

**National Catalogue of Industries Encouraged
by Foreign Investment(2020 version)**

1.Agriculture, forestry, animal husbandry and fishery

1.1Planting, development and production of woody edible oils,
seasonings and industrial raw materials

1.2Development, planting and product production of green and
organic vegetables (including edible fungus and melon), dried
and fresh fruits, tea cultivation technology

1.3Breeding, planting and production of wine grapes

1.4Breeding, planting and production of beer raw materials

1.5Development of new technology and production of crops
such as sugar, fruit trees, pasture, etc.

1.6Cultivation and development of new plant varieties for
high-yield and high-efficiency silage

1.7 Construction and operation of flower production and nursery base

1.8 Rubber, oil palm, sisal, coffee planting

1.9 Breeding and planting of aromatic plants, extraction of essential oils

1.10 Planting and breeding of Chinese medicinal materials

1.11 Comprehensive utilization of crop straw resources, development and production of organic fertilizer resources

1.12 Forest resource cultivation (fast-growing and high-yield timber forests, large-diameter timber forests, bamboo forests, oil tea and other economic forests, timber forests for precious tree species, etc.)

1.13 Understory ecological planting

1.14 Development and Application of Standardized Scale Breeding Technology for Livestock and Poultry

1.15 Breeding of breeding stock, poultry and aquatic fry
(excluding rare and excellent species unique to our country)

1.16 Construction and operation of ecological and environmental protection projects such as desertification prevention, water and soil conservation, and land greening

1.17 Aquatic product farming, deep-water cage farming, factory aquaculture, ecological marine aquaculture

2. mining industry

2.1 Exploration and development of oil and natural gas and utilization of mine gas

2.2 Improve crude oil recovery (in the form of engineering services) and the development and application of related new technologies

2.3 Development and application of new petroleum exploration and development technologies such as geophysical prospecting,

drilling, logging, logging, and downhole operations

2.4 The development and application of new technologies to improve the utilization rate of mine tailings and the comprehensive application of mine ecological restoration technologies

2.5 Exploration, mining and beneficiation of minerals in short supply in my country (such as potash, chromite, etc.)

3. manufacturing

3.1 Agricultural and sideline food processing industry

3.1.1 Development and production of safe, efficient and environmentally friendly feeds and feed additives (including vitamins and methionine), and antimicrobial substitutes for animal growth promotion

3.1.2 Pet feed and food development and production

3.1.3 Aquatic product processing, shellfish purification and

processing, seaweed health food development

3.1.4 Vegetables, dried and fresh fruits, poultry and livestock products processing

3.1.5 Development and production of bioethanol (excluding ethanol from grain conversion)

3.2 Food manufacturing

3.2.1 Development and production of high-temperature sterilized milk (sterilized at 130°C for 2 seconds or more)

3.2.2 Production of cheese and processed cheese, cheese prepared food

3.2.3 Development and production of formula foods for infants and young children, supplementary foods for infants and young children, formula foods for special medical purposes and health foods

3.2.4 Development and production of nutritious health foods,

food additives and formula foods for the elderly and improving the quality of life of the elderly

3.2.5 Development and production of baked goods (including chocolate and its products using natural cocoa beans), convenience foods and related ingredients

3.2.6 Production of candy, chewing gum, candied fruit, ice cream, puffed food, yogurt

3.2.7 Forest food processing

3.2.8 Development and production of plant protein bionic meat food

3.2.9 Development and production of new technologies for natural food additives, condiments, enzyme preparations, fermented products, and natural flavors

3.2.10 Development and production of aseptic liquid food packaging materials

3.3 Liquor, beverage and refined tea manufacturing

3.3.1 Development and production of fruit and vegetable

beverages, protein beverages, tea beverages, coffee beverages, and plant beverages

3.4 Textile industry

3.4.1 Using non-woven, weaving, knitting, knitting and other new technologies, such as multi-process compounding, long-term finishing, etc., to produce functional industrial textiles

3.4.2 Adopt digital intelligent printing and dyeing technology equipment, dyeing and finishing clean production technology (enzyme treatment, high-efficiency short-process pre-treatment, continuous open-width pre-treatment of knitted fabrics, low-temperature pre-treatment and dyeing, low-salt or no-salt dyeing, low-urea printing, small bath Specific airflow or gas-liquid dyeing, digital inkjet printing, foam finishing, etc.), functional finishing technology, new dyeing processing technology, composite fabric processing technology, production of high-end textile fabrics; development and application of

intelligent cheese dyeing technology and equipment

3.4.3 Processing technology and product production of special animal fiber, hemp fiber, mulberry silk, color cotton, and color mulberry cocoon silk natural fibers that meet environmental protection requirements

3.4.4 Recycling of waste textiles

3.5 Textile and Apparel, Apparel Industry

3.5.1 Production of high count cotton yarn

3.5.2 Apparel and semi-finished garment production using computer integrated manufacturing system

3.5.3 Functional special clothing production

3.6 Leather, fur, feathers and their products and footwear industry

3.6.1 Leather and fur cleaning technology processing

3.6.2 New technology processing for leather finishing

3.6.3 Comprehensive utilization of leather waste

3.6.4 High-performance elastomer shoe material production

3.7 Wood processing and wood, bamboo, rattan, palm and grass products industry

3.7.1 Forestry three remnants, new technology, new product development and production of comprehensive utilization of "secondary, small and firewood" wood, waste wood and bamboo, development and application of pollution control and treatment of wood and bamboo production, emission reduction of fine particles and dust explosion-proof technology

3.8 Cultural, Educational, Industrial and Beauty, Sports and Entertainment Products Manufacturing

3.8.1 Production of high-end carpets, embroidery and drawnwork products

3.9 Petroleum processing, coking and nuclear fuel processing industries

3.9.1 Phenol oil processing, washing oil processing, coal tar pitch preparation of high-end chemicals (not including modified asphalt)

3.10 Chemical raw materials and chemical products manufacturing

3.10.1 Development and production of new downstream products of polyvinyl chloride and organosilicon

3.10.2 Supporting materials for synthetic materials: propylene oxide by hydrogen peroxide oxidation, propylene oxide by hydrogen peroxide chloropropylene, epichlorohydrin, dimethyl naphthalate (NDC), 1,4-cyclohexane dimethanol (CHDM) , Production of adiponitrile, hexamethylene diamine, and high-performance polyurethane composite materials by butadiene method with an annual output of 50,000 tons and above

3.10.3 Production of polyethylene polyamine products

3.10.4 Development and production of high-end polyolefins such as high-carbon alpha olefin copolymer metallocene polyethylene

3.10.5 Synthetic fiber raw material production: nylon 66 salt, 1,3-propanediol

3.10.6 Synthetic rubber production: polyurethane rubber, acrylic rubber, epichlorohydrin rubber, and special rubbers such as fluorine rubber and silicon rubber

3.10.7 Engineering plastics and plastic alloy production: non-phosgene polycarbonate (PC), polyoxymethylene, polyphenylene sulfide, polyether ether ketone, polyimide, polysulfone, polyether sulfone, Polyarylate (PAR), polyphenylene ether, polybutylene terephthalate (PBT), polyamide (PA) and its modified materials, liquid crystal polymer and other products

3.10.8 Fine chemicals: new catalyst products, new technologies, commercial processing technology for dyes (pigments), electronic chemicals and paper chemicals, leather chemicals (except NN dimethylformamide), oilfield additives, surfactants, water Processing agent, adhesive, sealant, adhesive tape, inorganic fiber, inorganic nano material production, deep processing of pigment coating treatment

3.10.9 Production of high-purity electronic grade hydrofluoric acid (above 9N) and hydrogen fluoride

3.10.10 Production of low-volatility inks such as water-based inks, electron beam curing and ultraviolet curing, and environmentally friendly organic solvents

3.10.11 Production of citral, an intermediate of natural flavors, synthetic flavors, single ion flavors, and flavor components

3.10.12 Production of high-performance coatings, high-solids, solvent-free coatings and supporting resins, water-based industrial coatings and supporting water-based resins

3.10.13 Production of high-performance fluorine resins, fluorine film materials, medical fluorine-containing intermediates, environment-friendly fluorine-containing refrigerants, cleaning agents, and foaming agents

3.10.14 Hydrogen fuel production, storage, transportation, liquefaction

3.10.15 Production and supply of large-scale, high-pressure, high-purity industrial gases (including electronic gases)

3.10.16 Construction and operation of carbon capture, utilization and storage (CCUS) projects

3.10.17 Production of recovery of fluorine resources from phosphorus chemical industry and aluminum smelting

3.10.18 Development and production of new technologies and new products of forestry chemical products

3.10.19 Development and production of inorganic, organic and biological membranes for environmental protection

3.10.20 Development and production of new type fertilizers: high-concentration potash fertilizer, compound microbial inoculants, compound microbial fertilizers, straw and garbage decomposing agents, special function microbial preparations

3.10.21 Development and production of new pesticide varieties, new formulations, special intermediates, auxiliaries that are efficient, safe, and environmentally friendly, as well as the development and application of related clean production processes, and the production of chiral and three-dimensional pesticides by directional synthesis

3.10.22 Development and production of biological pesticides and biological control products: microbial insecticides, microbial fungicides, agricultural antibiotics, biostimulants, insect pheromones, natural enemy insects, microbial herbicides

3.10.23 Comprehensive utilization, treatment and disposal of waste gas, waste liquid and waste residue

3.10.24 Production of organic polymer materials: aircraft skin

coatings, rare earth cerium sulfide red dyes, lead-free electronic packaging materials, color plasma display special series photolithography slurry, small diameter and large specific surface area ultrafine fibers, high-precision fuel filter paper, Lithium-ion battery separators, surface treatment self-healing materials, super-hydrophobic nano-coating materials

3.11 Pharmaceutical manufacturing

3.11.1 Production of new compound drugs or active ingredient drugs (including bulk drugs and preparations)

3.11.2 Amino acids: production of tryptophan, histidine, methionine, etc. by fermentation

3.11.3 Development and production of new anti-cancer drugs, new cardiovascular and cerebrovascular drugs and new nervous system drugs

3.11.4 New drug production using bioengineering technology

3.11.5 Production of AIDS vaccines, hepatitis C vaccines,

contraceptive vaccines and new types of vaccines such as cervical cancer, malaria, hand-foot-mouth disease, etc.

