

**National Development and Reform Commission, People's Republic of China**

**People's Republic of China Ministry of Commerce**

**Decree**

**No. 52**

The Catalogue of Encouraged Industries for Foreign Investment (Edition 2022), adopted upon deliberation at the 22nd executive meeting of the National Development and Reform Commission on 29 July 2022 and ratified by the Ministry of Commerce, is hereby promulgated upon approval by the State Council, and shall be effective on 1 January 2023.

Chairman of the National Development and Reform Commission: He Lifeng

Minister of the Ministry of Commerce: Wang Wentao

26 October 2022

**Catalogue of Encouraged Industries for Foreign Investment  
(2022 Edition)**

This Catalogue is developed to implement the Foreign Investment Law and the regulation on its implementation and to encourage and direct foreign investors to invest in particular industries, fields, and regions as needed for national economic and social development.

This Catalogue consists of two parts: the National Catalogue of Encouraged Industries for Foreign Investment and the Catalogue of Priority Industries for Foreign Investment in Central and Western China.

The Catalogue of Industries for Encouraging Foreign Investment (2020 Revision) issued by the National Development and Reform Commission and the Ministry of Commerce on December 27, 2020, shall be repealed from January 1, 2023.

**National Catalogue of Encouraged Industries for Foreign Investment**

**I. Agriculture, Forestry, Animal Husbandry, and Fishery**

1. Planting, development, and production of woody plants that contain edible oils or are used as seasonings or industrial raw materials
2. Development of cultivation technologies, planting and production of green and organic vegetables (including edible fungi and watermelon and melon), fresh fruits and nuts, and tea
3. Breeding, planting, and production of wine grapes
4. Breeding, planting, and production of raw materials for beer
5. Development of new cultivation techniques and production of crops, such as sugar crops, fruit trees, and pasture
6. Breeding and development of new varieties of plants specially used for silage in high yield and high efficiency
7. Production of flowers and construction and operation of nurseries
8. Planting of rubber trees, oil palms, sisal, and coffee trees
9. Breeding and planting of aromatic plants and extraction of essential oils
10. Planting and cultivation of traditional Chinese medicinal crops

11. Comprehensive utilization of crop straw resources and development and production of organic fertilizer resources
12. Cultivation of forest resources (fast-growing and high-yield timber forests, large-diameter timber forests, bamboo forests, tea-oil trees, and other economic forests, timber forests comprising rare tree species, etc.)
13. Undergrowth ecological planting
14. Development and application of technologies for standardized large-scale breeding of livestock and poultry and intelligent breeding technology
15. Breeding of breeding livestock and poultry and aquatic offspring (excluding China's rare and endemic species)
16. Construction and operation of ecology and environment protection projects, such as preventing and controlling desertification, soil and water conservation, and land greening
17. Aqua farming, open ocean cage aquaculture, industrial aquaculture, and ecological mariculture
18. High-efficiency water-saving irrigation, farmland soil improvement and ecological management, comprehensive utilization of cultivated land reserve resources such as saline-alkali land, and green farmland construction and technology development and application; and construction of projects related to rural environment improvement, treatment of rural domestic sewage and garbage, and improvement and restoration of water ecology and environment, as well as technology development and application
19. Construction of cold chain logistics facilities for the storage and preservation of agricultural products
20. Intelligent agriculture (integrated application of software technology and equipment and digital transformation of agricultural production, operation, and management)
21. Rural e-commerce and new rural service industries, including agricultural production services adapted to large-scale, standardized, and mechanized agricultural production, and rural life services
22. Leisure agriculture and rural tourism, construction of practice bases for leisure and sightseeing, farming experience, outdoor activity development, ecological health care, and wellness, and labor education
23. Development and production of safe, efficient, and environment-friendly feeds and feed additives (including vitamins, methionine, and feed enzymes) and substitute products of anti-bacterial agents used for promoting animal growth

## **II. Mining Industry**

24. Exploration and exploitation of oil and natural gas (including shale gas and coalbed methane) and utilization of mine gas
25. Development and application of enhanced oil recovery (in the form of project services) and relevant new technologies
26. Development and application of new technologies for oil exploration and exploitation in areas such as geophysical prospecting, drilling, well logging, mud logging, and downhole operation
27. Development and application of new technologies for enhancing the utilization rate of mine tailings and comprehensive application of ecological restoration technologies in mining areas
28. Exploration, mining, and ore dressing of minerals in acute shortage in China (such as leopoldite and chromite)

### **III. Manufacturing Industry**

#### **(I) Agricultural and Sideline Food Processing**

- 29. Development and production of pet feed and food
- 30. Processing of aquatic products, purification and processing of shellfish, and development of seaweed health food
- 31. Processing of vegetables, fresh fruits and nuts, and livestock and poultry products

#### **(II) Food Manufacturing**

- 32. Development and production of high-temperature sterilized milk (sterilized at 132°C for a short time)
- 33. Production of cheese, processed cheese, and cheese-prepared food
- 34. Development and production of formula food for infants, complementary foods for infants, formula food for special medical purposes, and health food
- 35. Development and production of baked food (including the chocolates containing natural cocoa beans and their products), convenience food, ice cream, and related ingredients
- 36. Production of candy, chewing gum, candied fruit, and yogurt
- 37. Processing of forest food
- 38. Development and production of vegetable protein bionic meat food
- 39. Development of new technologies for and production of natural food additives and natural spices
- 40. Development and production of packaging materials for sterile liquid food

#### **(III) Alcohol, Beverage, and Refined Tea Manufacturing**

- 41. Development and production of fruit and vegetable juice and other drinks, protein drinks, tea drinks, coffee drinks, and botanical drinks

#### **(IV) Textile Industry**

- 42. Production of functional industrial textiles by using non-woven, machine weaving, knitting, weaving, 3D weaving, and other techniques, the composition of multiple techniques, long-term finishing, and other new technologies
- 43. Production of high-end textile fabrics by adopting digital and intelligent printing and technical dyeing equipment, dyeing and finishing cleaner production technology (enzyme treatment, high-efficiency short-process pretreatment, continuous open-width pretreatment of knitted fabrics, low-temperature pretreatment and dyeing, low-salt or salt-free dyeing, low-urea printing, small bath ratio airflow or gas-liquid dyeing, digital inkjet printing, foam finishing, etc.), functional finishing technology, new dyeing processing technology, composite fabric processing technology; and development and application of intelligent cheese dyeing technical equipment
- 44. Processing technology and product production of special animal fiber, hemp fiber, mulberry tussah silk, color cotton, and color mulberry cocoon silk natural fibers that satisfy environmental protection requirements
- 45. Sorting, recycling, and utilization of waste textiles
- 46. Production, research, and development of textiles for therapeutic medical treatment and public health, artificial skin, absorbable sutures, hernia repair materials, new dialysis membrane materials, catheters for interventional therapy, high-end functional biomedical dressings, etc.

#### **(V) Textile Garment and Apparel Industry**

- 47. Production of high-count cotton yarn

48. Clothing and semi-finished clothing production using the computer-integrated manufacturing system
49. Production of functional and special clothing  
(VI) Leathers, Furs, Feathers and Related Products and Shoemaking Industry
50. Cleaning technical processing of leathers and furs
51. Post ornament and processing of leather with new technology
52. Comprehensive use of leather wastes
53. Production of high-performance elastomer shoe materials  
(VII) Wood Processing and Wood, Bamboo, Rattan, Palm Fiber, and Straw Products
54. Development of new technologies for the comprehensive utilization of three forest residues, inferior quality lumber, small-sized lumber and firewood, waste wood and bamboo, development and production of relevant new products, development and application of the technology for pollution control and prevention in wood and bamboo production, fine particle emission reduction and dust explosion prevention
55. Development and production of new technologies for and new products of wood structures and wood building materials
56. Development and production of new technologies and new products for the recycling of waste wood  
(VIII) Manufacturing of Educational and Cultural Products, Arts and Crafts, and Sports and Entertainment Products
57. Production of high-end carpets, embroidery, and drawnwork products  
(IX) Petroleum Processing, Coking, and Nuclear Fuel Processing
58. Processing of phenol oil, processing of absorber oil, processing of anthracene oil, processing of naphthalene oil, and preparation of high-end chemicals from coal pitch (excluding modified pitch)
- (X) Manufacturing of Chemical Materials and Chemical Products
59. Development and production of new downstream products of polyvinyl chloride (PVC) and organosilicon
60. Auxiliary raw materials for the production of synthetic materials: production of hydrogen peroxide-based propylene oxide, hydrogen peroxide-based epichlorohydrin, naphthalene dicarboxylate (NDC), 1,4-Cyclohexanedimethanol (CHDM), and butadiene-based adiponitrile, hexanediamine and norbornene of 50,000 tons or more per year
61. Production of polyethylene polyamine products
62. Development and production of high-end polyolefin such as high-carbon  $\alpha$ -olefin copolymerized metallocene polyethylene and COC/COP cyclic olefin polymer
63. Production of raw materials of synthetic fibers: 1,3-propylene glycol
64. Production of synthetic rubber: acrylate rubber, epichlorohydrin rubber, special fluorine rubber, silicone rubber, fluorosilicone rubber, thermoplastic polyurethane rubber, and other special rubbers
65. Production of engineering plastics and plastic alloys: polyphenyl thioether, polyether ether ketone, polyimide, polysulfone, polyether sulfone, polyarylate (PAR), polyphenylene ether (PPE), special polyamide (PA) and its modified materials, liquid crystal polymer, and other products
66. Fine chemicals: new catalyst products and technologies; processing technologies for the commercialization of dyes (pigments); electronic chemicals and papermaking chemicals; leather chemicals; oilfield chemicals; surfactants; safe production technology of nitrogen-protected

double-shell tower for refining ethylene oxide from key raw materials; production of water treatment agents and key raw materials; production of high-solid, solvent-free, water-based, electron beam curing, UV curing, reactive adhesives, and key raw materials including high-end butyl acrylate and high-end octyl acrylate, polyester polyol and curing agents; production of sealant, adhesive tapes and key raw materials and production of efficient, safe and environment-friendly plasticizers (such as polyester plasticizers), new plastic additives such as halogen-free flame retardants, permanent anti-static agents, organic heat stabilizers and nucleating agents; production of inorganic fibers and inorganic nano materials; deep processing of pigment encapsulation; development and production of environment-friendly surface treatment technology products; and development and production of humic acid fine chemical products

