Catalogue of

Encouraged Industries for Foreign Investment
(Edition 2020)

Provided by Dezan Shira & Associates

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I. Agriculture, forestry, animal husbandry and fishery

1. Planting, development and manufacturing of woody edible oils, spices and industrial raw materials
2. Development of cultivation technologies, planting and production of green and organic vegetables (including edible fungus, watermelons and melons), dried and fresh fruits, and tea
3. Breeding, planting and manufacturing of wine grapes
4. Breeding, planting and manufacturing of beer raw materials
5. Development of new planting technologies and manufacturing of crops such as sugar crops, fruit trees and forage grass
6. Breeding and development of new varieties of high-yield and high-efficiency silage plants
7. Flower production and construction and operation of nursery bases
8. Planting of rubber trees, oil palms, sisal hemp and coffee
9. Breeding and planting of fragrant plants and extraction of essential oils
10. Planting and cultivation of Chinese medicinal herbs
11. Comprehensive utilization of crop straw resources and development and manufacturing of organic fertilizer resources
12. Cultivation of forest resources (fast-growing and high-yield timber forests, large-diameter timber forests, bamboo forests, camellia oleifera and other economic forests, timber forests of precious tree species, etc.)
13. Ecological planting and breeding in undergrowth areas
14. Development and application of technologies for standardized scale breeding of livestock and poultry
15. Breeding of breeding stock, poultry and aquatic offspring (exclusive of precious quality varieties peculiar to our country)
16. Construction and operation of ecological environmental protection projects for combating desertification, soil and water conservation and greening of land, etc.
17. Aquaculture, cage aquaculture in deep water, industrial aquaculture, and ecological oceanic aquaculture

II. Mining

18. Exploration and development of oil and natural gas and utilization of mine gas
19. Development and application of technologies which can increase the recovery factor of crude oil (in the form of engineering services) and related new technologies
20. Development and application of new technologies of petroleum exploration & development in areas such as geophysical prospecting, well drilling, logging, mud logging and downhole operation, etc.
22. Exploration, mining and beneficiation of minerals in short supply in China (such as potash and chromite, etc.)


III. Manufacturing

(I) Agricultural and side-line food processing industry
23. Development and production of safe, efficient and environmentally friendly feeds and feed additives (including vitamins and methionine), and substitute products of antibacterial drugs for animal growth promotion
24. Development and production of pet feeds and foodstuffs
25. Processing of aquatic products, purification and processing of shellfish, development of healthcare food with seaweed
26. Processing of vegetables, dried and fresh fruit, livestock and poultry products
27. Development and production of bioethanol (excluding conversion of grain to ethanol)

(II) Food manufacturing industry
28. Development and production of high temperature sterilized milk (sterilized under more than 130 °C for 2 seconds)
29. Production of cheese, remade cheese and cheese conditioned food
30. Development and production of infant formula food, infant supplementary food, special medical use formula food and health food
31. Development and production of nutritional and health-care food, food additives and formula food catering to the elderly population and improving the quality of life of the elderly population
32. Development and production of baked food (including chocolate and its products using natural cocoa beans), convenience food and related ingredients
33. Production of candy, chewing gum, preserves, ice cream, puffed food and yogurt
34. Processing of forest food
35. Development and production of bionic meat products containing plant protein
36. Development of new technologies for and production of natural food additives, spices, enzymes, fermented products and natural spices
37. Development and production of sterile liquid food packaging materials

(III) Manufacturing of alcohol, beverages and refined tea
38. Development and production of fruit and vegetable drinks, protein drinks, tea drinks, coffee drinks and botanical drinks

(IV) Textile industry
39. Production of functional industrial textiles by using non-woven, woven, knitting, weaving and other new techniques such as composite and long-acting finishing of various techniques
40. Clean production technologies for dyeing and finishing by using digital intelligent printing and dyeing technical equipment (enzyme treatment, high-efficiency short-flow pretreatment, continuous flat width pretreatment for knitted fabrics, low temperature pretreatment and dyeing, low-salt or salt-free dyeing, low urea printing, airflow or air-liquid dyeing with small bath ratio, digital inkjet printing, foam finishing, etc.), functional finishing technologies, new dyeing processing technologies, production of high grade textile fabrics, as well as development and application of intelligent cheese yarn dyeing technologies and equipment
41. Processing technology for and production of natural fibers such as special animal fiber, hemp, mulberry tussah silk, colored cotton and colored mulberry cocoon silk that meet environmental protection requirements