3.11.6 Development and production of marine drugs

3.11.7 Pharmaceutical preparation production: new dosage forms and new products using new technologies such as slow release, controlled release, targeting, and transdermal absorption

3.11.8 Development and production of new pharmaceutical excipients

3.11.9 Production of animal-specific antibacterial raw materials (including antibiotics and chemical synthesis)

3.11.10 Production of new products and new dosage forms of veterinary antibacterial drugs, anthelmintics, insecticides, and anticoccidial drugs

3.11.11 Development and production of new diagnostic reagents

3.11.12 R&D and production of cell therapy drugs (except in

areas where foreign investment is prohibited)

3.11.13 Development and production of new key raw materials for the production of vaccines and cell therapy drugs, and large-scale cell culture products

3.11.14 Development and production of new medicinal packaging materials and technologies (neutral borosilicate medicinal glass, chemically stable, degradable, light-proof, high-barrier functional materials, aerosols, powder mists, self-supply New packaging drug delivery systems and drug delivery devices, such as drugs, prefilling, automatic mixing, etc.)

3.12 Chemical fiber manufacturing

3.12.1 Continuous copolymerization modification of differentiated and functional polyester (PET) [Cation dyeable polyester (CDP, ECDP), alkali-soluble polyester (COPET), high shrinkage polyester (HSPET), flame retardant polyester, low Melting point polyester, non-crystalline polyester, biodegradable polyester, polyester produced with green catalysts, etc.]; flame

retardant, antistatic, anti-ultraviolet, antibacterial, phase change energy storage, photochromic, original solution coloring, etc. , Research and development of efficient and flexible preparation technology of functional chemical fibers; production of functional chemical fibers such as intelligent and super-simulation; original development of green, high-efficiency and environmentally friendly oil production for high-speed spinning processing

3.12.2 Development and production of high-performance fibers and products: carbon fiber (CF), aramid fiber (AF), aramid (PSA), ultra-high molecular weight polyethylene fiber (UHMWPE), polyphenylene sulfide fiber (PPS), polyimide Amine fiber (PI), polytetrafluoroethylene fiber (PTFE), polybenzobisoxazole fiber (PBO), polyarylene oxadiazole fiber (POD), basalt fiber (BF), silicon carbide fiber (SiCF), poly Ether ether ketone fiber (PEEK), high-strength glass fiber (HT-AR), poly(2,5-dihydroxy-1,4-phenylenepyridodiimidazole) (PIPD) fiber

3.12.3 New polyester production for fiber and non-fiber:

Polytrimethylene terephthalate (PTT), Polyethylene sebacate

(PEN), Polycyclohexane dimethanol terephthalate (PCT), binary Alcohol modified polyethylene terephthalate (PETG)

3.12.4 The use of new renewable resources and green environmental protection technology to produce biomass fiber, including new solvent method cellulose fiber (Lyocell), regenerated cellulose fiber using bamboo, hemp, etc. as raw materials, polylactic acid fiber (PLA), chitin fiber, poly Hydroxy fatty acid ester fiber (PHA), animal and vegetable protein fiber, etc.

3.12.5 Nylon 11, nylon 12, nylon 1414, nylon 46, long carbon chain nylon, high temperature resistant nylon and other new polyamides, differentiated, functional, high value-added modified nylon (including nylon elastomer, copolymer nylon, nylon engineering Plastic, flame-retardant nylon) development and production

3.13 Rubber and plastic products industry

3.13.1 Development, production and application of silicone products

3.13.2 Development, production and application of biodegradable plastics and their products

3.13.3 Development and production of a new type of light ecological multifunctional wide agricultural film, pollution-free and degradable agricultural film

3.13.4 Recycling and reuse of waste plastics

3.13.5 Development and production of new technology and new products (high barrier, multifunctional film and raw materials) of plastic flexible packaging

3.14 Non-metallic mineral products industry

3.14.1 Development and production of energy-saving, environmentally friendly, waste-use, lightweight, high-strength, high-performance, and multifunctional building materials

3.14.2 Development and production of integrated molding products

3.14.3 Production of energy-saving and efficient chemical building materials by replacing steel with plastic and wood with plastic

3.14.4 Intelligent manufacturing of new prefabricated building components

3.14.5 An annual output of 10 million square meters or more of elastomer and plastic modified bitumen waterproofing membranes, wide (above 2 meters) EPDM waterproofing membranes and supporting materials, and wide (above 2 meters) PVC waterproofing membranes Coiled material, thermoplastic polyolefin (TPO) waterproof coiled material production

3.14.6 New technology functional glass development and production: electromagnetic wave shielding glass, glass substrates for microelectronics, infrared transparent lead-free chalcogenide glass and products, electronic-grade large-size quartz glass products (tubes, plates, crucibles, instruments, etc.), excellent optical performance Multifunctional windshield (light transmittance $\geq 70\%$), coated privacy windshield, sound

insulation windshield, solar windshield, conductive color-changing windshield, electrically heated windshield, head-up display windshield, extreme materials and products for information technology (including Waveguide-grade high-precision optical fiber preform, quartz glass tube and ceramic substrate), high-purity ($\geq 99.998\%$) ultra-pure ($\geq 99.999\%$) crystal raw material purification processing

3.14.7 Sapphire substrate development and production

3.14.8 Production of conductive glass for thin film batteries, solar concentrator glass, and conductive glass for construction

3.14.9 Glass fiber products and special glass fiber production: ultra-fine glass fiber (monofilament diameter ≤ 5 microns), degradable glass fiber, special-shaped cross-section glass fiber, alkali-resistant glass fiber, low dielectric glass fiber, quartz glass fiber, high silica Glass fiber, high-strength and high-elastic glass fiber, ceramic fiber, etc. and their products

3.14.10 Production of optical fibers and products: image transmission beams and laser medical fibers, super second and

third generation microchannel plates, optical fiber panels, imagers and glass light cones

3.14.11 Standardized refinement of ceramic raw materials, production of high-end decorative materials for ceramics

3.14.12 Production of long-life energy-saving and environmentally friendly (chromium-free) refractory materials for kilns such as cement, electronic glass, ceramics, and microporous carbon bricks

3.14.13 Porous ceramic production

3.14.14 Production of new inorganic non-metal materials and products: composite materials, special ceramics, special sealing materials (including high-speed oil seal materials), special friction materials (including high-speed friction brake products), special cementing materials, special latex materials, underwater acoustic rubber products ,nanomaterials

3.14.15 Production of organic-inorganic composite foam insulation materials, high-performance energy-saving insulation

materials for buildings, production of insulation materials for modern concentrated agricultural breeding

3.14.16 Production of high-tech composite materials: continuous fiber reinforced thermoplastic composite materials and prepregs, process auxiliary materials for resin-based composite molding with temperature $> 300^{\circ}\text{C}$, biodegradable resin-based composite materials, resin-based composite materials for additive manufacturing, resins Matrix composite materials (including sporting goods, light-weight and high-strength vehicle components), special functional composite materials and products (including deep-water and diving composite products, medical and rehabilitation composite products), carbon/carbon composite materials, high-performance ceramic matrix Composite materials and products, metal-based and glass-based composite materials and products, metal layered composite materials and products, ultra-high pressure composite hoses with pressure $\geq 320\text{MPa}$, large passenger aircraft aviation tires, polyester structural foam materials (used for light and high-strength vehicles Parts, core materials of wind turbine blades, building materials, etc.)

