuel production technology

6. Biomass direct combustion and gasification power generation technology development and equipment manufacturing

7. Development and equipment manufacturing for collection, transportation and storage of agricultural and forestry biomass  
Manufacturing of processing equipment, boilers and stoves for agricultural and forestry biomass briquettes

8. Use crop straw, livestock manure, domestic garbage, industrial organic waste,

Large-scale biogas and biological gas using various urban and rural organic wastes such as organic sewage sludge as raw materials  
Natural gas production equipment

9. Biogas generator set, biogas purification equipment, biogas pipeline gas supply, complete set of canning

Equipment manufacturing

10. Ocean energy and geothermal energy utilization technology development and equipment manufacturing

11. Technology development and equipment manufacturing of offshore wind turbines of 5MW and above
  12. Offshore wind farm construction and equipment and submarine cable manufacturing
  13. Energy Internet technologies and equipment such as energy routing and energy trading
  14. Development and application of high-efficiency hydrogen production, hydrogen transportation and high-density hydrogen refueling stations and clean alternative fuel refueling stations for vehicles
  15. Development and application of mobile new energy technology
  16. Development and application of complementary technologies for traditional energy and new energy power generation
- Six, nuclear energy
1. Geological exploration of uranium mines, uranium mining and metallurgy, uranium refining, uranium conversion
  2. Construction and technology development of advanced nuclear reactors and multi-purpose modular small reactors
  3. Nuclear power plant construction
  4. Manufacturing of high-performance nuclear fuel components, MOX components, and metal components
  5. Reprocessing of spent fuel
  6. Development of isotope, accelerator and irradiation application technology
  7. Development of advanced uranium isotope separation technology and equipment manufacturing
  8. Radiation protection technology development and monitoring equipment manufacturing
  9. Development of key nuclear security systems and equipment manufacturing
  10. Decommissioning of nuclear facilities and treatment of radioactive waste
  11. Nuclear power plant life extension and decommissioning technology and equipment
  12. Emergency rescue technology and equipment for nuclear power plants
  13. Comprehensive utilization of nuclear energy (heating, steam supply, desalination, etc.)

10

## 7. Oil and natural gas

1. Conventional oil and natural gas exploration and exploitation
2. Unconventional shale gas, shale oil, tight oil, oil sands, natural gas hydrate, etc.

### Resource exploration and development

3. Storage and transportation and pipeline transportation of crude oil, natural gas, liquefied natural gas, and refined oil

### Construction, network and LNG bunkering facilities

4. Comprehensive utilization of oil and gas associated resources

5. Oil and gas field enhanced oil recovery technology, safe production guarantee technology, ecological environment r

Development and utilization of pollution control engineering technology

6. Vented natural gas recycling and device manufacturing

7. Development and application of natural gas distributed energy technology

8. Development and application of volatile oil and gas recovery technology in petroleum storage and transportation fa

9. Development and application of liquefied natural gas technology and equipment

10. Automatic monitoring equipment for oil and gas recovery

8. Steel

1. Ferrous metal mines take over resource exploration and key exploration technology development, low-grade

Comprehensive separation and utilization technology of refractory ore, green, efficient and intelligent production technolog  
Technology and equipment

2. Precise control of coke oven heating, resource utilization of coke oven flue gas desulfurization and denitration by-p

Resource utilization of desulfurization waste liquid, advanced treatment and reuse of coking wastewater, coal tar and carbor  
Needle coke from coal pitch, high value-added utilization of coke oven gas, raw gas and circulating ammonia, etc.

R&D and application of advanced technologies such as heat recovery, low-level pulverized coal drying and forming-dry dis

11

Comprehensive sewage advanced treatment and reuse, cold rolling wastewater advanced treatment and reuse, sintering flue  
R&D and application of water treatment and reuse technologies

3. Non-blast furnace ironmaking technology

4. High performance bearing steel, high performance gear steel, high performance cold heading steel, high performanc

Alloy spring steel, steel for advanced rail transit equipment, steel for energy saving and new energy vehicles, low

Iron loss high magnetic induction oriented electrical steel, high performance tool and die steel, high strength seismic for bui

Rebar, steel plate and section steel, ultra-high-strength bridge cable steel, high-performance pipeline steel, high performanc

Wear-resistant steel, high-performance corrosion-resistant steel, high-strength and high-toughness steel for engineering mac

Steel for equipment and high-tech ships, special steel for power equipment, high-quality oil and gas drilling for gathering ar

Quality special steel, high-performance stainless steel, high-temperature alloy, high ductility cold-rolled ribbed steel bar, no

High-strength steel, high-purity, high-quality alloy powder, composite

Steel, high-purity and high-performance steel for semiconductors

5. A new generation of heat engine with online heat treatment, online performance control, and online forced cooling  
Mechanical control processing (TMCP) process, direct rolling of cast slab, endless rolling, ultra-rapid cooling  
Technology applications such as cooling, energy-saving and high-efficiency rolling and subsequent processing

6. Ultra-high power electrodes with a diameter of 600 mm and above, micro-holes and ultra-micro holes for blast furnaces  
Carbon brick, special graphite (high strength, high density, high purity, high modulus), graphite (quality) anionization  
Development and production of graphitization furnaces for poles and inner strings, and development and production of environmental protection equipment

7. Production process of long-life energy-saving and environmentally friendly refractory materials for coke ovens, blast furnaces  
Low-carbon, carbon-free refractory materials for refined steel, thermal insulation materials and functions for high-efficiency  
Refractory production process

12

8. Whole-process quality control technology for steel products

9. Use steel production equipment to process social waste (excluding hazardous waste)

10. Ultra-low emission technology in the iron and steel industry, as well as by-product resource and reuse technology  
Technique

11. Metallurgical solid waste (including metallurgical mine waste rock, tailings, steel plant  
All kinds of dust, mud, slag, iron sheet, etc.) comprehensive utilization of advanced technology; metallurgical waste liquid (Wastewater, waste acid, waste oil, etc.) recycling technology and equipment

12. Development and application of recyclable process technology between steel and related industries

13. High-efficiency pellet production technology such as belt roasting, blast furnace high-proportion pellet smelting  
Refining technology

Nine, non-ferrous metals

1. Existing non-ferrous metal mines take over the exploration and development of resources, deep and scarce resource  
Difficult mining deposits

2. Development of high efficiency, low consumption, low pollution and new smelting technology

3. High efficiency, energy saving, low pollution, large-scale recycling and comprehensive utilization of renewable resources

Recycling of waste and miscellaneous non-ferrous metals (2) Comprehensive utilization of valuable elements (3) Red mud :

Comprehensive utilization of smelting waste residue (4) Extraction of alumina from high-aluminum fly ash (5) Tungsten smelting waste residue comprehensive utilization and harmless disposal

4. Information, new energy non-ferrous metal new materials production. (1) Information: 200mm in diameter Above silicon single crystals and polished wafers, diameter above 125mm, Czochralski or above 50mm diameter Horizontal growth of compound semiconductor materials, aluminum, copper, silicon, tungsten, molybdenum, rare earth and Ultra-high purity rare metals and targets, high-end electronic grade polysilicon, VLSI copper

13

Nickel silicon and copper chromium zirconium lead frame materials, electronic solders, etc. (2) New energy: nuclear sponge Zirconium and zirconium materials, high-capacity and long-life secondary battery electrode materials, precursor materials

5. Non-ferrous metal new materials in transportation, high-end manufacturing and other fields. (1) Hand in General transportation: copper alloy with compressive strength not less than 500MPa and conductivity not less than 80% IACS High-strength and high-conductivity copper alloys such as gold precision strips and ultra-long wire products, and the main s New high-strength, high-toughness, corrosion-resistant aluminum alloy materials and large-size products (aviation The compressive strength of aluminum alloy is not less than 650MPa, and the compressive strength of aluminum alloy for h Less than 500MPa), high-performance magnesium alloy and its products. (2) High-end manufacturing and other fields: Used in high-performance tungsten materials and tungsten-based composite materials in aerospace, nuclear industry, medical High-performance ultra-fine, ultra-coarse, composite structure cemented carbide materials and deep-processed products, high Porcelain carrier and rare earth catalytic materials, low modulus titanium alloy materials and memory alloys and other biom Materials, copper alloy and titanium alloy materials for corrosion-resistant heat exchangers, high-end gold for 3D printing It is a powder material, high-quality rare earth magnetic material, hydrogen storage material, optical function material, alloy Materials, special ceramic materials, additives and high-end applications

6. Continuous metal coils and vacuum for new energy, semiconductor lighting, and electronics Coating materials, high-performance copper foil materials

#### 10. Gold

1. Deep gold prospecting and mining (1000 meters and below)
2. Recovery of gold from tailings and waste rocks
3. High-efficiency and comprehensive utilization of valuable elements in gold smelting (recovery rate of beneficiation

≥75%; recovery rate of low-grade ore beneficiation ≥65% (excluding heap leaching); when gold and other

When minerals coexist, the comprehensive utilization rate is ≥70%; when gold is associated with other minerals, comprehensive

Utilization rate ≥50%)

#### 11. Petrochemical and chemical industry

1. The development and application of high-standard oil production technology, the production of p-xylene from coal

2. Exploration, development and synthesis of chemical mineral resources in shortage of sulfur, potassium, boron, lithium

Utilization, development and application of comprehensive utilization technology of phosphate ore dressing tailings, middle

Mineral mining and utilization, comprehensive utilization of associated resources of phosphate rock and fluorite mine

3. Energy-saving technology of zero pole pitch, oxygen cathode plasma membrane caustic soda electrolyzer, production

The development and application of comprehensive utilization technologies such as chlorine and new chromium salt cleaning

High-pressure water quenching slag and secondary pollution-free phosphorus sludge processing yellow phosphorus product

Potassium permanganate, total heat recovery thermal phosphoric acid production, large-scale defluorinated calcium phosphide

4. Ion exchange bisphenol A with a capacity of 100,000 tons/year and above, and direct

Propylene oxide by oxidation method, propylene oxide by co-oxidation method of 200,000 tons/year and above, 10,000 ton

Development and application of adiponitrile production equipment, 10,000-ton grade aliphatic isocyanate production technology

5. High-quality potash fertilizer and various special fertilizers, water-soluble fertilizers, liquid fertilizers, medium and

Production of nitro-based fertilizer and slow-release fertilizer, development and application of phosphogypsum comprehensive

6. Efficient, safe and environmentally friendly new pesticide varieties, new formulations, special intermediates

Development and production of chemicals and additives, production of chiral and three-dimensional pesticides by direction

Development and production of new pesticide products and technologies

7. Water-based woodware, industrial and marine coatings, high solids, solvent-free, radiation

Cured coatings, environmentally friendly and resource-saving coatings with low VOCs content, used in Dafei

Production of high-performance anticorrosive coatings in key areas such as machinery, high-speed rail, etc.; single-line process

Production of titanium dioxide by the above chloride method

8. High fixation rate, high color fastness, high liftability, high levelness, high reproducibility, Reactive dyeing for low staining and low salt, low temperature, low bath ratio dyeing and wet short steam pad dyeing Material, high superfine denier polyester fiber dyeability, high washing fastness, high dyeing rate, high light fastness And low staining (nylon, spandex), high alkali resistance, low toxicity, low harm, environmental protection type, small liquid Disperse dyes for dyeing, high washing resistance and high chlorine for dyeing polyamide fibers, wool and leather Bleaching, high level dyeing, high hiding power acid dyes, high color fastness, functional vat dyes, Organic with high color fastness, functionality, low aromatic amine, no heavy metal, easy to disperse, original paste coloring Pigments, water-based liquid colorants produced using the above dyes and pigments

9. New technologies for clean production and intrinsic safety of dyes, organic pigments and their intermediates (Including continuous sulfonation of fuming sulfuric acid, continuous nitration, continuous acylation, continuous extraction Hydrogenation reduction, continuous diazo coupling and other continuous processes, catalysis, sulfur trioxide sulfonation, a Thermal nitrification, directional chlorination, combined synergy, solvent reaction, hydrogen peroxide oxidation, recycling And other technologies, as well as applicable technologies to replace highly toxic raw materials such as phosgene, membrar Technology) development and application

10. Ethylene-vinyl alcohol copolymer resin, polyvinylidene chloride and other high-performance barrier resins, poly Special polyolefins such as isobutylene, ethylene-octene copolymer, metallocene polyethylene, high carbon  $\alpha$  Development and production of key raw materials such as olefins, liquid crystal polymers, polyphenylene sulfide, polyphen Production, blending modification and alloying of engineering plastics such as aromatic ketone polymer and polyarylether e Technology development and application, development of super absorbent resin, conductive resin and degradable polymer Development and production, development and production of new polyamides such as long carbon chain nylon and high ter

11. Bromobutyl rubber, solution polymerized styrene butadiene rubber, rare earth butadiene rubber with an annual cap Rubber, acrylate rubber, styrene-butadiene latex and isoprene latex with solid content greater than 60%

Development and production, development and application of synthetic rubber chemical modification technology, polyprop

Polyester (PTPE), thermoplastic polyester elastomer (TPEE), hydrogenated styrene-isoprene

Thermoplastic elastomer (SEPS), dynamic fully vulcanized thermoplastic elastomer (TPV), silicone

Development and production of modified thermoplastic polyurethane elastomer and other thermoplastic elastomer materials

12. Modified, water-based adhesives and new hot melt adhesives, environmentally friendly water-absorbing agents, w  
Treatment agent, molecular sieve solid mercury, mercury-free and other new high-efficiency, environmentally friendly catal  
Materials, functional membrane materials, ultra-clean high-purity reagents, photoresist, electronic gas, high-performance lic  
Development and production of new fine chemicals such as crystal materials

13. New organic silicon monomers such as phenylchlorosilane and vinylchlorosilane, phenyl silicone oil,  
Amino silicone oil, polyether modified silicone oil, etc., phenyl silicone rubber, phenylene silicone rubber, etc.  
Silicone rubber and hybrid materials, high-performance resins such as methyl phenyl silicone resin, triethoxy silane  
Efficient coupling agent

14. Special fluorine-containing monomers such as perfluoroalkenes, polyperfluoroethylene propylene, polyvinylidene  
High-quality fluororesin such as polychlorotrifluoroethylene, ethylene-tetrafluoroethylene copolymer, fluoroether rubber,  
High-performance fluorine rubber such as fluorine silicone rubber, tetrapropylene fluorine rubber, high fluorine content 246  
Fluorine grease, ozone depleting potential (ODP) is zero, global warming potential (GWP)  
Low Ozone Depleting Substances (ODS) Alternatives, Perfluorooctyl Sulfonyl Compounds (PFOS)  
And the development and application of substitutes and alternative technologies for perfluorooctanoic acid (PFOA) and its s  
Fluorine-containing fine chemicals and high-quality fluorine-containing inorganic salts

15. High-performance radial tires (including tubeless radial truck tires, giant engineering  
Radial tires (above 49 inches), low profile and flat (below 55 series)) and smart manufacturing  
Technology and equipment, aviation tires, agricultural radial tires and supporting special materials and equipment productio

17

Development and application of new natural rubber

16. Biopolymer materials, fillers, reagents, chips, interferons, sensors,  
Development and production of cellulose biochemical products

17. Carbon tetrachloride, silicon tetrachloride, methyltrichlorosilane, trimethylchlorosilane, etc.  
Comprehensive utilization of products, capture and application of carbon dioxide

12. Building materials



1. The use of new dry process cement kilns of not less than 2000 tons/day (inclusive) or not less than 6000 10,000 yuan/year (inclusive) new sintered brick and tile production line for co-processing waste, cement kiln co-processing Waste incineration fly ash is used for desalination pretreatment with water washing process; new dry cement kiln produces (Iron) aluminate cement, aluminate cement, white portland cement and other special cement processes R&D and application of technology and products; R&D of new static cement clinker calcination technology And application; new dry process cement kiln alternative fuel technology, flue gas carbon dioxide capture and purification Technology development and application; development and application of cement admixtures; energy-saving transformation Mud vertical mill, raw material roller press final grinding, etc.); cement packaging automatic bag inserting machine, packaging Development and application of loading machine

2. Ultra-thin substrate glass for electronic information industry with a scale of no more than 150 tons/day (inclusive) Glass, touch glass, high aluminum cover glass, carrier glass, light guide glass production line, technology Technical equipment and products; high borosilicate glass, glass-ceramic; for vehicles and solar equipment Aluminosilicate glass; large size (1 square meter and above) thin films such as copper indium gallium selenide and cadmium Membrane photovoltaic cell back electrode glass; functional glass for energy saving, safety, display, intelligent control, etc. Products and technical equipment; continuous automatic vacuum glass production line; full oxygen for glass melting furnace Oxygen-enriched combustion technology; one-kiln multi-line flat glass production technology and equipment; low-cost glass

18

Thermally conductive fused cast zirconium corundum, long life (12 years and above) chromium-free alkaline high-grade re

3. Partial building materials products suitable for prefabricated buildings; low-cost phase change energy storage walls Body materials and wall parts; photovoltaic building integration parts and components; rock wool composite products /Parts; Aerogel energy-saving materials; Class A flame-retardant insulation materials, composite vacuum for construction Thermal insulation materials, composite panels with integrated functions such as thermal insulation and decoration, bridges Long-life waterproof, anti-corrosion and flame-retardant composite materials used in lower pipe corridors, island and reef fi Materials, modified bitumen waterproofing membrane, polymer waterproofing membrane, water-based or high solid conten New building waterproof materials such as materials; functional decoration materials and products, green and aldehyde-free Plate making and pavement brick (board), pavement permeable brick (board), square permeable brick (board), installation Decorative bricks (blocks), antique bricks, slope protection ecological bricks (blocks), hydraulic ecological bricks (blocks) Technology development and production application of other green building materials

4. Development and application of production technology for centralized ceramic powder production and clean coal gas; Development of ceramic plate production line and process equipment technology with a single block area greater than 1.62 Development and application; lightweight foamed ceramic partition board and thermal insulation produced by tailings, waste Development and application of plate production line and process equipment technology

5. Toilets and squatting pans with a flushing water volume of 6 liters and below, water-saving Activated water appliances and water-saving control equipment, intelligent toilets, sanitary Development and production of integral sanitary parts with matching requirements

6. Pool of 80,000 tons/year and above alkali-free glass fiber roving (monofilament diameter > 9 microns) Kiln drawing technology, 50,000 tons/year and above alkali-free glass fiber spun yarn (monofilament diameter  $\leq 9$  micro M) Pool kiln wire drawing technology, ultra-fine, high-strength, high-modulus, alkali resistance, low dielectric, high silica, Technology development and production of high-performance glass fiber and glass fiber products such as degradation and s

19

Martialite fiber pool kiln drawing technology; silicon carbide fiber, composite fiber; aerospace, environmental protection, Marine engineering, electrical engineering and electronics, transportation, energy, construction, Internet of Things, animal h Thermoplastic and thermosetting composite products and their efficient molding preparation process and equipment; resin Technology and equipment for the recycling and utilization of waste based composite materials; 200,000 tons/year and above Material powder processing production line

7. Non-asbestos friction rubber using synthetic mineral fiber, aramid fiber, etc. as reinforcing materials Development and production of new technologies and new products for wiping and sealing materials

8. High-quality artificial crystals used in information, new energy, national defense, aerospace and other fields Materials, products and devices, functional synthetic diamond material production equipment technology development; high Pure quartz raw materials (purity greater than or equal to 99.999%), high-end quartz crucibles for semiconductors, chemical Learn the development and production of manufacturing technology such as gas phase synthesis of quartz glass; required in Special glass manufacturing technology development and production; high-purity nano-scale spherical silicon powder and h Production and application of industrial silicon and development and application of its technical equipment

9. Graphene material production and application development; environmental governance, energy-saving energy stora Production and technical equipment of non-metallic mineral functional materials such as information, heat preservation and

Development and application; on-line detection and control intelligent production line for mineral ultrafine material process  
It belongs to industry big data platform technology development and mining, processing, trade, application, investment, etc.

Construction

10. Production of ultra-thin composite stone of 300,000 square meters per year and above; mechanized stone mine  
Mountain mining; comprehensive utilization of ore scraps, slab scraps, stone powder production and technological equipment  
Hair; the production of inorganic artificial stone, the production of resin-based artificial stone using non-toxic or low-toxic materials  
Produce

20

11. Utilize mine tailings, construction waste, industrial waste, rivers and lakes (canals)  
The production of building materials from secondary resources such as sea silt and agricultural and forestry residues and the  
hair

12. Fine ceramic powder, ceramic precursor suitable for additive manufacturing and ceramic chopped  
Fiber; precision molded ceramic parts such as ceramic balls, ceramic valves, and ceramic screws; ceramics  
Membrane, honeycomb ceramics, foam ceramics; ceramic substrates, ceramic insulating parts, electronic ceramic materials  
Materials and components; continuous ceramic fiber and fiber-reinforced ceramic matrix composite materials; medical fine  
Porcelain materials and components; ceramic ink materials; ceramic materials for precision grinding and polishing industries  
Ceramic technology development and production application; information, new energy, national defense, aerospace and other  
Development and production with high-performance ceramic manufacturing technology

13. Realization of main production areas such as storage area, main machine mixing building, and material conveying  
Fully enclosed, and equipped with active dust collection and dust reduction equipment, using information integrated management  
Carry out operation management, an intelligent ready-mixed concrete production line with the ability to absorb urban solid waste  
Concrete for marine engineering, lightweight high-strength concrete, ultra-high performance concrete, concrete  
Development and application of repair materials

14. Development and application of building material product quality traceability system for engineering or equipment

13. Medicine

1. Development and production of new drugs with independent intellectual property rights, development and production  
To meet the needs of the prevention and treatment of major and multiple diseases in my country, the first development and  
Production, development and production of new drug formulations, new excipients, children's drugs, and shortage drugs, drugs

Membrane separation, supercritical extraction, new crystallization, chiral synthesis, enzymatic synthesis in the production p  
Development and application of technologies such as formation, continuous reaction, system control, and basic drug quality

twenty one

Technical level improvement and cost reduction, energy-saving, consumption-reduction and emission-reduction technologies  
Development and Application of Pharmaceutical Technology

2. Major disease prevention and control vaccines, antibody drugs, gene therapy drugs, cell therapy  
Drugs, recombinant protein drugs, nucleic acid drugs, large-scale cell culture and purification technology,  
Large-scale pharmaceutical peptide and nucleic acid synthesis, antibody coupling, serum-free protein-free medium culture,  
Development and application of fermentation and purification technologies, cellulase, alkaline protease, diagnostic enzymes  
Enzyme preparations, using modern biotechnology to transform traditional production processes

3. Development and production of new medicinal packaging materials and technologies (neutral borosilicate medicinal  
Glass, a functional material with good chemical stability, degradability and high barrier properties, aerosol,  
New packaging drug delivery system and drug delivery such as powder mist, self-administration, prefilling and automatic n  
Device)

4. Development of artificial breeding technology for endangered and scarce medicinal animals and plants, and standar  
Breeding and animal experiment services, advanced agricultural technology in the standardized planting and breeding of Ch  
Application, development and application of new technology for quality control of traditional Chinese medicine, and techn  
Technology, inheritance and innovation of the processing technology of Chinese herbal medicine, the development and proc  
R&D and production of innovative Chinese medicine drugs, secondary development and production of proprietary Chinese  
Hair and production

5. New medical diagnostic equipment and reagents, digital medical imaging equipment, artificial intelligence  
Can assist medical equipment, high-end radiotherapy equipment, electronic endoscopes, surgical robots, etc.  
High-end surgical equipment, new stents, prostheses and other high-end implanted interventional equipment and materials a  
Manufacturing technology development and application, life support equipment for critical illness, mobile and remote diag  
Equipment, new gene, protein and cell diagnostic equipment

twenty two

6. Development and production of high-end pharmaceutical equipment, transdermal absorption, powder mist and other Production equipment, large-scale bioreactors and auxiliary systems, efficient protein separation and purification Equipment, high-efficiency extraction equipment for traditional Chinese medicine, continuous production technology and e

#### 14. Machinery

1. High-end CNC machine tools and supporting CNC systems: 5-axis and above linkage CNC machine tools, Numerical control system, high-precision, high-performance cutting tools, measuring instruments and abrasives

2. Large generator sets, large petrochemical plants, large metallurgical equipment, etc.  
Distributed control system (DCS), field bus control system (FCS) for major technical equipment,  
New energy power generation control system

3. Programmable control system (PLC) with motion control function and remote IO, output  
There are more than 512 input and output points, with independent software system, independent communication protocol,  
Compatible with a variety of general communication protocols, support real-time multitasking, have a variety of programmi  
Has a customizable instruction set, etc.