67. Production of water-based inks and adhesives, electron beam curing inks, ultraviolet-curing inks, and other low-volatile inks, adhesives, environment-friendly organic solvent materials, and environment-friendly organic solvent-free materials

68. Production of natural spices, synthetic spices, single ion spices, and citral, the intermediate spice component

69. Production of high-performance coatings, adhesives, industrial coatings, high solids coatings, water-based, powder, radiation curing, solvent-free, and other low VOC content industrial coatings and supporting resins, water-based industrial coatings and auxiliary water-based resins (including high-end butyl acrylate and high-end octyl acrylate)

70. Production of high-performance fluororesin, fluorine coating materials, medical intermediates containing fluorine, zero ODP, and low GWP refrigerants in compliance with international conventions, cleaning agents, blowing agents, etc.

71. Development of green technologies for the production of hydrogen fuel (hydrogen production from chemical by-products, biological hydrogen production, water-electrolytic hydrogen production from renewable energy, etc.) and storage, transportation, and liquefaction of hydrogen fuel

72. Production and supply of large, high-pressure, and high-purity industrial gas (including electronic gas)

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

74. Production of fluoride resources recovered from the phosphorus chemical industry and aluminum smelters

75. Development of new technologies for forestry chemical products and development and production of relevant new products

76. Development and production of inorganic, organic, and biological membranes for environmental protection purposes

77. Development and production of new types of fertilizers: high potassium fertilizers, compound microbial inoculants, compound microbial fertilizers, decomposition agents for straws and refuse, microbial preparations with special functions, and humic acid fertilizers

78. Development and production of new varieties, new formulations, special-purpose intermediates, or auxiliary agents of efficient, safe, and environment-friendly agricultural chemicals, and development and application of relevant cleaner production process, and production of chiral and stereospecific pesticides by oriented synthesis

79. Development and production of biological agricultural chemicals and biological control products: microbial pesticides, microbial fungicides, agricultural antibiotics, biostimulants, insect

pheromones, natural enemies, and microbial herbicides

80. Comprehensive utilization, treatment, and disposal of waste gas, waste liquid, and waste residue

81. Production of organic polymer materials: aircraft skin coating, rare earth cerium sulphide red dyes, lead-free electronic packaging materials, lithographic slurry specifically for color plasma screens, microfibers with a small diameter and a large specific surface area, high-precision fuel filter paper, surface treatment self-healing materials, superhydrophobic nano-coating materials, ultra-high refractive index optical resins, co-extruded backsheets for environment-friendly recyclable solar modules and plastic materials for backsheets, automotive start-stop lead-acid battery separators, and energy storage lead-acid battery separators

82. Development, production, and application of new technologies and new products of forestry biomass energy

83. Development of low-carbon upgrading processes for petrochemical and chemical raw materials: electrically-driven ethylene cracking; reverse water-gas shift, and partial oxidation process to convert carbon dioxide and light hydrocarbons as raw materials into carbon monoxide

(XI) Pharmaceutical Industry

84. Production of new compound drugs or drugs with active ingredients (including drug substances and formulations)

85. Amino acids: production of tryptophan by using the zymotechnics process, histidine, methionine, etc.

86. Development and production of new anticarcinogenic drugs, cardiovascular and cerebrovascular drugs, and nervous system drugs

87. Production of new types of drugs employing bioengineering and biotechnology

88. Production of HIV/AIDS vaccines, Hepatitis C vaccines, contraceptive vaccines, new vaccines for cervical carcinoma, malaria, "hand, foot and mouth" disease, etc.

89. Development and production of marine drugs

90. Production of pharmaceutical formulations: new formulations and new products employing new technologies, such as slow release, controlled release, targeting, and percutaneous absorption

91. Development and production of new excipients

92. Production of special anti-bacterial drug substances for animals (including antibiotics and chemically synthesized active pharmaceutical ingredients)

93. Production of new products and new formulations of anti-bacterial drugs, anthelmintics, insecticides, and anti-coccidiosis drugs for veterinary use

94. Development and production of new types of diagnostic reagents

95. Research, development, and production of cell therapy drugs (except in areas where foreign investment is prohibited)

96. Development and production of new key raw materials for production, such as vaccines and cell therapy drugs, and large-scale cell culture products

97. Development and production of new-type drug packaging materials and technologies (neutral borosilicate pharmaceutical glass, degradable, light-resistant, and high-barrier functional materials with good chemical stability, COP cyclic olefin polymer drug packing materials, and drug delivery systems and devices with new packaging such as aerosol, powder inhalation, self-dosing, pre-filling, and automatic mixing)

98. Development and production of drugs for rare diseases and special medicines for children

99. Development and production of consumables relating to pharmaceutical manufacturing: separation and purification media, solid phase synthesis media, chiral resolution media, consumables for drug impurity control and detection, etc.

(XII) Chemical Fiber Manufacturing

100. Continuous copolymerization modification of differentiated and functional polyester (PET) [cationic dyeable polyester (CDP, ECDP), alkali-soluble polyester (COPET), high-shrinkage polyester (HSPET), flame-retardant polyester, low-melting-point polyester, non-crystalline polyester, biodegradable polyester, and polyester produced with green catalyst, etc.]; efficient and flexible preparation technologies for the production of flame-retardant, anti-static, anti-ultraviolet, anti-bacterial, phase change energy storage, photochromic, stock solution coloring, and other differentiated and functional chemical fibers and their research and development; production of intelligent, ultra-simulation, and other functional chemical fibers; and original development of green, efficient and environment-friendly oil for high-speed spinning processing

101. Development and production of high-performance fibers and products: carbon fiber (CF), aramid fiber (AF), polysulfonamide (PSA), ultra-high molecular weight polyethylene (UHMWPE), polyphenylene sulfite fiber (PPS), polyimide fiber (PI), polytetrafluoroethylene fiber (PTFE), polybenzobisoxazole fiber (PBO), polyarylene oxadiazole fiber (POD), basalt fiber (BF), silicon carbide fiber (SiCF), polyetheretherketone fiber (PEEK), high-tenacity alkali-resisting glass fiber (HT-AR), and poly (2,5-dihydroxy-1,4-phenylenepyridodiimidazole) (PIPD) fiber

102. Production of new types of polyester for fiber or non-fiber use: poly-trimethylene terephthalate (PTT), polyethylene naphthalene (PEN), poly-cyclohexylene dimethylene terephthalate (PCT), glycol-modified polyethylene terephthalate (PETG), and polylactic acid (PLA, using non-grain biomass as raw materials)

103. Production of biomass fibers by utilizing new types of renewable resources and environment-friendly processes, including new solvent-spun cellulose fibers (Lyocell), regenerated cellulose fibers using bamboo, hemp, etc. as the raw material, poly lactic acid (PLA) fibers, chitin fiber, polyhydroxyalkanoates (PHA) fibers, animal and plant protein fibers, polybutylene succinate (PBS), etc.

104. Development and production of nylon 11, nylon 12, nylon 1414, nylon 46, nylon 56 (using non-grain biomass as raw materials), long carbon chain nylon, high-temperature resistance nylon, and other new polyamides, and differentiated, functional and high value-added modified nylon (including nylon elastomer, copolymer nylon, nylon engineering plastics, and flame-retardant nylon)

105. Development and production of anti-seepage geomembrane in landfills

(XIII) Rubber and Plastic Products Industry

106. Development, production, and application of organosilicone products

107. Development, production, and application of biodegradable plastics and their products

108. Development and production of new photoecological, multi-functional, and wide-width agricultural film and pollution-free degradable agricultural film

109. Sorting, recycling, and reuse of plastic wastes

110. Development of new soft plastic packaging technologies and development and production of new varieties of soft plastic packaging products (including high-barrier and multi-functional film and relevant raw materials)

(XIV) Nonmetallic Mineral Products Industry

111. Development and production of building materials characterized by energy conservation,

environmental protection, waste recycling, lightweight, high-strength, high performance, and multiple functions

112. Development and production of integrated molding and die extrusion products

113. Production of energy-saving and high-efficiency chemical building materials using plastic to substitute for steel and wood

114. Intelligent manufacturing of newly fabricated building components

115. Production of SBS/APP modified bitumen waterproof rolls with an annual output of 10 million square meters or more, ethylene propylene diene monomer (EPDM) rubber waterproof rolls of which the width is two meters or longer, and relevant auxiliary materials, wide polyvinyl chloride (PVC) waterproof rolls of which the width is two meters or longer, and thermoplastic polyolefin (TPO) waterproof rolls