42. Recycling and utilization of waste textiles

(V) Textile and garment, apparels
43. Production of high-count cotton yarn
44. Production of garment and semi-finished garment products, using the computer integrated manufacturing system
45. Production of functional and special garments

(VI) Leather, fur, feather and related products, and shoemaking
46. Leather and pelage cleaning technology and processing
47. Post ornament and processing of leather with new techniques
48. Comprehensive utilization of leather wastes
49. Production of high-performance elastic shoe materials

(VII) Industries of wood processing and manufacturing of wood, bamboo, rattan, palm and straw products
50. New technologies for the comprehensive utilization of three forestry leftovers, "substandard wood, small wood, fuel wood", waste wood and bamboo material, development and production of new products, pollution control and treatment in the production of wood and bamboo material, emission reduction of fine particulate matter, and development and application of dust explosion proof technologies

(VIII) Manufacturing of cultural, educational, arts, sports and entertainment products
51. Production of high-grade carpets, embroidery and drawwork products

(IX) Petroleum processing, coking and nuclear fuel processing
52. Phenol oil processing, washing oil processing, and preparation of high-end chemicals from coal tar pitch (excluding modified asphalt)

(X) Manufacturing of chemical raw materials and chemical products
53. Development and production of new downstream products of polyvinyl chloride and organosilicon
54. Production of auxiliary raw materials for synthetic materials, including hydrogen peroxide propylene oxide method, hydrogen peroxide chloropropane epoxy chloropropane, naphthalene dicarboxylate (NDC), 1,4-Cyclohexane dimethanol (CHDM), adiponitrile, hexamethylene diamine, high-performance polyurethane using butadiene method with an annual capacity of 50,000 tons or more
55. Production of polyethylene polyamine products
56. Development and production of high carbon Alpha-Olefin copolymerization with metallocene polyethylene and other high-end polyolefin
57. Production of raw materials for synthetic fiber: nylon 66 salt, 1,3-propanediol
58. Production of synthetic rubber: polyurethane rubber, acrylate rubber, epichlorohydrin rubber, and special rubber such as fluorine rubber and silicone rubber.

59. Production of engineering plastics and plastic alloys: non-phosgene polycarbonate (PC) with an annual capacity of 60,000 tons or more, polyformaldehyde, polyphenylene sulfide, polyether etherketone, polyimide, polysulfone, polyylylether (PAR), polyphenylene ether, polybutanediol terephthalate (PBT), polyamide (PA) and its modified materials, and liquid crystal polymers, etc.

60. Fine chemicals: new catalyst products and technologies, commercialization of dye (pigment) processing technologies, electronics and paper chemicals, leather chemicals (excluding N-N Dimethylformamide), oilfield chemicals, surfactants, water treatment chemicals, adhesives, sealants, adhesive tape, production of inorganic fibers and inorganic nanomaterials, treatment and deep processing of pigment coating.

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

62. Production of low-volatile inks such as water-based inks, electron beam curing inks and UV curing inks, and environment-friendly organic solvents.

63. Production of natural spices, synthetic spices, single ion spices and intermediates of spice components.

64. Production of high-performance paints, high solid solvent-free paints, and supporting resins, water-based industrial paints and supporting water-based resins.


66. Production, storage, transportation and liquefaction of hydrogen fuels.

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

68. Construction and operation of carbon capture, utilization and sequestration (CCUS) projects.

69. Production of fluorine resources recovered from phosphorus chemicals and aluminum smelters.

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


72. Development and production of new fertilizers: high potassium fertilizer, compound microbial inoculation agent, compound microbial fertilizer, straw and refuse rotting agent, and microbial agents with special functions.

73. Development and production of efficient, safe and environment-friendly new varieties of pesticides, new formulations, special-purpose intermediates and additives, development and application of relevant clean production processes, and production of chiral and three-dimensional pesticides by directional synthesis.

74. Development and production of bio-pesticides and bio-control products: microbial pesticides, microbial fungicides, agricultural antibiotics, bio-stimulating hormone, insect pheromones, natural enemies of insects, and microbial herbicides.

75. Comprehensive utilization, treatment and disposal of waste gas, liquid waste and waste residue.
76. 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, lithium-ion battery separators, surface treatment self-repairing materials, and superhydrophobic nano-coating materials.