3.14.17 Production of precision high-performance ceramic raw materials: ultrafine silicon carbide (SiC) powder (purity>99%, average particle size<1 μ m), silicon="" nitride="" ultrafine="" powder="" purity="">99%, average particle size<1 μ m) high-purity="" ultra-fine="" alumina="" powder="" purity="">99.9%, average particle size<0.5 μ m), low-temperature sintered zirconia (ZrO₂) powder (sintering temperature <1350°C), high-purity aluminum nitride (AlN) powder (purity > 99%, average particle size <1 μ m), rutile="" tio₂="" powder="" purity="">98.5%), white carbon black (particle size<100nm), barium="" titanate="" purity="">99%, particle size<1 μ m)

3.14.18 Development and production of high-quality artificial crystals and crystal film products: high-quality synthetic crystals (piezoelectric crystals and ultraviolet light-transmitting crystals), super-hard crystals (cubic boron nitride crystals), high-temperature and high-insulation synthetic insulating crystals (artificial synthesis) Mica), new electro-optic crystals, high-power laser crystals and large-size scintillation crystals, diamond film tools, ultra-thin synthetic diamond saw blades with a thickness of 0.3mm and below

- 3.14.19 Fine processing of non-metallic minerals (superfine crushing, high purity, refinement, modification)
- 3.14.20 Ultra-high power graphite electrode production
- 3.14.21 Production of pearl mica (particle size 3-150 μ m)
- 3.14.22 Production of multi-dimensional and multi-directional integral woven fabrics and profiling fabrics
- 3.14.23 Use new dry-process cement kilns and sintered wall materials to produce harmless disposal of solid waste
- 3.14.24 Construction waste recycling
- 3.14.25 Comprehensive utilization of industrial waste such as industrial by-product gypsum
- 3.14.26 Development and application of new technologies for comprehensive utilization of non-metallic mine tailings and ecological restoration of mines

3.15 Non-ferrous metal smelting and rolling processing industry

3.15.1 Production of high-tech non-ferrous metal materials and their products: compound semiconductor materials (gallium arsenide, gallium phosphide, indium phosphide, gallium nitride), high-temperature superconducting materials, memory alloy materials (titanium nickel, copper-based and iron-based memory alloys) Materials), ultra-fine (nano) calcium carbide and ultra-fine (nano) crystalline cemented carbide, super-hard composite materials, precious metal composite materials, light metal composite materials, aluminum foil for radiators, aluminum foil for medium and high voltage cathode capacitors, aluminum foil for lithium battery electrodes, Electrolytic copper foil, large and complex cross-section aluminum alloy profiles, aluminum alloy precision die forgings, electric railway overhead wires, ultra-thin copper strips, corrosion-resistant heat exchanger copper alloy materials, high-performance copper-nickel, copper-iron alloy strips, beryllium copper strips , Wire, tube and rod processing materials, high temperature and aging resistance tungsten wire, magnesium alloy castings, lead-free solder, magnesium alloy and its application products, aluminum foam, titanium alloy smelting and processing, atomic

energy level sponge zirconium, tungsten and molybdenum
deep-processed products

3.15.2 Processing of high-end rare earth application products
that meet the requirements of new rare earth materials

3.16 Metal products industry

3.16.1 R&D and manufacturing of lightweight and
environmentally-friendly new materials for aviation, aerospace,
ships, automobiles, and motorcycles (special aluminum plates,
aluminum-magnesium alloy materials, motorcycle aluminum
alloy frames, etc.)

3.16.2 R&D and manufacturing of light metal semi-solid rapid
prototyping materials and their products

3.16.3 Manufacturing and processing of metal packaging
products (should be complete products, with a container wall
thickness of less than 0.3 mm) used for packaging all kinds of
grains, oils, foods, fruits and vegetables, beverages, daily
chemical products and other contents (including printing and

coating of the inner and outer walls of the products)

3.16.4 Steel fiber manufacturing for construction

3.17 General equipment manufacturing

3.17.1 Manufacturing of high-end CNC machine tools and key components: five-axis linkage CNC machine tools, CNC coordinate boring and milling machining centers, CNC coordinate grinders

3.17.2 Manufacturing of multi-station upsetting machines with a capacity of 1,000 tons and above

3.17.3 Manufacture of large-scale (loading capacity of more than 1 ton) multi-function controllable atmosphere heat treatment equipment, program-controlled chemical heat treatment equipment, program-controlled multi-function vacuum heat treatment equipment, vacuum heat treatment equipment with a loading capacity of more than 500 kg, and full-fiber lining heat treatment heating furnace

3.17.4 Manufacturing of equipment for dismantling, crushing and post-processing of scrapped automobiles

3.17.5 FTL flexible production line manufacturing

3.17.6 Development and manufacturing of complete sets of systems for robots and industrial robots, robot-specific high-precision reducers, high-performance servo motors and drives, fully autonomous programming and other high-performance controllers, sensors, end effectors, industrial intelligent gateways

3.17.7 High-end precision tool manufacturing, nano-composite coating and high-end processing equipment manufacturing

3.17.8 Manufacturing of sub-micron ultrafine grinder

3.17.9 Manufacturing of wheeled and crawler cranes of 400 tons and above

3.17.10 Design and manufacture of high-pressure plunger pumps and motors with working pressure $\geq 35\text{MPa}$, low-speed

and high-torque motors with working pressure $\geq 35\text{MPa}$

3.17.11 Integral hydraulic multi-way valve with working pressure $\geq 25\text{MPa}$, manufacturing of electro-hydraulic proportional servo components

3.17.12 Design and manufacture of valve islands, pneumatic solenoid valves with power below 0.35W , and high-frequency electronically controlled air valves above 200Hz

3.17.13 Production of valves whose operating temperature is below -120°C or above 530°C

3.17.14 Design and manufacture of hydrostatic drive device

3.17.15 Development and manufacturing of non-contact gas film seals with pressures above 10MPa and dry gas seals with pressures above 10MPa (including experimental devices)

3.17.16 Design and manufacture of pneumatic actuators with repeatability less than or equal to 0.03 degrees, and axial runout less than or equal to 0.02mm

3.17.17 Manufacturing of noise and vibration pollution control equipment: sound barriers, mufflers, damping spring vibration isolators

3.17.18 Development and manufacturing of equipment for automotive polymer materials (friction plates, modified phenolic pistons, non-metallic hydraulic master pumps, etc.)

3.17.19 Car wheel bearings of the third generation and above, high- and mid-range CNC machine tools and machining center bearings, high-speed wire and sheet rolling mill bearings, high-speed railway bearings, low-noise bearings below vibration value Z4, P4 and P2 bearings of various types of bearings, wind turbines Bearings, aviation bearings, aircraft engine bearings 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 (speed $\geq 12,000$ rpm), industrial robot RV deceleration Mechanical harmonic reducer bearing manufacturing

3.17.20 Manufacturing of high-density, high-precision, complex-shaped powder metallurgy parts and chains for automobiles and construction machinery

3.17.21 Manufacturing of gear transmissions for wind power and high-speed trains, variable-pitch gear transmission systems for ships, and large and heavy-duty gearboxes

3.17.22 Manufacture of high temperature resistant insulating materials (insulation grades F and H grades) and insulating molded parts

3.17.23 Development and manufacturing of accumulator capsules and rubber and plastic seals for hydraulic and pneumatic

3.17.24 Manufacturing of high-precision, high-strength (above grade 12.9), special-shaped and combined fasteners

3.17.25 Manufacturing of miniature precision transmission couplings (clutches)

3.17.26 Manufacturing of connecting shafts for large rolling mills

3.17.27 Remanufacturing of machine tools, construction machinery, railway locomotive equipment and other mechanical equipment, remanufacturing of auto parts, remanufacturing of high-end medical equipment and key components such as medical imaging equipment, remanufacturing of office equipment such as photocopiers

3.17.28 Development and manufacturing of digital cameras with more than 10 million pixels or with a horizontal field of view of more than 120 degrees and their optical lenses and optoelectronic modules

3.17.29 Manufacturing of office machinery (including industrial use): multifunctional integrated office equipment (copying, printing, faxing, scanning), printing equipment, high-resolution color printer heads with an accuracy of 2400dpi and above, photosensitive drums

3.17.30 Film machinery manufacturing: 2K, 4K digital film

projectors, digital film cameras, digital image production and editing equipment

3.17.31 Construction of port reception and disposal facilities and equipment manufacturing for ship pollutants, port emergency facilities for hazardous chemicals and oil products, and equipment manufacturing

3.18 Special equipment manufacturing industry

3.18.1 Manufacturing of trackless mining, loading and transportation equipment for mines: 200 tons and above mechanical drive mining dump trucks, mobile crushers, 5000 cubic meters per hour and above bucket wheel excavators, 8 cubic meters and above mining loaders, 2500 kilowatts Above electric traction shearer equipment, etc.