4. Digital, intelligent, networked industrial automatic detection instrument, in-situ online  
Analytical instruments, electromagnetic compatibility testing equipment, smart meters for smart grids (with sending  
And receiving signal, self-diagnosis, data processing function), low power with wireless communication function  
Consume all kinds of smart sensors, encryptable sensors, nuclear-level monitoring instruments and sensors

5. Used for detection of radiation, toxic, combustible, explosive, heavy metals, dioxins, etc.  
Analytical instruments, water quality, flue gas, air testing equipment; medicine, food, biochemical testing  
High-end mass spectrometers, chromatographs, spectrometers, X-ray analyzers, nuclear magnetic resonance spectrometers,  
Automatic biochemical detection system, automatic sampling system and sample processing system

6. The measurement accuracy of scientific research, intelligent manufacturing, testing and certification is above micro

twenty three

Multi-dimensional geometric size measuring instrument, automatic, intelligent, multi-functional mechanical properties of m

Testing equipment, industrial CT, three-dimensional ultrasonic flaw detector and other non-destructive testing equipment, u  
Meter observation and measurement with an electron microscope with a resolution higher than 3.0 nm

7. Urban intelligent visual monitoring, video analysis, video-assisted criminal investigation technology design

Prepare

8. Mine disasters (gas, coal dust, mine water, fire, surrounding rock noise, vibration, etc.)

Monitoring instrumentation and safety alarm system

9. Comprehensive meteorological observation equipment (ground, high-altitude, marine meteorological observation eq  
Equipment, professional weather observation, atmospheric composition observation equipment, weather radar and consuma  
Mobile emergency weather observation system, mobile emergency weather command system, meteorological measurement  
Operation monitoring system for equipment and meteorological observation equipment

10. Hydrological data acquisition equipment and equipment, hydrological instrument metrological verification equipm

11. Seismic and geological disaster monitoring instruments

12. Ocean observation, detection, monitoring technology systems and equipment

13. Digital multifunctional integrated office equipment (copying, printing, faxing, scanning),

Modern cultural office equipment such as digital cameras and digital movie projectors

14. Bearings for EMUs with a speed of more than 200 kilometers per hour, with an axle load of 23 tons and above  
Heavy-duty railway freight car bearings, high-power electric/diesel locomotive bearings, with a service life of 2.4 million ki  
The new type of urban rail transit bearings with a service life of more than 250,000 kilometers,  
Low friction torque automotive bearings and units, high temperature resistance (above 400 °C) automotive turbines, machin  
Mechanical supercharger bearings, P4, P2 level CNC machine tool bearings, 2 megawatts (MW) and above  
Various types of precision bearings for motor sets, with a service life of more than 5000 hours for large-scale construction s

twenty four

Industrial machinery bearings, P5 and P4 high-speed precision metallurgical rolling mill bearings, aircraft engine shafts  
Bearing and other aviation bearings, medical CT machine bearings, deep well and ultra deep well oil drilling rig bearings,  
Offshore engineering bearings, high-speed bearings for electric vehicle drive motor systems (rotating speed  $\geq 12,000$  revolu  
Minutes), industrial robot RV reducer harmonic reducer bearings, and the zero  
Pieces

15. Francis hydropower equipment with a single unit capacity of 800,000 kilowatts and above (water turbines, Generator, governor, excitation and other ancillary equipment), with a single unit capacity of 350,000 kilowatts and above  
Hydrogen storage, 50,000 kilowatts and above tubular and 100,000 kilowatts and above impulse hydropower  
Equipment and its key auxiliary equipment

16. Generator protection for supercritical and ultra-supercritical thermal power units of 600,000 kilowatts and above  
Key auxiliary equipment and components such as circuit breakers, pumps, valves, etc.

17. Supercritical parameter circulating fluidized bed boiler of 600,000 kilowatts and above

18. High-temperature gas turbine components (rotor body forgings for heavy gas turbines above 300MW, Large superalloy wheel, cylinder block, blade, etc.) and control system

19. Rotors (forging, welding), runners, rotors for power generation equipment of 600,000 kilowatts and above  
Key castings and forgings such as blades, pumps, valves, spindle guard rings, etc.

20. High-strength, high-plasticity ductile iron castings; high-performance vermicular graphite iron castings; high precision  
High-pressure, large-flow hydraulic castings; non-ferrous alloy special casting process castings; high-strength steel forgings  
High performance such as high temperature resistance, low temperature resistance, corrosion resistance, wear resistance, etc  
Forgings; high-precision, low-stress machine tool castings, forgings; automobiles, energy equipment, rail transit  
Key castings and forgings of general equipment, aerospace, military, and marine engineering equipment

21. 500 kilovolts (kV) and above UHV and UHV AC/DC transmission equipment and

25

Key components: transformer (outlet device, bushing, voltage regulating switch), switchgear (off  
Arc device, hydraulic operating mechanism, large basin insulator), high-strength pillar insulator and  
Hollow insulators, suspension composite insulators, insulating molded parts, UHV surge arresters, DC  
Lightning arrester, electric control, light control thyristor, converter valve (smoothing reactor, water cooling equipment),  
Control and protection equipment, complete sets of equipment for DC field, etc.

22. High-voltage vacuum components and switchgear, intelligent medium-voltage switch components and complete set  
Equipment, use environmentally-friendly medium-voltage gas insulated switchgear, intelligent (communicable) low-voltage  
Energy-saving distribution transformers, such as amorphous alloys and wound iron cores

23. Second-generation, third-, and fourth-generation nuclear power equipment and key components, multi-purpose mc  
Block-sized small-scale reactor equipment and key components; complete wind power equipment over 2.5 MW and 2.0 MW

The above wind power equipment control systems, converters and other key components; various types of crystalline silicon Solar photovoltaic cell production equipment; ocean energy (tidal, ocean wave, ocean current) power generation equipment

24. The short-flow melting process and equipment for producing iron castings directly from blast furnace molten iron; Aluminum alloy concentrated smelting short-flow casting process and equipment; high-purity pig iron for casting, casting Ultra-high-purity pig iron production technology and equipment; clay sand high-compactness molding automatic production Set of sand processing system; self-hardening sand high-efficiency complete equipment and supporting sand processing system Method/real-type complete set of technology and equipment; externally heated and water-cooled long furnace age and large Above) cupola; external hot air cupola waste heat utilization technology and equipment; large die-casting machine (combined Mold force above 3,500 tons); automated intelligent core making center; shell shape, precision core assembly modeling, Silica sol investment, die casting, semi-solid, extrusion, differential pressure, pressure regulation and other special casting technology Equipment; 3D printing and sand mold cutting rapid prototyping technology and equipment used in casting production; Automatic pouring machine; on-line inspection technology and equipment for castings; complete set of efficient automatic casting

26

Equipment; manufacturing and application of special casting robots

25. Application of dry (hot) method regeneration and reuse technology of resin sand and clay sand for foundry; Application of environmentally friendly resin, inorganic binder modeling and core making technology

26. High-speed precision press (180 ~ 2500kN, 2000 ~ 750 times/min), black Non-ferrous metal hydraulic extruder (above 150 mm/s), light alloy hydraulic extruder (10 mm M/s or less), high-speed precision shearing machine (above 2000kN, 70 ~ 80 times/min, breaking Face inclination below 1.5°), internal high pressure forming machine (above 10000kN), large bending machine (Above 60,000kN), digital sheet metal processing center (flexible manufacturing center/flexible manufacturing System), high-speed powerful spinning machine (radial spinning force/per wheel: 1000kN, axial spinning force /Each round: 800kN, spindle torque: 240kN•m, maximum spindle speed: 95 rpm), CNC multi-station press (replaced by servo multi-station press), large nominal pressure cold/warm Forging press (effective nominal force stroke above 25mm, nominal force above 10000kN), 4 Automatic warm/hot forging press above station (nominal force above 16000kN); servo multi-work Bit press (12000 ~ 30000kN), large servo press (8000 ~ 25000kN), Progressive die press (6000 ~ 16000kN), compound drive thermoforming press (nominal force



$\geq 12000\text{kN}$ , symmetrical connecting rod force-increasing mechanism, strokes 14-18 times/min, slider

Stroke 1100mm, slider adjustment 500mm, maximum downward speed 1000mm/s, return

The maximum speed of the stroke is 1000mm/s, the connecting rod force-increasing coefficient  $\geq 6$ , high-speed compound t

Intelligent stamping line (nominal force  $\geq 30600\text{kN}$ , compound cylinder drive symmetrical connecting rod booster

Structure, the number of continuous strokes of a single machine  $\geq 12$  times/minute, the production line beats 6-8 pieces/min

R&D and manufacturing of a new generation of aircraft skin comprehensive stretch and intelligent complete equipment (ma

$\geq 15\text{MN}$ , sheet thickness  $\leq 10\text{mm}$ , maximum jaw opening  $\leq 80\text{mm}$ , jaw limit

27

Load factor (maximum tensile force per unit width)  $\geq 63\text{kN/mm}$ , the stretching position of the master cylinder is synchroniz

Accuracy  $\pm 0.5\text{mm}$ , extension control accuracy  $\leq 0.2\%$ ; aerospace large and super large sheet

Liquid-filled forming process and equipment for metal parts (manufacturing of integral lip of engine intake with large bypas

Technology): (equipment nominal force 200MN, drawing tonnage 16000T, blanking tonnage 4000T,

Slide stroke 3000mm, working table size 5000mm $\times$ 5000mm, liquid chamber pressure

10MPa, liquid chamber volume 6000L, displacement 4300L); radial forging machine (precision forging machine)

And rotary forging machine (630 ~ 22000kN); pulse extruder (vibration extruder) (630 ~

22000kN), high-speed upsetting machine (100 pieces/minute, forging weight above 1.6kg)

27. Three ethylene cracking machines, 400,000 tons (polypropylene, etc.) extrusion granulation unit, 50

Key equipment such as 10,000-ton syngas, ammonia and oxygen compressors

28. Large-scale wind power seals (service life more than 7 years, working temperature  $-45^\circ\text{C} \sim$

$100^\circ\text{C}$ ); mechanical seal of main pump of nuclear power plant (applicable pressure  $\geq 17\text{ MPa}$ , working temperature

$26.7^\circ\text{C} \sim 73.9^\circ\text{C}$ ); the main bearing of the shield machine is sealed (the service life is 5000 hours); the car

Powertrain system and transmission system rotating seal; oil drilling, logging equipment seal (suitable

Use pressure  $\geq 105\text{ MPa}$ ); hydraulic support seals; high PV value rotary dynamic seals; super

Large diameter ( $\geq 2$  meters) mechanical seal; aerospace seals (working temperature  $-54^\circ\text{C} \sim 275^\circ\text{C}$ ,

Linear speed  $\geq 150\text{ m/s}$ ); high-pressure hydraulic component seals (applicable pressure  $\geq 31.5\text{ MPa}$ );

High-precision hydraulic castings (flow channel size accuracy  $\leq 0.25\text{ mm}$ , fatigue performance test  $\geq 200$

Ten thousand times)

29. High-performance non-asbestos sealing material (heat-resistant temperature  $500^\circ\text{C}$ , tensile strength  $\geq 20$

MPa); high-performance carbon graphite sealing material (heat-resistant temperature  $350^{\circ}\text{C}$ , compressive strength  $\geq 270$  MPa); high-performance pressureless sintered silicon carbide material (bending strength  $\geq 200$  MPa, thermal conductivity

28

$\geq 130$  watts/meter·Kelvin ( $\text{W/m}\cdot\text{K}$ ))

30. Intelligent welding equipment, laser welding and cutting, electron beam welding and other high-energy beams  
Welding and cutting equipment, friction stir, composite heat source and other welding equipment, digital, large-capacity inv  
Welding power

31. Large-scale mold (the half-periphery length of the bottom plate stamping die  $> 2500$  mm, the bottom plate half  
Circumference length cavity mold  $> 1400$  mm), precision mold (pressing mold accuracy  $\leq 0.02$  mm, type  
Cavity mold accuracy  $\leq 0.05$  mm), multi-station automatic deep drawing mold, multi-station automatic fine blanking  
Mould

32. Large-scale (loading capacity of more than 1 ton) multi-functional controllable atmosphere heat treatment equipment  
Controlled chemical heat treatment equipment, program-controlled multifunctional vacuum heat treatment equipment and ir  
Above vacuum heat treatment equipment, full fiber lining heat treatment furnace

33. Alloy steel, stainless steel, weathering steel high-strength fasteners, titanium alloy, aluminum alloy  
Fasteners and precision fasteners; springs for aviation, aerospace, high-speed rail, engines, etc.; high-precision  
High-speed transmission couplings, coupling shafts of large rolling mills; new powder metallurgy parts: high density ( $\geq$   
 $7.0 \text{ g/cm}^3$ ), high-precision, complex-shaped structural parts; friction between high-speed trains and airplanes  
Device; oil bearing; gear box for EMU, variable pitch gear transmission system for ship,  
Gearboxes for wind power over 2.0 MW, gearboxes for metallurgical and mining machinery; automotive powertrains  
Chain for construction machinery, construction machinery, large agricultural machinery; major equipment and key engineer  
part

34. Seawater desalination equipment

35. Robots and integrated systems: special service robots, medical rehabilitation robots,  
Public service robots, personal service robots, human-machine collaborative robots, dual-arm robots,

29

Arc welding robot, heavy-duty AGV, special inspection and assembly robot integrated system, etc. machine

Key components for robots: high-precision reducers, high-performance servo motors and drivers, all

Self-programming and other high-performance controllers, sensors, end effectors, etc. Robotics

Technology: inspection, testing and assessment certification, intelligent robot operating system, intelligent robot cloud servi

Service platform

36. Comprehensive mining equipment for mines and thin coal seams of 5 million tons per year and above, 10 million t  
Key equipment for large open-pit mines of grade/year and above

37, 18MW and above integrated compressor unit, diameter 1200 mm and above  
Natural gas pipeline supporting compressors, gas turbines, valves and other key equipment; single line 260  
Compressors, driving machinery, and cryogenic equipment for natural gas liquefaction of 10,000 tons/year and above;  
Key equipment such as oil pumps of 3000 cubic meters per hour and above for large oil pipelines

38. Single-sheet multi-color offset printing machine (width  $\geq 750$  mm, printing speed: single-sided multiple  
Color  $\geq 16000$  sheets/hour, double-sided multi-color  $\geq 13000$  sheets/hour); commercial web offset printing  
Machine (width  $\geq 787$  mm, printing speed  $\geq 7$  m/s, overprint accuracy  $\leq 0.1$  mm);  
Newspaper web offset printing machine (printing speed: single paper path single web machine  $\geq 75000$  sheets/hour, double  
Paper path double-width machine  $\geq 150000$  sheets/hour, overprint accuracy  $\leq 0.1$  mm); multi-color wide-width flexible  
Sexual printing machine (printing width  $\geq 1300$  mm, printing speed  $\geq 400$  m/min);  
Group flexographic printing machine (printing speed  $\geq 250$  m/min); environmentally friendly multi-color web material conc  
Plate printing machine (printing speed  $\geq 300$  m/min, overprint accuracy  $\leq 0.1$  mm); inkjet number  
Word printing machine (for publishing: printing speed  $\geq 150$  m/min, resolution  $\geq 600$  dpi; package  
Installation: printing speed  $\geq 30$  m/min, resolution  $\geq 1000$  dpi; variable data use: printing  
Speed  $\geq 100$  m/min, resolution  $\geq 300$  dpi); CTP direct plate making machine (imaging speed

≥35 sheets/hour, plate width ≥750 mm, repeatability 0.01 mm, resolution  
≥3000dpi); axisless CNC flat-bed hot stamping machine (hot stamping speed ≥10000 sheets/hour,

Processing accuracy 0.05 mm)

39. More than 100 horsepower, equipped with power shift gearbox or continuously variable gearbox, total  
Line control system, safety cab, power output shaft with more than 2 speeds, hydraulic output  
Point not less than 3 groups of two-wheel or four-wheel drive wheeled tractors and crawler tractors. Match  
Set of cultivating tractors with a power of more than 50 horsepower, tractors for orchards, high ground clearance tractors  
Machine (minimum height above the ground 40 cm)

40. Agricultural machinery for tractors with more than 100 horsepower: deep protection  
Loose machine, combined soil preparation machine and soil preparation and seeding combined operation machine, etc., req  
The single-body width ≥40 cm split plow, disc harrow, grain drill, cultivating crop essence  
Dense seeder, field cultivator, no-tillage seeder, large spray (dusting) machine, etc.

41. Key components of tractors above 100 horsepower: power shift transmission, hydraulic  
Mechanical continuously variable transmission, integrated pump motor, wheel-side brake and limited slip for wheeled tract  
Front drive axle with differential lock, ABS braking system, electric tractor battery, motor and  
Control system, clutch, hydraulic pump, hydraulic cylinder, various valves and hydraulic output valve, etc.  
Closed hydraulic system, electric control hydraulic lifter with closed heart variable and load sensing, electric control system  
Hydraulic steering mechanism, etc.

42. Crop transplanting machinery: riding-type soil-driven high-speed rice transplanter (per minute  
More than 350 times of clock insertion, 3 ~ 5 plants per hole, suitable row spacing 20 ~ 30 cm, plant spacing can be  
Adjustment, adapt to plant spacing of 12-22 cm); soil-type motorized rice seedling swinging machine (riding or hand  
Support type, adaptable row spacing is 20-30 cm, plant spacing is adjustable, adaptable plant spacing is 12-22 cm

M) etc.

43. Agricultural harvesting machinery: self-propelled grain combine harvester (feeding amount 6 kg/  
Seconds or more); self-propelled half-feed rice combine harvester (more than 4 rows, supporting engine  
44 kilowatts or more); self-propelled corn combine harvester (3-6 rows, ear picking type, with peeling  
Bark device, as well as the stalk crushing and returning to the field device or the stalk cutting and collecting device);

Corn harvester (picking and peeling, shredding and recycling of stalks), self-propelled corn kernel combined harvesting  
Harvesting (more than 4 rows, direct grain harvesting); self-propelled barley, alfalfa, corn, sorghum

Waiting for silage harvester (supporting power above 147 kW, chopped stem length 10 ~ 60

Mm, "with metal detection, stone detection safety device and grain crushing function"); cotton

Picker (more than 3 rows, self-propelled or tractor-backed, defloration device is mechanical or

Pneumatic type, suitable for cotton bead height of 35-160 cm, equipped with seed cotton container and automatic cotton unl

Device); potato harvester (self-propelled or tractor-drawn, 2 rows or more, row spacing can be

Adjustment, with soil removal device and collection device, maximum digging depth 35 cm), sugarcane harvest

Machine (self-propelled or tractor-backed, supporting power above 58 kW, ratoon crushing rate

≤18%, loss rate ≤7%); combined operation machine for recovery of residual film and stalk crushing; forage harvest

Obtaining machinery (self-propelled forage harvester, suspended mowing and squeezing machine, finger-pan type forage ra

Machine, pasture picking and baling machine, etc.); self-propelled potato harvesting machinery; hybrid paper mulberry

Get machinery

44. Water-saving irrigation equipment: various large and medium-sized sprinkler irrigation machines, various types of  
Etc.; anti-flood drainage equipment (displacement of 1500 cubic meters/hour or more, head 5-20 meters,  
Power is over 1500 kW, efficiency is over 60%, mobile)

45. Biogas generation equipment: integrated biogas fermentation and gas storage (gas storage volume 300 ~

32

2000 cubic meters series products), biogas slurry pumping equipment (suction volume above 1 cubic meter/min)

Wait

46. Large-scale construction machinery: hydraulic excavators of more than 30 tons, full section of 6 meters and more  
Roadheaders, crawler bulldozers of 320 horsepower and above, loaders of 6 tons and above, 600 tons and

The above bridge erecting equipment (including bridge erecting machine, beam transport vehicle, beam lifting machine), cr

Heavy machinery, 100 tons and above all-terrain cranes, 25 tons and above container reach stackers, 1,000

Tower cranes of ton/meter and above, rock drilling rigs for drilling holes of 100 mm or more, 1 meter wide and below

Upper milling machine, 75 tons and above mining trucks, 220 horsepower and above graders, 18 tons and above

Upper vibrating hydraulic roller, 9 m and above paver, 1 m and above milling machine, 20

Forklifts for containers with tons and above, internal combustion forklifts with 8 tons and above, battery forklifts with 3 ton

Concrete pump truck of 40 meters and above, concrete mixer truck of 8 cubic meters and above, 90 cubic meters per hour at Shang Concrete Mixing Station, 400 kW and above concrete cold and hot regeneration equipment, 2000 mm and above rotary Drilling rig, 400mm and above diaphragm wall excavation equipment; key components: power Shift gearbox, wet drive axle, slewing ring, hydraulic torque converter, equipped for electric forklift Set of motors, electric control, hydraulic motors, pumps, and control valves with a pressure above 25 MPa

47. Intelligent logistics and warehousing equipment, information systems, intelligent material handling equipment, inter Port loading and unloading equipment, agricultural intelligent logistics equipment, etc.