(XI) Pharmaceutical industry

77. Production of new compound drug products or active ingredient drug products (including APIs and formulations)
78. For amino acids: production of tryptophan, histidine, methionine, etc. through zymotechnics
79. Development and production of new anticarcinogenic drugs, new cardiovascular and cerebrovascular drugs, and new nervous system drugs
80. Production of new drugs by applying bioengineering technologies
81. Production of AIDS vaccine, Hepatitis C vaccine, contraceptive vaccine and new vaccines for cervical cancer, malaria, hand, foot and mouth disease, etc.
82. Development and production of marine drugs
83. Production of pharmaceutical formulations: new dosage forms and new products employing new technologies, such as slow release, controlled release, targeting, percutaneous absorption
84. Development and production of new pharmaceutical excipients
85. Production of antibacterial drugs dedicated for animals (including antibiotics and chemical synthesis category)
86. Production of new products and formulations of antibacterial drugs, anthelmintics, insecticides and anti-coccidiosis drugs for veterinary use
87. Development and production of new diagnostic reagents
88. Development and production of cell therapy drugs (except in areas where foreign investment is prohibited)
89. Development and production of new key raw materials for vaccine and cell therapy drugs, etc.
90. Development and production of new medicine packaging materials and technologies (neutral borosilicate medical glass, functional materials with good chemical stability, good degradation, light-shielding and high barrier, and new packing drug delivery systems and devices such as aerosol, powder, self-administration, pre-encapsulation, automatic mixing, etc.)

(XII) Manufacturing of chemical fibers

91. Continuous copolymerization modification of differentiated and functional polyester (PET) (cationic dye dyeable polyester (CDP, ECDP), alkaline soluble polyester (COPET), high-shrinkage polyester (HSPET), flame-retardant polyester, low-melting point polyester, amorphous polyester, biodegradable polyester, etc.); R&D of high-efficiency flexible preparation technologies for differentiated and functional chemical fibers such as flame-retardant, anti-static, anti-ultraviolet, anti-bacterial, phase change storage energy, photochromism, liquid coloring, etc.; production of intelligent, super simulation, etc.; production of green, high-efficiency and environment-friendly oil agents for use in creative development of high-speed spinning.
92. Development and production of high performance fibers and products: carbon fiber (CF), aramid (AF), polysulfone (PSA), ultra-high molecular weight polyethylene fiber (UHMWPE), polyphenylene sulfide fiber (PPS), polyimide fiber (PI), polytetrafluoroethylene fiber (PTFE), polybenzo-bisoxazole fiber (PBO), polyaroxadiazole fiber (POD), basalt fiber (BF), silicon carbide fiber (SiCF), polyether ether ketone fiber (PEEK), high strength glass fiber (HT-AR), poly (2,5-dihydroxy-14-phenylpyridine and dimidazole) (PIP) fibers.

93. Production of new types of polyester for fiber and non-fiber applications: polyethylene terephthalate (PTT), polyethylene naphthalate (PEN), polyethylene terephthalate (PCT), and polyethylene terephthalate -modified (PETG) fibers.

94. Production of biomass fibers by utilizing new renewable resources and environment-friendly process, including new solvent spun cellulose fibers (Lyocell), regenerated cellulose fibers using bamboo, hemp, etc., poly lactic acid (PLA), chitin fiber, polyhydroxyalkylate (PHA) fibers, animal and plant protein fibers, etc.

95. Development and production of new types of polyamides such as nylon 11, nylon 12, nylon 1414, nylon 46, long carbon chain nylon, heat-resistant nylon, etc., and of differentiated, functional, and high value-added modified nylon (including nylon elastomer, copolymer nylon, nylon engineering plastics, flame-retardant nylon).

(XIII) Rubber and plastic products industries

96. Development, production and application of organosilicon products.


98. Development and production of new types of photo-ecological, wide and pollution-free and degradable agricultural films.


100. Development of new technologies for, and production of new types of flexible plastic packaging products (including high-barrier and multi-functional films and relevant raw materials).

(XIV) Non-metallic mineral products manufacturing industry


102. Development and production of molded products with integrated molding and injection molding.

103. Production of energy-saving and high-efficiency chemical building materials with plastic in lieu of steel and wood.

104. Intelligent manufacturing of new assembled building components.

105. Production of elastomer or plastic-modified bituminous waterproof rolls with an annual production of 10 million square meters or more, wide (more than 2 m) ethylene propylene diene rubber waterproof rolls and their auxiliary materials, wide (more than 2 m) polyvinyl chloride (more than 2 m) waterproof rolls, and thermoplastic polyolefin (TPO) waterproof rolls.