116. Development and production of functional glass using new technologies: infrared transmitting lead-free chalcogenide glass and products, multiple-functional windshield glass with excellent optical performance (transmittance  $\geq 70\%$ ), coated privacy windshield glass, sound insulation windshield glass, solar windshield glass, conductive color-changing windshield glass, electric heating windshield glass, head-up display windshield glass, vacuum glass, purification processing of raw materials for high pure ( $\geq 99.998\%$ ) or ultrapure ( $\geq 99.999\%$ ) crystals

117. Production of power generation glass for thin film batteries, glass for solar illuminators, and photovoltaic power generation glass used in construction

118. Production of alkali-free glass fiber roving (monofilament diameter  $> 9$  microns) by tank furnace wire drawing with an annual yield of 80,000 tons or more and production of alkali-free glass fiber spun yarn (monofilament diameter  $\leq 9$  microns) by tank furnace wire drawing with an annual yield of 50,000 tons or more, production of high-performance and special glass fibers such as superfine glass fiber (monofilament diameter  $\leq 5$  microns), degradable glass fiber, special-shaped cross-section glass fiber, alkali-resistant glass fiber, low dielectric glass fibers, quartz glass fibers, high silica glass fibers, high strength, and high elastic glass fibers, ceramic fibers, glass fiber felt cloth and other products

119. Production of optical fibers and their products: optical fiber bundles for image transmission and laser optical fibers for medical treatment, super second-generation and third-generation microchannel plates, optical fiber panels, image inverters, and glass fiber cones

120. Standardized refinement of ceramics raw materials and production of high-grade decorative materials used in ceramics

121. Production of long-life, energy-saving, and environment-friendly (non-chromizing) refractory materials used in furnaces, including cement, electronic glass, ceramics, and microporous carbon bricks

122. Production of porous ceramics

123. Production of new inorganic and nonmetallic 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 binding materials, special latex materials, underwater acoustic rubber products, and nanophase materials

124. Production of organic-inorganic composite cellular insulation materials, production of high-performance energy-saving insulation materials for buildings, and insulation materials for the modern centralized agricultural breeding industry

125. Production of high-tech composite materials: continuous fiber reinforced thermoplastic

composite materials and prepregs, auxiliary materials for molding of resin-based composite materials with thermal resistance of more than 300°C, biodegradable resin matrix composite materials, resin-based composite materials used for additive manufacturing, resin-based composite materials (including sports products and lightweight, high-strength parts of vehicles), special-function composite materials and their products (including composite material products used in deep water or for diving and composite materials products for medical treatment and recuperation), carbon or carbon composite materials, high-performance ceramic-based composite materials and their products, metal or glass-based composite materials and their products, metal-layered composite materials and their products, ultra high pressure composite rubber hoses (pressure  $\geq 320$ MPa), large passenger aircraft tires, and polyester structural foam materials (used in lightweight and high-strength vehicle parts, core materials of wind turbine blade, building materials, and other fields)

126. Production of raw materials for precision and high-performance ceramics: ultra-fine silicon carbide (SiC) powder (purity >99%, average particle size <1 $\mu$ m), ultra-fine silicon nitride powder (Si<sub>3</sub>N<sub>4</sub>) (purity >99%, average particle size <1 $\mu$ m), high-purity ultra-fine alumina powder (purity >99.9%, average particle size <0.5 $\mu$ m), low-temperature sintered zirconia (ZrO<sub>2</sub>) powder (sintering temperature <1350°C), high-purity aluminum nitride (AlN) powder (purity >99%, average particle size <1 $\mu$ m), rutile titanium dioxide (TiO<sub>2</sub>) powder (purity >98.5%), white carbon black (particle size <100nm), and barium titanate (purity >99%, particle size <1 $\mu$ m)

127. Development and production of high-quality artificial crystals and thin-film transistor products: high-quality artificially synthesized crystal (piezoelectric crystal and ultraviolet ray transmitting crystal); super-hard crystal (cubic boron nitride crystal); high-temperature resistant, highly-insulated, and artificially synthesized crystal (artificially synthesized mica); new electro-optic crystal; high-power laser crystal and large-scale scintillation crystal; diamond-film tool; ultrathin synthetic diamond saw blade with the thickness of not more than 0.3mm

128. Fine processing of nonmetallic ores (ultra-fine grinding, high purifying, refining, and modified performance)

129. Production of ultra-high-power graphite electrodes

130. Production of pearl mica (particle size of 3-150 $\mu$ m)

131. Production of multi-dimensional and multi-directional integral fabrics and shape fabrics

132. Safe disposal of solid wastes using new dry-process cement kilns and sintered wall materials

133. Recycling of building wastes

134. Comprehensive utilization of industrial by-product gypsum and other industrial waste

135. Development and application of new technologies for comprehensive utilization of nonmetal mine tailings; and ecological restoration of mines

136. Development and production of high-temperature resistant and corrosion-resistant filter materials

(XV) Nonferrous Metal Smelting and Rolling Processing

137. Production of new and high-tech nonferrous metal materials and their products: high-temperature superconducting materials; memory alloy materials (titanium nickel, copper-based, and iron-based memory alloy materials); ultra-fine (nano) calcium carbide and ultra-fine (nano) crystal hard alloy; ultra-hard composite materials; precious metal composite materials; light metal composite materials; deep processing of high-performance light metals and copper alloy materials for new generation information technology industry, aerospace equipment, electric power

equipment, advanced rail transit equipment, biomedicine, and high-performance medical equipment, ocean engineering equipment and high-tech ships, energy-saving and new energy vehicles, high-end numerical control machines and robots, agricultural machinery equipment, energy conservation, and environmental protection; foamed aluminum; sponge zirconium at the atomic energy level, and deep processing products of tungsten and molybdenum

138. Processing of rare earth high-end application products in line with the requirements of new rare earth materials

139. Production of high-performance AlTiB grain refiner

(XVI) Metal Products Manufacturing Industry

140. Research, develop, and manufacture new lightweight and environment-friendly materials for aviation, aerospace, vessels, automobiles, and motorcycles (special-purpose aluminum sheets, aluminum-magnesium alloy materials, aluminum alloy motorcycle frames, etc.)

141. Manufacturing and processing (including painting and processing the inner and outer surface of products) of metal packing products (which shall be complete products, and the thickness of container wall shall be less than 0.3 millimeters) used for packing all kinds of grain, oil, food, vegetables, fruits, beverages, and household chemical products, etc.

142. Manufacturing of steel fiber for construction

(XVII) General Equipment Manufacturing Industry

143. Manufacturing of high-end numerical control machines and their key parts and components: five-axis alignment numerical control machines, numerical control coordinate boring and milling processing centers, and numerical control coordinate grinding machines

144. Manufacturing of large-scale (loading capacity of more than one 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 charging capacity of over 500kg and full-fiber lining heat treatment heating furnaces

145. Manufacturing of equipment for dismantling, crushing, and post-processing and sorting of retired automobiles

146. Manufacturing of flexible transfer lines (FTL)

147. Manufacturing of high-end precision tools, nano composite coating, and high-end processing equipment

148. Manufacturing of sub-micron and ultra-fine grinders

149. Manufacturing of wheeled or crawler cranes of 400 tons or more

150. Design and manufacturing of high-pressure plunger pumps and engines of working pressure  $\geq 35\text{MPa}$  and low-speed large-torque engines of working pressure  $\geq 35\text{MPa}$

151. Manufacturing of integrated hydraulic-pressure multiple unit valve of working pressure  $\geq 25\text{MPa}$  and electro-hydraulic proportional servo elements

152. Design and manufacturing of valve terminal, pneumatic solenoid valve of less than 0.35W, and high-frequency electrically-controlled gas valves of 200Hz or more

153. Production of valves of which the operating temperature is below  $-120^{\circ}\text{C}$  or above  $530^{\circ}\text{C}$

154. Design and manufacturing of hydrostatic drive devices

155. Development and manufacturing of non-contact gas film seals of pressure  $>10\text{MPa}$  and dry gas seals of pressure  $>10\text{MPa}$  (including experimental devices)

156. Design and manufacturing of pneumatic actuators with repeatability less than or equal to 0.03

degrees and axial runout less than or equal to 0.02mm

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

158. Development and manufacturing of macromolecule material equipment for automobiles (including friction plates, remodeled phenolic pistons, nonmetallic hydraulic master/sub-pumps, etc.)