48. High-reliability, low-emission and low-energy internal combustion engines for non-road mobile machinery: Life Index (8000 ~ 12000 hours for heavy duty, 5000 ~ 7000 hours for medium duty, light duty 3000 ~ 4000 hours), emission indicators (in line with Euro III B, Euro IV, Euro V, National III, National IV emission target requirements); affect the power and economy of internal combustion engines for non-road mobile Fuel system, supercharging system, exhaust gas aftertreatment system (all including electronic

33

Control System)

49. Refrigeration and air-conditioning equipment and key components: heat pump, composite heat source (air source and Solar energy) heat pump water heaters, refrigeration and air-conditioning compressors with secondary energy efficiency and Falling film heat exchange technology and equipment, electronic expansion valve, two-phase flow ejector and their key components Refrigeration and air-conditioning compressors using environmentally friendly refrigerants (ODP is 0, GWP value is low)

50, 12000m and above deep well drilling rigs, polar drilling rigs, high-displacement deep wells and deserts Drilling rigs, drilling rigs for swamps difficult to enter areas, offshore drilling rigs, truck mounted drilling rigs, special drilling Complete sets of equipment such as art drilling rigs

51. Centralized treatment equipment for hazardous waste (including medical waste)

52. Large high-efficiency two-platen injection molding machine (clamping force above 1,000 tons), all-electric plastic Injection molding machine (with injection volume below 1000 grams), energy-saving plastic and rubber injection molding Consumption less than 0.4 kWh/kg), high-speed energy-saving plastic extrusion unit (production capacity 30 ~ 3000 kg/h, energy consumption below 0.35 kWh/kg), microcellular foamed plastic injection Molding machine (clamping force 60-1000 tons, injection volume 30-5000 grams, energy consumption 0.4 kWh/ Hour/kg), large twin-screw extrusion granulation unit (production capacity of 300,000 to 600,000 tons/

Year), large-scale para-aramid reactive extrusion unit (production capacity of 14,000 tons per year), carbon Fiber prepreg unit (production capacity above 600,000 meters/year; width above 1.2 meters), fiber Three-dimensional reinforced composite material online mixing injection molding equipment (clamping force 200-6800 ton The shot volume is 600 ~ 85000 grams)

53. Nanofiltration membrane and reverse osmosis membrane pure water equipment

54. Safe drinking water equipment: combined integrated water purifier (processing capacity 100 ~ 2500 Tons/hour)

34

55. Air pollution control equipment: coal-fired generating units desulfurization, denitrification, dust removal, etc. Low-emission complete set of technical equipment; pre-charged bag dust removal technology for fine particles of steel furnaces; Equipment; coke oven flue gas SDA desulfurization + SCR denitration technology equipment; electrolytic aluminum flue gas Defluorination and dust removal technology equipment; complete set of equipment for dry desulfurization and dust removal Dust collector; electric bag composite dust removal technology equipment (particle emission concentration <10 mg/m<sup>3</sup>); FCC regeneration flue gas dust removal and desulfurization technology equipment; VOCs adsorption recovery device; VOC Incineration device; unorganized emission control technology equipment for furnaces and stockyards; catering industry Chemical equipment

56. Sewage control technology and equipment: complete sets of urban sewage treatment equipment (dephosphorization Sludge hydrolysis and anaerobic digestion technology and equipment; sludge drying and incineration technology and equipment Above); submerged membrane bioreactor (COD removal rate above 90%); ceramic vacuum Filter (vacuum degree: 0.09~0.098 MPa, pore: 0.2 micron~20 micron); ultra Bio-coupling method and biomembrane method to treat high-concentration organic wastewater technology and equipment; Product washing water treatment technology equipment

57. Solid waste control technology and equipment: domestic waste clean incineration technology and equipment (help Coal burning less than 20%); food waste centralized harmless treatment technology and equipment (utilization rate 95% Above); landfill leachate and odor treatment technology equipment (treatment capacity above 50 tons/day); Automatic sorting technology and equipment for domestic waste (sorting rate above 80%); construction waste treatment And reuse process technology equipment (processing capacity above 100 tons/hour); industrial hazardous waste

Technical equipment for waste disposal (treatment rate above 90%); Oilfield drilling waste treatment department  
 Set up technology and complete sets of equipment (with a reduction of more than 50% and a treatment rate of more than 70  
 Clean incineration, high-temperature cooking and harmless treatment technology equipment (processing capacity of 150 kg

35

Above, the combustion efficiency is more than 70%), and medical waste microwave and chemical disinfection treatment tec  
 Prepared; livestock and poultry manure centralized treatment technology equipment (processing capacity more than 20 tons

58. Soil remediation technology and equipment: crushing and screening integrated machine, odor suppression equipm  
 Connecting thermal desorption equipment, indirect thermal desorption equipment, soil washing equipment, soil improveme  
 Push drilling and sampling equipment

59. Prying trolley, patio drilling rig, multi-function crushing and plug cleaning machine, dual-system braking  
 Hydrostatic four-wheel drive underground mine multi-function service vehicle, portable gas detector for mine, underground  
 Near-ore body curtain grouting technology, remote control technology of underground electric locomotive, paste and high-c  
 Mine filling technology and equipment, cutting well drilling rig

60. Heat pump (ground source, water source, air source, etc.) technology development and equipment manufacturing

61. Development and production of power electronic transformer technology for core equipment of smart distribution

62. Noise and vibration pollution control equipment: sound barrier, muffler, damping spring isolation

Vibrator

63. Additive manufacturing equipment and special materials

15. Urban rail transit equipment

1. Application of vibration reduction and noise reduction technology in urban rail transit

2. Automatic fare collection system (AFC), car door, platform screen door, car coupler system,

Windshield system, fire alarm and automatic fire extinguishing system

3. Signal system based on wireless communication [including automatic train monitoring system (ATS),  
 Automatic train protection device (ATP), automatic train operation device (ATO)]

4. Rail vehicle AC traction drive system, braking system and core components (including  
 IGCT, IGBT, SiC components), network control system, permanent magnet traction motor, DC

36



High-speed switches, vacuum circuit breakers (GIS), new intelligent switching devices

5. Lightweight application of car body, bogie, gear box and car interior decoration materials
6. Urban rail train regenerative braking absorption device, energy feedback, energy storage system
7. Testing and testing instruments and monitoring systems for rail transit
8. Fully automatic operation system (FAO), an autonomous train operation system based on vehicle-to-vehicle communication system (TACS), intelligent operation and maintenance system
9. Urban rail transit traction power supply system (based on 25kV AC traction power supply system

Urban rail line)

10. Magnetic levitation train, rubber wheel rail transportation technology equipment
16. Automobile

1. Key auto parts: gasoline engine supercharger, eddy current retarder, hydraulic retarder

Speed controller, follow-up headlamp system, LED headlamp, digital instrument, electronic control system execution

Solenoid valve for mechanism, special axle for large passenger car with low floor, air suspension, energy-absorbing steering Systems, large and medium-sized passenger car inverter air conditioners, high-strength steel wheels, commercial vehicle disc Commercial vehicle tire burst emergency protection device, steering shaft type electric power steering system

(C-EPS), rack-and-pinion electric power steering system (R-EPS), idle start-stop system

Integrated, high-efficiency and high-reliability electromechanical coupling system; dual-clutch transmission (DCT), electro-mechanical transmission (AMT), 7-speed and above automatic transmission (7-speed and above AT), no

-Stage automatic transmission (CVT); high-efficiency diesel engine particulate trap; electronically controlled high-pressure

Rail injection system and its fuel injector; high-efficiency pressurization system (maximum comprehensive efficiency  $\geq 55\%$ )

Air recirculation system; electric brake, electric power steering and their key components

2. Application of lightweight materials: high-strength steel (in accordance with GB/T 20564

Strength cold continuous rolled steel plate and steel strip" standard or GB/T 34566 "Hot stamping steel plate and Steel strip" standard), aluminum alloy, magnesium alloy, composite plastic, powder metallurgy, high-strength composite Synthetic fiber, etc.; advanced forming technology application: 3D printing forming, expansion of laser tailor-welded blank Application, internal high pressure forming, ultra-high strength steel plate (strength $\geq$ 980MPa, strong plastic product 20 ~ 50GPa%) thermoforming, flexible roll forming, etc.; environmental protection material application: water-based paint, Lead-free solder, etc.

3. Key components of new energy vehicles: high-safety energy-type power battery cells (energy Quantity density  $\geq$ 300Wh/kg, cycle life  $\geq$ 1800 times); battery cathode material (specific capacity  $\geq$ 180mAh/g, cycle life 2000 times not less than 80% of initial discharge capacity), battery Anode material (specific capacity  $\geq$ 500mAh/g, cycle life 2000 times not less than initial discharge 80% of capacity), battery separator (thickness $\leq$ 12 $\mu$ m, porosity 35% ~ 60%, stretch Strength MD $\geq$ 800kgf/cm<sup>2</sup>, TD $\geq$ 800kgf/cm<sup>2</sup>); battery management system, motor control Electric vehicle electronic control integration; electric vehicle drive motor system (high efficiency area: 85% Work area efficiency  $\geq$ 80%), DC/DC for vehicles (input voltage 100V ~ 400V), high power Electronic devices (IGBT, voltage level  $\geq$ 750V, current  $\geq$ 300A); plug-in hybrid Mechanical-electromechanical coupling drive system; fuel cell engine (mass specific power  $\geq$ 350W/kg), Fuel cell stack (volume specific power  $\geq$ 3kW/L), membrane electrode (platinum dosage  $\leq$ 0.3g/kW), quality Sub-exchange membrane (proton conductivity  $\geq$ 0.08S/cm), bipolar plate (metal bipolar plate thickness  $\leq$  1.2mm, thickness of other bipolar plates  $\leq$ 1.6mm), low platinum catalyst, carbon paper (resistivity  $\leq$  3M $\Omega$ ·cm), air compressor, hydrogen circulation pump, hydrogen ejector, humidifier, fuel Battery control system, boost DC/DC, 70MPa hydrogen cylinder, vehicle-mounted hydrogen concentration sensor; Heat pump air conditioners for electric vehicles; 32-bit and above chips for motor drive control (many

2 hardware cores, the main frequency is not less than 180MHz, with hardware encryption and other functions, the core The chip design meets the requirements of functional safety ASIL C and above); integrated electric drive assembly (power Density $\geq$ 2.5kW/kg); high-speed reducer (maximum input speed $\geq$ 12000rpm, noise < 75dB)

4. On-board charger (efficiency  $\geq$ 95% under full load output conditions), two-way on-board charging

Machine and off-board charging equipment (output voltage 250V ~ 950V, efficiency within the voltage range  $\geq 88\%$ ); high power density, high conversion efficiency, high applicability wireless charging, mobile charging technology Technology and equipment, fast charging and battery exchange facilities

5. Automotive electronic control system: engine control system (ECU), gearbox control System (TCU), anti-lock brake system (ABS), traction control (ASR), electronic Stability control (ESC), network bus control, on-board fault diagnosis instrument (OBD), electronic control Intelligent suspension, electronic parking system, electronic throttle, lane keeping assist system (LKA), Automatic emergency braking system (AEBS), electric control system (EBS), axles for trucks Load automatic measurement system, etc.

6. Research on smart cars, new energy vehicles and key components, and efficient vehicle internal combustion engine: Capacity building

7. Key components and technologies of smart cars: sensors, on-board chips, central office Computer, vehicle operating system and information control system, vehicle network communication system equipment, vis Different systems, high-precision positioning devices, wire-controlled chassis systems, safety glass for smart cars; new -Type intelligent terminal module, multi-core heterogeneous intelligent computing platform technology, all-weather comple Scenery high-precision positioning and mapping technology, sensor fusion sensing technology, car wireless communication Key technology, basic cloud control platform technology; new security isolation architecture technology, software and hard

Attack recognition technology, terminal chip security encryption and application software security protection technology, w Communication security encryption technology, secure communication and authentication and authorization technology, da Trial evaluation system architecture research and development, virtual simulation, real vehicle road test and other technolog Vehicle-level and system-level test and evaluation methods, test basic database construction

## 17. Ship

1. Bulk carriers, oil tankers and container ships adapt to the requirements of green, environmental protection and safet Upgrade, and the development and construction of ship types that meet the new international shipbuilding regulations and s

2. Liquefied natural gas carriers over 100,000 cubic meters, liquefaction over 15,000 cubic meters LPG ship, container ship with more than 10,000 boxes, car carrier with 5000 parking spaces or more, luxury

Ro-ro passenger ships, chemical tankers above IMO II, large and medium-sized luxury cruise ships, 2000 parking spaces

Cars on ro-ro ships, cargo ro-ro ships with more than 3000 meters lanes, LNG bunkering ships, livestock  
 Livestock transport ships, methanol (ethane) transport ships, oil-electric hybrid ships, battery-driven ships and  
 Multi-purpose ship, polar cruise ship, polar transport ship, polar multi-purpose ship, polar geophysical ship  
 High-tech and high value-added ships

3. Large ocean fishing and processing fishing vessels, trailing suction dredgers over 10,000 cubic meters, fire  
 Car ferries, scientific research ships, icebreakers, ocean survey ships, deck transport ships, ocean surveillance  
 Special ships such as pipe ships and their special equipment

4. Small waterplane area catamaran, hydrofoil, ground effect ship, hovercraft, wave piercing ship, etc.  
 High performance ship

5. Jack-up drilling platform with water depth of 120 meters and above, deep drilling platform of 1500 meters and above  
 Mainstream marine mobile drilling platforms such as ships, semi-submersible drilling platforms with water depths of 1500 m  
 (Ship); Floating production storage and unloading device (FPSO) with a capacity of 150,000 tons and above, water depth of

40

Semi-submersible production platform, column production platform (SPAR), tension leg platform (TLP),  
 Floating production systems such as LNG-FPSO and marginal oil field floating production and storage devices; Wanma  
 Lishui-class deep-water three-purpose work ship, 1500-meter water-deep large crane pipe-laying ship, 1500-meter water  
 Deep engineering survey ships, high-performance geophysical prospecting ships, semi-submersible transport ships of 50,000  
 Vehicle installation ship, floating storage and regasification unit (FSRU), deep water dynamic positioning crude oil transport  
 Delivery device, ultra-deep sea work industry ship, deep sea large-scale aquaculture equipment, lifting capacity 10,000  
 Heavy lift ships of more than 10,000 tons, gas hydrate drilling and production equipment, seabed metal mineral resources prospecting  
 Exploration and development equipment, heavy-duty construction platforms for islands and reefs, offshore oilfield facilities  
 Operation ship and auxiliary ship

6. Dynamic positioning system, FPSO single point mooring system, large offshore platform power station set  
 System, main power and transmission system, drilling platform lifting system, underwater oil and gas production system  
 General and special marine engineering supporting equipment

7. Yacht development and manufacturing and supporting industries

8. Intelligent and environmentally friendly marine medium and low speed diesel engines and their key components and

Machinery, marine boilers, oil-water separators, seawater desalination devices, ballast water treatment systems, Ships use shore power technology and equipment, LNG marine dual-fuel engines, pod propulsion

Feeder, straight-wing rudder propeller propulsion device, large-scale high-efficiency water jet propulsion device, high-power

Generators, ship communication navigation and automation systems, integrated electric propulsion systems and key equipment

Equipment, ship exhaust gas treatment device, waste heat recovery system, bimetal valve, large marine waste

Key marine ancillary equipment such as waste incinerator, domestic sewage treatment system, cargo oil system, etc.

9. Subsea mining robots, subsea trenchers and other subsea mineral resource development equipment and Deep-sea mining system, deep-sea riser related supporting systems and equipment, underwater vehicles, robots

41

And detection and observation equipment

10. Precision management control, digital shipbuilding, unit assembly, pre-outfitting and modularization, Advanced coating, high-efficiency welding technology application, ultra-high pressure water rust removal device, laser welding Human, intelligent segmented assembly line, ship group welding production line, ship middle group welding Workstations, ship segmented intelligent coating robots, ship pipe processing production lines, ships Free edge grinding production line for small parts

11. Repair, modification and climbing of high-tech and high value-added ships and marine engineering equipment Green and environmentally friendly ship repair technology applications such as wall robots and high-pressure intelligent cleaning

12. Development of smart ships, unmanned boats and related intelligent systems and equipment, ships Ship's whole-life safety operation supervision technology and equipment development

13. Safety, energy-saving and environmental protection inland river, river-sea combined transportation and coastal shipping

14. Manufacturing of "expanded and broken connecting rods"

15. Pure electric and natural gas ships; alternative fuel, hybrid power, pure electric, gas Motor vehicle and ship technology such as battery; hybrid and plug-in hybrid engines,

Optimize powertrain system matching

18. Aerospace

1. Development and manufacturing of trunk lines, branch lines, general aircraft and parts

2. Aeroengine development and manufacturing

3. Development of airborne equipment, mission equipment, air traffic control equipment and ground support equipment

manufacture

4. Development and manufacturing of the overall helicopter, rotor system, and transmission system
5. Development and production of new materials for aerospace

42

---

Page 43

6. Manufacturing of gas turbines for aerospace
7. Manufacturing of satellites, launch vehicles and parts
8. Aviation and aerospace technology applications, system software and hardware products, and terminal product development

Produce

9. Development and manufacturing of aircraft ground simulation training system and test system
10. Development and manufacturing of aircraft ground repair, maintenance and testing equipment
11. Satellite ground and application system construction and equipment manufacturing
12. Development and application of special emergency rescue equipment for aircraft
13. Aircraft, equipment and parts maintenance
14. Development and production of advanced satellite payloads
15. Development and manufacturing of overall drones, materials, communications, control systems, etc.
16. Design of civil aircraft and helicopters
17. Development and production of solar cells for aerospace
19. Light Industry

1. A single piece of chemical wood pulp is 300,000 tons/year and above, and chemical mechanical wood pulp is 100,000 tons/year and above, chemical bamboo pulp 100,000 tons/year and above forest-paper integrated production line and corresponding supporting paper and cardboard production lines (except newsprint and coated paper); adopt clean production process, using non-wood fibers as raw materials, a single pulp production line with an annual output of 100,000 tons/year; development and manufacturing of advanced pulping and papermaking equipment; element-free chlorine (ECF) Chemical Pulp Bleaching Process

2. Design and manufacture of precision molds for non-metal products
3. Development, production and application of biodegradable plastics and series of products, agricultural plastics

43

Development and production of material and water-saving equipment and long-life (three years or more) functional agricultural

4. New plastic building materials (high air-tightness and energy-saving plastic windows, large-diameter drainage and s  
Road, impact-resistant modified polyvinyl chloride pipe, polyethylene pipe for ground source heat pump system, trenchless  
Plastic pipes, composite plastic pipes, plastic inspection wells); impermeable geomembrane; plastic-wood composite  
Production of materials and ultra-high molecular weight polyethylene pipes and plates with a molecular weight  $\geq 2$  million

5. Technical application and equipment manufacturing of dynamic plasticization and plastic extensional rheological pl  
Plastic processing equipment with electromagnetic induction heating and servo drive system

6. Special ceramics used in the fields of industry, medicine, electronics, aerospace, etc.  
Production and technology, equipment development; ceramic clean production and comprehensive utilization technology de

7. High-efficiency and energy-saving sewing machinery (using embedded digital control, no oil or slight oil lubricatio  
Sliding and other advanced technologies) and development and manufacturing of key components

8. R&D and manufacturing of multi-station modular machine tools for pen-making, clock and watch industries

9. Development and application of high-tech, digital, intelligent printing technology and high-definition plate making  
use

10. Manufacturing of special needs products for ethnic minorities

11. Vacuum aluminum plating, sprayed silicon oxide, polyvinyl alcohol (PVA) coating film,  
Functional polyester (PET) film, oriented polystyrene (OPS) film and paper plastic base  
New packaging materials such as layer co-extrusion or composite

12. Two-color and above metal plate printing, matching light curing (UV), thin plate coating  
Membrane and high-speed food and beverage can processing and supporting equipment manufacturing

13. New lithium primary batteries such as lithium iron disulfide and lithium thionyl chloride; lithium ion batteries,  
Ni-MH battery, new structure (bipolar, lead cloth horizontal, winding type, tube type, etc.) sealed

Lead batteries, lead-carbon batteries, super batteries, fuel cells, lithium/carbon fluoride batteries, etc.

Battery and super capacitor

14. Ternary and multi-element, lithium iron phosphate and other cathode materials and intermediate phases for lithium  
Anode materials such as carbon microspheres and silicon carbon, single-layer and three-layer composite lithium-ion battery  
Electrolytes and additives such as ethylene carbonate (FEC); recycling and green recycling of used batteries  
Ring production process and equipment manufacturing

15. Automated and intelligent production lines for lead-acid batteries; automated and intelligent lithium-ion batteries  
Energy and chemical production complete sets of manufacturing equipment; more than 600 alkaline zinc-manganese battery  
Energetic production complete set of manufacturing equipment

16. Development and key points of clean production of tannery and fur processing, and new technology development  
Equipment manufacturing, comprehensive utilization of chromium-containing leather solid waste; leather and fur processing;  
Recycling, comprehensive utilization of trivalent chromium sludge; ash-free expansion (auxiliary) agent, ammonia-free dea  
Agent, salt-free pickling (auxiliary) agent, high absorption chrome tanning (auxiliary) agent, natural vegetable tanning agent  
Development, production and application of functional chemical products for high-end leather such as synthetic finishing (a

17. High-efficiency and energy-saving electric light source (high and low pressure discharge lamps and solid-state light  
Technology development, product production and application of solid mercury production technology; recycling and reuse of

18. Development and production of household appliances that meet the national level 1 or level 2 energy efficiency

19. Multi-effect, energy-saving, water-saving, environmentally friendly surfactants, additives and detergents  
Development and production

20. Use new refrigerants to replace hydrochlorofluorocarbon-22 (HCFC-22 or R22)  
Development and manufacturing of air conditioners, using new foaming agents to replace HCFC-141b (HCFC-141b)  
In the production of household appliances in China, a new blowing agent is used to replace hydrochlorofluorocarbon-141b (

Production and application of rigid polyurethane foam

21. Energy-saving and environmentally friendly glass furnaces (including full electric melting, electric boosting, and c  
NO<sub>x</sub> concentration ≤1200mg/m<sup>3</sup> low-nitrogen combustion technology) design and application; glass  
Furnace DCS energy-saving automatic control technology



22. Process technology and key equipment for lightweight glass bottles (lightweight  $\leq 1.0$ )  
Development and production

23. Energy-saving and environmentally friendly oils such as water-based inks, UV curable inks, vegetable oil inks, etc  
Ink production

24. Development and production of new technologies for natural food additives and natural spices

25. Advanced food production equipment R&D and manufacturing; food quality and safety monitoring (inspection Measurement) R&D and production of instruments and equipment

26. Tropical juices, berry juices, cereal drinks, herbal drinks, tea concentrates,  
Development, production and processing of high value-added plant beverages such as tea powder and plant protein beverage  
Base construction; comprehensive development and utilization of pomace, tea dregs, etc.

27. Nutritional and healthy rice, wheat flour (food special rice, germinated brown rice, embryo  
Rice, food special flour, whole wheat flour and nutrition fortification products, etc.) and product development and production  
Industrialized production of traditional staple foods; development and production of special equipment for grain processing;  
Development of key technologies for comprehensive utilization of products (rice husk, rice bran, bran, germ, meal, etc.)  
application

28. Rapeseed oil production line: using puffing, negative pressure evaporation, self-balancing utilization of heat energy  
Low-consumption steam vacuum system and other technologies, the main rapeseed production area processes 400 tons of rapeseed  
The solvent consumption is less than 1.5 kg per ton of material (including 200

46

One ton and above, solvent consumption for one ton below 2 kg); peanut oil production line: main peanut production  
The daily processing capacity of peanuts in the district is 200 tons and above, and the solvent consumption per ton is less than 1.5 kg  
Production line: The cottonseed production area processes 300 tons of cottonseed and above every day, and the solvent consumption is less than 1.5 kg  
Next; rice bran oil production line: using dispersed and rapid expansion, centralized oil production and refining technology;  
Rice germ oil production line; woody oilseeds such as camellia seeds and walnuts, flax, sesame, sunflower seeds,  
Peony seeds and other small varieties of oil processing production lines and the use of supercritical carbon dioxide extraction  
Technology to produce vegetable oil

29. Using fermentation process to produce small varieties of amino acids (lysine, glutamic acid, threonine, etc.)  
Excluding acid), using molasses as raw material to produce 8,000 tons or more of yeast products and yeast derivatives

Products, new enzyme preparations and compound enzyme preparations, polysaccharide alcohols and biological chemical products  
 Functional fermented products (functional sugars, functional red yeast rice, fermented antioxidant and compound  
 Development, production and application of functional ingredients, active peptides, and microecological preparations. Enzyme  
 Process technology development and industrialization and standardized production

30. Comprehensive utilization and harmless treatment of by-products such as livestock bones, blood, feathers and intestines

31. Technical development and production of enamel electrostatic powder and enamel pre-grinding powder

32. Condensing gas water heaters, gas stoves using energy-generating combustion technology, etc. are highly efficient  
 Development and manufacturing of energy-saving and environment-friendly gas appliances

## 20. Textile

1. Continuous copolymerization modification of differentiated and functional polyester (PET) [cationic dyes  
 Dyeable polyester (CDP, ECDP), alkali-soluble polyester (COPET), high shrinkage polyester  
 (HSPET), flame-retardant polyester, low melting point polyester, non-crystalline polyester, biodegradable polyester  
 Esters, polyesters produced with green catalysts, etc.]; flame retardant, antistatic, anti-ultraviolet, antibacterial,

47

High efficiency of differentiated and functional chemical fibers such as phase change energy storage, photochromism, and conductive  
 Flexible manufacturing technology; intelligent, super-simulation and other functional chemical fiber production; originality  
 Development of green, high-efficiency and environmentally friendly oils for high-speed spinning

2. Polytrimethylene terephthalate (PTT), polyethylene naphthalate (PEN),  
 Polybutylene terephthalate (PBT), polybutylene succinate (PBS), polyterephthalate  
 Cyclohexane dimethanol dicarboxylate (PCT), bio-based polyamide, bio-based furan ring and other new  
 Development, production and application of type polyester and fiber

3. Use green and environmentally friendly technology and equipment to produce new solvent-based cellulose fiber  
 (Lyocell), bacterial cellulose fiber, using bamboo, hemp and other new renewable resources as raw materials  
 Regenerated cellulose fiber, polylactic acid fiber (PLA), seaweed fiber, chitosan fiber,  
 Polyhydroxy fatty acid ester fiber (PHA), animal and vegetable protein fiber

4. Development, production and application of high-performance fibers and products [Carbon Fiber (CF)  
 Tensile strength  $\geq 4200$ MPa, elastic modulus  $\geq 230$ GPa), aramid (AF), aramid (PSA),  
 Ultra-high molecular weight polyethylene fiber (UHMWPE) (spinning production device single line capacity  $\geq 300$