106. Development and production of functional glass with new technologies: electromagnetic wave shielding glass, glass substrate for microelectronic use, infrared transmitting lead-
free chalcogenide glass and products, electronic-grade large-scale quartz glass products (pipe, plate, crucibles, instruments, utensils, etc.), multi-functional windshield glass with excellent optical performance (light transmittance ≥ 70%), coated privacy windshield glass, soundproof windshield glass, solar windshield glass, conductive color-changing windshield glass, electric heated windshield glass, head display windshield glass, extreme materials and products for use in information technologies (including quartz glass bushing and ceramic substrate for waveguide-grade and high-precision optical fiber preform rod), purification processing of raw materials for high purity (≥ 99.998%) or ultrapure (≥ 99.999%) crystal

107. R&D and production of sapphire substrate

108. Production of conductive glass for thin film battery, solar collector glass and conductive glass used in construction

109. Production of glass fiber products and special glass fibers: superfine glass fibers (monofilament diameter ≤ 5 microns), degradable glass fibers, special-section glass fibers, alkali resistant glass fibers, low dielectric glass fibers, quartz glass fibers, high silica glass fibers, high strength and high elastic glass fibers, ceramic fibers and their products

110. 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

111. Standardized refinement of ceramic raw materials and production of high-grade decoration materials for ceramic use

112. Production of long-life energy-saving and environment-friendly (chromizing free) refractory materials used in furnaces such as cement, electronic glass, ceramics and microporous carbon bricks

113. Production of porous ceramics

114. Production of new inorganic and non-metallic 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 nanomaterials

115. Production of organic-inorganic composite foam insulation materials; production of high-performance and energy-saving insulation materials for buildings; and production of insulation materials for modern centralized agricultural breeding

116. Production of high-tech composite materials: continuous fiber reinforced thermoplastic composites and prepregs, technical auxiliary materials used in prototyping of resin- based composite materials of heat resistance > 300 °C, biodegradable resin- based composite materials, resin- based composite materials used in additive manufacturing, resin- based composite materials (including sporting goods, light-weight and high-strength vehicle parts), special feature composite materials and their products (including products of composite materials for deep-sea and diving, and composite material products for medical and therapeutic uses), carbon/carbon composite materials, high-performance ceramic-based composite materials and their products, metal-based and glass-based composite materials and their products, metal-layered composite materials and their products, ultra-high-pressure composite hoses of pressure ≥ 320MPa, tires for large passenger aircrafts, and
polyester structural foaming materials (used in the fields of light-weight and high-strength vehicle parts, wind power blade core materials, building materials and other fields)

117. Production of raw materials for precision and high performance ceramics: ultra-fine silicon carbide (SiC) powders (purity > 99%, average particle size < 1 μm), ultra-fine silicon nitride (Si3N4) powders (purity > 99%, average particle size < 1 μm), high-purity ultra-fine aluminum oxide powders (purity > 99.9%, average particle size < 0.5 μm), low-temperature sintered zirconia (ZrO2) powders (sintering temperature < 1350 °C), high-purity aluminum nitride (AlN) powders (purity > 99%, average particle size < 1 μm), rutile TiO2 powders (purity > 98.5%), white carbon black (particle size < 100 nm), and barium titanate (purity > 99%, particle size < 1 μm)

118. Development and production of high quality artificial crystals and crystal thin film products: high quality synthetic crystals (piezoelectric crystals and UV transmitting crystals), ultra-hard crystals (cubic boron nitride crystals), high temperature resistant and highly insulating synthetic crystals (synthetic mica), new electro-optic crystals, high power laser crystals and large size scintillation crystals, diamond film tools, ultrathin synthetic diamond saw blade with a thickness of 0.3mm and below

119. Fine processing of nonmetallic minerals (ultra-fine grinding, high purity, refining and modified)

120. Production of ultra-high power graphite electrodes

121. Production of pearlescent mica (particle size 3 – 150 μm)

122. Production of multi-dimensional woven fabrics and shaped fabrics

123. Production by using new dry process cement kiln and sintered wall materials and harmless disposal of solid wastes

124. Recycling of building wastes

125. Comprehensive utilization of industrial by-product gypsum and other industrial wastes

126. Development and application of new technologies for comprehensive utilization of nonmetallic mine tailings and ecological restoration of mines