3.18.2 Geophysical prospecting (excluding gravity and magnetic measurement), logging equipment manufacturing: MEME seismic geophone, digital telemetry seismograph, digital imaging, numerical control logging system, horizontal wells, directional wells, drilling rigs and appliances, MWD logging

while drilling tools

3.18.3 Petroleum exploration, drilling, gathering and transportation equipment manufacturing: floating drilling systems and floating production systems with working water depths greater than 1500 meters and supporting subsea oil extraction, gathering and transportation equipment

3.18.4 Shale gas equipment manufacturing

3.18.5 Manufacturing of large-diameter rotary drilling rigs with a diameter of 2 meters or more and a depth of 30 meters or more, a pipe jacking machine with a diameter of 1.2 meters or more, a large-scale non-excavation laying underground pipeline complete set of equipment with a drag force of more than 300 tons, and an underground continuous wall construction drilling rig

3.18.6 Design and manufacture of large bulldozers with 520 horsepower and above

3.18.7 Design and manufacture of dredgers with specifications

of 100 cubic meters per hour and above, and dredging devices for dredgers of 1,000 tons and above

3.18.8 Design and manufacture of construction equipment for concrete cut-off walls for flood control dams

3.18.9 Manufacture of earthquake-proof and disaster-reduction devices for civil engineering structures

3.18.10 Manufacture of underwater earth and stone construction machinery: bulldozers, loaders, excavators, etc. below 9 meters in water depth

3.18.11 Highway bridge maintenance, automatic inspection equipment manufacturing

3.18.12 Manufacturing of equipment for road tunnel operation monitoring, ventilation, disaster prevention and rescue systems

3.18.13 Design and manufacture of large-scale railway construction, railway line, bridge, tunnel maintenance machinery and inspection and monitoring equipment and their

key components

3.18.14 (Asphalt) linoleum tile equipment, galvanized steel sheet and other metal roof production equipment manufacturing

3.18.15 Environmental protection and energy-saving on-site spraying polyurethane waterproof and thermal insulation system equipment, polyurethane sealing paste preparation technology and equipment, modified silicone sealing paste preparation technology and production equipment manufacturing

3.18.16 Design and manufacture of high-precision strip rolling mill (thickness accuracy of 10 microns)

3.18.17 Manufacturing of beneficiation equipment for multi-element, fine-particle, and refractory metal minerals

3.18.18 Manufacturing of key equipment in complete sets of ethylene equipment with an annual capacity of 1 million tons and above: a granulator with an annual processing capacity of 400,000 tons or more, a spiral discharge centrifuge with a diameter of 1,000 mm and above, a small flow high-lift

centrifugal pump

3.18.19 Design and manufacture of metal product molds (copper, aluminum, titanium, zirconium tube, rod, profile extrusion mold)

3.18.20 Design and manufacture of stamping dies for automobile body outer covering parts, large injection molds for automobile dashboards and bumpers, automobile and motorcycle fixtures, and inspection tools

3.18.21 Design and manufacture of special production equipment for automotive power batteries

3.18.22 Design and manufacture of precision molds (pressing mold accuracy higher than 0.02 mm, cavity mold accuracy higher than 0.05 mm)

3.18.23 Design and manufacture of molds for non-metallic products

3.18.24 Manufacture of 60,000 bottles/hour and above beer

filling equipment, 50,000 bottles/hour and above beverage medium temperature and hot filling equipment, and 36,000 bottles/hour and above aseptic filling equipment

3.18.25 Production technology and key equipment

manufacturing of amino acids, enzyme preparations, food additives, etc.

3.18.26 Manufacturing of complete sets of equipment and key components for feed processing with a capacity of 10 tons/hour and above

3.18.27 Manufacturing of light corrugated cardboard and carton equipment with a corrugated height of 0.75 mm and below

3.18.28 Single-fed multi-color offset printing machine (width ≥ 750 mm, printing speed: single-sided multi-color ≥ 16000 sheets/hour, double-sided multi-color ≥ 13000 sheets/hour)

3.18.29 The printing speed of the single-web single-path web lithographic printing machine is more than 75,000 pairs of openings/hour (787 \times 880 mm), and the printing speed of the

double-width single-path web lithographic printing machine is more than 170,000 pairs of openings/hour (787×880 mm) , Commercial web lithographic printing machine printing speed is greater than 50,000 pairs of openings / hour (787 × 880 mm) manufacturing

3.18.30 Multi-color wide-format flexographic printing machine (printing width ≥ 1300 mm, printing speed ≥ 350 m/s), inkjet digital printing machine (for publishing: printing speed ≥ 150 m/min, resolution ≥ 600 dpi; packaging: printing Speed ≥ 30 m/min, resolution ≥ 1000 dpi; for variable data: printing speed ≥ 100 m/min, resolution ≥ 300 dpi) manufacturing

3.18.31 Computer ink color pre-adjustment, ink color remote control, ink speed tracking, automatic printing quality detection and tracking system, shaftless transmission technology, high-speed automatic paper splicing machine with a speed of 75,000 sheets/hour, paper feeder and high-speed folding with automatic remote control Manufacture of page machines, automatic overprinting systems, cooling devices, silicon adding systems, offset adjustment devices, etc.

3.18.32 Manufacturing of electron gun automatic coating machine

3.18.33 Flat glass deep processing technology and equipment manufacturing

3.18.34 Manufacturing of complete sets of equipment such as new papermaking machinery (including pulp)

3.18.35 Manufacturing of new technology and equipment for leather finishing

3.18.36 Soil pollution treatment and repair equipment manufacturing

3.18.37 Development and manufacture of new equipment for processing and storage of agricultural products: new equipment for processing, storage, preservation, grading, packaging, drying of grain, oilseeds, vegetables, dried and fresh fruits, meat, aquatic products, etc., agricultural product quality testing equipment, agricultural product quality Non-destructive testing equipment, rheometers, farinographs, ultra-fine grinding

equipment, high-efficiency dehydration equipment, high-efficiency juice concentration equipment with more than five effects, powder food material sterilization equipment, solid and semi-solid food aseptic packaging equipment, discs
Centrifuge

3.18.38 Agricultural machinery manufacturing: agricultural facilities and equipment (automatic greenhouse irrigation equipment, automatic nutrient solution configuration and fertilization equipment, high-efficiency vegetable seedling equipment, soil nutrient analysis equipment), supporting tractors with engine power above 200 kilowatts and supporting agricultural tools, low fuel consumption, low noise and low emission diesel engines , A sprayer with a residual mist recovery device for large tractors, a high-performance rice transplanter, a cotton picker and a cotton picking table, and a self-propelled corn combine harvester (hydraulic drive or mechanical drive) that adapts to multiple row spacings, Peanut harvester, rapeseed harvester, sugarcane harvester, sugar beet harvester, self-propelled grape harvester

3.18.39 Forestry facilities and equipment manufacturing:

intelligent greenhouse for seedlings and flowers, precision irrigation, fertilization, seedling cultivation and other equipment, analysis instruments for root runoff, seed vitality, soil nutrients and other analysis instruments of dry diameter of seedlings, high-power (240KW) woodland operation chassis and supporting equipment, multi-functional Small and medium-sized machines for land preparation, tree planting, tending, felling, and skimming, afforestation machines for difficult sites, machines for collecting, bundling, wood chips, crushing and comprehensive utilization of woodland residues, large and medium-sized plant protection and pesticide application sprayers, small Precision pesticide application equipment or biomimetic pesticide application robot, tree cone collection, oil fruit harvester, large and medium-sized tree transplanter, shrub stubble equipment, high-efficiency pruning equipment, and rapid forest volume measurement equipment

3.18.40 Wood processing equipment manufacturing: rapid color difference recognition technology equipment, rapid solid wood board measuring rule equipment, rapid scar detection equipment, solid wood surface defect detection equipment, sawn timber complete equipment technology, artificial board surface defect

rapid detection equipment, online quality grading equipment , Rotary-cut veneer quality online inspection equipment, solid wood furniture paint film polishing dust treatment equipment, intelligent polishing robots, multi-color automatic switching paint spraying robots, furniture packaging, cutting, stacking robots, panel furniture panel quick sorting equipment, furniture Manufacturing smart warehouse

3.18.41 Forestry disaster monitoring equipment manufacturing: forest rapid rescue equipment, high-precision navigation and positioning equipment, drone fire and disaster monitoring and early warning equipment, fire extinguishing and deinject equipment

3.18.42 Manufacturing of equipment for crop straw collection, bundling and comprehensive utilization

3.18.43 Manufacturing of equipment for resource utilization of agricultural waste and large-scale livestock and poultry breeding waste

3.18.44 Manufacturing of special equipment for advanced

intelligent manufacturing and processing of leather, fur and their products

3.18.45 Manufacturing of fertilizer-saving, (agricultural) medicine, and water-saving agricultural technology and equipment

3.18.46 Manufacturing of electromechanical well cleaning equipment and cleaning drug production equipment

3.18.47 Electronic endoscope manufacturing

3.18.48 Fundus camera manufacturing

3.18.49 Manufacturing of medical imaging equipment (high field strength superconducting magnetic resonance imaging equipment, X-ray computed tomography equipment, digital color ultrasonic diagnostic equipment, etc.), medical imaging intelligent auxiliary diagnosis system and key components

3.18.50 Medical ultrasonic transducer (3D) manufacturing

3.18.51 Manufacturing of boron neutron capture therapy equipment

3.18.52 Manufacturing of image-guided adaptive intensity-modulated radiotherapy system

3.18.53 Manufacturing of hemodialysis machines and blood filter machines

3.18.54 Manufacturing of automatic biochemical monitoring equipment, five-category blood cell analyzer, automatic chemiluminescence immunoassay analyzer, and high-throughput gene sequencing system

3.18.55 New technology and equipment manufacturing for drug quality control

3.18.56 Development and manufacturing of new technology, extraction process and new equipment for effective substance analysis of natural medicines

3.18.57 R&D and manufacturing of production equipment for

biomedical consumables

3.18.58 Manufacturing of multi-layer co-extrusion water-cooled film blowing equipment for non-PVC medical infusion bags

3.18.59 Artificial intelligence assisted medical equipment manufacturing

3.18.60 Manufacturing of high-end radiotherapy equipment

3.18.61 Manufacturing of high-end surgical instruments, physical therapy rehabilitation equipment, and wearable intelligent health equipment

3.18.62 Manufacturing of life support equipment for critical illness

3.18.63 Mobile and remote diagnosis and treatment equipment manufacturing

3.18.64 Manufacturing of ventilator, ECMO, monitor, PCR machine

3.18.65 Development and production of minimally invasive surgical medical equipment: 3D imaging, electron microscopy systems, surgical robots, robotic arms, etc.