Ton/year, breaking strength  $\geq 40\text{cN/dtex}$ , initial modulus  $\geq 1800\text{cN/dtex}$ ), polyphenylene sulfide

Fiber (PPS), polyimide fiber (PI), polytetrafluoroethylene fiber (PTFE), polystyrene

Bisoxazole fiber (PBO), polyarylene oxadiazole fiber (POD), basalt fiber (BF),

Silicon carbide fiber (SiCF), polyether ether ketone fiber (PEEK), high-strength glass fiber

(HT-AR), poly(2,5-dihydroxy-1,4-phenylenepyridodiimidazole) (PIPD) fiber

Wait]

5. Special animal fiber, hemp fiber, mulberry cocoon silk, color that meet environmental protection requirements

Processing technology and products of cotton and colored mulberry cocoon silk natural fibers

48

6. Establish an intelligent spinning factory and adopt a complete set of intelligent and continuous spinning equipment (Blowing and carding, thick and thin, fine entanglement and CNC single-machine and air-jet vortex spinning, high-speed rotor spinning, and other short-process advanced spinning equipment) to produce high-quality yarns; adopt high-speed CNC shuttleless weaving machine, automatic drawing-in machine, fully formed computerized flat knitting machine, high-speed computerized flat knitting machine, new type of numerical control equipment, producing high-end, high-density, jacquard and other high-end woven and knitted fabrics

7. Adopt digital intelligent printing and dyeing technology and equipment, dyeing and finishing clean production technology, high-efficiency short-process pre-processing, continuous open-width pre-processing of knitted fabrics, low-temperature dyeing, low-salt or no-salt dyeing, low-urea printing, small bath ratio airflow or gas-liquid dyeing, number printing, inkjet printing, foam finishing, etc.), functional finishing technology, new dyeing processing technology, composite fabric processing technology to produce high-end textile fabrics; intelligent package dyeing technology preparation and application

8. The use of non-woven, woven, knitting, weaving and other processes and multiple process composites, new technologies such as long-lasting finishing to produce functional industrial textiles

9. Intelligent, high-efficiency, low-energy-consumption textile machinery, key dedicated basic parts, design development and manufacturing of measurement instruments and test equipment

10. Production of high-end carpets, drawnwork and embroidery products

11. Development and application of digital, networked and intelligent clothing production technology and equipment

12. Biological degumming in the textile industry, no polyvinyl alcohol (PVA) size sizing, less water

Water-free energy-saving printing and dyeing processing, "three wastes" efficient treatment and promotion of resource recycling

## And application

13. R&D and application of waste textile recycling technology and equipment, using polyester recycled materials to produce polyester industrial yarn, differentiated and functional polyester filament, non-woven m

49

## High value-added products

## 21. Architecture

1. Research and development and promotion of building seismic isolation and damping structure system and products
2. Research on the manufacturing and integration technology of intelligent building products and equipment
3. R&D and promotion of central heating system measurement and control technology and products
4. Application of high-strength and high-performance structural materials and systems
5. Integrated buildings for solar thermal utilization and photovoltaic power generation applications
6. R&D and promotion of advanced and applicable building technology, products and residential parts
7. Steel structure residential integration system and technology research and development and promotion
8. Research and development and promotion of energy-saving buildings, green buildings, prefabricated building techn

wide

## 9. Promotion of factory decoration technology

10. Development and application of mobile emergency domestic water supply system
11. Development and application of building information modeling (BIM) related technologies
12. R&D and engineering application of seismic reinforcement technology for existing buildings
13. R&D and promotion of prefabricated steel structure green building technology system

## 22. Urban Infrastructure

1. Production and key points of high-precision urban navigation, high-precision remote sensing images and 3D data

## Technology development

2. Urban three-dimensional management information system based on basic geographic information resources
3. Urban public transportation construction
4. Urban roads and intelligent transportation system construction

50

5. Urban traffic control system technology development and equipment manufacturing
  6. Construction of new urban and municipal rail transit lines (including light rail and tram)
  7. Urban safe drinking water project, water supply source and water purification plant project
  8. Construction of common trenches for urban underground pipelines, underground pipeline network geographic information system
  9. Urban water supply and drainage pipe network engineering, pipe network inspection, testing, repair and transformation
- Trenchless construction and repair technology, leak detection equipment for water supply pipe network, related technology equipment production
10. City gas engineering
  11. Urban central heating construction and renovation project
  12. Urban rainwater collection and utilization project
  13. Urban landscaping and ecological community construction
  14. Renovation of existing parking facilities; parking buildings, underground parking lots, mechanical three-dimensional parking
- Construction of intensive parking facilities such as garages; parking facilities with electric vehicle charging facilities
15. Urban construction management information technology application
  16. Application of key technologies in urban ecosystem
  17. Development and application of urban water-saving technology
  18. Development and application of intelligent urban lighting, green lighting products and system technology
  19. Reclaimed water utilization technology and engineering
  20. Urban water supply, drainage, gas plastic pipeline application engineering
  21. Urban emergency and backup water source construction project
  22. Seawater water supply pipe network and seawater desalination projects in coastal towns
  23. Development and application of urban waterlogging monitoring and early warning technology, urban drainage and

24. Development and application of key technology products for sponge city construction

25. Rapid purification equipment such as combined overflow pollution and initial rainwater, decentralized purification

Give

26. City Information Model (CIM) based on big data, Internet of Things, GIS, etc.

Related technology development and application

23. Railway

1. Construction of new railway lines

2. Reconstruction and expansion of existing railways and construction of special railway lines

3. Technical development and construction of passenger dedicated lines and high-speed railway systems

4. The technology and equipment of railway train, passenger and freight safety guarantee system, railway train

Vehicle operation control and vehicle control system development and construction

5. Development and construction of railway transportation information system

6. AC drive electric locomotives of 7,200 kilowatts and above, 6,000 horsepower and above AC

Diesel locomotives, EMUs with speeds above 200 kilometers per hour, plateaus above 3000 meters above sea level

Special rescue equipment for locomotives, plateau EMUs, large special trucks, and rolling stock

7. AC traction drive system, braking system and core components of main rail vehicles

(Including IGCT and IGBT components)

8. Railway catenary, turnouts, buckle parts, traction supply for railways with a speed of 200 kilometers and above

Electrical equipment

9. Application of power factor compensation technology for electrified railway traction power supply

10. Large-scale road maintenance machinery, railway engineering construction machinery and equipment, line, bridge

11. Development of automation technology for traffic dispatch and command

52

12. Concrete structure repair and durability improvement technology and material development

13. Railway passenger train toilet and ground receiving and treatment project

14. Railway GSM-R communication signal system

15. Development and construction of railway broadband communication systems such as LTE-R

16. Development and construction of digital railway and intelligent transportation

17. Vibration and noise reduction technology for high-speed railways or passenger dedicated lines with a speed of 300 application

18. Intercity and city (suburban) railway

24. Highway and road transportation (including urban passenger transportation)

1. National Expressway Network Project Construction

2. Reconstruction and upgrading of national and provincial trunk lines

3. Automobile passenger and freight station, urban bus station

4. Development and application of related technologies for expressway non-stop toll collection system

5. Development and development of highway intelligent transportation, fast passenger and cargo transportation, and h

Construction

6. Development and construction of highway management services and emergency support systems

7. Development and production of new materials for highway engineering

8. Road container and van transportation

9. Application of super long span bridge construction and maintenance technology

10. Application of construction and maintenance technology for long tunnels

11. Development and construction of rural passenger and cargo transportation network

12. Rural road construction

53

13. Development and construction of inter-city rapid system

14. Development and construction of taxi service dispatching information system

15. Construction of emergency evacuation routes for expressway vehicles

16. Low noise road technology development

17. Development and application of expressway rapid construction and maintenance technology and materials

18. City bus

19. Development and application of operating vehicle safety monitoring and recording system

20. Development and application of traffic safety and public security control equipment and technology for main high

25. Water Transport

1. Construction of deep water berths (coastal 10,000 tons, inland rivers 1,000 tons and above)
  2. Construction of coastal deep-water waterways and high-grade waterways and navigable buildings in inland rivers, v
- Construction of inland waterways in regions and poverty-stricken areas
3. Construction of transportation terminals on coastal land and islands
  4. Large port loading and unloading automation project
  5. Application of Marine Electronic Data Exchange System
  6. Water traffic safety supervision and rescue system construction
  7. Standardization of inland vessels
  8. Technical renovation project of the old port area
  9. The construction of port reception and disposal facilities and equipment manufacturing for ship pollutants, the port
- Chemical and oil emergency facility construction and equipment manufacturing
10. Inland self-unloading container ship transportation system
  11. Water high-speed passenger transportation

54

12. Port gantry crane oil-to-electricity-saving reconstruction project
  13. Water ro-ro multimodal transportation
  14. Construction of water operation industry information system
  15. International cruise transportation and cruise home port construction
  26. Air Transport
1. Construction and operation of airports and supporting facilities
  2. Public air transportation
  3. General aviation
  4. Construction of air traffic control and communication navigation monitoring system
  5. Aviation computer management and its network system development and construction
  6. Aviation fuel refueling service and facility construction
  7. Maritime air surveillance, patrol and search and rescue services and facility construction, small aircraft should
- Emergency take-off and landing site construction
27. Comprehensive Transportation



1. Construction and renovation of comprehensive transportation hub
2. Convenient transfer and luggage MRT system construction in comprehensive transportation hub
3. Construction and application of integrated transportation hub operation management information system
4. Construction of guidance system for integrated transportation hub
5. Construction of integrated service facilities for comprehensive transportation hubs
6. Disaster prevention and relief and emergency evacuation system of integrated transportation hub
7. Construction of a convenient freight forwarding system in a comprehensive transportation hub
8. Research and development of passenger interline transportation facilities and equipment, ticketing integration, and i

55

#### Wide application

##### 28. Information Industry

1. Construction of 2.5GB/s and above optical synchronous transmission system
2. 155MB/s and above digital microwave synchronous transmission equipment manufacturing and system construction
3. Manufacturing and construction of satellite communication systems and earth station equipment
4. Network management monitoring, clock synchronization, billing and other communication support network construction
5. Internet of Things such as Narrowband Internet of Things (NB-IoT), Broadband Internet of Things (eMTC)

#### Manufacturing and construction of new business network equipment such as sensor network) and intelligent network

6. Manufacturing and construction of new business network equipment such as Internet of Things (sensor network)
7. Manufacturing and construction of broadband network equipment
8. Digital cellular mobile communication network construction
9. IP business network construction
10. IPv6-based next-generation Internet technology research and development and services, network equipment, core

#### R&D and production of chips, systems and related test equipment

11. Satellite digital TV broadcasting system construction
12. Construction of value-added telecommunications service platform
13. Manufacturing of equipment for 32-wavelength and above optical fiber wavelength division multiplexing transmission
14. Manufacturing of 10GB/s and above digital synchronization series optical fiber communication system equipment

- 15. Routers, switches, base stations and other equipment supporting the communication network
- 16. Manufacturing of stratospheric communication system equipment
- 17. Digital mobile communication, mobile ad hoc network, access network system, digital trunking communication System and router, gateway and other network equipment manufacturing

56

---

 Page 57

18. Large and medium-sized electronic computers, trillions of high-performance computers, portable mini Computers, high-end servers of one trillion times per second and above, large-scale simulation systems, large Manufacturing of industrial control machines and controllers

19. Integrated circuit design, manufacturing of integrated circuits with line width below 0.8 microns, and ball grid Package Array (BGA), Pin Grid Array Package (PGA), Chip Scale Package (CSP), Multi-chip package (MCM), grid array package (LGA), system-in-package (SIP), Flip chip packaging (FC), wafer level packaging (WLP), sensor packaging (MEMS), etc. Advanced packaging and testing

20. Integrated circuit equipment manufacturing

21. New electronic components (chip components, frequency components, hybrid integrated electronics Circuits, power electronic devices, optoelectronic devices, sensitive components and sensors, new electromechanical device Components, high-density printed circuit boards and flexible circuit boards, etc.) manufacturing

22. Semiconductors, optoelectronic devices, new electronic components (chip components, electrical Power electronics devices, optoelectronic devices, sensitive components and sensors, new electromechanical components, High-frequency microwave printed circuit boards, high-speed communication circuit boards, flexible circuit boards, high-performance Materials for electronic products

23. Software development and production (including the research, promotion and application of national language information technology)

24. Development and application of digital system (software): embedded software for smart devices, Distributed control system (DCS), programmable logic controller (PLC), data acquisition and Industrial control systems such as supervisory control (SCADA) and advanced control system (APC); manufacturing execution Operation system (MES), computer-aided design (CAD), auxiliary engineering (CAE), engineering Art planning (CAPP), product lifecycle management (PLM), industrial cloud platform, engineering

57

Industry APP and other industrial software; Energy Management System (EMS), Building Information Modeling (BIM) System and other dedicated systems

25. Semiconductor lighting equipment, photovoltaic solar equipment, chip component equipment, new Type power battery equipment, surface mount equipment (including stencil printing machine, automatic placement machine Lead reflow soldering, photoelectric automatic inspection instrument) etc.

26. Printers (including high-speed barcode printers) and mass storage and other computer external equipment

27. Thin film field effect transistor LCD (TFT-LCD), organic light emitting diode (OLED), electronic paper display, laser display, 3D display and other new flat panel display devices, Key components such as glass substrates for the LCD panel industry and cover glass for the electronics and information ind And key materials

28. Manufacturing of new (non-dispersive) single-mode optical fiber and optical fiber preform

29. Manufacturing of discs for high-density digital laser video disc players

30. Copy production of read-only CDs and recordable CDs

31. Audio and video coding and decoding equipment, audio and video broadcast transmission equipment, digital TV s Room equipment, digital TV system equipment, digital TV broadcasting single frequency network equipment, digital TV Receiving equipment, digital camcorders, digital recorders, digital TV products

32. Development system for network security products, data security products, and network monitoring equipment Make

33. Technical development and manufacturing of smart mobile terminal products and key components

34. Doppler radar technology and equipment manufacturing

35. Medical electronics, health electronics, bioelectronics, automotive electronics, power electronics,

Financial electronics, aerospace instrument electronics, image sensors, sensor electronics, etc.

#### Product manufacturing

36. Wireless local area network technology development, equipment manufacturing
37. E-commerce and e-government system development and application services
38. Satellite navigation chip, system technology development and equipment manufacturing
39. Construction of emergency radio and television systems
40. Quantum communication equipment
41. Thin film transistor liquid crystal display (TFT-LCD), light emitting diode (LED)

And organic light-emitting diode display (OLED), electronic paper display, laser display, 3D display

#### Special equipment for the production of new display devices

42. Semiconductor lighting substrates, epitaxy, chips, packaging and materials (including efficient heat dissipation Copper Clad Laminate, Thermal Conductive Glue, Thermal Conductive Silicone Film) etc.

43. Department of development of digital content products such as digital music, mobile media, animation and games

#### Unify

44. Development and application of anti-counterfeiting technology
45. The core chip and related software of nuclear power instrument control system
46. Big data, cloud computing, information technology services and blocks within the scope allowed by the state

#### Chain Information Service

47. Industrial Internet network, platform, security hardware equipment manufacturing and software system development and integration of innovative applications, industrial Internet equipment security, control security, network security, Platform security and data security related technology product development and application, industrial Internet network construction and transformation, construction and promotion of logo analysis system, construction and application of industrial c

48. Broadband digital trunking equipment, using time division duplex (TDD) carrier aggregation

Next-generation private network communication equipment such as the 230MHz band broadband wireless data transmission equipment, Car networking direct-connect communication equipment and other car networking wireless communication equipment base station equipment, Letter equipment

49. Research and integrated application of air-ground integrated acquisition technology for disaster site information

50. Research and manufacturing of new mechanism computer systems such as quantum and brain-like

51. Various advanced solar photovoltaic cells and high-purity crystalline silicon materials (polycrystalline silicon

The comprehensive power consumption is less than 65kWh/kg, and the conversion efficiency of monocrystalline silicon photovoltaic cells is greater than 21.5%, and the conversion efficiency of polycrystalline silicon photovoltaic cells is greater than 17%, the conversion efficiency of copper indium gallium selenium battery is greater than 18%)

The conversion efficiency of polycrystalline silicon battery is greater than 21.5%, and the conversion efficiency of cadmium telluride battery is greater than 17%, the conversion efficiency of copper indium gallium selenium battery is greater than 18%)

29. Modern logistics industry

1. Important commodities such as coal, grain, cotton, iron ore, fertilizer, and petroleum are modern

Construction of chemical logistics facilities

2. Construction of agricultural products logistics and distribution facilities, cold chain logistics of agricultural products

Food and pharmaceutical logistics quality and safety control technical services

3. Modern supply chain innovation and application

4. Construction of multimodal transport facilities, rapid multimodal transport and reloading equipment, standard

R&D, promotion and application of standardized carrying units

5. Promotion and application of standard pallets and 600mm×400mm packaging basic modules, environmentally friendly

Manufacturing and use of pallets with recyclable materials

6. Logistics information service technology, cargo tracking, identification and positioning technology, intelligent ware

R&D and application of picking and distribution technology and logistics information security technology

60

7. Construction and operation of emergency logistics, reverse logistics, and green logistics facilities

8. Development and construction of logistics public information platform

9. Construction and operation of logistics hub

10. Public warehousing, vehicle parking, loading and unloading, charging and other supporting facilities required for urban

Facility construction

30. Financial Service Industry

1. Construction of rural financial service system

2. Bond issuance and transaction service system construction

3. Agricultural insurance, liability insurance, credit insurance, commercial health insurance, property insurance

risk

4. Development and application of inclusive financial products
5. Development of loan pledge business for intangible assets such as intellectual property rights and income rights
6. Credit card and network services
7. Construction of RMB cross-border settlement and clearing system
8. Development and application of financial supervision technology
9. Venture capital
10. The R&D, application and service output of fintech products of financial institutions
11. Green financial service system construction
12. Open banking system security protection
13. Financial guarantee services and financial leasing services
14. Asset securitization, real estate investment trust funds (REITs), etc. revitalize stocks

Development and application of asset financial instruments and financial products

61

### 31. Technology Service Industry

1. Industrial design, meteorology, biology, new materials, new energy, energy saving, environmental protection, Professional technology services such as surveying and mapping, oceanography, standardization services, measurement test Inspection and testing services, technology popularization
2. Online data and transaction processing, IT facility management and data center services, mobile Internet service, Internet conference TV and image and other telecom value-added services
3. Industry (enterprise) management and informatization solution development, network-based software Software service platform, software development and testing services, information system integration, consulting, operation Services such as protection and data mining
4. Digital content services such as digital music, mobile media, online publishing, geography, Information resource development services in international trade and other fields
5. Emerging cultural technologies such as digital technology, high-fidelity technology, high-speed computing technology Support technology construction and services

6. Analysis, experiment, testing and related technical consulting and R&D services, intelligent production Design services such as product overall plan, ergonomic design, system simulation, etc.

7. Online data processing and data security services, data recovery and disaster recovery services, information Information security protection, network security emergency support services, cloud computing security services, big data s Full service, information security risk assessment, certification and consulting services, information equipment and software Full evaluation service, password technology product testing and certification service, information system level protection s Scheme design service

8. Science and technology information exchange, literature information retrieval, technical consultation, technical incu Services such as evaluation of technological achievements, transfer and transformation of technological achievements, and t

62

9. Intellectual property agency, transfer, registration, identification, search, analysis, evaluation, Operation, certification, consulting and related investment and financing services

10. National Engineering (Technology) Research Center, National Industrial Innovation Center, National Agricultural high-tech industry demonstration, national agricultural science and technology park, nationally recognized ente Centers, national laboratories, national key laboratories, major national science and technology infrastructure, high-tech New technology entrepreneurship service center, green technology innovation base platform, new product development and Heart, science and education infrastructure, industrial cluster comprehensive public service platform, pilot base, experiment Base construction

11. Advanced technologies such as information technology outsourcing, business process outsourcing, and knowledge Service

12. Smart manufacturing system integration application experience verification service

13. Industrial services: maintenance and repair of modern high-end equipment, digital production line transformation Manufacturing and integration, industrial service network platform, industrial e-commerce, remote operation and maintenar System, smart factory equipment monitoring and diagnosis platform, predictive maintenance system, professional maintena Business and supply chain services, industrial management services (including equipment operation and maintenance mana Maintenance and management services, industrial APP and equipment management software (SaaS)), data and digitization Services (PaaS, IaaS, data analysis services and other innovative data services)

14. Network security integration, security maintenance, security operation, risk assessment, education and training

Security services such as training, consulting, and emergency response

15. Construction, maintenance, leasing, etc. of cloud computing data centers

16. Information system integration and Internet of Things technical services, operation and maintenance services, information management and storage support services, information technology consulting services, digital content services and other information services

63

Page 64

## Technical Services

### 32. Business Service Industry

1. Economics, management, information, accounting, taxation, auditing, law, energy conservation, environmental protection, insurance, investment and other consulting and services

2. Engineering consulting services (including planning consulting, project consulting, evaluation consulting, process engineering consulting)

3. Credit service system construction such as credit investigation and rating

4. Asset evaluation, calibration, testing, inspection and other services

5. Property rights transaction service platform

6. Advertising creative, planning, design, production, agency, publishing and other advertising services

7. Exhibition services (excluding the construction of exhibition venues)

8. Supply chain management services (referring to the logistics,

Business flow, information flow and capital flow are designed, planned, controlled and optimized, and the single and decent Order management, procurement execution, customs declaration and tax refund, logistics management, financial communication, etc.) Integrated services such as management, trade commerce, settlement, etc.)

### 33. Commercial service industry

1. Construction of modern market circulation facilities for agricultural products and means of production

2. Seeds, seedlings, breeding livestock and poultry and fry (seeds), chemical fertilizers, pesticides, agricultural machinery, etc. Chain operation and comprehensive services of agricultural materials such as agricultural film

3. Chain operation of daily necessities, medicines, publications and other daily necessities for rural areas

4. Agricultural products auction service

5. Unified distribution and distribution network construction of commercial enterprises

64



6. Use information technology to transform and enhance traditional commodity trading markets

7. Second-hand goods market construction

8. Construction of a modern second-hand car transaction service system

9. New rural modern circulation service network project construction, application and demonstration of agricultural m  
Fan project construction

34. Tourism

1. Tourist commodities, tourist souvenirs, tourist equipment and equipment, as well as leisure, mountaineering,  
Development and marketing services for various outdoor activities such as skiing, diving, and adventure

2. Cultural tourism, health tourism, rural tourism, ecological tourism, marine tourism,  
Forest tourism, grassland tourism, industrial tourism, sports tourism, red tourism, ethnic customs

Comprehensive development of tourism and other tourism resources, infrastructure construction and information services

35. Postal Industry

1. Construction of postal savings network

2. Construction of integrated postal service network

3. Mail processing automation project

4. Safety supervision of delivery channels, time limit monitoring of express mail, consumer complaints, full  
Public service and market supervision functions such as opinion survey and publicity, zip code and industry tariff query  
And other postal industry public service information platform construction

5. Urban and rural express service outlets, stores and other express service outlets and smart express mail (letter  
Package) Box and express terminal integrated service site construction

6. Express sorting centers, transshipment centers, distribution centers in cities, regions and between regions  
Construction of express delivery facilities such as centers and processing hubs

7. Express tracking query, automatic sorting, delivery scheduling, express customer service call center

Development and application of other express information system

8. Data collection, container, intelligent terminal, intelligent warehousing, automatic sorting,

Express delivery such as mechanized loading and unloading, cold chain express, AGV, drone, unmanned vehicle and green

R&D and application of technical equipment

9. Mail express transportation and transportation network integration and multimodal transportation and operation plat

Technology development and application

### 36. Education

1. Pre-school education

2. Special education

3. Vocational education

4. Internet + education, distance education

### 37. Hygiene

1. Construction of preventive health care, health emergency, and health supervision service facilities

2. Family planning, prenatal and postnatal care, reproductive health consultation and services

3. Internet + medical and health services, medical big data applications

4. Health consultation, medical knowledge and other medical information services and health management services

5. Construction of medical and health service facilities

6. Infectious diseases, children, mental health specialist hospitals and rehabilitation hospitals (centers), nursing

Construction and service of science institute (center, station), tranquility and nursing center, general medical facilities

7. Psychological counseling service

8. TCM health care services

66

### 38. Culture

1. Public culture, culture and art, press and publishing, radio, television and film, online video

Listening, cultural heritage protection and utilization, and facility construction

2. Cultural creativity design services, digital cultural creativity (including digital cultural creativity technology Equipment, digital cultural creative software, digital cultural creative content production, new media services,

Digital cultural creative content application services), animation creation, production, dissemination, publishing, development  
Product development

3. Radio, film and television production, distribution, trading, broadcasting, publishing, derivative development,  
Network audio-visual program technical service and development

4. Press and publication content supervision technology, copyright protection technology, publication production technology  
Development and application of technology and publication distribution technology, new publications of electronic paper, etc.  
Technology development, application and industrialization

5. Development and application of film digitization service and supervision technology

6. Protection and revitalization of intangible cultural heritage, national and folk arts, and traditional crafts  
Art protection and development, national historical and cultural cities (towns, villages) and cultural blocks, China  
Protection of minority villages and towns, protection and development of Chinese time-honored brands, ethnic culture and etc.  
Premium international marketing and promotion

7. Cultural information resource sharing project, smart museum construction, traditional media and new  
The development of integrated media, smart broadcasting and television construction, mobile multimedia broadcasting and  
Digitalization, intelligent collaborative coverage of cable, wireless, satellite broadcast and television network, national cable  
Network intelligent construction and interconnection platform construction

8. Development and application of language technology

67

9. Performing Arts

Thirty-nine. Sports

1. Sports management activities

2. Sports competition performance activities

3. Sports, fitness and leisure activities

4. Sports venue and facility management

5. Sports brokerage and agency, advertising and exhibition, performance and design services

6. Physical Education and Training

- 7. Sports media and information services
- 8. Sports tourism, health and rehabilitation, financial and asset management services
- 9. R&D and manufacturing of sporting goods and related products
- 10. Sales, rental and trade agency of sporting goods and related products
- 11. Sports facilities construction
- 40. Elderly care and childcare services

1. Long-term care service institutions (including nursing homes, nursing homes for the elderly, and rural elderly Facilities, etc.)