159. Manufacturing of second-generation wheel hub bearings (THU2) for commercial vehicles, third- and higher-generation car wheel hub bearings, bearings for high- or medium-grade numerical control machines and processing centers, high-speed wire rod or plate rolling mill bearings, high-speed railway bearings, low-noise bearings with vibration below Z4, P4 or P2 level bearings of various bearings, bearings of wind turbine generator set, aircraft bearings, aircraft engine bearings, and other aviation bearings, medical CT machine bearings, deep well and ultra-deep well oil rig bearings, offshore engineering bearings, high-speed bearings for electric vehicle drive motor systems (rotation speed  $\geq 12,000$  rpm), bearings of RV reducers and harmonic drive reducers for industrial robots, bearings for shield machines, machining numerical control machines, and heat treatment equipment for large bearings

160. Manufacturing of gear transmission used for wind power or high-speed rail, gear transmission agent with adjustable blades used for vessels, and large-sized and heavy-load gear boxes

161. Manufacturing of high-temperature resistant insulation materials (of F and H insulation classes) and molded insulation products

162. Development and manufacturing of accumulator's bladders and rubber and plastic seals for hydropneumatic use

163. Manufacturing of high-precision, high-strength (at the level of 12.9 or above), special-shaped, and assembly fasteners

164. Manufacturing of miniature precision transmission junction pieces (clutches)

165. Manufacturing of coupling shafts for heavy rolling mills

166. Remanufacturing of machineries such as machine tools, engineering machinery, and railroad engine equipment, remanufacturing of automobile parts and components

167. Development and manufacturing of digital cameras of 10 million pixels or more or with a 120-degree or above horizontal field and their optical lens and photoelectric modules

168. Manufacturing of office machinery (including that for industrial use): all-in-one multi-functional office equipment (printer, copier, fax machine, and scanner), printing devices, heads of high-resolution color printers with the precision of 2,400dpi or more, and OPC drums

169. Manufacturing of film machinery: 2K, 4K digital cinema projectors, digital cinema cameras, and digital video production and editing equipment

170. Construction of facilities and manufacturing of equipment for receiving and disposing of ship pollutants at ports, construction of port hazardous chemicals and oil emergency facilities, and equipment manufacturing

171. Development and application of industrial water-saving processes and technologies and manufacturing of relevant equipment

(XVIII) Special-Purpose Equipment Manufacturing Industry

172. Manufacturing of trackless equipment for mining, loading, and transport in mines: including electric-wheel mining tippers with a capacity of 200 tons or more; mobile crushers; bucket wheel excavators with a capacity of 5,000 cubic meters per hour or more; loaders for mining purposes

with the capacity of eight cubic meters or more; and electrically-dragged coal mining machines of 2,500 kilowatts or more, etc.

173. Manufacturing of equipment for geophysical exploration (excluding gravity and magnetic observations) and well logging: MEME seismometers; digital telemetric seismographs; digital imaging systems and digitally controlled well logging systems; devices and apparatus for horizontal wells, directional wells, and drilling rigs; and measurement while drilling (MWD) tools

174. Manufacturing of equipment for oil exploration, drilling, collection, and transportation: floating drilling systems and floating production systems with an operating water depth of more than 1,500 meters and supporting subsea oil extraction, collection, and transportation equipment

175. Manufacturing of large-caliber rotary drilling rigs with a caliber of two meters or more and depth of 30 meters or more, push benches with a diameter of 1.2 meters or more, complete sets of large equipment with a pull-back force of 300 tons or more for laying underground pipes and lines without digging, and underground diaphragm wall construction drilling rigs

176. Design and manufacturing of large bulldozers of 520 horsepower or more

177. Design and manufacturing of silt removers with a capacity of 100 cubic meters or more per hour and dredging devices for dredgers with a capacity of 1,000 tons or more

178. Design and manufacturing of equipment for the construction of concrete cut-off walls used for flood prevention dikes

179. Manufacturing of earthquake prevention and disaster mitigation devices for civil engineering structure

180. Manufacturing of underwater earthwork construction machinery: bulldozers, loaders, excavators, etc., operating nine meters underwater or deeper

181. Manufacturing of equipment for the maintenance and automatic testing of highways and bridges

182. Manufacturing of equipment for operational monitoring, ventilation, disaster prevention, and rescue systems of highway tunnels

183. Design and manufacturing of maintenance machinery and inspection and monitoring equipment for large-scale railway construction, railway tracks, bridges, and tunnels, and their key parts and components

184. Manufacturing of ore dressing equipment for multi-element, fine-particle, and refractory metal minerals

185. Manufacturing of the key equipment of complete sets of ethylene equipment with an annual capacity of one million tons or more: mixing granulators with an annual processing capacity of 400,000 tons or more, helical-conveyer centrifuges with a diameter of 1,000 millimeters or more, and low-flow high-head centrifugal pump

186. Design and manufacturing of metal product molds (extrusion dies for pipes, rods, and section bars made of copper, aluminum, titanium, and zirconium)

187. Design and manufacturing of punching dies for automobile body covers, large-sized injection molds for a dashboard, bumper, etc., and clamps and gauges for automobiles and motorcycles

188. Design and manufacturing of production equipment for power batteries for automobiles

189. Design and manufacturing of precise die molds (punching dies with a precision of higher than 0.02 millimeters and cavity molds with a precision of higher than 0.05 millimeters)

190. Manufacturing of beer bottling equipment with a capacity of 60,000 bottles or more per hour, hot- and medium-temperature beverage bottling equipment with a capacity of 50,000 bottles or

- more per hour, and aseptic filling equipment with a capacity of 36,000 bottles or more per hour
191. Technology for producing and manufacturing key equipment for amino acids, enzyme preparations, food additives, etc.
192. Manufacturing of complete sets of equipment for fodder processing with a capacity of 10 tons or more per hour and their key components
193. Manufacturing of equipment for lightweight corrugated boards and cartons with a corrugation height of 0.75 millimeters or less
194. Manufacturing of sheet-fed and multi-color offset presses (width  $\geq$  750 millimeters; printing speed: single side and multiple colors  $\geq$  16,000 sheets per hour, and both sides and multiple colors  $\geq$  13,000 sheets per hour)
195. Manufacturing of single-width single-paper path web-fed lithographic printing presses with a printing speed of more than 75,000 bisect sheets per hour (787×880 millimeters), double-width single-paper path web-fed lithographic printing presses with a printing speed of more than 170,000 bisect sheets per hour (787×880 millimeters), and commercial web-fed lithographic printing presses with the printing speed of more than 50,000 bisect sheets per hour (787×880 millimeters)
196. Manufacturing of multi-color wide flexographic presses (printing width  $\geq$  300 millimeters and printing speed  $\geq$  350 meters per second), inkjet digital printing presses (used for publication: printing speed  $\geq$  150 meters per minute and resolution  $\geq$  600dpi; used for packaging: printing speed  $\geq$  30 meters per minute and resolution  $\geq$  1,000dpi; used for variable data: printing speed  $\geq$  100 meters per minute and resolution  $\geq$  300dpi)
197. Manufacturing of systems for ink color computer pre-setting, remote ink color control, water-ink speed tracking, automatic printing quality inspection and tracking, and shaftless driving technology; manufacturing of high-speed automatic pasters and feeders with the speed of 75,000 sheets per hour, remotely adjustable high-speed folding machines, automatic overprinting systems, cooling devices, silicon-adding systems, and deviation adjustment devices
198. Manufacturing of electron-gun automatic coating machines
199. Technology for and manufacturing of equipment for sheet glass deep processing
200. Manufacturing of complete sets of a new paper (including pulp) making machines
201. Manufacturing of equipment featuring new leather post ornament and processing technology
202. Manufacturing of soil pollution control and repair equipment
203. Development and manufacturing of new agricultural product processing and storage equipment: new equipment for the processing, storage, preservation, grading, packaging, and drying of grains, oil-bearing materials, vegetables, nuts, dried and fresh fruit products, meat products, aquatic products, and other products; agricultural product quality inspection instruments and equipment; damage-free quality inspection instruments and equipment for agricultural products; rheometers; farinographs; ultramicro crushing equipment; high-efficiency dewatering equipment; high-efficiency fruit juice condensation equipment achieving five or more effects; sterilization equipment for powder food materials; solid and semi-solid food aseptically packaging equipment; and disk-type centrifugal separators
204. Manufacturing of agricultural machinery: agricultural facilities and equipment (automatic irrigation equipment for greenhouses, equipment for automatic disposition of nutrient solutions and fertilization, high-efficiency vegetable seedling equipment, and soil nutrient analysis equipment); tractors with an engine power of 200 kilowatts or more and auxiliary farm implements; diesel engines with low fuel consumption, low noise and low emission; sprayers auxiliary to large

tractors and equipped with residual droplets retrieval devices; high-performance rice transplanters; cotton picking machines and cotton picking platforms; self-propelled (hydraulically or mechanically-driven) corn combine harvesters adaptable to various row spacings; peanut harvesters; rapeseed harvesters; cane harvesters; beet harvesters; and self-propelled grape harvesters

205. Manufacturing of forestry facilities and equipment: equipment of intelligent greenhouse for seedlings and flower, precision irrigation, fertilizing and seedling, the analysis instruments for runoff of trunk-diameter roots and leaves of seedling, seed vigor and soil nutrients, etc., high-power (240KW) woodland operation chassis and its supporting machines and tools, small and medium-sized machines for multi-functional land preparation, tree planting, cultivation, felling and logging, etc., afforestation machinery at difficult sites, machines for collection, bundling, chipping and smashing of forest land remnants as well as their comprehensive utilization, large and medium-sized plant protection and spraying machines, small precision pesticide application equipment or biomimetic pesticide application robot, forest cone collection machine, oil fruit harvester, large and medium-sized tree transplanters, shrub stubble equipment, efficient pruning equipment, and rapid measuring equipment for forest stocks

206. Manufacturing of wood processing equipment: rapid color difference identification technology and equipment, quick solid wood measuring instrument, rapid scar detection equipment, solid wood surface defect detection equipment, complete equipment and technology for sawing wood, equipment for the rapid detection of surface defects of artificial panel, online quality grading equipment, equipment for the online testing of rotary cutting veneer quality, equipment for film grinding and dust treatment of solid wood furniture paint, quick sorting equipment for panel furniture, and intelligent warehouse for furniture manufacturing

207. Manufacturing of forestry disaster monitoring equipment: rapid rescue equipment and high precision navigation and positioning equipment in forest areas, unmanned aerial vehicle fire and disaster monitoring and early warning equipment, and fire extinguishing and de-insectization equipment