3.18.66 R&D and production of holmium laser and carbon dioxide laser treatment products

3.18.67 Development and application of new stents, prostheses and other high-end implanted interventional equipment and materials, and additive manufacturing technology

3.18.68 Emergency rescue equipment manufacturing

3.18.69 Development and manufacturing of new textile machinery, key components and textile testing and experimental instruments

3.18.70 Computer jacquard artificial fur machine manufacturing

3.18.71 Manufacturing of special equipment for high-tech solar cell production

3.18.72 Manufacturing of equipment for carbon dioxide capture, utilization, storage and monitoring

3.18.73 Manufacturing of air pollution prevention equipment: high temperature and corrosion resistant filter materials, low NO_x combustion devices, flue gas denitrification catalysts and complete sets of denitrification equipment, flue gas desulfurization equipment, flue gas dust removal equipment, industrial organic waste gas purification equipment, diesel vehicle exhaust Purification device, heavy metal-containing waste gas treatment device

3.18.74 Water pollution prevention and control equipment manufacturing: horizontal spiral centrifugal dehydrator, membrane and membrane materials, ozone generator above 50kg/h, chlorine dioxide generator above 10kg/h, ultraviolet disinfection device, small rural domestic sewage treatment equipment, containing Heavy metal wastewater treatment device

3.18.75 Manufacturing of solid waste treatment and disposal equipment: sewage treatment plant sludge disposal and resource

utilization equipment, complete set of waste incineration equipment with a daily processing capacity of 500 tons or more, landfill leachate treatment technology and equipment, landfill impermeable geomembrane, construction waste treatment And resource utilization equipment, hazardous waste treatment equipment, landfill biogas power generation equipment, waste steel treatment equipment, and medical waste centralized treatment facilities

3.18.76 Development and manufacturing of equipment for comprehensive utilization of red mud in the aluminum industry

3.18.77 Manufacturing of equipment for comprehensive utilization of tailings

3.18.78 Manufacturing of recycling equipment for waste plastics, electrical appliances, rubber, and batteries

3.18.79 Manufacturing of waste textile recycling equipment

3.18.80 Manufacturing of remanufacturing equipment for waste mechanical and electrical products

3.18.81 Manufacturing of equipment for comprehensive utilization of waste tires

3.18.82 Manufacturing of waste heat, pressure and waste gas utilization equipment

3.18.83 Environmental protection technology and equipment manufacturing for aquatic ecosystems

3.18.84 Manufacturing of mobile combined water purification equipment

3.18.85 Manufacturing of unconventional water treatment and reuse equipment and water quality monitoring equipment

3.18.86 Manufacturing of leak detection equipment and instruments for industrial water pipe networks and equipment (appliances)

3.18.87 Development and manufacturing of seawater desalination and circulating cooling technology and complete

sets of equipment with a daily production capacity of 100,000 cubic meters and above

3.18.88 Manufacturing of water-saving industrial equipment for high water-consuming industries such as steel, paper, textile, petrochemical, chemical, metallurgy, etc.

3.18.89 Manufacturing of special meteorological observation and analysis equipment

3.18.90 Seismic station, network and mobile seismic observation technology system development and instrument equipment manufacturing

3.18.91 Manufacturing of radial tire building machines with four drums and above

3.18.92 Manufacturing of rolling resistance testing machine and tire noise laboratory

3.18.93 Manufacturing of new technology equipment for heating metering and temperature control devices

3.18.94 Manufacturing of hydrogen energy preparation, storage and transportation equipment and inspection system

3.18.95 Manufacture of new type heavy slag gasification atomization nozzle, high-efficiency steam trap with steam leakage rate of 0.5% and below, and high-temperature ceramic heat exchanger of 1000°C and above

3.18.96 Manufacturing of offshore oil spill recovery device

3.18.97 Manufacturing of equipment for the utilization of low-concentration coal mine gas and exhaust air

3.18.98 Development and utilization of clean coal technology products and equipment manufacturing (coal gasification, liquefaction, coal water slurry, industrial briquette)

3.18.99 Large-scale public buildings, high-rise buildings, petrochemical facilities, forests, mountains, waters and underground facilities fire fighting and rescue technology development and equipment manufacturing

3.18.100 Manufacturing of intelligent emergency medical rescue equipment

3.18.101 Hydrological monitoring sensor manufacturing

3.18.102 Design, R&D, and manufacturing of nuclear reactor main process equipment

3.19 Automotive Manufacturing

3.19.1 Automobile engine manufacturing and engine R&D
institution construction: gasoline engines with a power per liter of not less than 70 kW, diesel engines with a power per liter of not less than 50 kW and a displacement of less than 3 liters, and diesel engines with a power per liter of not less than 40 kW and a displacement of more than 3 liters New energy engines such as engines, fuel cells and mixed fuels

3.19.2 Manufacturing of key automobile parts and research and development of key technologies: dual clutch transmission (DCT), continuously variable automatic transmission (CVT),

electronically controlled mechanical transmission (AMT), gasoline engine turbocharger, viscous coupling (for four-wheel drive) , Automatic transmission actuator (solenoid valve), hydraulic retarder, eddy current retarder, gas generator for automobile airbag, fuel common rail injection technology (maximum injection pressure greater than 2000 Pa), variable cross-section turbocharger Technology (VGT), Variable Nozzle Turbocharging Technology (VNT), Engine Emission Control Device That Meets China's Phase VI Pollutant Emission Standards, Intelligent Torque Management System (ITM) and Coupler Assembly, Steer-by-Wire System, Particles Catchers, low-floor large passenger car axles, energy-absorbing steering systems, low drag disc brake assemblies, aluminum steering knuckles, large and medium-sized passenger car inverter air conditioning systems, special rubber accessories for automobiles, and the key to the above components Parts, components

3.19.3 R&D and manufacturing of automotive electronic devices: engine and chassis electronic control systems and key components, automotive electronic technology (automotive information systems and navigation systems), automotive electronic bus network technology, electronic control system

input (sensor and sampling system) output (execution))

Components, electronic controllers for electric power steering systems, embedded electronic integrated systems, electronically controlled air springs, electronically controlled suspension systems, electronic valve system devices, electronic combination meters, ABS/TCS/ESP system, circuit braking system (BBW), transmission electronic control unit (TCU), tire pressure monitoring system (TPMS), on-board fault diagnostic device (OBD), engine anti-theft system, automatic collision avoidance system, automobile, Motorcycle-type testing and maintenance inspection system, automatic driving system, on-board electronic operating system, on-board electronic operating system application development (APP), head-up display technology, intelligent networked vehicle avoidance steering assist system, collision warning system (FCW), automatic Brake control system (ABC), automatic emergency braking system (AEB), electronic parking brake system (EPB), brake-by-wire system, adaptive cruise system (ACC), front-view camera system, wheel speed sensor, car Networking technology