- 2. The backbone network of community elderly care services
- 3. Pension financial products and services
- 4. Meals and mobility
- 5. Senior education
- 6. Kangyang Residence
- 7. Training and education of elderly care services

68

- 8. Rehabilitation assistive device configuration service (rental) agency
- 9. Construction and renovation projects for aging homes
- 10. Development of human resources for the elderly
- 11. Elderly health management and physical fitness
- 12. Smart health and elderly care
- 13. Early childhood development (intellectual development, dietary nutrition, mental health)
- 14. Education and training of infant care
- 15. Infant care service institutions (centers)
- 16. Infant health management
- 17. Family parenting support and parenting guidance
- Forty-one. Housekeeping
- 1. Community housekeeping services
- 2. Employee-based housekeeping services

3. Housekeeping vocational education and skill training
4. Comprehensive housekeeping information service
5. Construction and operation management of housekeeping service measures (housekeeping service outlets)
6. Standardization of housekeeping services
42. Other service industries
  1. Construction and management of affordable housing
  2. Property services
  3. Activity places for the elderly and minors
  4. Construction of basic service facilities and comprehensive service outlets in urban and rural communities

69

5. Construction and service of supporting public service platforms in development zones and industrial clusters
6. Community care services
7. Construction of a network system for recycling and utilization of renewable resources
8. Wedding service industry
9. Grassroots employment and social security service facilities construction
10. Construction of service facilities for left-behind families of migrant workers
11. Social Security All-in-One Card Project
12. Construction of Work Injury Rehabilitation Center
13. Rental housing construction, operation and management
14. Consumer rights protection services
43. Environmental protection and comprehensive utilization of resources
  1. Mine ecological environment restoration project
  2. Marine environmental protection and scientific development, marine ecological restoration
  3. Development and utilization of brackish water, brackish water, inferior water, seawater, and seawater desalination Co-utilization project
  4. Development and utilization of substitutes for ozone-depleting substances
  5. Regional scrap cars, scrap electrical and electronic products, scrap ships, scrap steel, Construction of recycling bases for waste wood, waste rubber and other resources

6. Technical engineering of effluent radiation environmental monitoring
  7. Environmental monitoring system engineering
  8. Technical equipment for the safe disposal of hazardous waste (medical waste) and heavy metal-containing waste
- Development, manufacturing and disposal center construction and operation; radioactive waste, nuclear facility decommissioning

70

Development and manufacturing of total disposal technology equipment and construction of disposal center

9. Monitoring and prevention technology for mobile pollution sources (locomotives, ships, automobiles, etc.)
  10. Urban traffic noise and vibration control technology application
  11. Development and application of electromagnetic radiation control technology for power grids and information systems
  12. Development and application of technologies to reduce and control dioxin emissions
  13. Development and application of substitutes for persistent organic pollutant products
  14. Development and application of disposal technology for waste persistent organic pollutant products
  15. "Three Wastes" Comprehensive Utilization and Treatment Technology, Equipment and Engineering
  16. Development and production of biological strains and additives for "three wastes" treatment
  17. Development and application of mercury recovery and treatment technologies for mercury-containing wastes, and use
  18. Zero discharge of wastewater, application of reuse water technology
  19. Development of high-efficiency and low-energy wastewater treatment and regeneration technologies
  20. Urban garbage, rural domestic garbage, rural domestic sewage, sludge and other solid waste
- Waste reduction, recycling, harmless treatment and comprehensive utilization project
21. Waste landfill anti-seepage technology and materials
  22. Development and application of technologies for energy saving, water saving, material saving, environmental protection and equipment manufacturing; to provide users with energy-saving, environmental protection, comprehensive resource utilization
  - Evaluation, testing, auditing, certification, diagnosis, financing, renovation, operation management and other services
  23. High-efficiency, energy-saving, environmentally friendly mining and beneficiation technology (pharmaceuticals); Technology and equipment for the development and comprehensive utilization of miscellaneous and refractory mines
  24. Comprehensive utilization technology of symbiotic and associated mineral resources and extraction of valuable elements

71

25. Comprehensive utilization of tailings, waste residue and other resources and manufacturing of supporting equipment

26. Renewable resources, construction waste recycling project and industrialization

27. Waste wood, waste electrical and electronic products, waste printed circuit boards, waste batteries, Waste ships, waste agricultural machinery, waste plastics, waste textiles and textile waste and scraps, Waste (broken) glass, waste rubber, waste oil and other waste materials and other resources recycling technology Technology, equipment development and application

28. Scrap cars, construction machinery, mining machinery, machine tool products, agricultural machinery, Recycling and remanufacturing of waste mechanical and electrical products and parts such as ships, ink cartridges, organic products Remanufacturing (refilling), dismantling of large civil aircraft and engines, parts and components, Reuse, remanufacture

29. Comprehensive utilization of technical equipment: scrap steel crushing production line above 4000 horsepower; waste Complete sets of equipment for recycling and processing of composite materials (recovery rate above 95%); light hydrocarbon Product comprehensive utilization technical equipment; biomass energy technical equipment (power generation, oil product Sulfur recovery equipment (Cryogenic Claus process)

30. R&D and application of soil remediation technology containing persistent organic pollutants

31. Development and application of technologies to reduce and control heavy metal emissions

32. Industrial refractory organic wastewater treatment technology

33. High-efficiency treatment technology for toxic, organic waste gas and malodor

34. Technology development and facility construction of kitchen waste resource utilization

35. Carbon capture, utilization and storage technology and equipment

36. Ice storage technology and its complete equipment manufacturing

37. Recycling of waste power batteries of electric vehicles: cascade utilization and recycling

Technology and equipment for the recycling of used power batteries: automatic disassembly technology and equipment;  
 Dynamic rapid sorting into groups of technical equipment; battery remaining life and consistency evaluation technical equip  
 Residual value evaluation technology and equipment; echelon utilization technology and equipment; positive electrode, neg  
 High-efficiency recycling and harmless treatment of electrolyte technology and equipment

38. Waste wood material recycling project

39. Waste sorting technology, equipment and facilities

40. Third-party governance of environmental pollution

41. Volatile organic compounds reduction, resource utilization and terminal treatment and monitoring technology

42. Waste sulfuric acid cracking recovery technology

43. Resource utilization of industrial by-product salt

44. Green and efficient integrated technology for leaching and extraction of ionic rare earth ore

45. Advanced technology and equipment for waste heat recovery and utilization

44. Public safety and emergency products

1. Meteorology, earthquake, geology, ocean, flood and drought disasters, urban and forest fire disasters

#### Development and Application of Harm Monitoring and Early Warning Technology

2. Development and application of monitoring and early warning technologies for biological disasters and animal epid

3. Development and application of safety automatic monitoring and alarm technology for dams and tailings ponds

4. Development and application of safety production monitoring and alarm technologies for coal, mines, etc.

5. Development and application of early warning technology for public transport accidents

6. Technologies and products for rapid monitoring of water, soil and air pollutants

7. Development and application of food and drug safety rapid inspection technology, equipment and equipment

8. Test reagents and instruments for major epidemics and emerging infectious diseases

9. Quick screening equipment for persons with abnormal body temperature in public places

10. Traffic safety, urban public safety, terrorist attack safety, network and information system

System safety, police safety, special equipment safety, engineering construction safety, fire, major hazards



Dangerous source safety monitoring, monitoring and early warning system, product technology development and application

11. Rapid detection of radioactive, drug and other contraband, nuclear, biological and chemical terrorist sources and of

Testing technology and products

12. Development and application of hazardous chemical safety monitoring technology

13. Development and application of protective equipment for emergency rescuers

14. Household emergency protection products

15. Development and application of new lightning protection technology

16. Safe production and avoidance products and facilities for mines, engineering and hazardous chemicals

17. Technologies and products such as rapid surveying and mapping, storage and transmission of on-site information c

18. Life detection equipment

19. Intelligent, large, special, unmanned, high-performance fire fighting and rescue equipment

20. All-terrain ruin rescue equipment for buildings (structures)

21. Emergency communications, emergency command, emergency power generation and power restoration, logistics s

All-terrain, high-mobility, multi-functional emergency rescue special vehicle and equipment

22. Detection, demolition, life-saving, lighting, smoke exhaust, leak plugging, transfer, decontamination, lifting

High-efficiency rescue products

23. Aviation emergency rescue equipment and equipment

24. Road emergency rescue equipment and facilities

25. Development and application of deicing and snow removal machinery and environmentally friendly deicing agents

74

26. Water (underwater and deep sea) emergency rescue technology and equipment

27. Construction and equipment of emergency facilities for vehicles, ports and other hazardous chemicals and oil prod

28. Marine oil spill and toxic and hazardous material leakage emergency treatment technology and equipment

29. The rapid absorption and treatment of toxic and hazardous liquids, technical equipment, and mobile medical waste

Emergency treatment equipment, special equipment for identifying characteristics of hazardous waste, etc.

technical equipment

30. Aviation emergency medical system, mobile medical rescue system, sanitary emergency disinfection supply

Should be equipped with an integrated first aid and evacuation platform for life support, treatment and monitoring

31. Vaccines and medicines for the prevention and control of public health emergencies and biological events
32. Anti-terrorism operations technical equipment and reconnaissance and control technology; anti-terrorism integrate Anti-nuclear terrorist robots, emergency explosion-proof vehicles, medium-sized anti-terrorism explosion-proof robots, explosives destroyer, etc.
33. Emergency medical treatment, traffic rescue, engineering rescue, safety production, aviation rescue, Network and information security and other emergency rescue social services
34. Emergency logistics facilities and services
35. Emergency consultation, evaluation, training, leasing and insurance services
36. Construction of emergency material reserve infrastructure
37. Construction of emergency rescue base and public emergency experience infrastructure
38. New-type fire-resistant coatings, fire-resistant materials, fire-prevention and explosion suppression devices, and bu
39. Development and application of forest and grassland fire automatic monitoring and alarm technology
40. Safety monitoring system based on Beidou navigation satellite
41. Development and application of digital mining technology, and development of safety production simulation traini

75

And application, the safety technology of fine-grained tailings mould bag method

42. Development and application of technology for rapid acquisition of earthquake disaster information, exploration o  
Measurement technology development and application
43. Development and application of rapid identification technology for coal mine water inrush and water source
44. Rapid testing equipment for fire product quality
45. Development and application of monitoring technology for harmful elements in agricultural products and the envi
46. Rapid safety monitoring equipment for production and domestic water
47. Special types of protection products
48. Important infrastructure safety, social public safety, agriculture, forestry and meteorology, biological disasters  
Development and application of prevention and protection technology
49. Emergency rescue and hazardous chemicals for major disasters such as coal mine gas, thermal power, and water d  
Complete sets of technologies and equipment for product risk monitoring, safety prevention and control, and emergency res
50. Large-scale, multi-functional engineering rescue equipment

51. Special equipment and equipment for flood prevention and rescue
52. Artificial Weather Modification Operation System
53. Nuclear accident emergency response technology and equipment
54. Epidemic disease quarantine and disposal technology and equipment
55. Special equipment accident rescue technology and equipment
56. Emergency monitoring technology and equipment for flood and drought disasters
57. Intelligent identification technology and equipment for flood and drought disaster risk
58. Self-organizing network cluster emergency communication technology and equipment for flood prevention and re
59. Technical equipment for emergency water finding and well drilling for drought relief

76

60. Compilation technology and application of typhoon risk zoning map
61. Major disaster accident emergency rescue base-based logistics support key technical equipment
62. Key technical equipment for intelligent unmanned emergency rescue of major accidents and disasters
63. Research and application of key technologies and equipment for disaster site resettlement equipment in plateau alp
64. Efficient and intelligent deicing and snow removal equipment for rain, snow and freezing disasters
65. Light-duty modular engineering rescue equipment for complex environments
66. Research and application demonstration of key technologies for prevention and control of dam-break disasters in l
67. Construction of emergency facilities for flood control and drought relief
68. Development and application of new technologies and products for flood control and drought resistance
69. Development and application of heat transfer identification plate production
45. Civil explosive products

1. Safe, environmentally friendly and energy-saving industrial explosives and bulk industrial explosives without deton  
On-site mixed production method; adopts latex matrix centralized preparation and remote distribution on-site mixed produc  
Production methods; underground mines, large chambers, highway and railway tunnels and other engineering applications c  
Explosive loading technology; civil explosive research, production, and blasting service "integrated" mode; decommissionit  
Application of explosives in industrial explosives, special purpose explosives

2. Intelligent production technology and equipment for industrial explosives, unmanned industrial explosives vehicles

Room; production line on-line monitoring, fault self-diagnosis technology; high-precision on-site mixed production mode  
 High-speed charge measurement technology, online parameter detection technology; on-site mixed production mode, the wl  
 Energy and chemical management and control platform; informatization and visualization intelligent network of production  
 Network supervision platform; process for safe and environmentally friendly recycling and reuse of waste hazardous materi  
 Technology and equipment

77

3. New type of detonating equipment; digital electronic detonator; industrial detonator products are safe against blastin  
 Technology and basic detonator intensive production, remote distribution and safe packaging; digital electronic mine  
 Electronic ignition components (including electronic control modules and ignition components) for centralized production c  
 Delivery mode; industrial detonating cord with serialized charge

4. Modularized, automated, and continuous equipment for high-risk production processes, safe and environmentally fr  
 -Type waste (material) destruction and treatment equipment; intelligent production process for pyrotechnic agents and produ  
 And equipment, unmanned workshop of industrial detonator production line; production process quality control point proce  
 Automatic collection, storage and traceability analysis system for data such as number, man, machine, material, and environ  
 Occupational hazards, safety, environmental protection, and product performance testing methods with a high degree of infc  
 Automatic equipment for explosive addition, winding, coiling, sealing and packaging in the production process of explosive

5. The production process of the detonator is automated; a stable and controllable seismic source drug that can periodi  
 Application of column products, water-containing explosives, etc. in seismic source grains; serialized and general perforatic  
 Ammunition products; reliable, diverse, efficient, and environmentally friendly blasting equipment for artificial weather mo  
 Application of service fire (explosive) in industrial explosive products

6. Visual process data, online production data collection, automatic safety parameter inspection  
 The production process of industrial explosive products tested; in the manufacturing of detonators, the intrinsic safety level  
 Process equipment for continuous and intelligent melting, mixing, pouring, and mold ejection; seismic source  
 Process equipment for automatic charging and automatic assembly of grains; automatic charging and automatic suppression  
 Process equipment

7. An industrial explosive production line where the total number of operators in dangerous workshops is not more tha  
 The production of detonators is intelligent, there is no fixed operator in the melt-mixing and injection workshop, and a singl  
 A production line where the total number of operators in the packaging workshop is not more than 5 (including); the seismic

Production realizes continuous, automated, informatized, and flexible intelligent manufacturing, level 1.1 single

A production line in which the number of operators in dangerous workshops is not more than 5;

A production line that is automated and intelligent, with no more than 6 operators in dangerous workshops;

The production of weather-influencing explosive equipment is automated and intelligent, and dangerous workshop operator

A production line with no more than 5 people; manufacturing of pyrotechnic information bombs such as marine life-saving

At present, the automation of the preparation and loading process of the medicine, the mechanization of the assembly proce

A production line with no more than 5 operators in the dangerous workshop

#### 46. Human Resources and Human Capital Service Industry

##### 1. Human resources and human capital informatization construction

##### 2. Human resource service and human capital service industrial park and platform construction

##### 3. Human resources recruitment, employment and entrepreneurship guidance, human resources and social security ma

Service agent, human resource training, labor dispatch, human resource evaluation, human resource management

Consulting, human resource service outsourcing, senior talent search, human resource information software service

Human resources services

##### 4. Human capital value evaluation, evaluation and transaction, human capital value statistics and analysis

Analysis and application, investment activities in the process of human capital formation

##### 5. Human capital financial innovation platform construction

##### 6. Construction of human resources and human capital market and supporting service facilities

##### 7. Construction of employment service platform for rural labor transfer

#### 47. Artificial Intelligence

##### 1. Artificial intelligence chip

##### 2. Industrial Internet, public systems, digital software, intelligent equipment system integration

## Chemical technology and application

3. Network infrastructure, big data infrastructure, high-performance computing infrastructure, etc.

## Intelligent infrastructure

4. Virtual reality (VR), augmented reality (AR), speech semantic image recognition, multiple

## Research and application of sensor information fusion and other technologies

5. Typical industry application systems such as unmanned autonomous systems
6. Artificial intelligence standard testing and intellectual property service platform
7. Key technology and equipment for intelligent manufacturing, transformation of intelligent manufacturing plants and
8. Intelligent human-computer interaction system
9. Wearable devices, smart robots, smart homes
10. Intelligent medical, medical imaging auxiliary diagnosis system
11. Intelligent security, video image identification system
12. Intelligent transportation, intelligent vehicles
13. Smart Education
14. Smart City
15. Smart agriculture

## The second type of restriction

## 1. Agriculture and Forestry

1. Overload grazing on natural pastures
2. Ordinary particleboard and high and medium density fiberboard with a single line of less than 50,000 cubic meters per year

## Production device

3. Wooden particleboard production equipment with a single line of less than 30,000 cubic meters per year
4. Rosin production projects with an annual output of less than 1,000 tons

5. Veterinary powder/powder/premix production line project (variety with new veterinary drug certificate  
And automated closed high-efficiency mixed production process except)
6. Veterinary cell vaccine production line project of roller bottle culture production method (holding new veterinary dr  
(Except for the types of certificates and those adopting new technologies)
7. Primary processing project of pine resin
8. Production and use of disposable wooden products and wooden packaging with high-quality forest trees as raw mat  
Wood and bamboo processing projects with low comprehensive utilization rate of wood and bamboo processing
9. Plywood and blockboard production lines of less than 10,000 cubic meters per year
10. Root carving manufacturing of rare plants and ancient trees
11. Processing of precious and endangered wild animals and plants using wild resources as raw materials
12. Lakes and reservoirs that do not meet the requirements of ecological breeding
13. Wasteland agricultural development projects that are not conducive to ecological environment protection
14. Construction of pulp raw material forest bases in water-scarce areas and national ecologically fragile areas
15. Grain conversion into ethanol and edible vegetable oil that does not conform to national planning and industrial pc  
Biofuel conversion project
16. Development projects that destroy woodland, wetland and grassland
2. Coal
  1. Coal mines with an annual capacity of less than 300,000 tons (of which Shanxi, Inner Mongolia, and Shaanxi are le  
10,000 tons/year, Ningxia less than 600,000 tons/year), coal and gas outburst mines less than 900,000 tons/year

well

2. Coal mine projects using non-mechanized mining technology
3. Coal mine projects where the recovery rate of coal resources cannot meet the requirements of national regulations
4. Coal mine projects that have not submitted the overall planning of the mining area in accordance with the procedure
5. Coal mine projects with more than 2 underground mining working faces
6. The mining depth exceeds the coal mine and product quality specified in the "Coal Mine Safety Regulations"

The list of coal mines, mining technology and equipment required by the "Interim Measures for Commercial Coal Quality M  
Included in the restricted catalog of "Coal Production Technology and Equipment Policy Guide (2014 Edition)" and cannot

## Coal mines implementing technological transformation

## 3. Electricity

1. Within the coverage of a large power grid, the coal consumption for power generation is higher than 300 grams of s  
Wet-cooled generator set, air-cooled generator set with coal consumption higher than 305 grams of standard coal/kWh

## 2. Diversion hydroelectric power generation without ecological flow

## Fourth, petrochemical industry

1. Newly build atmospheric and vacuum plants with an annual capacity of less than 10 million tons, catalytic cracking  
Continuous reforming (including aromatics extraction) under 1 million tons per year, hydrocracking under 1.5 million tons  
Chemical production equipment

2. Newly build naphtha cracking to ethylene with an annual capacity of less than 800,000 tons, and C  
Acrylonitrile, purified terephthalic acid less than 1 million tons/year, ethylene glycol less than 200,000 tons/year, 20  
Styrene below 10,000 tons/year (except for dry gas to ethylbenzene process), caprolactyl below 100,000 tons/year  
Amine, ethylene acetic acid, oxo acetic acid with an annual output of less than 300,000 tons, natural gas to methanol  
( Except for natural gas with a CO<sub>2</sub> content of more than 20%), coal-to-methanol production with an annual output of less t

Production equipment, acetone cyanohydrin method methyl methacrylate, grain method acetone/butanol, chlorohydrin meth  
Propylene oxide and saponification method epichlorohydrin production equipment, saponin (including hydrolyzed  
物) Production equipment

3. Newly build polypropylene with an annual capacity of less than 70,000 tons, polyethylene and acetylene methods w  
PVC, ethylene oxychlorination PVC with an initial scale of less than 300,000 tons/year, 10  
Polystyrene below 10,000 tons/year, acrylonitrile-butadiene-styrene copolymerization below 200,000 tons/year  
(ABS), ordinary synthetic latex below 30,000 tons/year-carboxyl styrene butadiene rubber (including styrene butadiene late  
Production equipment, new construction, renovation and expansion of neoprene rubber, styrene butadiene thermoplastic rub  
Solvent-based general-purpose adhesive production device for type and polyacrylate type

4. Newly built soda ash (except for underground circulating soda production and trona), caustic soda (waste salt comp  
Except for ion-exchange membrane caustic soda plants used), sulphur-burning sulphur  
Except for electronic grade sulfuric acid with ion ≤100ppb), pyrite sulphuric acid with an annual output of less than 200,000



Compression method and comprehensive method nitric acid, calcium carbide (replacement of equal amount of large-scale a Outside), potassium hydroxide production plant with a single-line capacity of less than 50,000 tons/year

5. Newly built sodium tripolyphosphate, sodium hexametaphosphate, phosphorus trichloride, phosphorus pentasulfide Calcium hydrogen phosphate, sodium chlorate, low-calcium roasting process sodium dichromate, electrolytic manganese di Calcium, anhydrous sodium sulfate (except salt industry co-production and by-products), barium carbonate, barium sulfate, Barium chloride, barium chloride, barium nitrate, strontium carbonate, white carbon black (except gas phase method), choli Alkali production plant

6. Newly build yellow phosphorus, the initial scale is less than 30,000 tons/year, and the single-line production capaci Annual sodium cyanide (100% equivalent), single-line production capacity of lithium carbonate and lithium hydroxide belo Dry-process aluminum fluoride and single-line production capacity of 20,000 tons/year or less anhydrous aluminum fluorid

83

Spar production equipment

7. Newly build nitrogen fertilizer using petroleum and natural gas as raw materials, adopt fixed-layer intermittent gasi Technical synthesis of ammonia, ammonium phosphate production unit, copper washing method ammonia synthesis feed gas

8. Newly build high-toxic, high-residue, and environmentally-affecting pesticide technical materials (including oxygen Dimethoate, hydrocarbophos, isofenphos-methyl, phorate, terbufos, trimethoprim, methyl bromide, Methomyl, Aldicarb, Carbofuran, Dimethoate Sodium, Difuketone, Shafuling, Romoxan, Bromine Diuron, bromofauma, botulinum toxin, dimehypo, methamphet, aluminum phosphide, organochlorine, Organic tin pesticides, thiram fungicides, sodium nitrophenolate (potassium), chlorsulfuron, sulfamethoxazole Sulfuron, metsulfuron, etc.) production equipment

9. Newly built glyphosate, chlorpyrifos (except the water-phase process), triazophos, paraquat, Chlorothalonil, abamectin, imidacloprid, acetochlor (except the methylened process), chloropicrin Production facility

10. Newly build sulfuric acid process titanium dioxide, lead chrome yellow, iron oxide pigments with an annual output Solvent-based coatings (except for encouraged coating varieties and production processes), containing isocyanuric acid thre Glycidyl ester (TGIC) powder coating production equipment

11. Newly build production equipment for dyes, dye intermediates, organic pigments, printing and dyeing auxiliaries ( Except for encouragement and encouragement technology)

12. Newly-built hydrogen fluoride (HF, enterprise downstream deep-processing products supporting self-use, electron And wet-process phosphoric acid), the initial scale of new construction is less than 200,000 tons/year, and the scale of a single production unit of methyl chlorosilane monomer with a production capacity of 100,000 tons/year, with a production capacity of 100,000 tons/year and above, without supporting disposal facilities for by-product carbonyl fluoride (except for supporting facilities) and 100,000 tons/year and above, without supporting disposal facilities for by-product carbonyl fluoride. Of the methane chloride production equipment, there is no by-product trifluoromethane supporting disposal facility of difluoromethane.