208. Manufacturing of equipment for the collection, bundling, and comprehensive utilization of crop straws

209. Manufacturing of equipment for the utilization of agricultural waste as resources and of waste generated from large-scale livestock and poultry breeding as resources

210. Manufacturing of special equipment for advanced intelligent manufacturing and processing of leather, fur, and their products

211. Manufacturing of agricultural equipment using fertilizer-saving, pesticide-saving, or water-saving technology

212. Manufacturing of equipment for cleaning electromechanical wells and equipment for producing cleaning agents

213. Manufacturing of electronic endoscopes

214. Manufacturing of fundus cameras

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

216. Manufacturing of (3D) ultrasonic transducers for medical use

217. Manufacturing of equipment for boron neutron capture therapy (BNCT)
218. Manufacturing of image-guided intensity modulated radiation therapy systems
219. Manufacturing of hemodialysis machines and hemofiltration machines
220. Manufacturing of equipment for automated biochemical monitoring equipment, automated five categories of blood analyzers, fully-automated chemiluminescence immunoassay analyzers, high-throughput DNA sequencing systems, and molecular diagnostics devices
221. New technology for and manufacturing of new equipment for drug quality control
222. Development and manufacturing of new technology for analyzing, a new process for extracting, and new equipment for effective constituents in natural drugs
223. Research, development, and manufacturing of equipment for the production of biomedical matching consumables
224. Manufacturing of multi-layer co-extrusion water-cooled blown film equipment for non-PVC medical infusion bags
225. Manufacturing of artificial intelligence-assisted medical equipment
226. Manufacturing of high-end radiotherapy equipment
227. Manufacturing of high-end surgical instruments, physical therapy rehabilitation equipment, and wearable intelligent health equipment
228. Manufacturing of life support equipment for critical illness
229. Manufacturing of mobile and remote diagnosis and treatment equipment
230. Manufacturing of ventilators, ECMO, monitors, and PCR machine
231. Development and production of minimally invasive surgical medical equipment: 3D imaging, electron microscopy systems, surgical robots, robotic arms, hearing aids, cochlear implants, etc.
232. Research, development, and production of holmium laser and carbon dioxide laser treatment products
233. Development and application of new stents, prostheses, and other high-end implanted interventional devices, materials, and additive manufacturing technologies
234. Production and manufacturing of emergency rescue equipment
235. Development and manufacturing of new textile machinery, key parts and components, and textile testing and experimental apparatus
236. Manufacturing of computer-aided jacquard artificial fur machines
237. Manufacturing of high and new equipment, especially for producing solar cells
238. Manufacturing of carbon capture, utilization, and storage (CCUS) equipment and greenhouse gas monitoring and metering equipment
239. Manufacturing of air pollution prevention and control equipment: low-NO<sub>x</sub> combustion devices, catalyst for flue gas denitrogenation and complete sets of denitrogenation equipment, industrial organic exhaust purification equipment, diesel vehicle exhaust purification equipment, and heavy metal exhaust air treatment equipment
240. Manufacturing of water pollution prevention and control equipment: horizontal spiral centrifugal dehydrators, membrane and membrane materials, ozone generators with a capacity of 50kg/h or more, chlorine dioxide generators with a capacity of 10kg/h or more, ultraviolet disinfection devices, small domestic sewage treatment equipment used in rural areas, and heavy metal wastewater treatment equipment
241. Manufacturing of solid waste treatment and disposal equipment: sewage plant sludge disposal and resource recycling equipment, landfill leachate treatment technology equipment,

- building waste treatment and resource recovery utilization equipment, devices for the disposal of hazardous waste, landfill biogas generation and power generation devices, ferrous waste treatment equipment, and facilities for the centralized disposal of medical waste
242. Development and manufacturing of equipment for the comprehensive utilization of red mud from the aluminum industry
243. Manufacturing of equipment for the comprehensive utilization of mine tailings
244. Manufacturing of equipment for the recycling, disposal, and reutilization of waste plastics, electrical appliances, rubber, and batteries
245. Manufacturing of reclamation equipment for waste textiles
246. Manufacturing of equipment for the remanufacturing of waste mechanical and electrical products
247. Manufacturing of waste heat, excess pressure, and residual air utilization equipment
248. Technology for and manufacturing of equipment for the environmental protection of aquatic ecosystems
249. Manufacturing of portable assembling water purification equipment
250. Manufacturing of unconventional water treatment or recycling equipment and water quality monitoring instruments
251. Manufacturing of leak test equipment and instruments for industrial water pipeline networks and equipment (appliances)
252. Development of technology and manufacturing of complete sets of equipment for seawater desalination and circulating cooling with a daily capacity of 100,000 cubic meters or more
253. Manufacturing of water-saving industrial equipment for high-water consumption industries such as the steel, papermaking, textile, petrochemical, chemical, and metallurgical industries
254. Manufacturing of special meteorological observation and analysis equipment
255. Development of systems of seismic stations, networks, and mobile seismologic observation technology, and manufacturing of corresponding apparatus and equipment
256. Manufacturing of rolling resistance testers and establishment of tire noise laboratories
257. Manufacturing of new technology equipment for heat supply metering and temperature control devices
258. Manufacturing of equipment for hydrogen energy preparation, storage, transportation, and inspection systems
259. Manufacturing of new heavy residual oil gasification and atomizing nozzles, high-efficiency steam trap valves with a leakage rate of 0.5% or below, and high-temperature ceramic heat exchanger with the temperature of 1,000°C or above
260. Manufacturing of devices for the recovery of marine oil spilling
261. Manufacturing of equipment for the utilization of low-concentration coal-mine gas and ventilation air methane
262. Development and utilization of products using clean coal technology and manufacturing of clean coal equipment (coal gasification and liquefaction)
263. Development of firefighting and rescue technologies and manufacturing of equipment for large public buildings, high-rise buildings, petrochemical facilities, forests, mountains, waters, and underground facilities
264. Manufacturing of intelligent equipment for emergency medical rescue
265. Manufacturing of sensors for hydrological monitoring

266. Design, research, development, and manufacturing of main process equipment of nuclear reactors

267. Development and production of diamond compact (PDC bits)

268. Technology for the online analysis of sand and gravel grain shapes and gradations and the development and production of related equipment

269. Design and manufacturing of precise electronic molds

270. Development and production of dental implant systems for implant repair of patients with bone loss

271. Heavy and light ice and snow equipment for ski resorts; industrial research, development, and production of special equipment such as passenger cableways, snowmakers, and snow compactors

272. Manufacturing of polymeric dressings such as sterile vacuum sealing drainage dressing kits, bacterial cellulose membranes, and polyurethane foam dressings

273. Construction of production lines for co-extruded uniaxially and biaxially-oriented films with five or more layers; and construction of barrier coating production lines

(XIX) Automobile Manufacturing Industry

274. Manufacturing of automobile engines and establishment of engine research and development institutions: gasoline engines with the power of not less than 70 kilowatts per liter, diesel engines with the power of not less than 50 kilowatts per liter and the displacement of fewer than three liters, diesel engines with the power of not less than 40 kilowatts per liter and the displacement of three liters or more, and engines using new energy resources such as fuel cells and mixed fuels

275. Manufacturing of key automobile parts and components and research and development of key technologies: dual-clutch transmission (DCT), continuously variable transmission (CVT), automated mechanical transmission (AMT), gasoline engine turbocharger, viscous coupling (for four-wheel drive), actuator for automatic transmission (electromagnetic valve), hydraulic retarder, eddy current retarder, gas generators for automobile safety air-bags, common rail fuel injection technology (with the maximum injection pressure of more than 2,000 pa), variable geometry turbocharging (VGT) technology, variable nozzle turbocharging (VNT) technology, engine emission control devices meeting China's Phase VI pollutant emission standards, intelligent torque management (ITM) systems and coupler assembly, steer-by-wire systems, particulate trap devices, special-purpose axles for low-floor large buses, energy-absorbing steering system, low drag disc brake assemblies, aluminum steering knuckles, variable frequency air-conditioning system for large and medium buses, special rubber automobile accessories, and key parts and components of the above parts and components

276. Research, development, and manufacturing of automobile electronic devices: electronic control systems and key parts and components of engine and chassis; input (sensor and sampling system) and output (actuator) components of electronic control systems; electronic controllers for electric power steering system; embedded electronic integrated systems; electronically-controlled air springs; electronically-controlled suspension systems; electronic valve system devices; electronic combination instrument; ABS/TCS/ESP systems; Brake-By-Wire (BBW) system; gearbox transmission control unit (TCU); tire-pressure monitoring system (TPMS); on-board diagnostics (OBD); engine anti-theft system; automatic bump-shielded system; and testing systems for automobile and motorcycle testing and maintenance; autopilot system, vehicle electronic operating system, vehicle electronic operating system application program development (APP), head-up display technology, auto avoidance steering assistant system, forward 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 control system (ACC), front-view camera system, and wheel speed sensors