3.19.4 Development and manufacturing of key components of new energy vehicles: energy-type power battery cells; battery

cathode materials (specific capacity $\geq 180\text{mAh/g}$, cycle life 2000 times not less than 80% of the initial discharge capacity) and precursor materials, battery anode materials (Specific capacity $\geq 500\text{mAh/g}$, cycle life 2000 times not less than 80% of the initial discharge capacity), battery separator (thickness $\leq 12\mu\text{m}$, porosity 35%~60%); battery management system, motor controller, electric vehicle Control integration; Electric vehicle drive motor system (high efficiency area: 85% working area efficiency $\geq 80\%$), automotive DC/DC (input voltage 100V~400V), high-power electronic devices (IGBT, voltage level $\geq 750\text{V}$, current $\geq 300\text{A}$); Electric hybrid electromechanical coupling drive system; fuel cell engine (mass specific power $\geq 350\text{W/kg}$), fuel cell stack (volume specific power $\geq 3\text{kW/L}$), membrane electrode (platinum consumption $\leq 0.3\text{g/kW}$), proton exchange membrane (Proton conductivity $\geq 0.08\text{S/cm}$), bipolar plate (metal bipolar plate thickness $\leq 1.2\text{mm}$, other bipolar plate thickness $\leq 1.6\text{mm}$), low platinum catalyst, carbon paper (resistivity $\leq 3\text{m}\Omega\cdot\text{cm}$), air Compressor, hydrogen circulation pump, hydrogen ejector, humidifier, fuel cell control system, boost DC/DC, 70MPa hydrogen cylinder, on-board hydrogen concentration sensor; heat pump air conditioner for electric vehicles; 32 bits and

above for motor drive control Chip (not less than 2 hardware cores, frequency not less than 180MHz, with hardware encryption and other functions, chip design meets the requirements of functional safety ASILC and above); integrated electric drive assembly (power density $\geq 2.5\text{kW/kg}$); high speed Reducer (maximum input speed $\geq 12000\text{rpm}$, noise lower than 75dB)

3.19.5 On-board chargers (efficiency $\geq 95\%$ under full load output conditions), two-way on-board chargers, off-board charging equipment (output voltage 250V~950V, efficiency within the voltage range $\geq 88\%$) and high power density, high conversion efficiency, and high applicability Wireless charging, mobile charging technology development and equipment manufacturing

3.19.6 R&D and manufacturing of key components of smart cars: sensors, on-board chips, central processing units, on-board operating systems and information control systems, vehicle network communication system equipment, visual recognition systems, high-precision positioning devices, wire-controlled chassis systems; new smart terminal modules , Multi-core

heterogeneous intelligent computing platform technology, high-precision positioning and mapping technology for all-weather complex traffic scenes, sensor fusion perception technology, key vehicle wireless communication technology, basic cloud control platform technology; new security isolation architecture technology, software and hardware collaborative attack recognition technology , Terminal chip security encryption and application software security protection technology, wireless communication security encryption technology, secure communication and authentication authorization technology, data encryption technology; test and evaluation system architecture research and development, virtual simulation, real vehicle road testing and other technologies and verification tools, complete vehicles -Level and system-level test and evaluation methods, test basic database construction

3.19.7 Hardware manufacturing related to L3/L4/L5

autonomous driving: Lidar, millimeter wave radar

3.19.8 Manufacturing of charging piles and energy storage

charging piles

3.20 Railway, shipbuilding, aerospace and other transportation equipment manufacturing

3.20.1 Manufacturing of large-displacement (displacement > 250ml) motorcycle engine emission control devices that meet the fourth-stage pollutant emission standards of China's motorcycles

3.20.2 Civil aircraft design, manufacturing, and maintenance: mainline, regional aircraft, general-purpose aircraft

3.20.3 Manufacture and maintenance of civil aircraft parts

3.20.4 Design and manufacture of civil helicopters

3.20.5 Civilian helicopter parts manufacturing

3.20.6 Ground and water surface effect aircraft manufacturing and UAV and aerostat design and manufacturing

3.20.7 Aviation engine and parts, aviation auxiliary power

system design, manufacturing, maintenance

3.20.8 Development and production of new materials for aerospace

3.20.9 Design and manufacture of civil aviation airborne equipment

3.20.10 Aviation ground equipment manufacturing: civil airport facilities, civil airport operation guarantee equipment, civil airport security facilities, flight test ground equipment, flight simulation and training equipment, aviation test and measurement equipment, aviation ground test equipment, comprehensive test equipment for airborne equipment, Special equipment for aviation manufacturing, special equipment for trial production of aviation materials, ground receiving and application equipment for civil aircraft, ground test equipment for launch vehicles, launch vehicle mechanics and environmental experiment equipment

3.20.11 Civil satellite design and manufacturing, civil satellite payload manufacturing

3.20.12 Civilian satellite component manufacturing

3.20.13 Star product testing equipment manufacturing

3.20.14 Design of luxury cruise ships and deep water (above 3000 meters) marine engineering equipment

3.20.15 Design of seabed mineral resources development equipment

3.20.16 Design of ship low and medium speed diesel engines and their parts

3.20.17 Design of ship cabin machinery

3.20.18 Design of Ship Communication and Navigation Equipment

3.20.19 Design of Yachts

3.20.20 Design of smart ships and research and development of

related smart systems

3.20.21 Research and development and manufacturing of passenger ship navigation and communication systems

3.21 Electrical machinery and equipment manufacturing

3.21.1 Manufacturing of key auxiliary equipment for 2,951 million kilowatt ultra-supercritical thermal power units: safety valves, regulating valves

3.21.2 Manufacturing of denitration technology and equipment for sintering machines in the iron and steel industry

3.21.3 Design and manufacture of seals for thermal power equipment

3.21.4 Manufacturing of large castings and forgings for coal-fired power stations and hydropower stations

3.21.5 Manufacturing of key auxiliary equipment for hydroelectric generating units

3.21.6 Manufacturing of power transmission and transformation equipment and key components

3.21.7 New energy power generation equipment or key equipment manufacturing: photovoltaic power generation, solar thermal power generation, geothermal power generation, tidal power generation, wave power generation, waste power generation, biogas power generation, 2.5 MW and above wind power generation equipment

3.21.8 Manufacturing of Stirling Generator Sets

3.21.9 Development and manufacturing of linear and planar motors and their drive systems

3.21.10 High-tech green battery manufacturing: power nickel-metal hydride batteries, zinc-nickel batteries, sodium salt batteries, zinc-silver batteries, Lithium ion batteries, solar cells, fuel cells, etc.

3.21.11 Manufacture of refrigeration and air-conditioning

compressors using DC speed regulation technology for motors, refrigeration and air-conditioning compressors using CO₂ natural refrigerant, and refrigeration and air-conditioning equipment using renewable energy (air source, water source, ground source)

3.21.12 Manufacturing of solar air conditioners, heating systems, and solar drying devices

3.21.13 Manufacturing of biomass drying and pyrolysis systems and biomass gasification equipment

3.21.14 Manufacturing of biological natural gas raw material pretreatment and feeding, fermentation, purification, and biogas liquid treatment equipment

3.21.15 Manufacturing of AC frequency modulation and voltage regulation traction equipment

3.21.16 Manufacturing of high-voltage vacuum components and switchgear, intelligent medium-voltage switch components and complete sets of equipment, insulated switchgear using

environmentally-friendly medium-voltage gas, intelligent (communicable) low-voltage electrical appliances, amorphous alloy, wound iron core and other energy-saving distribution transformers 3.22 Computer, communications and other electronic equipment manufacturing

3.22.1 Manufacturing of high-definition digital video cameras and digital sound reproduction equipment

3.22.2 TFT-LCD, OLED, AMOLED, laser display, quantum dot, 3D display and other flat panel display and display material manufacturing (except for the 6th generation and below TFT-LCD glass substrates)

3.22.3 Development and manufacturing of polarizer base film and diffusion film

3.22.4 Development and manufacturing of e-book materials (electronic ink screens, etc.)

3.22.5 Manufacturing of silicon single crystals with a diameter of 8 inches and above

3.22.6 Manufacturing of silicon wafers with a diameter of 12 inches and above

3.22.7 Manufacturing of key components such as optical engines, light sources, projection screens, high-definition projection tubes, and micro-display projection equipment modules for large-screen color projection displays

3.22.8 Manufacturing of laser projection equipment

3.22.9 Manufacturing of ultra-high-definition and high-tech video products: 4K/8K ultra-high-definition televisions, 4K cameras, monitors, interactive videos, immersive videos, VR videos, cloud games and other high-tech video end-to-end key software and hardware, etc.

3.22.10 Digital audio and video coding and decoding equipment, digital broadcast television studio equipment, digital cable television system equipment, digital audio broadcast transmission equipment, digital television up-down converters, digital television terrestrial broadcasting single frequency

network (SFN) equipment, satellite digital television Uplink station equipment manufacturing

3.22.11 Integrated circuit design, manufacturing of large-scale digital integrated circuits with a line width of 28 nanometers and below, manufacturing of analog and digital-analog integrated circuits with a line width of 0.11 micron and below, mask manufacturing, MEMS and compound semiconductor integrated circuit manufacturing, and BGA, PGA, CSP, MCM, etc.