84

Chloride production plant, acceptable use of PFOS and its salts, and PFOS

Sulfonyl fluoride (the rest are eliminated), perfluorooctanoic acid (PFOA), sulfur hexafluoride (SF6, high

Except for pure grade), production of hexabromocyclododecane for specific exempted purposes (the rest are eliminated)

Device

13. Newly built bias tires and tires (including trolley tires), nylon cords, 30,000 tons/year steel cord, reclaimed rubber (except continuous desulfurization process at normal pressure), rubber peptizer Production plant for pentachlorothiophenol and rubber accelerator tetramethylthiuram disulfide (TMTD)

#### 5. Information Industry

1. Laser video disc machine production line (VCD series complete machine products)

Six, steel

1. The iron and steel complex has not synchronized the construction of CDQ, coal loading, coke pushing and dust removal Coking project; independent coking enterprises have not simultaneously constructed supporting coal loading and coke push Coking project

2. Sintering machine below 180 square meters (ferroalloy sintering machine, pig iron sintering machine for casting except)

3. Pig iron blast furnace for steelmaking with an effective volume of more than 400 cubic meters and less than 1200 cubic meters. Steelmaking of 1,200 cubic meters and above but not meeting mandatory standards such as environmental protection, energy consumption. Blast furnace with pig iron

4. Steelmaking converter with a nominal capacity of more than 30 tons and less than 100 tons; a nominal capacity of 100 tons and above, but failing to meet mandatory standards such as environmental protection, energy consumption

5. Electric arc furnace with a nominal capacity of more than 30 tons and less than 100 tons (alloy steel 50 tons);

The nominal capacity is 100 tons (alloy steel 50 tons) and above, but it cannot meet environmental protection, energy consumption

Fully compulsory standard electric arc furnace

6. Hot-rolled strip steel (excluding special steel) below 1450 mm
7. Hot-dip galvanized coil project with an annual capacity of 300,000 tons or less
8. Color coated coil project of 200,000 tons/year and below
9. Chromium-containing refractories
10. Ordinary power and high-power graphite electrode pressing equipment, baking equipment and production lines
11. Production of ultra-high power graphite electrodes with a diameter of less than 600 mm or less than 20,000 tons/year

Production line

12. Pre-baked anodes (carbon blocks) less than 80,000 tons/year, ordinary cathodes less than 20,000 tons/year

Carbon block, carbon electrode production line below 40,000 tons/year

13. Pelletizing equipment (ferroalloy, cast iron ball

Except for groups)

14. The height of the carbonization chamber of the top-loaded coke oven is less than 6.0 meters, and the height of the Coking projects with an annual capacity of less than 1 million tons; heat recovery coke oven tamping coal cake volume <35 Enterprise production capacity <1 million tons/year (foundry coke <600,000 tons/year) coking project; semi-coke Furnace single furnace production capacity <100,000 tons/year, enterprise production capacity <1 million tons/year coking ]

15. Medium and low-carbon ferromanganese of 3000 kVA and above without hot charging and hot exchange process, Electric Furnace Metal Manganese and Low Carbon Ferrochrome Refining Electric Furnace

16. Ferromanganese blast furnace below 300 cubic meters; 300 cubic meters and above, but high coke ratio Ferromanganese blast furnace with a capacity of 1320 kg/ton; a ferromanganese blast furnace enterprise with a scale of less

17. Silicon-calcium alloy and silicon-calcium-barium-aluminum alloy mine thermoelectric furnaces below 12,500 kVA/ 12,500 kVA and above, but the power consumption of silicon-calcium alloy is higher than 11,000 kWh/ton of mineral heat

## Electric stove

18. Silicon-aluminum alloy mine thermoelectric furnaces below 16,500 kVA; 16500 kVA and below  
But the power consumption of silicon-aluminum alloy is higher than 9000 kWh/ton.

19. Ordinary ferroalloy ore thermoelectric furnaces below 2×25,000 kVA (the central and western regions have unique  
The key poverty areas identified by the country with the advantages of small hydropower and mineral resources in operation  
Electric furnace capacity <2×1.25 million kVA); 2×25,000 kVA and above, but the transformer is not  
Choose three-phase or three single-phase energy-saving equipment with on-load electric multi-stage voltage regulation, and  
Operation mechanization and control automation, ferrosilicon power consumption is higher than 8,500 kWh/ton, industrial  
Electricity consumption is higher than 12000 kWh/ton, electric furnace ferromanganese consumption is higher than 2600 kWh/ton  
The power consumption of manganese alloy is higher than 4200 kWh/ton, and the power consumption of high-carbon ferro  
Ton, ordinary ferroalloy ore thermoelectric furnace with silicon-chromium alloy power consumption higher than 4800 kWh/ton.

20. Electrolytic manganese metal leaching process with intermittent leaching and intermittent liquid feeding; 10,000 tons/year  
The following electrolytic metal manganese single production line (one transformer), the general rules of electrolytic metal  
Companies with a model of less than 30,000 tons/year

21. Independent hot rolling production line without supporting steelmaking process in the plant  
Seven, non-ferrous metals

1. The newly built or expanded tungsten metal reserves are less than 10,000 tons, and the annual mining scale is less than 10,000 tons  
Tungsten ore mining project with a ton of ore (expansion of deep and side resource mining of existing tungsten mines  
Except for projects), tungsten, molybdenum, tin, and antimony smelting projects (in compliance with national environmental protection standards  
Except items required by regulations) and antimony oxide, lead-tin solder production projects, rare earth mining,  
Smelting separation projects (rare earths that meet the requirements of total control indicators for rare earth mining and smelting  
Except for enterprise group projects)

2. Single series blister copper smelting projects with an annual scale of 100,000 tons or less (recycled copper projects  
(Except for direct leaching of chemical ore projects)

3. Electrolytic aluminum projects (except for capacity replacement projects)

4. Single-series lead smelting projects with an annual capacity of less than 50,000 tons (technical transformation with environmental protection renovation projects)
5. Single series zinc smelting projects with an annual capacity of 100,000 tons/year (except for direct leaching)
6. Magnesium smelting project (comprehensive utilization project and technological transformation of advanced energy saving projects)
7. Independent aluminum carbon projects with an annual output of less than 100,000 tons
8. Newly build a single-series production capacity of 50,000 tons/year or less, and rebuild and expand single-series production capacity 20,000 tons/year and below, and indicators such as resource utilization, energy consumption, and environmental protection
- Recycled lead projects that fail to meet industry access requirements
9. Newly built and expanded primary mercury mining projects
- Eight, gold
  1. The self-supplying capacity of raw materials under 200 tons (excluding) of gold concentrate per day is less than 50% (Not included) independent cyanide projects (except for the biological cyanide gold extraction process)
  2. Independent mining system without supporting mining system with daily processing capacity of less than 300 tons (excluding) Gold Concentrator Project
  3. Unique mining systems without supporting mining systems that process less than 200 tons of gold concentrate per day (excluding) Fire smelting project of Li Gold Smelter
  4. Independent heap leaching field without supporting mining system below 1500 tons/day (excluding)

5. Open-pit mining and dressing projects with daily processing of rock gold ore less than 300 tons (excluding), 100 tons (excluding) Underground mining and dressing projects below ton (excluding)
6. Placer gold mining project with annual processing of 300,000 (excluding) cubic meters of placer gold ore
7. Project of mining placer gold in forest areas, basic farmland and rivers
- Nine, building materials
  1. New dry process cement clinker production line (special water) (Except for mud production lines), cement grinding stations below 600,000 tons/year (excluding)

2. Architectural ceramics of 1.5 million square meters per year and below (excluding architectural glass products) production line
3. Tunnel kiln sanitary ceramic production line less than 600,000 pieces/year (excluding)
4. Paper-faced gypsum board production line with a capacity of 30 million square meters per year (excluding) (Tibet except)
5. Medium-alkali glass fiber pool kiln method drawing production line; single kiln scale is less than 80,000 tons/year (Excluding) alkali-free glass fiber roving tank kiln drawing production line; medium alkali, alkali-free, alkali-resistant Glass ball kiln production line; medium-alkali and alkali-free glass fiber instead of platinum crucible wire drawing producti
6. Clay hollow brick production line (Shaanxi, Qinghai, Gansu, Xinjiang, Tibet, Ning Except summer)
7. Gypsum (hollow) block production line with a capacity of 150,000 square meters per year (excluding) Small concrete hollow blocks of less than 50,000 cubic meters per year (excluding) per shift and single shift Fixed production line of concrete floor tiles with an annual capacity of 150,000 square meters (excluding), 50,000 li Artificial light aggregate (ceramsite) production line below square meters per year (excluding)
8. Aerated concrete production line below 150,000 cubic meters per year (excluding)

89

9. Production of sintered bricks and sintered hollow blocks below 60 million standard bricks/year (excluding) line
10. Rock (mineral) wool product production line under 30,000 tons/year and under 8,000 tons/year Glass wool product production line
11. Prestressed high-strength concrete centrifugal pile production line of 1 million meters per year and below
12. Prestressed steel cylinder concrete pipe (PCCP pipe for short) production line: PCCP-L Type: Annual design production capacity  $\leq 50$  kilometers, PCCP-E type: Annual design production capacity  $\leq 30$  km
10. Medicine
  1. Newly build and expand the original powder of colognic acid and vitamin C (including medicinal, food, (For feed, cosmetics) production equipment, newly built medicines, food, feed, cosmetics, etc. Production equipment for raw materials of vitamin B1, vitamin B2, vitamin B12, and vitamin E

Set

2. Newly built penicillin industrial salt, 6-aminopenicillanic acid (6-APA), chemical method

Production of 7-aminocephalosporanic acid (7-ACA), chemical production of 7-amino-3-deacetoxy head

Sporanoic acid (7-ADCA), penicillin V, ampicillin, amoxicillin, cephalosporin

Bacteriocin c fermentation, oxytetracycline, tetracycline, chloramphenicol, analgin, paracetamol, Lin Ke

Gentamicin, Gentamicin, Dihydrostreptomycin, Amikacin, Medicin, Cylindrical White

Ciprofloxacin, norfloxacin, norfloxacin, rifampicin, caffeine, cocosine

Production facility

3. Newly built paclitaxel (except for supporting yew planting), plant extraction method berberine (with

(Except for Coptis planting) production equipment

90

4. Newly built, rebuilt and expanded medicinal butyl rubber stoppers, two-step production of plastic bottles for infusio

Production facility

5. The raw materials for new construction, renovation and expansion contain endangered animals and plants that have

Product production device for herbal medicine

6. Newly built, renovated and expanded mercury-filled glass thermometers, sphygmomanometer production devices, a

Integrate dental materials, build new disposable syringes, blood transfusion sets, and infusion sets with an annual output of 1

Production device

11. Machinery

1, 2 arm and below rock drilling rig manufacturing project

2. Manufacturing project of rock loader (except vertical claw rock loader)

3. Manufacturing projects of small mine carts of 3 cubic meters and below

4. Project for manufacturing winches with a diameter of 2.5 meters or less

5. Mine hoist manufacturing project with a diameter of 3.5 meters or less

6. Manufacturing project of screening machine of 40 square meters and below

7. Manufacturing projects of cyclones with a diameter of 700 mm and below

8. 800 kW and below coal mining machine manufacturing project

9. Manufacturing project of mining excavators with bucket capacity of 3.5 cubic meters and below

10. Manufacturing project of mining mixing, thickening and filtering equipment (except pressure type)
11. Dedicated for general transportation such as warehouse trucks, fence trucks, dump trucks and ordinary vans  
Automobile and general transportation trailer enterprise projects; three-wheeled vehicles, low-speed electric vehicles
12. Single-cylinder diesel engine manufacturing project
13. Belt-driven small four-wheel tractor with single-cylinder diesel engine, and single-cylinder diesel

91

The machine's walking tractor has sliding gear shifts, and the emission cannot reach the required 50 horsepower or less

Wheel tractor

14. Manufacturing projects of conventional coal-fired thermal power generation equipment of 300,000 kilowatts and below (except for using units)

15. 6kV and above (land use) dry-method cross-linked power cable manufacturing project
16. Non-CNC metal cutting machine tool manufacturing project
17. Manufacturing projects of ordinary mechanical presses of 6300 kN and below
18. Non-CNC shearing machine, bending machine, pipe bending machine manufacturing project
19. Projects of ordinary high-speed steel drill bits, milling cutters, saw blades, taps and dies
20. Sintered block projects of brown corundum, green silicon carbide, black silicon carbide, etc.
21. Various bonding agents with a diameter below 450 mm and a grinding speed below 40 m/s

Grinding wheels (except rail grinding wheels)

22. Manufacturing project of synthetic diamond cutting saw blades with a diameter of 400 mm and below
23. P0-level ordinary micro-small bearing manufacturing project with a diameter of 60 mm or less
24. Power transformers of 220 kV and below (amorphous alloys, wound iron cores, etc.

Except electric transformer)

25. 220kV and below high, medium and low voltage switchgear manufacturing project (using environmental protection type medium pressure gas insulated switchgear and explosion-proof switchgear used in explosive outer)

26. Manufacturing project of acid carbon steel electrode
27. Manufacturing project of civilian ordinary watt-hour meters



## 28. General low-grade standard fastener manufacturing projects below 8.8

92

29. General purpose fixed reciprocating piston air compressor (drive motor power 560 KW and below, rated exhaust pressure 1.25 MPa and below) manufacturing project
30. General transportation container dry container project
31. 56 inch and below single-stage split pump manufacturing project
32. General purpose type 10 MPa and below medium and low pressure carbon steel valve manufacturing project
33. Short furnace age cupola of 5 tons/hour and below
34. Nonferrous alloy hexachloroethane refining, magnesium alloy SF6 protection
35. Cupola melting uses metallurgical coke
36. Sodium silicate sand molding core-making process without old sand regeneration
37. Salt bath nitrocarburizing furnace and salt
38. Electronic tube high frequency induction heating equipment
39. Nitrite corrosion inhibitor and preservative
40. Fuel oil heating furnace for casting/forging
41. Coal-fired heating furnace for forging
42. Manual gas forging furnace
43. Steam hammer
44. Arc welding transformer
45. Lead and cadmium solder
46. Complete machine assembly project of full-face tunneling machine
47. Project of hydraulic press for free forging over 10,000 tons
48. Castings and forgings produced using obsolete and restricted equipment and processes; not used Clay sand casting project, water glass investment casting project with automated modeling equipment,

93

Centrifugal ductile iron pipe projects with a scale of less than 200,000 tons/year, and those with a scale of less than 30,000 t

#### Centrifugal Gray Cast Iron Pipe Project

49. Moving coil and tapped manual electrode arc welding machine

50. Y series (IP44) three-phase asynchronous motors (frame size 80 ~ 355) and

Derived series, Y2 series (IP54) three-phase asynchronous motor (frame size 63 ~ 355)

51. Knapsack manual compression sprayer

52. Knapsack motorized spray powder duster

53. Manual rice transplanter

54. Tea processing machinery for bronze products

55. Double disc friction press

56. Lead-containing powder metallurgy parts

57. Export ship block construction project

#### 12. Light Industry

1. Polyvinyl chloride ordinary artificial leather production line

2. Production lines with an annual processing capacity of less than 200,000 standard sheets of hides and wet blue

Production lines with a leather capacity of less than 100,000 standard cowhides

3. Use hydrochlorofluorocarbons (HCFCs) as refrigerants, foaming agents, fire extinguishing agents, solvents

Controlled-purpose polyurethane foam production line, continuous

Extruded polystyrene foam (XPS) production line and refrigerators, freezers, car air conditioners

Refrigerator, industrial and commercial refrigeration, refrigeration equipment production line

4. Polyvinyl chloride (PVC) food preservation packaging film

5. General lighting incandescent lamps

6. Lockstitch sewing machines with a maximum speed of less than 4000 stitches/minute (not including heavy-weight s

Overlock sewing machine with a maximum speed of less than 5000 stitches/min

7. Electronic price calculation scale (accuracy is less than 1/3000 of the maximum weighing, weighing  $\leq 15$  thousand G), electronic belt scale (accuracy less than 5/1000 of the maximum weighing), electronic crane scale (quasi The accuracy is less than 1/1000 of the maximum weighing, weighing  $\leq 50$  tons), spring dial scale (accuracy Less than 1/400 of the maximum weighing, weighing  $\leq 8$  kg)

8. Electronic truck scale (accuracy is less than 1/3000 of the maximum weighing, weighing  $\leq 300$  tons), Electronic static rail scale (accuracy is less than 1/3000 of the maximum weighing, weighing  $\leq 150$  tons), Electronic dynamic rail scale (accuracy is less than 1/500 of the maximum weighing, weighing  $\leq 150$  tons)

9. Glass thermos flask production line

10. Glass bottle production line with an annual capacity of 30,000 tons or less

11. Prepare glass batch materials and weigh them manually

12. Glass that does not meet the indicators specified in the cleaner production evaluation index system for the daily glass  
Glass kiln

13. Fatty alcohol products produced by oxo method and Ziegler method

14. Thermal production line of sodium tripolyphosphate

15. Production process and equipment of single-layer spray gun washing powder, scale sulfonate below 1.6 tons/hour  
Chemical device

16. Northern sea salt project with an annual capacity of less than 1 million tons; southern sea salt field project; 600,000  
Mine (well) salt projects below ton/year

17. Monochrome metal plate offset printing machine

18. Single chemical wood pulp less than 300,000 tons/year, chemical mechanical wood pulp 100,000 tons/year

Below, chemical bamboo pulp production line below 100,000 tons/year

19. Raw sugar processing project and daily processing of 5,000 tons of sugarcane (3,000 tons in Yunnan),  
Projects that process sugar beets less than 3000 tons per day

20. Alcohol production line

21. Production line of chemical synthetic sweeteners such as saccharin

22. Soybean squeezing and extraction project (Heilongjiang, Jilin, Inner Mongolia soybean production areas  
(Except); the single-line daily processing rapeseed and cottonseed 200 tons and below in the eastern and central regions,

Oilseed processing projects with a production capacity of 100 tons or less; single-line daily processing rapeseed and cotton

Processing projects of 100 tons or less of oilseeds such as seeds and peanuts

23. The annual processing of corn is below 450,000 tons, and the absolute dry yield of corn starch is below 98%  
(The annual processing scale of special corn such as waxy corn and high straight-chain corn is less than 10,000 tons)

24. Annual slaughter of 150,000 pigs and below, 10,000 beef cattle and below, 15 meat sheep  
Slaughter construction project of 10 million or less live poultry (in ethnic minority areas)

Except area)

25. Western-style meat processing projects of 3000 tons/year and below

26. Yeast products with an annual output of 2,000 tons (dry) and below

27. Frozen seawater surimi production line

28. In the production of lead-acid batteries, cast plates, milling, powder feeding, powder filling, paste, coating,  
Manual work processes such as brushing, mixing and filling with acid, external formation, weighing, and cladding

29. Use external chemical forming process to produce lead-acid batteries

30. Citric acid production line with an annual output of less than 50,000 tons

31. Lysine and threonine production lines with an annual capacity of 100,000 tons and below; 200,000 tons/year and b

96

Glutamic acid production line

13. Textile

1. Continuous polymerization production of conventional polyester (PET) with a single-line production capacity of less than 100,000 tons/year  
Device

2. Dimethyl terephthalate (DMT) production process of conventional polyester

3. Semi-continuous spun viscose filament production line

4. Intermittent spandex polymerization production device

5. Semi-automatic winding equipment with spindle length of 1200 mm and below for conventional chemical fiber filament

6. Adhesive plate and frame filter

7. Conventional polypropylene spunbonded nonwovens with single-thread production capacity  $\leq 1000$  tons/year and below  
Fabric production line

8. Carding machines below 25 kg/h

9. Cotton combing machine under 200 tongs/min

10. Self-draining air spinning equipment below 50,000 rpm

11. FA502, FA503 spinning frame

12. Rapier looms with a weft insertion rate less than 600 m/min, the weft insertion rate is less than 700 m/min

Minute air jet loom, water jet loom with weft insertion rate less than 900 m/min

13. Adopt polyvinyl alcohol slurry (PVA) sizing process and products (polyester cotton products, Except for high-count and high-density products of pure cotton)

14. Wool scouring process and equipment with more than 20 tons of raw wool scouring water

15. Vertical silk reeling process and equipment of double palace silk and tussah silk

16. Skein dyeing process

97

17. Sodium chlorite bleaching equipment

18. Ordinary polyester carrier dyeing

14. Tobacco

1. Tobacco product processing project

15. Civil explosive products

1. Discontinuous and automated detonator assembly production line with non-human-machine isolation

2. Discontinuous, automated explosive production line

3. Highly polluting detonator production line

4. Industrial powder explosive production line with high energy consumption, high pollution and low performance

5. The total number of on-site operators in the dangerous goods production plant with a hazard level of 1.1 is large  
Explosive production line for 5 people

6. The number of on-site operators in the dangerous goods production plant with a hazard level of 1.1 is greater than  
Explosive production line for 9 people

7. The number of operators in close contact with the detonator (including raw materials and semi-finished products)  
Production line for basic detonator filling production line with more than 5 persons

16. Other

1. Urban arterial roads whose land red line width (including green belt) exceeds the following standards  
 Road projects: 40 meters for small cities and key towns, 55 meters for medium cities, 70 meters for large cities (200 meters)  
 If the arterial roads of mega cities with a population of more than 10,000 people really need to exceed 70 meters, the overall  
 There should be special instructions)

2. Urban recreational assembly square projects with a land area exceeding the following standards: small cities  
 1 hectares in key towns, 2 hectares in medium-sized cities, 3 hectares in large cities, with a population of more than 2 million

98

Upper megacities 5 hectares

3. Villa real estate development projects

4. Golf course project

5. Racecourse project

6, 4 gears and below mechanical automatic transmission (AT)

7. Motor vehicle engines with emission standards of China III and below

8. Does not comply with the Air Pollution Prevention and Control Law, the Water Pollution Prevention and Control Law, Environmental Protection Law, Energy Conservation Law, Safety Production Law, Product Quality Law, Land Management Law, Occupational Disease Prevention and Control Law, and other national laws and regulations, which do not meet the mandatory standards in terms of environmental protection, energy consumption and quality, and those that do not meet the national standards in terms of technology, products, equipment

### The third type of elimination

Note: The year in parentheses after the entry is the phase-out period, and the phase-out period is December 2020  
 The 31st means that it should be eliminated before December 31, 2020, the rest can be deduced by analogy; there is an elimination period for items that are eliminated according to the plan; the items that have not marked the elimination period or the elimination plan should be eliminated immediately.  
 The domestic industrial policy has been explicitly ordered to be eliminated or eliminated immediately.