(XV) Non-ferrous metal smelting and calendering industries

127. Production of high-tech nonferrous metallic materials and products: compound semiconductor materials (gallium arsenide, gallium phosphide, indium phosphide and gallium nitride); high-temperature superconducting materials; memory alloy materials (titanium nickel, copper- and iron-based memory alloy materials); ultra-fine (nano) calcium carbide and ultra-fine (nano) grain carbide; ultra-hard composite materials; precious metal composite materials; aluminum foils for radiators; aluminum foils for medium- and high-voltage cathode capacitance; aluminum foils for lithium battery electrodes; electrolytic copper foils; aluminum alloy sections with large and complex sections; aluminum alloy precision forging; overhead conductors for electrified railway lines; ultra-thin copper strips; copper alloy materials for corrosion-resistant heat exchangers; high-performance copper-nickel and copper-iron alloy strips; materials for processing beryllium copper strips, lines, pipes and rods; heat-resistant and anti-senescence tungsten filaments; magnesium alloy castings; lead-free solder; magnesium alloys and their products; foamed aluminum; titanium alloy smelting and processing; sponge zirconium at atomic energy level; and deeply processed tungsten and molybdenum products
128. Processing of rare earth high-end application products which comply with the requirements of new rare earth materials

(XVI) Metal products industry
129. Research, development and manufacturing of new lightweight and environmentally friendly materials for aviation, aerospace, vessels, automobiles and motorcycles (special-purpose aluminum sheets, aluminum-magnesium alloy materials, aluminum alloy motorcycle frames etc.)
130. Research, development and manufacturing of light metal semi-solid rapid prototyping materials and their products
131. Manufacturing and processing of metal packaging products (which should be complete products, with thickness of container wall less than 0.3mm) used for packaging of various cereals, oils and foodstuffs, fruits and vegetables, beverages, daily chemical products (including print coating and processing of inner and outer surfaces of products)
132. Manufacturing of steel fiber for construction use

(XVII) General equipment manufacturing industry
133. Manufacturing of key parts of high-end digital-controlled machine tools: 5-axis digital-controlled machine tool, digital-controlled coordinate boring and milling processing centers, digital-controlled coordinate grinders
134. Manufacturing of multiple-station forging forming machines of 1,000 tons or above
135. Manufacturing of large (furnace capacity of 1 ton and above) multi-functional controlled atmosphere heat treatment equipment, programmable chemical heat treatment equipment, programmable multi-functional vacuum heat treatment equipment and vacuum heat treatment equipment with furnace capacity of 500 kg and above, full-fiber furnace lining heat treatment heating furnace
136. Manufacturing of equipment for dismantling, crushing and post-processing sorting of scrapped automobiles
137. Manufacturing of FTL flexible production lines
138. Development and manufacture of complete systems for robots and industrial robots, high-performance controllers, sensors, terminal actuators and industrial intelligent gateways, high-performance reducers specially used for robots, high-performance servo motors and drivers, autonomous programming and other high-performance controllers, sensors, end actuators and industrial intelligent gateways
139. Manufacturing of high-end precision tools, production and manufacturing of nano composite coating and high-end processing equipment
140. Manufacturing of sub-micron ultrafine crushing machines
141. Manufacturing of wheeled cranes and crawler cranes of 14100 tons and above
142. Design and manufacturing of high-pressure plunger pumps and engines with working pressure ≥ 35MPa and low-speed large-torque engines with working pressure ≥ 35MPa
143. Manufacturing of integrated hydraulic multiple unit valve with working pressure ≥ 25MPa and electro-hydraulic proportion servo components
144. Design and manufacturing of valve terminal, pneumatic solenoid valves below 0.35W and high frequency electronic valves with power above 200Hz
145. Production of valves to be used in temperature below -120 °C or more than 530 °C
146. Design and manufacturing of hydrostatic drive devices
147. Development and manufacturing of non-contacting gas film seals with pressure > 10MPa and dry gas seals with pressure > 10MPa (including experimental device)
148. Design and manufacturing of pneumatic actuators with repetition accuracy of less than or equal to 0.03 degree and axial jerk less than or equal to 0.02mm
149. Manufacturing of noise and vibration pollution control equipment: sound barriers, mufflers, and damping spring isolators
150. Development and manufacturing of equipment for automobile polymer materials (friction plates, remodeled phenolic pistons, non-metallic hydraulic master/sub-pumps, etc.)
151. Manufacturing of third generation and above sedan wheel hub bearings, bearings for high- and medium-grade numerically controlled machine tools and processing centers, high-speed wire rod and plate rolling mill bearings, high-speed railway bearings, low-noise bearings with vibration below Z4, P4 and P2 level bearings of all types of bearings; bearings for wind turbine generators, aircraft bearings, bearings for aircraft engines and other aircraft bearings, medical CT machine bearings; bearings for deep-well ultra-deep well oil drilling rig, marine engineering bearings, high-speed bearings for driving motor systems of electric vehicles (speed ≥ 12,000 RPM); and bearings for industrial robot RV reducer
152. Manufacturing of high-density, high-precision and complex-shaped powder metallurgy parts and chains for automobile, engineering machinery, etc.
153. Manufacturing of gear transmission used for wind power or high-speed rail; gear transmission system with adjustable blades used for vessels; and large-sized heavy-load gear boxes
154. Manufacturing of high-temperature resistant insulation material (F and H insulation classes) and moulded insulation products
155. Development and manufacturing of accumulator bladders and rubber and plastic seals for hydropneumatic use
156. Manufacturing of high-precision, high-strength (grade 12.9 or above), special-shaped and assembly fasteners
157. Manufacturing of miniature precision transmission couplings (clutches)
158. Manufacturing of coupling shaft for heavy rolling mills
159. Remanufacturing of machinery such as machine tools, engineering machinery and railway locomotive equipment; remanufacturing of automobile parts; remanufacturing of high-end medical devices and their key components such as medical imaging equipment; and remanufacturing of office equipment such as photocopiers
160. Development and manufacturing of digital cameras of 10 million pixels or above or with a horizontal field of view of 120 degrees or above; and development and manufacturing of optical lenses and photoelectric modules thereof
161. Manufacturing of office machinery (including industrial use): all-in-one multifunctional office equipment (photocopier, printer, fax machine, and scanner), printer, heads of high-resolution color printers with precision of 2400dpi or more; and OPC drums
162. Manufacturing of film machinery: 2K, 4K digital cinema projectors, digital cinema cameras, and digital video production and editing equipment
163. Construction of facilities for receiving and handling of pollutants from vessels at ports and manufacturing of equipment; and construction of facilities for emergency treatment of dangerous chemicals and oil products at ports and manufacturing of equipment