Advanced packaging and testing

3.22.12 Manufacturing of large and medium-sized electronic computers, teraflops of high-performance computers, portable microcomputers, large-scale simulation systems, industrial control machines and controllers

3.22.13 Research and development and manufacturing of new mechanisms such as quantum and brain-like computer systems

3.22.14 Development and manufacturing of etching machines, PVD, CVD, oxidation furnaces, cleaning machines, diffusion furnaces, MFCs, etc. for VLSI manufacturing

3.22.15 Integrated circuit packaging and testing equipment manufacturing

3.22.16 Computer Digital Signal Processing System and Board Card Manufacturing

3.22.17 Manufacturing of graphics and image recognition and processing systems

3.22.18 Development and manufacturing of large-capacity optical and disk drives and their components

3.22.19 100TB and above storage system manufacturing, 8TB and above SSD solid state drive manufacturing and intelligent storage equipment manufacturing

3.22.20 Computer-aided design (3D CAD), electronic design automation (EDA), auxiliary testing (CAT), auxiliary manufacturing (CAM), auxiliary engineering (CAE) system and other computer application system manufacturing

3.22.21 Software product development and production

3.22.22 Development and manufacturing of special electronic materials (except for the development and manufacturing of optical fiber preforms)

3.22.23 Manufacturing of special electronic equipment, testing instruments, and molds

3.22.24 Manufacturing of new electronic components: chip components, sensitive components and sensors, frequency control and selection components, hybrid integrated circuits, power electronic devices, optoelectronic devices, new electromechanical components, polymer solid capacitors, super capacitors, passives Integrated components, high-density interconnection laminates, single-layer, double-layer and multi-layer flexible boards, rigid-flex printed circuit boards and package carrier boards, high-density and high-fine circuits (line width/line spacing $\leq 0.05\text{mm}$) flexible circuits Board etc.

3.22.25 Manufacturing and assembly of touch systems (touch screens, touch components, etc.)

3.22.26 R&D and manufacturing of virtual reality (VR) and augmented reality (AR) equipment

3.22.27 Manufacturing of high-brightness LEDs with luminous efficiency above 140lm/W, LED epitaxial wafers (blue) with luminous efficiency above 140lm/W, white luminous tubes with luminous efficiency above 140lm/W and power above 200mW

3.22.28 Development and production of key components for high-density digital optical disc players

3.22.29 Production of recordable optical discs

3.22.30 R&D and manufacturing of D printing equipment and its key components

3.22.31 Satellite communication system equipment manufacturing

3.22.32 Manufacturing of optical communication measuring instruments, optical transceivers with a rate of 40Gbps and

above

3.22.33 Manufacturing of ultra-wideband (UWB) communication equipment

3.22.34 Manufacturing of wireless local area network (including support for WAPI) and wide area network equipment

3.22.35 100Gbps and above rate time division multiplexing equipment (TDM), dense wavelength division multiplexing equipment (DWDM), broadband passive network equipment (including EPON, GPON, WDM-PON, etc.), next-generation DSL chips and equipment, optical cross-connect Manufacturing of equipment (OXC), automatic optical switching network equipment (ASON), and SDH optical fiber communication transmission equipment over 40Gbps

3.22.36 Development and manufacturing of next-generation Internet system equipment, terminal equipment, testing equipment, software, and chips based on IPv6

3.22.37 Development and manufacturing of mobile phones, base

stations, core network equipment, optical transmission equipment, and network testing equipment for the fourth and fifth generation and subsequent mobile communication systems

3.22.38 Visual sensors (digital cameras, digital cameras, 3D sensors, lidars, millimeter-wave radars, etc.) and their core elements used in fifth-generation mobile terminals (mobile phones, automobiles, drones, virtual reality and enhanced displays, etc.) Development and manufacturing of components (optical lenses and lenses, lasers, photosensitive chips, motors, optoelectronic modules, etc.), IoT terminals

3.22.39 Cloud computing equipment (including servers, storage equipment, cloud and cloud service equipment, high-precision mechanical parts, etc.), software and system development

3.22.40 Development and manufacturing of high-end routers with a processing capacity of more than 6.4Tbps (two-way) and switches with a switching capacity of more than 40Tbps

3.22.41 Manufacturing of air traffic control system equipment

3.22.42 Development and manufacturing of electronic auxiliary teaching equipment for traditional Chinese medicine based on computer information technology such as sound, light, electricity, touch control, and virtual pathology and physiological model equipment

3.22.43 Manufacturing of smart consumer devices such as wearable smart devices, smart unmanned aerial vehicles, service consumer robots, etc.

3.22.44 Smart home platform system and equipment manufacturing

3.23 Instrumentation Manufacturing

3.23.1 Manufacturing of soil moisture monitoring equipment

3.23.2 Industrial process automatic control system and device manufacturing: field bus control system, large programmable logic controller (PLC), two-phase flow meter, solid flow meter, new sensors and field measuring instruments

3.23.3 Manufacturing of automated, intelligent, and multifunctional material mechanical performance testing equipment, industrial CT, three-dimensional ultrasonic flaw detectors and other non-destructive testing equipment

3.23.4 Development and manufacturing of large-scale precision instruments and high-resolution microscopes (resolution less than 200nm)

3.23.5 Manufacturing of high-precision digital voltmeters and ammeters (display range more than seven and a half digits)

3.23.6 Manufacturing of reactive power automatic compensation device

3.23.7 Manufacturing of new instruments and equipment for safe production

3.23.8 Manufacturing of VXI bus automatic test system (in line with IEEE1155 international standard)

3.23.9 Development and manufacturing of coal mine

underground monitoring and disaster forecasting systems, and coal safety inspection integrated management systems

3.23.10 Engineering surveying and geophysical observation equipment manufacturing

3.23.11 Manufacturing of Environmental Monitoring Instruments

3.23.12 Manufacturing of wireless remote transmission smart water meters

3.23.13 Manufacturing of intelligent monitoring instruments for reservoir and dam safety

3.23.14 Manufacturing of hydrological data collection, processing and transmission, and flood control and early warning instruments and equipment

3.23.15 Manufacturing of marine exploration and monitoring instruments and equipment

3.23.16 Manufacturing of leakage monitoring instruments for municipal pipe networks and water pipelines

3.23.17 Nuclear instrument and meter R&D and manufacturing

3.24 Comprehensive utilization of waste resources

3.24.1 Coal washing and comprehensive utilization of fly ash (including desulfurized gypsum), coal gangue, etc.

3.24.2 Production of fully biodegradable materials

3.24.3 Recycling and processing of waste electrical and electronic products, automobiles, electromechanical equipment, rubber, metal, and batteries

3.24.4 Comprehensive Utilization of Red Mud and Other Smelting Waste Residues

4. Electricity, heat, gas and water production and supply industry

4.1 Construction and operation of ultra-supercritical unit power stations with a single unit of 600,000 kilowatts and above

4.2 Construction and operation of power stations using back pressure cogeneration, cogeneration of heat, power and cooling, and super (super) critical cogeneration units of 300,000 kilowatts and above

4.3 Construction and operation of large-scale air-cooled power stations with a single unit of 600,000 kilowatts and above in water-scarce areas

4.4 Construction and operation of clean coal power generation projects such as integrated coal gasification combined cycle power generation

4.5 Construction and operation of power generation projects with a single unit of 300,000 kilowatts and above that use fluidized bed boilers and utilize coal gangue, Chinese coal, and coal slime

4.6 Construction and operation of large-scale hydropower

stations and pumped-storage power stations focusing on power generation

4.7 Construction and operation of nuclear power plants

4.8 Construction and operation of new energy power stations (including solar energy, wind energy, geothermal energy, tidal energy, wave energy, biomass energy, etc.)

4.9 Construction and operation of natural gas peak-shaving power stations and natural gas distributed energy stations in important load centers with guaranteed gas sources

4.10 Development and application of complementary systems for gas-fired power generation and renewable power generation

4.11 Construction and operation of waste incineration power plants

4.12 Construction and operation of clean energy microgrid

4.13 Construction and operation of regional energy supply (cold

and heat) projects driven by natural gas, electricity and renewable energy

4.14 Seawater utilization (direct seawater utilization, seawater desalination), brackish water utilization

4.15 Design, construction and operation of water supply plants

4.16 Design, construction and operation of reclaimed water plants

4.17 Design, construction and operation of sewage treatment plants

4.18 Construction and operation of motor vehicle charging stations and battery replacement stations

4.19 Construction and operation of hydrogen refueling stations

4.20 Construction and operation of bio-natural gas projects

4.21 Research and development, application and production of

green plant insulating oil

5. Transportation, warehousing and postal industry

5.1 Construction and operation of railway trunk line network and special railway lines

5.2 Construction and operation of intercity railways, urban (suburban) railways, resource-based development railways and branch railways and their bridges, tunnels, ferries and station facilities

5.3 Comprehensive maintenance of high-speed railway and intercity railway infrastructure

5.4 Construction and operation of highways, independent bridges and tunnels

5.5 Road cargo transportation company

5.6 Construction and operation of port public terminal facilities

5.7 Construction and operation of civil airports (excluding air traffic control)

5.8 Public Air Transport Company

5.9 General Aviation of Agriculture, Forestry and Fishery

5.10 International Maritime Transport Company

5.11 International Maritime Transportation of Cruise Passengers

5.12 Construction of international container multimodal transportation facilities, rapid transshipment and reloading equipment, research and development, promotion and application of standardized carrying units

5.13 International ship management agencies, crew dispatch agencies

5.14 Construction and operation of oil (gas) pipelines and oil (gas) depots (excluding aviation oil pipelines and oil depots)