1. Outdated production technology and equipment

(1) Agriculture and forestry

## 1. Wet fiberboard production process

99

Page 100

2. Production process of rosin by drip method

3. Rural traditional old-fashioned stove kang

4. Local activated carbon production with wood and stumps as main raw materials

5. Collection of tourism activities and medicinal materials that exceed the ecological carrying capacity

6. Construction of irrigated papermaking raw material forest bases in areas with severe water shortage

7. Methyl bromide soil fumigation process before planting

## (2) Coal

1. Small coal mines that overlap the plane projection of large coal mines

2. Shanxi, Inner Mongolia, Shaanxi, Ningxia less than 300,000 tons/year (excluding 300,000 tons/year

Years), Hebei, Liaoning, Jilin, Heilongjiang, Jiangsu, Anhui, Shandong, Henan, Gansu

Less than 150,000 tons/year in Su, Qinghai, Xinjiang (excluding 150,000 tons/year), 90,000 tons in other regions

Coal mines with an annual output of ton/year and below (including 90,000 tons/year);

(Excluding 300,000 tons/year) "zombie enterprise" coal mines; less than 300,000 tons/year (excluding 30

10,000 tons/year) coal mines with serious disasters such as rock bursts, coal and gas outbursts. Belonging to meet the forest

Residents in remote mountainous areas need to use coal or undertake special supply tasks and comply with resources, environ

Coal mines with safety, technology, energy consumption and other standards may be temporarily approved by the provincial

Keep or postpone exit

3. High-sulfur coal (sulfur content higher than 3%) that has neither sulfur reduction measures nor compliance discharge

Production mines, high-ash coal (ash content higher than 40%) that cannot be used locally

And high-arsenic coal (the arsenic content in power coal exceeds 80μg/g, and the arsenic content in coking coal exceeds

Over 35μg/g) production coal mine

4. 6AM, φM-2.5, PA-3 coal flotation machine

100

Page 101

5. PB2, PB3, PB4 type mine explosion-proof high voltage switch
6. PG-27 vacuum filter
7. X-1 box filter press
8. ZYZ, ZY3 hydraulic support
9. The coal preparation process that cannot realize the closed-circuit circulation of coal washing wastewater, and the d  
Standard discharge dry coal preparation equipment
10. Exploitation scope and nature reserves, scenic spots, and drinking water source protection areas  
Overlapping coal mines (to be eliminated according to laws, regulations and relevant national documents)
- (3) Electricity
  1. Conventional coal-fired thermal power units with a single unit capacity of 300,000 kilowatts and below that do not :  
(Except for comprehensive utilization units), oil-fired boilers and generator sets that mainly generate electricity
- (4) Petrochemical Industry
  1. Atmospheric and vacuum equipment with an annual capacity of 2 million tons or less (Qinghai Golmud, Xinjiang Z  
(Except for storage), a kettle-type distillation device that uses open flame high-temperature heating to produce oil, waste  
Rubber and plastic soil refining process, tar intermittent method to produce asphalt, 25,000 tons/year and above  
Single set of crude (light) benzene refining plant under the construction, single set of coal tar processing capacity of 50,000  
Device
  2. Pyrite-based sulphuric acid and sulfur-burning sulphuric acid with an annual capacity of less than 100,000 tons (exc  
Open-hearth oxidation process potassium permanganate, diaphragm process caustic soda production equipment (as a compr  
Can be retained), open-hearth method and large pot evaporation method soda sulfide production process, Glauber's salt metl  
(Sodium disulfide) production process, intermittent coke method carbon disulfide process
  3. Yellow phosphorus production equipment with a single production capacity of less than 5,000 tons/year and that do

There is a calcium roasting chromium compound production device with a single-line production capacity of 3,000 tons or l  
Barium, barium hydroxide, barium chloride, and barium nitrate production equipment, with a production capacity of less th



Sodium production equipment, calcium carbide furnace and open calcium carbide furnace with a single furnace capacity less than 10,000 tons/year, high mercury catalyst (more than 6.5% mercury chloride content) and acetylene using high mercury catalyst  
 Method for producing polyvinyl chloride, using mercury or mercury compound sodium methoxide, potassium methoxide, etc.  
 Production of sodium, potassium ethoxide, polyurethane, acetaldehyde, caustic soda, bioinsecticides and topical antibacterials  
 Plant, sodium ammonia method and cyanide melt sodium cyanide production process

4. Single-line production capacity is less than 10,000 tons/year of sodium tripolyphosphate, and less than 5,000 tons/year of sodium phosphate, phosphorus trichloride less than 5,000 tons/year, calcium hydrogen phosphate for feed less than 30,000 tons/year  
 Hydrofluoric acid with outdated technology and serious pollution, less than 5000 tons/year, and less than 5000 tons/year  
 Wet-process aluminum fluoride and open-type crystalline fluoride salt production device

5. The single-line production capacity is less than 30,000 tons/year of sodium cyanide (100% sodium cyanide), 10,000 tons/year of potassium hydroxide below 15,000 tons/year, ordinary white carbon black below 15,000 tons/year, general grade silica below 100,000 tons/year  
 General grade calcium carbonate, ordinary grade anhydrous sodium sulfate below 100,000 tons/year (salt industry co-product except), lithium carbonate and lithium hydroxide below 30,000 tons/year, ordinary grade carbon below 20,000 tons/year  
 Barium acid, ordinary strontium carbonate production plant with an annual output of less than 15,000 tons

6. Semi-water gas ammonia liquid liquid desulfurization, natural gas normal pressure intermittent conversion process  
 Ammonia, carbon monoxide normal pressure change and full intermediate temperature conversion (high temperature conversion)  
 The wet desulfurization process of the sulfur recovery unit does not have the supporting construction of blowing gas waste liquid  
 The fixed-layer intermittent coal gasification unit of the gas furnace slag comprehensive utilization unit has no supporting production  
 Urea production facility of condensate hydrolysis analysis device

7. Sodium paraquat production process, trichlorfon production process for dichlorvos, small package

102

Process and equipment for manual packaging (filling) of pesticide products (1 kg and below), Raymond machine  
 Method for the production of pesticide powders and the production of pentachlorophenol (sodium) with hexachlorobenzene  
 8. Preparation of chlorinated rubber by the resin for coating directly heated by fire, and carbon tetrachloride solvent method  
 Glue production process, saponin (including hydrolysate) production equipment with a capacity of less than 100 tons/year, 1  
 The saponin production process and the saponin production equipment that cannot meet the pollutant emission standards, in  
 Process (4,4-diaminostilbene-disulfonic acid [DSD acid], 2-amino-4-methyl-5-chloro  
 Benzenesulfonic acid [CLT acid], 1-amino-8-naphthol-3,6-disulfonic acid [H acid] three products temporarily suspended)

9. Bias tires of 500,000 pieces/year or less and wheels with natural cotton cord fabric as the skeleton  
Tires, dry granulation carbon black of 15,000 tons/year or less (except for special carbon black and semi-reinforced carbon black), natural latex condoms less than 300 million units per year, rubber vulcanization accelerator N-oxygen (1,2-Ethylene)-2-benzothiazole sulfenamide (NOBS) and rubber antioxidant D  
Production device

10. Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) as their own downstream  
Raw materials for industrial products and not for external sales), 1,1,1-trichloroethane used for cleaning (Methyl chloroform), mainly produces carbon tetrachloride (CTC), and uses carbon tetrachloride (CTC) as processing  
All products of additives, fluoropolymer production process with PFOA as processing aid, including DDT coating, non-closed production plant for dicofol using DDT as raw material  
(According to the country's overall plan for implementing international conventions, it will be eliminated)

#### (5) Steel

1. Indigenous coking (including improved coke oven); single furnace capacity is less than 75,000 tons/year or no coal  
Gas, tar recycling and sewage treatment are not up to the semi-coke (blue  
Carbon) production plant

103

2. The height of the carbonization chamber is less than 4.3 meters for coke ovens (except for tamping coke ovens of 3. Iron and steel enterprise coke ovens without CDQ

3. Earth sinter

4. Hot sinter

5. Ring sintering machine for steel production, sintering machine under 90 square meters, 8 square meters  
The following pellet shaft furnaces; belt manganese ore and chromium ore sintering of less than 24 square meters for ferroalloy machine

6. Pig iron blast furnace for steelmaking of 400 cubic meters or less (Hebei will be eliminated before the end of 2020 450 cubic meters and below pig iron blast furnace for steelmaking), 200 cubic meters and below ferroalloy production  
Use blast furnace (of which ferromanganese blast furnace is 100 cubic meters and below), 200 cubic meters and below are cast iron blast furnace (the casting pig iron blast furnace supporting the "short flow" casting process is

100 cubic meters and below)

7. Power frequency and intermediate frequency induction furnaces for melting scrap steel (according to laws, regulations, Relevant requirements for banning "floor steel" are eliminated)

8. Steelmaking converters of 30 tons and below (excluding ferroalloy converters) (Hebei end of 2020)

The steel-making converters of 40 tons and below were eliminated before, and the converters producing special quality alloy (outer)

9. Steelmaking electric arc furnace of 30 tons and below (excluding mechanical casting, special quality alloy steel, Electric arc furnace for special alloy materials such as high temperature alloy and precision alloy)

10. Chemical iron and steelmaking

11. Complex double wire rod mill

12. Horizontal wire rod mill

104

13. Horizontal bar and profile rolling mills (excluding rolling mills for producing high-temperature alloys)

14. Stacked sheet rolling mill

15. General steel blooming mill and medium-sized rolling mill for billeting

16. Hot rolled narrow strip mill

17. Three-high Lauter Medium Plate Mill

18. Hot-rolled seamless pipe mills with diameters below 76 mm

19. Three-roll type wire rod mill (excluding special steel production)

20. Metallurgical furnaces that do not meet environmental protection standards

21. Manually operated soil asphalt tar impregnation device, mixing ore raw materials with solid raw materials  
Burning, natural ventilation, hand-operated earth-shaft kiln, using coal as fuel directly  
Inverted flame kiln that can meet the standard

22. 6300 kVA and below ferroalloy ore thermoelectric furnace, iron below 3000 kVA  
Alloy semi-closed DC electric furnace, ferroalloy refining electric furnace (special varieties such as tungsten iron, vanadium  
Except electric stove)

23. Steam heating kneading, inverted flame roaster, Acheson AC graphitization furnace, 10000  
Three-phase bridge rectifier Acheson DC graphitization furnace of kilovolt ampere and below and its parallel unit

24. Production equipment for cold-rolled ribbed steel bars with a stand-alone capacity of 10,000 tons or less (high ductility cold-rolled ribbed steel bar production equipment)

25. Production equipment of single tank wire drawing machine for producing prestressed steel wire

26. Lead quenching process for stress relief treatment in the production of prestressed steel

27. Calcined lime soil kiln

28. Iron ilmenite smelting furnaces with a unit output of less than 5 tons per furnace, and reverberatory furnaces for roasting

105

Ferromolybdenum production line and production of metallic chromium produced by reverberatory furnace reduction and casting line

29. Production line of refractory materials and raw material products for coal-fired inverted flame kiln

30. One-stage stationary gasifier project for iron and steel industry (excluding powdered coal gasifier)

31. Rectifier transformer of 6000 kVA and below, effective capacitance for electrolytic manganese

Compound tank with a volume of 170 cubic meters or less

32. Enterprise production capacity <400,000 tons/year heat recovery coke oven; supporting construction is not synchronous  
Coke oven with heat recovery device

33. Reverberatory furnace for reducing manganese dioxide (including reverberatory furnace for manganese sulfate plant  
With reverberatory furnace, etc.)

34. Plate frames and boxes other than high-pressure diaphragm filter press for electrolytic metal manganese primary finishing  
Filter press

35. Light-burning reflector kiln with effective volume of 18 cubic meters and below

36. Re-burned magnesia shaft kiln with an effective volume of 30 cubic meters and below

(6) Non-ferrous metals

1. Use muffle furnace, mangle furnace, horizontal tank, small vertical tank, etc. for roasting and simple cooling  
Condensation facility for dust collection and other backward methods for zinc smelting or zinc oxide production process equipment

2. Using iron pots and earthen stoves, distillation pots, crucible furnaces and simple condensation dust collection facilities  
Backward method of mercury refining

3. Adopt backward methods such as earth pit furnace or crucible furnace roasting, simple condensation facilities to cool  
Process equipment for refining arsenic oxide or metal arsenic

## 4. Aluminum self-baked electrolytic cell and pre-baked cell below 160kA

106

---

 Page 107

5. Copper smelting process and equipment for blast furnace, electric furnace and reverberatory furnace
6. Dry purification of flue gas sulphuric acid and hot concentrated acid washing technology
7. Smelting antimony using backward methods such as pit furnace, crucible furnace, and Hexcel furnace
8. Lead smelting process and equipment using backward methods such as sintering pot, sintering pan, simple blast furnace

Prepare

9. Process and equipment for smelting recycled aluminum alloy and recycled lead using crucible furnace
10. Project of wet-process fluoride salt for aluminum
11. Secondary aluminum and secondary lead projects with an annual output of less than 10,000 tons
12. Reverberatory furnace project using direct coal burning in the production of recycled non-ferrous metals
13. Copper wire rod (black rod) production process
14. Lead smelting process of sintering machine without supporting acid production and tail gas absorption system
15. Sintering-blast furnace lead smelting process
16. Recycled copper incineration process and equipment without flue gas treatment measures
17. Production process and equipment of reclaimed copper in traditional fixed reverberatory furnace under 50 tons
18. Production process and equipment of reverberatory aluminum under 4 tons
19. Heap leaching and pool leaching process of ionic rare earth ore
20. Monazite Single Mineral Development Project
21. Rare earth chloride electrolysis metal preparation process project
22. Production process for wet production of rare earth fluoride for electrolysis
23. Development projects of mixed rare earth mines below 20,000 tons/year (REO); 5,000

Bastnaesite rare earth mine development projects under 100 tons (REO)/year; 500 tons (REO)

Ionic rare earth mine development projects under 100 tons/year

107

24. Rare earth separation projects under 2000 tons (REO)/year

25. Below 1500 tons/year, the electrolyzer current is less than 5000A, and the current efficiency is lower than

85% of light rare earth metal smelting projects

26. Primary mercury mining (August 16, 2032)

(7) Gold

1. Amalgamation gold extraction process

2. Small cyanide pool leaching process, local smelting process

3. Extracting precious metals such as gold, silver and palladium from circuit boards without environmental protection

4. Mining projects with a daily processing capacity of less than 50 tons (excluding)

5. Whole ore amalgamation; open burning of amalgam or processed amalgam;

Incineration of amalgam in residential areas; without first removing the mercury,

Cyanide leaching of sediments, ore or tailings

(8) Building materials

1. Dry-process hollow kiln (except for the production of special cement such as aluminate cement), cement machine st  
Kiln, Liboer Kiln, Wet Kiln

2. Cement grinding equipment less than 3 meters in diameter (excluding special cement production)

3. Non-coated plastic woven cement packaging bag production line

4. Flat glass production line (including grid method)

5. Building ceramic tiles less than 1 million square meters per year (not included), 200,000 pieces per year (not includ  
Include) the following sanitary ceramic production lines

6. Building and sanitary ceramics (excluding architectural glass products) earth kilns, inverted flame kilns, and more  
Hole kiln, coal-fired open flame tunnel kiln, flame tunnel kiln, sagger-mounted sanitary ceramic tunnel kiln

7. Friction brick press for building ceramic tiles

8. Production technology and equipment of glass fiber clay crucible wire drawing

9. Paper-faced gypsum board production line with an annual (exclusive) less than 10 million square meters

10. Production of modified bitumen waterproofing membranes with a volume of less than 5 million square meters per  
Production line; Asphalt composite tire flexible waterproofing membrane production line below 5 million square meters per  
Asphalt paper tire felt production line below 1 million rolls/year (excluding)

11. Lime soil shaft kiln

12. Brick and tile wheel kiln (December 31, 2020) and vertical kiln, top wheel kiln, horse

Earth kiln

13, ordinary extruder

14. SJ1580-3000 double shaft, single shaft brick making mixer

15. SQP400500-700500 Double Roll Crusher

16, 1000 type ordinary cutting machine

17. Disc rotary brick press below 100 tons

18. Handmade wallboard production line

19. Simple mobile concrete block forming machine, attached vibration forming table

20. Fixed-type concrete block forming machines with a single shift of less than 10,000 cubic meters per year, single st

Fixed molding machine for concrete paving and floor tiles with an annual capacity of less than 100,000 square meters

21. Production process of artificially poured, non-mechanically formed gypsum (hollow) blocks

22. Vacuum pressure method and gas refining one-step quartz glass production process equipment

23. 6×6 Meganewton six-side top small press for producing synthetic diamond

24. Manual cutting aerated concrete production line, non-autoclaved curing aerated concrete production

109

line

25. Non-sintered, non-autoclaved fly ash brick production line

26. Decorative stone mine chamber blasting mining technology, sling-type marble soil see-saw,

Mobile small circular saw

(9) Medicine

1. Manual capsule filling process

2. The process of cork hot wax packaging medicine
3. Ampoule wire drawing filling and sealing machine that does not meet GMP requirements
4. Tower heavy distilled water device
5. Hot air drying oven without purification facilities
6. Production equipment for APIs whose environment, occupational health and safety cannot meet national standards

Set

7. Paracetamol (paracetamol), caffeine device by iron powder reduction method
8. Use chlorofluorocarbons (CFCs) as aerosols, propellants, propellants or dispersions

The production process of pharmaceutical supplies (according to the requirements of the country's overall plan for fulfilling Eliminated)

#### (10) Machinery

1. Heat treatment lead bath furnace (the lead liquid covering agent for metal wire rope and its products and

Except for the online heat treatment lead bath production line of negative pressure exhaust dust removal environmental prot

2. Heat treatment barium chloride salt bath furnace (high temperature barium chloride salt bath furnace is temporarily
3. TQ60, TQ80 tower crane
4. QT16, QT20, QT25 mast simple tower crane

110

5. KJ1600/1220 single cylinder hoisting and twisting machine
6. Ordinary brown corundum smelting furnace below 3000 kVA
7. Stationary brown corundum smelting furnace below 4000 kVA
8. Silicon carbide smelting furnace below 3000 kVA
9. Forced-driven simple elevator
10. Tobacco expansion equipment production line using chlorofluorocarbons (CFCs) as expansion agents
11. Sand casting clay drying sand mold and core
12. Coke furnace to melt non-ferrous metals
13. Sand casting oil sand core
14. Heavy brick lining trolley furnace
15. Medium frequency generator induction heating power supply



16. Coal-fired flame reflection heating furnace
17. Casting/forging pickling process
18. Position type AC contactor temperature control cabinet
19. Insert electrode type salt bath furnace
20. Moving coil and tapped silicon rectifier arc welding machine
21. Magnetic amplifier type arc welding machine
22. Punches that cannot be installed with safety protection devices
23. Non-magnetic yoke ( $\geq 0.25$  ton) aluminum shell intermediate frequency induction electric furnace
24. Coreless power frequency induction furnace

(11) Ship

1. Tidal flat dismantling process of used ships

111

2. Marine steel ships with a length of more than 90 meters and inland rivers with a length of more than 120 meters

The overall construction process of steel ships

(12) Light Industry

1. A single set of vacuum salt production equipment with an annual output of less than 100,000 tons, and a lake with a Salt and northern sea salt production facilities with an annual output of less than 300,000 tons

2. Production processes that use mineral salt brine, oil and gas field water and use flat pans and beaches to make salt Art and installation

3. Southern sea salt production equipment with an annual capacity of 20,000 tons or less

4. Production of ultra-thin (thickness less than 0.025 mm) plastic shopping bags

5. The annual raw hide processing capacity is 50,000 standard cowhides, and the annual wet blue processing capacity Leather production line under a piece of leather

6. Ink production equipment with an annual output of less than 300 tons (using high-tech, pollution-free Except)

7. Production of solvent-based inks containing benzene

8. Lime pool pulping equipment (except rice paper)

9. Chemical wood pulp production lines with an annual output of less than 51 thousand tons

10. A single non-wood pulp production line with an annual output of less than 34,000 tons

11. A single pulp production line with an annual output of 10,000 tons or less, using waste paper as raw material

12. Cultural paper with a width of 1.76 meters or less and a speed of 120 meters per minute or less  
production line

13. Whiteboard paper and boxes with a width of 2 meters or less and a speed of 80 meters per minute or less  
Board paper and corrugated paper production line

112

---

Page 113

14. Refrigerators, freezers and automobiles using chlorofluorocarbons (CFCs) as refrigerants and foaming agents  
Air conditioner, industrial and commercial refrigeration, refrigeration equipment production line

15. Polyurethane, polyethylene, polystyrene with chlorofluorocarbons (CFCs) as blowing agents  
Foam production

16. Production process with carbon tetrachloride (CTC) as cleaning agent

17. Use trifluorotrichloroethane (CFC-113) and methyl chloroform (TCA) as cleaning  
Agent and solvent production process

18. Process for preparing tertiary amine by fatty acid method, sulfonation process of fuming sulfuric acid, stirred tank  
Basic process

19. The soldering process in the tin printing industry

20. Crucible glass kiln burning coal and producer gas, direct fire type, no hot air circulation  
Glass annealing furnace

21. Mechanical timing line-type bottle making machine

22. Carbon with a production capacity of 150 bottles/min or less (bottle capacity of 250 ml or less)  
Sour drink production line

23. The daily processing capacity of raw milk (two shifts) is less than 20 tons for concentration, spray drying, etc.  
Application; manual and semi-automatic liquid milk filling equipment under 200 kg/h

24. Alcohol production lines with an annual capacity of less than 30,000 tons (except for ethanol made from waste mo

25. Glutamic acid production line with iso-ionization process, MSG production equipment with an annual output of le  
Set

26. Traditional calcium salt method citric acid production device
27. Wet-process corn starch with an annual processing capacity of less than 150,000 tons and a total dry matter yield o

113

Flour production line (except special corn starch production line)

28. Pig slaughtering equipment such as bridge split saw and open pig scalding machine
29. Manual slaughter of pigs, cattle, sheep and poultry
30. Adding process of wheat flour whitening agent (benzoyl peroxide, calcium peroxide)
31. Elemental chlorine bleaching pulping process
32. Open lead melting pot and open lead powder machine for the production of lead storage batteries
33. Dry powder filling process for tubular lead storage battery
34. Add white arsenic, antimony trioxide, lead and fluorine (except for all electric furnaces),

Glass batch of chromium slag and other harmful raw and auxiliary materials

(13) Textile

1. Cotton spinning, wool spinning, linen spinning equipment, and weaving equipment that have been used for 30 years
2. The top roller gin with a roller length of less than 1000 mm, and the number of saw blades less than 80

Sawtooth gin, lint baler with pressure below 400 tons (excluding 160 tons,

200 tons of short-staple cotton baler)

3. ZD647, ZD721 automatic silk reeling machine, D101A automatic silk reeling machine, ZD681

Type vertical reeling machine, DJ561 type spun worsted spinning machine, K251, K251A type silk loom and other silk processing equipment

4. Z114 small jacquard machine
5. GE186 Jacquard Terry Machine
6. Model Z261 artificial fur machine
7. Type 74 dyeing and finishing equipment without modification
8. Steam heating open and unsealed flat washing tank for printing and dyeing