277. Research, development, and manufacturing of key parts and components of new energy vehicles: energy-type power battery cells; battery anode material (specific capacity  $\geq 180\text{mAh/g}$ , cycle life of 2,000 times with not less than 80% of initial discharge capacity) and precursor materials, battery cathode material (specific capacity  $\geq 500\text{mAh/g}$ , cycle life of 2,000 times with not less than 80% of initial discharge capacity), battery separators (thickness  $\leq 12\ \mu\text{m}$ , porosity of 35%-60%); battery management systems, motor controller, and electronic control assembly of electric vehicles; driving motors of electric vehicles system (high-efficiency area: 85%, efficiency in working area  $\geq 80\%$ ), vehicle DC/DC (input voltage of 100V-400V), high-power electronic devices (IGBT, voltage class  $\geq 750\text{V}$ , current  $\geq 300\text{A}$ ); plug-in hybrid electromechanical coupling drive systems; fuel cells motors (mass specific power  $\geq 350\text{W/kg}$ ), fuel cell stacks (volumetric specific power  $\geq 3\text{kW/L}$ ), membrane electrode (platinum dosage  $\leq 0.3\text{g/kW}$ ), proton exchange membrane (proton conductivity  $\geq 0.08\text{S/cm}$ ), low platinum catalyst, carbon paper (resistivity  $\leq 3\text{m}\ \Omega \cdot \text{cm}$ ), air compressor, hydrogen circulating pump, hydrogen ejector, humidifier, fuel cell controlling system, step-up DC/DC, 70MPa hydrogen bottle, vehicle-mounted hydrogen concentration sensor; heat pump air conditioning for electric vehicle; 32-bit and above chips specially used for motor drive control (with not less than two hardware kernels, basic frequency of not lower than 180MHz, hardware encryption and other functions, chip design in conformity with the function safety requirement of ASILC or above); integrated electric drive assembly (power density  $\geq 2.5\text{kW/kg}$ ), high-speed reducer (maximum input speed  $\geq 12,000\text{rpm}$ , noise lower than 75dB); thermal management and control systems (electric compressors, refrigerant combination valves, electronic water pumps, high-efficiency silent electronic cooling fans, high-efficiency blowers, integrated modules of new energy vehicles, etc.); aluminum plastic films of lithium batteries (thickness  $152\ \mu\text{m} \pm 10\%$ , outer layer peel strength  $\geq 6.5\text{N}/15\text{mm}$ , inner layer peel strength  $\geq 10\text{N}/15\text{mm}$ , peel strength of inner electrolyte resistance  $\geq 9.0\text{N}/15\text{mm}$ , and formability  $\geq 5.5\text{mm}$ )

278. Development of on-board chargers (efficiency under full load output condition  $\geq 95\%$ ), two-way on-board chargers, off-board charging equipment (output voltage 250V~950V, efficiency within voltage range  $\geq 88\%$ ), as well as wireless charging and mobile charging technologies with high power density, high conversion efficiency, and high suitability and equipment manufacturing

279. Research, development, and manufacturing of key parts and components of intelligent automobiles: sensor, on-board chip, central processor, on-board operating system and information control system, automobile network communication system, visual identification system, chassis-by-wire system; new-type intelligent terminal module, multi-core, heterogeneous and intelligent computing platform technology, sensor fusion sensing technology, key technologies of vehicle wireless communication, basic cloud control platform technology; new-type security isolation architecture technology, software and hardware collaborative attack recognition technology, terminal chip security encryption and application software security protection technologies, wireless communication security encryption technology, safe communication and authentication authorization technology, and data encryption technology; research and development of testing and evaluation system architecture, virtual simulation, field road testing and other technologies and verification tools, complete and system testing and evaluation methods, and construction of basic test database

280. Manufacturing of hardware and key parts and components related to L3/L4/L5 autonomous driving: lidar, millimeter wave radar, and intelligent cameras
281. Manufacturing of charging piles and energy storage charging piles, and development and manufacturing of integrated energy-saving facilities or solutions for charging/energy storage  
(XX) Railway, Vessel, Aerospace, and Other Transportation Equipment Manufacturing Industry
282. Manufacturing of engine emission control devices for high-emission (>250ml) motorcycles meeting China's Phase IV emission standards for motorcycles
283. Design, manufacturing, and maintenance of civil aircraft: aircraft for trunk lines, regional aircraft, and general-purpose aircraft
284. Manufacturing and maintenance of civil aircraft parts and components
285. Design and manufacturing of civil helicopters
286. Manufacturing of civil helicopter parts and components
287. Manufacturing of ground-effect and water-effect aircraft, and design and manufacturing of driverless aerial vehicles and aerostats
288. Design, manufacturing, and maintenance of aircraft engines, engine parts and components, and aircraft auxiliary power systems
289. Development and production of new materials used for aerospace
290. Design and manufacturing of airborne equipment for civil aviation
291. Manufacturing of aviation ground equipment: civil airport facilities, civil airport security facilities, ground facilities for flight tests, flight simulation and training equipment, aviation test and measurement equipment, equipment for aviation ground tests, integrated test equipment for airborne equipment, special equipment for aeronautical manufacturing, special equipment for trial manufacturing of aeronautical materials, civil aircraft ground reception and application equipment, carrier rocket ground testing equipment, equipment for carrier rocket mechanics and environmental experiments, towing equipment for aircraft without tow bars, containerized cargo loaders, and deicing equipment for aircrafts
292. Design and manufacturing of civil satellites and manufacturing of civil satellite payloads
293. Manufacturing of civil satellite parts and components
294. Manufacturing of testing equipment for satellite-borne products
295. Design, research, and development of large and medium-sized cruise ships and small cruise ships; research, development, and manufacturing of internal decoration, digital video and audio, information systems, and other professional supporting facilities of cruise ships
296. Design, research, and development of new types of marine engineering equipment, such as deep sea offshore aquaculture platforms, large aquaculture vessels, and deep sea mineral resources exploitation equipment
297. Design, research, and development of marine LNG dual fuel power, pure battery power, hydrogen fuel cell power, methanol fuel power, ammonia fuel power, biomass fuel power, and other clean energy and new energy power
298. Design, research, and development of marine deck machinery and cabin equipment
299. Design, research, and development of vessel communication and navigation system equipment
300. Design, research, and development of yachts and specialized supporting equipment
301. The overall design of intelligent systems for intelligent vessels, design, research, and development of intelligent perception systems, intelligent navigation systems, intelligent energy

efficiency management systems, etc.

302. Design, researched, and developed offshore oil and gas equipment such as deep-sea oil and gas drilling platforms (ships), floating liquefied natural gas units (FLNG), and floating storage and regasification units (FSRU)

303. Design, research, and develop offshore wind power equipment and offshore new energy equipment (including tidal energy, wave energy, temperature difference energy, etc.)

304. Design, research, and development of single point mooring system, liquid cargo containment system, subsea production system, and other special systems

305. Design, research, and development of intelligent green equipment such as precision management and control for the construction of final ship assembly, digital shipbuilding, pre-outfitting and modularization, efficient welding, green coating, ultra-high pressure water derusting, intelligent welding production lines, intelligent segment assembly lines, and intelligent pipe processing production lines

(XXI) Electric Machinery and Equipment Manufacturing Industry

306. Manufacturing of key auxiliary equipment used for one million-kilowatt ultra-supercritical thermal power units: safety valves and control valves

307. Design and manufacturing of seals of thermal power equipment

308. Manufacturing of key auxiliary equipment for hydropower-generating units

309. Manufacturing of power transmission and transformation equipment and their key parts and components

310. Manufacturing of complete sets of equipment or key equipment for new energy power generation: equipment for photovoltaic power generation, solar thermal power generation, geothermal power generation, tidal power generation, wave power generation, garbage power generation, and biogas generation and power generation; and manufacturing of bulk heterojunction matrix materials

311. Manufacturing of Stirling generator sets

312. Development and manufacturing of linear motors, plane motors, and their drive systems

313. Manufacturing high-tech green batteries: nickel-metal hydride (Ni-MH) batteries, nickel-zinc batteries, sodium salt batteries, silver-zinc batteries, lithium-ion batteries, solar batteries, fuel batteries, etc.

314. Manufacturing of refrigeration compressors for air conditioning with motors adopting DC speed control technology, refrigeration compressors for air conditioning adopting CO<sub>2</sub> natural refrigerants, and refrigeration equipment for air conditioning applying renewable energy (air source, water source, and ground source)

315. Manufacturing of solar air conditioning and heating systems and solar drying devices

316. Manufacturing of biomass drying pyrolysis systems and biomass gasification devices

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

318. Manufacturing of alternating current variable voltage variable frequency traction devices

319. Manufacturing high-voltage vacuum components and switchgear, intelligent medium-voltage switch components and complete sets of equipment, insulated switchgear using environment-friendly medium-voltage gas, intelligent (communicable) low-voltage electrical appliances, and energy-saving power distribution transformers of amorphous alloys, rolled iron cores, etc.