5.15 Construction and operation of coal pipeline transportation facilities

5.16 Construction of storage facilities related to logistics business, especially automated elevated three-dimensional storage facilities, construction and operation of integrated storage facilities related to packaging, processing, and distribution businesses

5.17 R&D and application of technological equipment and green packaging related to express delivery services, and R&D and application of green logistics facilities and equipment

5.18 Construction and operation of shared systems for pallets and container units

5.19 Rural and community chain distribution

5.20 Provision and application of logistics and related technical services such as common distribution of general commodities, cold chain logistics of fresh and live agricultural products, and low-temperature distribution of special medicines

5.21 Construction of bulk commodity import and export
distribution logistics center

6. Wholesale and retail trade

6.1 Cross-border e-commerce retail

6.2 Cross-border e-commerce supply chain companies

6.3 Unified distribution and distribution network construction of
commercial and trade enterprises

6.4 Operation of Helium

6.5 Construction and operation of automobile refueling station

7. Information transmission, software and technical service
industry

7.1 E-commerce system development and application services,
construction and operation of various professional asset trading

platforms

7.2 Online education, online medical, online office system development and application services

8. Leasing and business service industry

8.1 International economics, technology, environmental protection, logistics information, business, accounting, tax consulting services

8.2 Engineering Consulting Services

8.3 Engage in information technology and business process outsourcing services such as system application management and maintenance, information technology support management, bank back-office services, financial settlement, software development, offshore call center, data processing, etc. by undertaking service outsourcing

8.4 Maintenance and repair of modern high-end equipment, digital production line transformation and integration,

professional maintenance services and supply chain services

8.5 Conference, exhibition and related services

8.6 Venture Capital Enterprise

8.7 Intellectual Property Services

8.8 Family Services

9. Scientific research and technical service industry

9.1 Bioengineering and Biomedical Engineering Technology,
Biomass Energy Development Technology Research and
Development

9.2 DNA coding compound library technology research and
development

9.3 Veterinary and pet nutrition scientific research and technical
services

9.4 Development and application of artificial intelligence technologies such as smart devices, robots, neural network chips, and neuron sensors

9.5 Research and development of isotope, radiation and laser technology

9.6 Marine development and marine energy development technology, comprehensive utilization technology of marine chemical resources, related product development and intensive processing technology, marine medicine and biochemical product development technology research and development

9.7 Marine monitoring technology (ocean wave, meteorology, environmental monitoring), seabed exploration and ocean resource exploration and evaluation technology research and development

9.8 Research and development of high value-added utilization technology of seawater chemical resources such as the comprehensive utilization of desalinated concentrated seawater for salt production, extraction of potassium, bromine,

magnesium, lithium, and deep processing

9.9 Offshore oil pollution clean-up and ecological restoration technology and related product development, seawater eutrophication prevention technology, marine life explosive growth disaster prevention technology, and coastal ecological environment restoration technology research and development

9.10 Research and application of energy saving, environmental protection and circular economy technology

9.11 Research and application of resource regeneration and comprehensive utilization technology, and the reuse technology of enterprise production emissions

9.12 Environmental pollution control and monitoring technology research and development

9.13 Cleaner Production Technology Development and Services

9.14 Carbon Capture, Utilization and Storage (CCUS)
Technology Development and Services

9.15 Green building land saving and outdoor environment, energy saving and energy utilization, water saving and water resource utilization, material saving and material resource utilization, indoor environment and operation management integrated technology research and development and utilization

9.16 R&D and Application of Radioactive Waste Treatment Technology

9.17 Professional construction, operation and technical consulting services of hazardous waste utilization and disposal facilities

9.18 New products and technologies for energy saving and consumption reduction in chemical fiber production and printing and dyeing, three waste treatment

9.19 Development and Application of Comprehensive Utilization Technology of Phosphogypsum

9.20 Research and development of sand prevention and control

and sand desert restoration technology

9.21 Research and development of integrated management technology for grass-livestock balance

9.22 R&D and application of technologies for comprehensive utilization of modern animal husbandry wastes

9.23 Research and Application of New Pesticide Application Technology

9.24 Research and Development of Civil Satellite Application Technology

9.25 Inspection, Testing and Certification Services

9.26 Research and Development Center

9.27 High-tech, new product development and business incubation center

9.28 R&D and Application of Fifth Generation Mobile

Communication Technology

9.29 Internet of Things Technology R&D and Application

9.30 Blockchain Technology R&D and Application

9.31 Creative industries such as industrial design, architectural design, clothing design, etc.

9.32 Urban and rural planning preparation services (except city and town master planning services)

10. Water conservancy, environment and public facilities management industry

10.1 River and lake water environment management, water ecological restoration, management, protection and management

10.2 Construction and operation of closed urban roads

10.3 Construction and operation of urban subway, light rail and other rail transit

10.4 Construction and operation of garbage treatment plants, hazardous waste treatment and disposal plants (incineration plants, landfills) and environmental pollution control facilities

10.5 Construction and Operation of Urban Parking Facilities

10.6 Construction and operation of public transportation systems such as taxis, trams, and buses

11. Education

11.1 Non-academic vocational training institutions

11.2 Non-academic language training institutions (except for preschool education, compulsory education, and high school education)

12. Health and social work

12.1 Service agencies for the elderly, the disabled and children (except child welfare agencies, minor rescue and protection

agencies, and adoption registration agencies)

12.2 Elderly care institutions, communities and home care services

12.3 Medical institutions

12.4 Mental Rehabilitation Institutions

12.5 Psychological Counseling Agency

13. Culture, Sports and Entertainment Industry

13.1 Performance venue operation

13.2 Sports venue operation, fitness, competition performance, sports training and intermediary services

13.3 Tourism Infrastructure Construction and Tourism Information Service

Hubei Catalogue of Industries Encouraged by Foreign

Investment(2020 version)

1. Breeding of new crop varieties and seed production
2. Tea planting, processing and purchase services
3. Development and application of Conservation Tillage Technology
4. Production of drinking natural mineral water
5. Development and production of selenium rich agricultural products and food
6. Development of high-end textile and clothing technology
7. Production of non-woven fabrics and medical textiles
8. Development, protection and sustainable utilization of animal and plant medicinal materials and health care products, research and development of plant flower, leaf, root and stem products, and deep processing of seed oil extraction

9. High grade textile, knitting and garment processing and production of cotton, wool, linen, silk and chemical fiber, and R & D and testing of related products

10. Packaging and decoration printing

11. R & D and manufacturing of production equipment (meteorological precipitation, carbonization and sintering, etc.) of carbon series materials such as graphene and carbon fiber (composite materials), R & D and production of carbon series materials such as graphene and carbon fiber (including composite materials) and manufacturing of end products

12. Extended processing and recycling of copper ore and other non-ferrous metal products

13. Technical development and deep processing of special varieties (ultra white, ultra-thin, online Low-E, hollow, ultra thick) high-quality float glass

14. Manufacturing of air conditioners, energy-efficient compressors and parts

15. Development and manufacturing of auto parts: automatic transmission with more than six gears, high power density drive axle for commercial vehicles, follow-up headlamp system, LED headlamp, lightweight material application (high-strength steel, aluminum magnesium alloy, carbon fiber, composite plastic, powder metallurgy, high-strength composite fiber dimension, etc.), clutch, hydraulic shock absorber, central control panel assembly, seats, products related to fuel rail injection system, turbocharged engine Motor and control system, active safety and automatic driving control system

16. Vehicle compressed hydrogen plastic inner tank carbon fiber fully wound cylinder

17. Production of high-performance radial tires: tubeless truck radial tires, low section and flattening (lower than 55 Series), large rim high-performance passenger car radial tires (more than 15 inches), aviation tires and agricultural radial tires

18. Production of high-speed and precision CNC machine tools and supporting CNC systems, servo motors and driving devices,

functional components, tools, measuring tools, gauges and high-end abrasive tools with linkage of more than three axes

19. Manufacturing of special steel wire rope and cable (average tensile strength $> 2200\text{mpa}$)

20. Development and manufacturing of laser medical equipment

21. Development and manufacturing of optoelectronic technology and products (including optical fiber preform, semiconductor LED)

22. Research and development and manufacturing of integrated circuit materials, equipment, chip manufacturing and compound semiconductor materials and devices

23. Comprehensive utilization of waste gas, waste liquid and waste residue of pharmaceutical and chemical raw materials

24. Production and processing of new medical devices and equipment and medical materials

25. Development and construction of food safety traceability system

26. Development, production and utilization of biomass energy

27. R & D and production application of large-scale energy storage technology (energy storage battery, pumped storage technology, air energy storage technology, wind power and late night heating, etc.)

28. Broadband services and value-added telecommunications services (limited to telecommunications services that China has promised to open up after its accession to the WTO)

29. Highway passenger transport company

30. Development and application of integrated optical storage and charging system and new energy vehicle charging equipment technology

31. Vocational Colleges (including technical schools)

32. Animation creation, production and derivatives development

33. Construction and operation of urban gas, heat and water supply and drainage networks

34. Protection, development and operation of scenic spots (spots) and construction of supporting facilities