114

9. R531 type acid viscose spinning machine
10. Viscose conventional staple fiber production line with an annual capacity of 40,000 tons or less
11. Wet Spandex Production Process
12. Dimethylformamide (DMF) solvent method spandex and acrylic production process
13. Production process and equipment of nitric acid method acrylic fiber conventional fiber
14. Conventional polyester (PET) batch polymerization production process and equipment
15. Semi-automatic winding equipment with conventional polyester filament spindle shaft length 900 mm and below
16. Domestically produced products with a service life of more than 15 years and imported prints with a service life of more than 15 years
- Dyeing pretreatment equipment, stenter and setting equipment, rotary screen and flat screen printing machine, continuous dyeing machine
17. Intermittent cotton and chemical fiber with a service life of more than 15 years and a bath ratio greater than 1:10
- Dyeing equipment
18. Printing and dyeing production line driven by DC motor
19. Cast iron structure steaming box and washing equipment for printing and dyeing, bottomless steaming machine for printing and dyeing, L-type de-boiling and bleaching track steamer with short steam preheating zone
20. The diameter of the screw extruder is less than or equal to 90mm, and the polyester with an annual capacity of less than 10,000 tons
- Regenerated spun short fiber production device
- (14) Printing
  1. All lead row and lead printing process
  2. All lead printing machines and related auxiliary machines
  3. Photographic plate making machine
  4. ZD201, ZD301 series monograph casting machine
  5. TH1 automatic bar casting machine, ZT102 series bar casting machine

6. ZDK101 type engraving machine

7. KMD101 type die cutter grinder
8. AZP502 semi-automatic Chinese hand-selected casting line machine, ZSY101 semi-automatic Chinese Casting machine, TZP101 foreign text strip casting machine, ZZP101 Chinese automatic casting machine
9. QY401, 2QY404 series electric lead printing and proofing machines, QYSH401, 2QY401, DY401 Manual Lead Printing Proofer
10. YX01, YX02, YX03 series paper pressing machine, HX01, HX02, HX03, HX04 Series Paper Drying Machine
11. PZB401 flat lead plate casting machine, YZB02, YZB03, YZB04, YZB05, YZB06, YZB07 series lead plate casting machine
12. JB01 Flat Lead Plate Pouring Machine
13. RQ02, RQ03, RQ04 series lead pump lead melting furnace
14. BB01 type planer, YGB02, YGB03, YGB04, YGB05 type round Lead plate scraping machine, YTB01 round lead plate boring machine, YJB02 round lead plate sawing machine, YXB04, YXB05, YXB302 series round lead plate revision machine
15. P401, P402 series four-open flat presses, P801, P802, P803, P804 Series Octal Flat Press
16. PE802 double hinge printing machine
17. TE102, TE105, TE108 series full-sheet automatic two-rotation platform printing machine
18. TY201 type monochromatic one-rotation platform printing machine, TY401 type four-open monochromatic One rotary platform printing machine

19. TY4201 four-open one-rotation two-color printing machine
20. TT201, TZ201, DT201 type manual feed and stop rotary platform printing machine
21. TT202 type automatic stop rotary platform printing machine, TT402, TT403, TT405, DT402 type four-open automatic stop rotary platform printing machine, TZ202 type half-open semi-automatic Movable stop rotary platform printing machine, TZ401, TZS401, DT401 four-open semi-automatic stop and return

## Transfer platform printing machine

22. TR801 series vertical platform printing machine

23. LP1101, LP1103 series flat sheet full-sheet single-sided rotary printing machine,

LP1201 type flat paper full-sheet double-sided rotary printing machine, LP4201 type flat paper quarto two-color

Rotary press

24. LSB201 (880×1230 mm) and LS201, LS204 (787×1092

Mm) series web book printing machine

25. LB203, LB205, LB403 type web newspaper page rotary printing machine, LB2405,

LB4405 type web double-layer two-group newspaper page rotary press, LBS201 type web book,

Rotary press

26. KMT type automatic typesetting machine, PH-5 type Chinese character typesetting machine

27. Ball shock proofing and plate making machine (DIA PRESS cleaning machine)

28. Manual phototypesetting machines and domestic plate-making cameras produced before 1985

29. Centrifugal coating machine

30. J1101 series full sheet monochrome offset press (printing speed of 5000 sheets per hour and below under)

117

31. J2101, PZ1920 series of offset monochrome offset presses (printing speed 4000 per hour Sheets and below), PZ1615 series four-open monochrome offset press (printing speed 4000 per hour Sheets and below), YPS1920 series double-sided monochrome offset press (printing speed 4000 per hour Zhang and below)

32. W1101 full sheet automatic gravure printing machine, AJ401 roll paper single-sided four-color Gravure printing machine

33. DJ01 type flat binding perfect binding unit, PRD-01, PRD-02 type perfect binding unit Motivation, DBT-01 flat-fitted with thread binding, wrapping and ironing linkage

34. Solvent-based coating film machines, various laminating machines whose substrates cannot be degraded and recyc

35. QZ101, QZ201, QZ301, QZ401 paper cutter

36. MD103A knife sharpener

## (15) Civil explosive products

1. Airtight packaging type emulsion explosive matrix cooler
2. Airtight packaging type emulsion explosive low temperature sensitizer
3. Small diameter manual single-head explosive charging machine
4. Explosive equipment such as mixing and conveying the bearing covered in the medicament
5. The drying process of the detonator adopts a steam oven drying process
6. The manufacturing process of the delayed component (body) adopts the manual charging process
7. There is no reliable anti-detonation measures for detonator loading, assembly process and transmission between pro

Craft

8. The production line without reliable explosion-proof facilities for the dosing device in the manufacturing process of
9. Industrial explosives and industrial detonators that do not realize remote video surveillance in hazardous workplace

118

production line

10. Detonating cord production line without remote video surveillance in hazardous workplaces
11. Explosive pharmacy process using traditional wheel grinding method
12. The waste water produced by explosives cannot meet the "Water Pollution Discharge Standard for Weapon Industri"(GB14470.2) required emission production process
13. Emulsification process where the temperature of the emulsifier is greater than 130°C
14. The charging efficiency of small-diameter water-containing explosives is lower than 1200kg/h, and small-diameter Charging machine with charging efficiency lower than 800kg/h
15. In places with fixed operators, explosive devices with noise exceeding 85 decibels

Prepare

16. Production of electric detonators with a total resistance range greater than 1.5Ω (steel core foot wire length 2m) technology
17. The production of products that are packaged offline does not realize online collection and timely transmission of line
18. Production of electric detonators with a total resistance range greater than 1.0Ω (steel core leg wire length 2m)

Craft

19. Detonating cord production line without reliable anti-detonation measures between processes

20. On-line detection of no amount of drug in the rope making process, automatic interlocking protection device for drug  
Production line

21. Production process of ordinary electric detonator with maximum non-firing current less than 0.25A

22. The production process of the detonator filling process without man-machine isolation

23. The production process of the detonator bayonet and inspection process that requires manual delivery of products

119

24. Low-level industrial explosive production line with an annual output of 10,000 tons and below

(16) Fire protection

1. Production process of manual plug-welding electronic components for fire detectors

(17) Mining

1. Manual loading and unloading of ore during centralized shovel loading operations

2. Dry rock drilling operations without dust catcher

3. The main trackless transportation roadways and open pits use human or animal power to transport ore and rock

4. Use non-flame retardant cables, air ducts and conveyor belts in underground mines

5. Use wood support for main shafts in underground mines

6. The underground mine adopts open-field mining (no-pillar mining method) with manual installation in the stope

Operation

7. The underground mine adopts horizontal prop mining method

8. Expanded pot blasting used in open-pit mines

9. The open-pit mine adopts "one wall" mining with bottom caving, digging and non-layered mining

10. The open pit mine uses blasting to crush large ore rocks twice

(18) Other

1. The electroplating process containing toxic and harmful cyanide (electroplating of gold, silver, copper-based alloys  
Except for copper plating and primer process)

2. Cyanide-containing zinc precipitation process

3. Physical dam-to-island technology



4. Collection of forest products such as tourism activities and medicinal materials that exceed ecological carrying capacity
5. It does not meet the current national incineration of urban domestic garbage, medical waste and industrial waste

120

Small incinerators with relevant pollution control standards, engineering technical standards and equipment standards

6. Does not comply with the Air Pollution Prevention and Control Law, the Water Pollution Prevention and Control Law, the Environmental Protection Law, Energy Conservation Law, Safety Production Law, Product Quality Law, Land Management Law, Occupational Disease Prevention and Control Law, and other national laws and regulations, which do not meet the mandatory standards in terms of environmental protection, energy consumption and quality, and those that do not meet the standards of Art, technology, products, equipment

Second, backward products

(1) Petrochemical and chemical industry

1. Modified starch, modified fiber, colorful interior wall (the resin is mainly nitrocellulose, O/W type paint whose solvent is mainly xylene), vinyl chloride-vinylidene chloride copolymer emulsion exterior wall, Tar-type polyurethane waterproof, water-based polyvinyl chloride tar waterproof, polyvinyl alcohol and its acetals Interior and exterior walls (106, 107 coatings, etc.), polyvinyl acetate emulsions (including ethylene/vinyl acetate Ester copolymer emulsion) exterior wall paint

2. Interior walls, solvent-based woodware, toys, automobiles, Exterior wall paint, containing di-p-chlorophenyl trichloroethane, tributyltin, perfluorooctanoic acid and its salts, Coatings for hazardous substances such as perfluorooctane sulfonic acid and red lead

3. Azo dyes (non- The field of textiles is temporarily suspended), nine carcinogenic dyes (used in direct contact with the human body) Area suspended)

4. Paint remover containing benzene, phenol, benzaldehyde and dichloromethane, Lide Powder, PVC building waterproof joint material (tar type), 107 glue, clenbuterol, polychlorinated

121

Biphenyl (transformer oil)

5. Highly toxic pesticide products: BHC, dibromoethane, butyryl hydrazide, diquat, in addition Oxalbufen, fenflumidine, Tetramethan, fluoroacetamide, sodium fluoroacetate, dibromochloropropane, treatment of borer Phosphorus (Suhua 203), phosphoramidate, glycofluoride, tetramine, methamidophos, parathion, methyl parasulfide Phosphorus, monocrotophos, thiocyclophos (ethyl thiocyclophos), thiram, thiram and all arsenic Preparations, mercury preparations, lead preparations, 10% glyphosate water, methyl thiocyclophosphate, calcium phosphid Zinc phosphide, fenamiphos, methoxaphos, magnesium phosphide, sulfaphos, coumaphos, pyraclosporin, Terbution, Dicofol

6. Products to be eliminated according to the country's overall plan for fulfilling the international conventions: chlorin Dan, heptachlor, methyl bromide, DDT, hexachlorobenzene, mirex, lindane, toxaphene, Ai Dirin, dieldrin, endrin, endosulfan, sulfluramid, chlordecone,  $\alpha$ -hexachlorocyclohexane,  $\beta$ -hexachlorocyclohexane, PCBs, pentachlorobenzene, hexabromobiphenyl, tetrabromodiphenyl ether and pentabromo Diphenyl ether, hexabromodiphenyl ether and heptabromodiphenyl ether, hexabromocyclododecane (specific exempted use Is restricted), perfluorooctyl sulfonic acid and its salts and perfluorooctyl sulfonyl fluoride (acceptable The way is restricted)

7. Bicycle tires with soft side structure, ordinary conveyor belts with cotton cord as the skeleton material and Ordinary V-belts with nylon cord as the frame material, tires, bicycle tires, motorcycle tires  
Vulcanization mould

(2) Railway

1. G60 and G17 tank cars
2. P62 boxcar
3. K13 ore truck

4. U60 cement truck

5. N16 and N17 flat cars

6. L17 grain truck

7. C62A and C62B gondola cars

8. Rail flat cars (40 tons and below)

(3) Steel

1. Hot rolled silicon steel sheet

2. Steel wire and steel stranded wire of ordinary relaxation level

3. Hot rolled steel bars: grades HRB335, HPB235

4. Steel billets (ingots) produced by melting scrap steel using power frequency or intermediate frequency induction furnace

Steel products produced as raw materials (in accordance with national laws and regulations and the country's

Required to be eliminated)

(4) Non-ferrous metals

1. Copper wire rod (black rod)

(5) Building materials

1. Glass fiber reinforced cement (GRC) produced using non-alkali-resistant glass fiber or non-low-alkali cement

Hollow slats

2. The clay crucible is made of wire-drawn glass fiber and its products and its reinforced plastic (glass reinforced plastic)

Product

3. 25A open-web steel window

4. S-2 concrete sleeper

5. To flush toilets with a maximum water consumption of more than 8 liters at a time

123

6. Amphibole asbestos (namely blue asbestos)

7. Non-mechanical production of hollow glass, double-layer double-frame doors and windows, and single-cavity structural Plastic doors and windows

8. Polyethylene polypropylene fiber composite waterproof produced by the secondary heating composite molding process  
Coiled material, polyethylene polypropylene fiber composite waterproof coiled material (the thickness of the polyethylene composite  
Cotton polyester fiberglass (high alkali) grid composite tire base material, PVC waterproof membrane (S type)

9. Asbestos velvet clutch facings, synthetic train brake shoes, asbestos cork wet clutch

Organ patch

(6) Medicine

1. Lead tin ointment tube, single-layer polyolefin ointment tube (except for anorectal and cavity administration)
2. Sterile powder for ampoule filling and injection
3. Medicinal natural rubber stoppers
4. Non-easy folding ampoule
5. Polyvinyl chloride (PVC) soft bag for infusion (not including peritoneal dialysate, flushing

For liquid)

(7) Machinery

1. T100, T100A bulldozer
2. ZP-II, ZP-III dry shotcreting machine
3. WP-3 excavator
4. Pneumatic rock grabs below 0.35 cubic meters
5. Mining steel wire rope impact drill
6. BY-40 oil drilling rig

124

7. Water gas generator with a diameter of 1.98 meters
8. CER capsule series
9. Thermocouple (graduation number LL-2, LB-3, EU-2, EA-2, CK)
10. Thermal resistance (graduation number BA, BA2, G)
11. DDZ-I electric unit combination instrument
12. GGP-01A belt scale
13. BLR-31 type load cell
14. WFT-081 radiation temperature sensor
15. WDH-1E, WDH-2E photoelectric thermometer, PY5 digital thermometer
16. BC series single bellows differential pressure gauge, LCH-511, YCH-211, LCH-311,

YCH-311, LCH-211, YCH-511 ring type differential pressure gauge

17, EWC-01A type long graph electronic potentiometer

18. XQWA bar type automatic balance indicator

19. ZL3 type XY recorder

20. DBU-521, DBU-521C liquid level transmitter

21. YB series (frame size 63 ~ 355mm, rated voltage 660V and below),

YBF series (frame size 63 ~ 160mm, rated voltage 380, 660V or 380/660V),

YBK series (frame size 100 ~ 355mm, rated voltage 380/660V, 660/1140V)

Flameproof three-phase asynchronous motor

22. DZ10 series molded case circuit breakers, DW10 series frame circuit breakers

23. CJ8 series AC contactor

24, QC10, QC12, QC8 series starters

125

25, JR0, JR9, JR14, JR15, JR16-A, B, C, D series thermal relay

Device

26. Non-ferrous metal smelting furnace using coke as fuel

27. GGW series intermediate frequency centerless induction melting furnace

28, B type, BA type single-stage single-suction cantilever centrifugal pump series

29. F type single-stage single-suction corrosion-resistant pump series

30. JD type long shaft deep well pump

31. KDON-3200/3200 type cold accumulator full low pressure process air separation equipment,

KDON-1500/1500 type cold accumulator (tube type) all low pressure process air separation equipment,

KDON-1500/1500 tube-sheet type all low pressure process air separation equipment, KDON-6000/6600

Type cold storage process air separation plant

32. 3W-0.9/7 (ring valve) air compressor

33, C620, CA630 ordinary lathe

34, C616, C618, C630, C640, C650 ordinary lathe

35, X920 keyway milling machine

- 36, B665, B665A, B665-1 Bullhead planer
- 37, D6165, D6185 EDM machine tools
- 38, D5540 electric pulse machine tool
- 39, J53-400, J53-630, J53-1000 double disc friction press
- 40, Q11-1.6×1600 shearing machine
- 41, Q51 truck crane
- 42. TD62 fixed belt conveyor

126

- 43. 3 tons DC wireline underground mine electric locomotive
- 44, A571 single beam crane
- 45. Fast circuit breaker: DS3-10, DS3-30, DS3-50 (1000, 3000, 5000A),  
DS10-10, DS10-20, DS10-30 (1000, 2000, 3000A)
- 46. SX series box-type resistance furnace
- 47. Single-phase watt-hour meter: DD1, DD5, DD5-2, DD5-6, DD9, DD10,  
DD12, DD14, DD15, DD17, DD20, DD28
- 48, SL7-30/10 ~ SL7-1600/10, S7-30/10 ~ S7-1600/10 power distribution transformer  
Device
- 49. Knife switch: HD6, HD3-100, HD3-200, HD3-400, HD3-600,  
HD3-1000, HD3-1500
- 50. GC type low pressure boiler feed water pump, DG270-140, DG500-140, DG375-185  
Boiler feed pump
- 51. Thermal power traps: S15H-16, S19-16, S19-16C, S49H-16,  
S49-16C, S19H-40, S49H-40, S19H-64, S49H-64
- 52. Fixed grate coal-fired boilers (except for double-layer fixed grate boilers)
- 53, L-10/8, L-10/7 type power reciprocating air compressor
- 54, 8-18 series, 9-27 series high-pressure centrifugal fans
- 55, X52, X62W 320×150 lifting table milling machine
- 56, J31-250 mechanical press

57, TD60, TD62, TD72 fixed belt conveyor

58, E135 two-stroke medium-speed diesel engine (including three models of 2, 4 and 6 cylinders), 4146

127

diesel engine

59. TY1100 single-cylinder vertical water-cooled direct injection diesel engine

60, 165 single cylinder horizontal evaporative water cooling, pre-chamber diesel engine

61. Switches and relays containing mercury

62. Fuel Moped

63. Vehicle engines with lower emissions than China II

64. Friction plates containing asbestos materials for motor vehicle braking

65. Unshaped shaft cage, below  $\Phi 1.2\text{m}$  (excluding  $\Phi 1.2\text{m}$ ) for lifting

Personnel hoisting winch, KJ type mine hoist, JKA type mine hoist, XKT type

Mine hoist, JTK type mine hoisting winch, belt brake mine hoisting winch, TKD

Type hoist electric control device and hoist electric control device using relay structure principle, special

Dry brakes for trackless rubber-tyred vehicles used to transport personnel and oil, without voltage stabilizing device

Medium and deep hole drilling equipment

66. Coal-fired boilers of 10 tons per hour and below

67. Diesel trucks operating under national emission standards of China III and below adopt lean burn technology and

Old gas vehicles with "oil-to-gas"

(8) Ship

1. Steel transport ships constructed by the integral shipbuilding method

2. Modified ships that do not meet the specifications and ships that have reached the deadline for scrapping

3. Single hull tanker

4. The propeller boat and its engine

(9) Light Industry

128

1. Mercury batteries (mercury oxide primary cells and battery packs, zinc mercury batteries)
2. Mercury-containing paste zinc-manganese battery, mercury-containing cardboard zinc-manganese battery, mercury-Batteries, mercury-containing button alkaline manganese batteries
3. Mercury-containing slurry layer paper, mercury-containing zinc powder
4. Open-type ordinary lead storage battery, dry-type charged lead storage battery
5. Lead storage battery with cadmium content higher than 0.002%
6. Lead storage battery with arsenic content higher than 0.1%
7. Nickel-cadmium batteries for civilian use
8. In-line gas water heater
9. Spiral lifting (cast iron) faucet
10. Aniline ink for gravure printing
11. The water inlet is lower than the water surface of the overflow, and the upper guide straight down toilet tank access
12. Cast iron globe valve
13. Semi-automatic (horizontal) industrial washing machine
14. Open type tetrachloroethylene dry cleaning machine and ordinary closed type tetrachloroethylene dry cleaning machine  
Body oil dry cleaning machine and ordinary closed oil dry cleaning machine
15. Alkylphenol polyoxyethylene ether (including nonylphenol polyoxyethylene ether, octylphenol polyoxyethylene  
Production and use of vinyl ether and dodecylphenol polyoxyethylene ether, etc.)
16. Disposable foam plastic tableware, disposable plastic cotton swabs (December 31, 2020  
Japan); daily chemical products containing plastic microbeads (prohibition of production until December 31, 2020, until  
Prohibited on December 31, 2022); ultra-thin plastic with a thickness of less than 0.025 mm  
Bags, polyethylene agricultural mulch film with a thickness of less than 0.01 mm

17. Cold cathode fluorescent lamps and external electrode fluorescent lamps for electronic display: (1) long



The temperature is short ( $\leq 500$  mm) and the mercury content of a single tube exceeds 3.5 mg; (2) Medium length ( $> 500$  mm and  $\leq 1500$  mm) and a single tube contains more than 5 mg of mercury; (3) length Longer ( $> 1500$  mm) and a single tube containing more than 13 mg of mercury (December 31, 2020 day)

18. Cosmetics (containing more than one part of mercury), including skin lightening soaps and creams, Does not include eye cosmetics that use mercury as a preservative and have no effective and safe alternative preservatives (December 31)

19. Production of mercury-containing barometers, hygrometers, pressure gauges, thermometers (except for clinical thermometers) Other non-electronic measuring instruments (no suitable mercury-free substitutes cannot be obtained, installed in large-scale production) Except for non-electronic measuring equipment that is in preparation or used for high-precision measurement (December 31 day)

20. Mercury thermometer and mercury sphygmomanometer (December 31, 2025)

21. Batteries containing mercury, excluding button-type zinc silver oxide batteries with mercury content less than 2% And button zinc-air batteries with mercury content less than 2% (December 31, 2020)

22. For general lighting purposes, no more than 30 watts and a single lamp containing more than 5 milligrams of mercury Grams of compact fluorescent lamps (December 31, 2020)

23. Straight tube fluorescent lamps for general lighting purposes: (1) Less than 60 watts and single A straight tube fluorescent lamp with mercury content exceeding 5 mg (using three primary colors phosphors); (2) Straight tube fluorescent lamp with less than 40 watts (including 40 watts) and with a single mercury content of more than 1 mg (Use halophosphate phosphor) (December 31, 2020)

24. High-pressure mercury lamps for general lighting purposes (December 31, 2020)

130

25. Use monofluorodichloroethane (HCFC-141b) as a foaming agent to produce refrigerators and freezers Products, refrigerated container products, electric water heater products

26. Daily fragrance containing musk xylene

(10) Fire protection

1. Difluoro-chloro-bromomethane fire extinguishing agent (abbreviated as 1211 fire extinguishing agent)

2. Trifluoro-bromomethane fire extinguishing agent (1301 fire extinguishing agent for short) (raw materials and necessities except the way)

3. Simple 1211 fire extinguisher
4. Portable 1211 fire extinguisher
5. Cart 1211 fire extinguisher
6. Portable chemical foam fire extinguisher
7. Portable acid-base fire extinguisher
8. Simple 1301 fire extinguisher (except for essential purposes)
9. Portable 1301 fire extinguisher (except for essential purposes)
10. Trolley type 1301 fire extinguisher (except for essential purposes)
11. Pipe network 1211 fire extinguishing system
12. Suspended 1211 fire extinguishing system
13. Cabinet 1211 fire extinguishing system
14. Pipe network 1301 fire extinguishing system (except for essential purposes)
15. Suspended 1301 fire extinguishing system (except for essential purposes)
16. Cabinet 1301 fire extinguishing system (except for essential purposes)
17. PVC lining fire hose

131

#### (11) Civil explosive products

1. Industrial detonators that do not meet the requirements of domestic public safety full life cycle management and control
2. Fuse
3. Ammonium Explosive
4. Paper shell detonator

#### (12) Other

- 1, 59, 69, 72, TF-3 type gas mask
2. ZH15 isolated chemical oxygen self-rescuer, carbon monoxide filter self-rescuer
3. Does not comply with the Air Pollution Prevention and Control Law, the Water Pollution Prevention and Control Law, the Environmental Protection Law, Energy Conservation Law, Safety Production Law, Product Quality Law, Land

Management Law, Occupational Disease Prevention and Control Law, and other national laws and regulations, which do not meet the mandatory standards in terms of environmental protection, energy consumption and quality, and those that do not meet the requirements of the Art, technology, products, equipment