(XXII) Computer, Telecommunications, and Other Electronic Equipment Manufacturing Industries

- 320. Manufacturing of HD digital camcorders and digital sound-playing equipment
- 321. Manufacturing of TFT-LCD, OLED, AMOLED, laser display, quantum dots, 3D displayer, and other panel displays, and their materials (excluding TFT-LCD glass substrate for the first generation through the sixth generation)
- 322. Research, development, and manufacturing of polarizer base film and diffusion film
- 323. Research, development, and manufacturing of electronic book materials (electronic ink screen, etc.)
- 324. Manufacturing of single silicon crystals with a diameter of 8 inches and above
- 325. Manufacturing of silicon wafers with a diameter of 12 inches and above
- 326. Manufacturing of key parts for large-screen color projection displays, such as optical engines, light sources, projection screens, high-resolution projection tubes, and micro-display projection modules
- 327. Manufacturing of laser projection equipment
- 328. Manufacturing of ultra-high-definition and high-tech video products: high-tech video end-to-end key software and hardware such as 4K/8K ultra-high-definition televisions, 4K cameras, monitors, interactive videos, immersive videos, VR videos, and cloud games
- 329. Manufacturing of digital audio and video coding and decoding equipment; equipment for digital broadcasting and television studios; equipment for digital cable television systems; digital audio broadcasting transmission equipment; digital television up-and-down converters; digital television ground broadcasting single frequency network (SFN) equipment; and equipment for satellite digital TV uplink stations
- 330. Design of integrated circuits; manufacturing of large-scale digital integrated circuits with a line width of 28 nanometers or less; manufacturing of analog or digital-analog integrated circuits with a line width of 0.11 micron or less; manufacturing of mask reticle, MEMS, and compound semiconductor integrated circuits; and BGA, PGA, CSP, MCM, LGA, SIP, FC, WLP, and other advanced packaging and testing
- 331. Manufacturing of large- and medium-sized electronic computers, high-performance computers with a computing capacity of 10,000 trillion calculations per second, portable minicomputers, large analog simulation systems, industrial controlling machines, and controllers
- 332. Research, development, and manufacturing of quantum, quasi-brain, and other new mechanism computer systems
- 333. Development and manufacturing of key equipment for the manufacturing of super-large-scale integrated circuits
- 334. Manufacturing of integrated circuit packaging and testing equipment
- 335. Manufacturing of computer digital signal processing system and boards
- 336. Manufacturing of graphic and image recognition and processing systems
- 337. Development and manufacturing of high-capacity optical and disk drives and their components
- 338. Manufacturing of memory systems with the capacity of 100TB or more, manufacturing of SSD solid state disks with the capacity of 8TB or more, and manufacturing of intelligent memory equipment
- 339. Manufacturing of computer-aided design (three-dimensional CAD) systems, electronic design automation (EDA) systems, computer-aided testing (CAT) systems, computer-aided manufacturing (CAM) systems, computer-aided engineering (CAE) systems, and other computer application

systems

340. Development and production of software products

341. Development and manufacturing of materials exclusively for electronic purposes (excluding the development and manufacturing of optical fiber preforms); development and manufacturing of lead-free solder paste used for surface mount technology (SMT), and high-purity (electronic grade) polysilicon materials

342. Manufacturing of equipment, testing instruments, tools, and molds exclusively for electronic purposes

343. 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, high molecular solid capacitors, super-capacitors, passive integrated components, high-density interconnect boards, single-layer, double-layer and flex-printed circuit boards, rigid-flex printed circuit boards, and packaging boards, and flexible circuit boards with high-density and high-thin line (line width/line spacing  $\leq 0.05\text{mm}$ ), etc.

344. Manufacturing of touch control system (touch control screens, components, etc.)

345. Research, development, and manufacturing of virtual reality (VR), augmented reality (AR), and mixed reality (MR) equipment

346. Manufacturing of high-brightness light-emitting diodes (LEDs) with a luminous efficiency of more than 1,401m/W, LED epitaxial wafers (blue light) with a luminous efficiency of more than 1,401m/W, and white luminous tubes with the luminous efficiency of more than 1,401m/W and the power of more than 200mW

347. Development and production of key parts of high-density digital disk drives

348. Production of recordable disks

349. Research, development, and manufacturing of 3D printing equipment and their key parts and components

350. Manufacturing of equipment for satellite communication systems

351. Manufacturing of optical communication measuring instruments and optical transceivers with a speed of 40Gbps or more

352. Manufacturing of ultra-wideband (UWB) communication equipment

353. Manufacturing of equipment for wireless local area networks (including WAPI supportive) and wide area networks

354. Manufacturing of time division multiplex equipment (TDM) with a rate of 100Gbps or more, dense wavelength division multiplexing equipment (DWDM), broadband passive network equipment (including EPON, GPON, WDM-PON, etc.), next-generation DSL silicon and equipment, optical cross-connect (OXC) equipment, automatically switched optical network (ASON) equipment, and transmission equipment for SDH optical fiber communication at more than 40Gbps

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

356. Development and manufacturing of the fourth and the fifth generations and subsequent mobile communication cell phones, base stations, core network equipment, optical transmission equipment, and network testing equipment

357. Development and manufacturing of vision sensors (digital camera, digital cam, 3D sensor, laser radar, millimeter wave radar, etc.) applied to fifth-generation mobile terminals (mobile

phones, automobiles, driverless aerial vehicles, virtual reality, enhanced display, etc.) and their core parts and components (optical lens and lens, laser devices, sensitive chips, motors, optoelectronics modules, etc.), and IoT terminals

358. Development of cloud computing equipment (including high-precision mechanical parts of servers, storage device cloud, cloud service equipment, etc.), software, and system

359. Development and manufacturing of (two-way) high-end routers with an overall processing capacity of more than 6.4Tbps and switches with an exchange capacity of more than 40Tbps

360. Manufacturing of equipment for air traffic control systems

361. Development and manufacturing of auxiliary electronic teaching equipment for traditional Chinese medicine that is based on sound, light, electricity, touch control, and other computer information technologies, virtual pathological and physiological human model equipment

362. Manufacturing of intelligent consumer equipment such as wearable smart devices and innovative driverless aerial vehicles

363. Manufacturing of smart home platform system and equipment

364. Development and production of electronic-grade fiberglass fabric exclusively for copper-clad plate

365. Developing and researching key software and data interworking technology of different equipment interfaces, etc.

366. Wafer manufacturing and regeneration

367. Research, development, and manufacturing of smart healthcare products for the elderly (manufacturing of articles and ancillary products for the elderly, manufacturing of medical apparatus and rehabilitation aids for the elderly, manufacturing of intelligent and wearable devices for the elderly, etc.)

368. Production of organic polymer materials: lithium-ion battery separators; production of high-tech nonferrous materials and their products: compound semiconductor materials (gallium arsenide, gallium phosphide, indium phosphide, and gallium nitride)

369. Development and production of high-purity electronic chemicals and high-performance photoresist

370. Development and production of functional glass using new technologies: electromagnetic wave shielding glass, a glass substrate for microelectronic use, electronic-grade large-scale quartz glass products (such as pipes, plates, crucibles, and utensils), 10.5-generation or above TFT-LCD substrate glass, high-performance lithium alumina glass, OLED glass, touch sensors, flexible glass, and other glass used for electronic information display, extreme materials, and products for use in information technologies (including quartz glass sleeves and ceramic wafers for waveguide-grade, high-precision optical fiber preform rods)

371. Research, development, and production of the sapphire substrate

(XXIII) Manufacturing of Instruments and Meters

372. Manufacturing of soil moisture monitoring equipment

373. Manufacturing of industrial process automatic control systems and devices: Fieldbus control systems, large-scale programmable logic controller (PLC), two-phase flow meters, solid flow meters, and new-type sensors and field measuring meters

374. Manufacturing of automated, intelligent, and multi-functional material mechanical performance testing equipment, industrial CT, three-dimensional ultrasonic flaw detectors, and other non-destructive testing equipment

- 375. Development and manufacturing of large precision instruments and high-resolution microscopes (with a resolution of less than 200nm)
- 376. Manufacturing of high-precision digital voltmeters and ammeters (with a span of seven and a half bits or more)
- 377. Manufacturing of reactive power auto-compensation devices
- 378. Manufacturing of new instruments and equipment for production safety
- 379. Manufacturing of VXI bus automatic testing systems (complying with IEEE 1155 international standards)
- 380. Development and manufacturing of underground coal mine monitoring and disaster forecasting system and coal safety inspection integrated management system
- 381. Manufacturing of equipment for engineering surveying and geophysical observation
- 382. Manufacturing of environmental monitoring instruments
- 383. Manufacturing of wireless remote transmission intelligent water meters
- 384. Manufacturing of intelligent monitoring instrument for reservoir dam safety
- 385. Manufacturing of instruments and equipment for hydrological data collection, processing and transmission and flood control early warning
- 386. Manufacturing of monitoring instruments and equipment for marine exploration
- 387. Manufacturing of leakage monitoring instruments for municipal pipe networks and water pipeline
- 388. R&D and manufacturing of nuclear instruments and meters
- 389. Development and production of glow discharge mass spectrometers
- 390. Development and production of transmission electron microscope
- (XXIV) Comprehensive utilization of waste resources
- 391. Coal dressing and comprehensive utilization of coal ash (including gypsum), coal gangue, etc.
- 392. Production of completely biodegradable materials
- 393. Recycling and treatment of waste and used electrical and electronic products, automobiles, mechanical and electrical equipment, rubbers, metals, and batteries
- 394. Comprehensive utilization of red mud and other smelting residues
- 395. Recycling and treatment of decommissioned wind power blades and waste photovoltaic modules
- 396. Comprehensive utilization of Yellow River sediment

#### **IV Power, heating, gas, and water production and supply industries**

- 397. Construction and operation of supporting and regulating power sources using single-machine 600,000-kilowatt and above ultra-supercritical units
- 398. Construction and operation of power stations with backpressure cogeneration unit, thermoelectric cooling polygeneration unit, ultra-critical cogeneration unit of 300,000 KW or more
- 399. Construction of clean coal power generation projects such as circulating fluidized bed, pressurized fluidized bed, integrated coal gasification combined cycle power generation, and low calorific value coal power generation projects using coal gangue, medium coal, and coal slime with

a single unit of 300,000 kilowatts or more, operating

400. Construction and operation of large hydropower stations and pumped storage power stations with the main purpose of power generation

401. Construction and operation of nuclear power stations

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

403. Construction and operation of natural gas peak-shaving power stations and natural gas-distributed energy stations in areas of gas sources

404. Development and application of a complementary system for power generation with gas and renewable resources

405. Construction and operation of waste incineration power plants

406. Construction and operation of clean energy micro-grids

407. Construction and operation of regional energy supply (cold and heat) projects driven by natural gas, electric power, and renewable energy resources

408. Utilization of seawater (direct utilization of seawater, desalination), utilization of brackish water

409. Consulting, design, investment, construction, and operation of water supply plants

410. Consulting, designing, investing, constructing, and operating recycled water plants

411. Consulting, design, investment, construction, and operation of sewage treatment plants, and consulting design of sludge treatment and disposal facilities, investment, construction, operation  
Consulting design, investment, construction, and operation of water supply plants

412. Construction and operation of motor vehicle charging stations and battery replacement stations

413. Construction and operation of hydrogenation stations

414. Construction and operation of biogas projects

415. R&D, application, and production of green plant insulation oil

416. Research and development, manufacturing, construction, and operation of new energy storage equipment (including various energy storage technologies such as lithium-ion batteries, liquid flow batteries, compressed air, flywheels, and hydrogen energy storage)

417. Integration of power source, grid, load and storage, and construction of multi-energy complementary power sources

## **V. Transportation, warehousing, and post industries**

418. Construction and operation of trunk railway network and special railway lines

419. Construction and operation of intercity railways, urban (suburban) railways, resource development railways and branch railways and their bridges, tunnels, and station facilities, and construction of ferries

420. Comprehensive maintenance of infrastructures of high-speed railways and intercity railways

- 421. Construction and operation of highways, independent bridges, and tunnels
- 422. Road freight transportation companies
- 423. Construction and operation of public dock facilities in ports
- 424. Construction and operation of civil airports (excluding air traffic control)
- 425. Public air transport companies
- 426. General airline companies for agriculture, forestry, and fishery
- 427. International maritime transport companies
- 428. International maritime transportation service for cruise passengers
- 429. Construction of transfer facilities for international container intermodal transport, and R&D, promotion, and application of rapid transfer and reloading equipment and standardized delivery units
- 430. International ship management organizations and organizations engaged in the overseas assignment of crew
- 431. Construction and operation of oil (gas) pipelines and oil (gas) depots (excluding aviation oil pipelines and oil depots)
- 432. Construction and operation of coal pipeline transportation facilities
- 433. Construction of warehousing facilities related to the logistics business, especially construction and operation of elevated three-dimensional automatic warehousing facilities and integrated warehousing facilities related to packaging, processing, and distribution businesses
- 434. R&D and application of technical equipment and green packaging relating to courier service, R&D and application of green logistics facilities and equipment
- 435. Construction and operation of a shared system of pallets and container units
- 436. Rural and community logistics and distribution
- 437. Provision and application of logistics such as joint distribution of general merchandise, cold chain logistics of fresh agricultural products, low-temperature distribution of special medicines, and relevant technical services
- 438. Construction of a distribution center for imported and exported bulk commodities
- 439. Construction of rural road passenger transport facilities and rural road passenger transport companies

## **VI. Wholesale and retail trade**

- 440. E-commerce retail (including cross-border e-commerce, excluding pharmaceuticals and medical devices subject to special management by laws and regulations)
- 441. E-commerce supply chain companies (including cross-border e-commerce, excluding pharmaceuticals and medical devices subject to special management by laws and regulations) Equipment and other commodities)
- 442. Centralized distribution and distribution network construction of commercial enterprises and catering enterprises

- 443. Operation of helium
- 444. Construction and operation of fueling stations for vehicles
- 445. Distribution and retail of imported vehicles
- 446. Retail of creative cultural products

### **VII. Information transmission, software, and technology services**

- 447. E-commerce system development and application service; development and operation of all kinds of specialized assets trading platforms
- 448. Development and application services for online education, online medical, and online office system

### **VIII. Leasing and business services**

- 449. International economic, technology, environmental protection, logistics information, commerce, accounting, and tax consulting services
- 450. Engineering consulting services
- 451. Engagement in system application management and maintenance, information technology support and management, banking back-office services, financial settlement, software development, offshore paging centers, data processing, and other outsourced information technology and business process services in the form of undertaking outsourced services
- 452. Maintenance and repair of modern high-end equipment, reconstruction and integration of digital production line, professional maintenance services, and supply chain services
- 453. The conference, exhibition, and related services
- 454. Venture capital enterprises
- 455. Intellectual property services
- 456. Home service
- 457. Human resources services
- 458. Postpartum maternal and child services in confinement centers
- 459. Tourism and exhibitions
- 460. Language service industry (including translation, localization services, language technology development and application, language resource services, etc.)

### **IX. Scientific research and technology services**

- 461. R&D of bioengineering and biomedical engineering technology, biomass energy development technology
- 462. R&D of DNA-encoded compound library technology
- 463. Veterinary and pet nutrition scientific research and technical services
- 464. R&D and application of artificial intelligence technologies such as intelligent devices, robots,

neural network chips, and neuron sensors

465. R&D of isotope, radiation, and laser technology

466. Ocean development and ocean energy development technology, technology for comprehensive utilization of marine chemical resources, development and refinement/ deep processing of related products, development of marine medicine and biochemical products, and relevant technical R&D

467. R&D of ocean monitoring technology (ocean tidal waves, weather, environmental monitoring), seabed detection, and ocean resources exploration and evaluation technology

468. R&D of high value-add utilization of seawater chemical resources such as manufacturing of salt and extraction of potassium, bromine, magnesium, and lithium by comprehensive utilization of desalinated dense seawater

469. R&D of offshore oil pollution cleaning and ecological restoration technology and the relevant product development, prevention and treatment of seawater eutrophication, prevention and treatment of marine life explosive growth disaster, coastal zone ecological environment restoration technology

470. R&D and application of technologies for energy conservation, environmental protection, and recycling economy

471. R&D and application of technologies for recycling and comprehensive utilization of resources and recycling of emissions and discharges from enterprise production

472. R&D of environmental pollution treatment and monitoring technology

473. Clean production technology development and services, traditional energy clean operation, engineering construction, and technical services, clean production evaluation, certification, and audit

474. Development of carbon capture, utilization, and storage (CCUS) technology and services

475. R&D and utilization of integrated technologies for land conservation and outdoor environment, energy conservation and utilization of water resources, material conservation and utilization of material resources, indoor environment and operational management of green buildings

476. R&D and application of disposal technology for radioactive waste

477. Construction and operation of hazardous waste utilization and disposal facilities and technical consultancy services

478. New products and new technologies for energy saving and consumption reduction in the production of chemical fiber and printing and dyeing processing and treatment of three waste residues

479. R&D and application of comprehensive utilization of phosphogypsum

480. R&D of technologies for the prevention and control of desertification and desert restoration

481. R&D of integrated management technology for grassland and livestock

482. R&D and application of modern animal husbandry waste

483. R&D and application of new pesticide

- 484. R&D of civil satellite application technology
- 485. Inspection, testing, and certification services
- 486. R&D centers
- 487. Centre for new technology, new product development, and enterprise incubation
- 488. R&D and application of mobile communication technology of the fifth generation
- 489. R&D and application of the Internet of things
- 490. R&D and application of blockchain technology
- 491. Creative industries such as industrial design, architectural design, costume design
- 492. Urban and rural planning preparation services (except for urban and township master planning services)
- 493. Low-carbon, environmental protection, green, energy-saving, and water-saving advanced system integration technologies and services
- 494. Development and application of environmentally friendly technologies
- 495. Professional design services

#### **X. Water Conservancy, Environment, and Public Utility Management**

- 496. Control of the Water environment of rivers and lakes, restoration, management, protection, and operation of aquatic ecology
- 497. Construction and management of urban closed roads
- 498. Construction and operation of the urban subway, light rail, and other track transport
- 499. Construction and operation of garbage treatment plants, hazardous waste treatment and disposal plants (incineration plants and landfills), and environmental pollution treatment facilities
- 500. Construction and operation of urban parking facilities
- 501. Construction and operation of public transport systems such as taxis, trams, and public transport

#### **XI. Education**

- 502. Non-degree vocational training institutions
- 503. Non-degree language training institutions (except for primary and middle school students and preschool children aged 3 to 6)
- 504. Non-academic art training institutions (for primary and middle school students and school ages 3 to 6)
- 505. Vocational colleges (including technical schools)

#### **XII. Health and social work**

- 506. Service institutions for the disabled and children (except child welfare institutions, juvenile rescue and protection institutions, and adoption registration institutions)
- 507. Elderly care services (including home and community elder care services, institutional elder

care services, and the construction and operation of elder care institutions and community elder care service institutions, etc. )

508. Medical institutions

509. Mental rehabilitation institutions

510. Psychological consultation institutions

511. Rehabilitation institutions for children with autism

512. Renovation of homes suitable for aging, renovation of livable environment for the elderly, public facilities suitable for aging, and barrier-free renovation

513. Professional education related to elderly care services, skills training for elderly care services, family care skills training, education for the elderly

### **XIII. Culture, tourism, Sports, and Entertainment**

514. Operation of performance venues

515. Operation of sports grounds, body-building, competition performance, sports training, and intermediary services

516. Construction of tourism infrastructure and tourism information services

517. Tourist scenic spot management, intelligent scenic spot construction, and service industry

518. Construction, operation, and management of outdoor sports camps and other fitness venues and facilities

519. Research and development, popularization and promotion of intelligent sports products and services

(Note: This English translation doesn't include the Catalogue of Industries with Advantages for Foreign Investment in the Central and Western Regions.)