(XVIII) Special-purpose equipment manufacturing

164. Manufacturing of trackless equipment for mining, loading and transportation in mines: mechanically-driven dump trucks of 200 tons and above used in mines, mobile crushers, 5,000 cubic meters/hour and above bucket wheel excavators, loaders of 8 cubic meters and above used in mines, and electrically-dragged shearer of 2,500 kilowatt and above etc.

165. Manufacturing of geophysical (excluding gravity and magnetic survey) and logging equipment: MEME geophone, digital telemetry seismograph, digital imaging, digital-controlled logging system, horizontal wells, directional wells, drilling rig equipment and tools, MWD logging-while-drilling apparatus

166. Manufacturing of equipment for oil exploration, drilling, gathering and transportation: floating drilling systems and floating production systems with an operating depth of more than 1,500 meters and complementary subsea oil extraction, gathering and transportation equipment

167. Manufacturing of shale gas equipment

168. Manufacturing of large-caliber rotary drilling rigs with a caliber of more than 2 m and depth of more than 30 m, push benches with a diameter of more than 1.2 m, large equipment set with a pull-back force of more than 300 tons for laying of underground pipelines without digging, underground diaphragm wall construction drilling rigs

169. Design and manufacturing of large bulldozers of 520 horsepower and above

170. Design and manufacturing of silt removers with a capacity of 100 cubic meters per hour and above, dredging device of dredgers with a capacity of 1,000 tons and above

171. Design and manufacturing of construction device for concrete cut-off wall used in flood control dike

172. Manufacturing of seismic prevention and disaster mitigation devices for civil engineering structures

173. Manufacturing of underwater earthwork construction machinery: bulldozers, loaders, excavators etc. for water depth of 9 m and below

174. Manufacturing of maintenance and self-testing equipment for highways and bridges

175. Manufacturing of operational monitoring, ventilation, disaster prevention and rescue system and equipment for highway tunnels

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

177. Manufacturing of equipment for (asphalt) linoleum tiles and equipment for producing galvanised steel sheets and other metal roofs

178. Manufacturing of equipment for environment-friendly and energy-saving on-site polyurethane spraying waterproof and thermal insulation systems, technology of preparing polyurethane sealants and manufacturing of relevant equipment, and technology of preparing modified silicone sealants and manufacturing of relevant production equipment

179. Design and manufacturing of high-precision strip mills (with thickness precision of 10 microns)
180. Manufacturing of mineral processing device for multi-element, fine-particle and refractory metal minerals

181. Manufacturing of the key equipment of complete sets of ethylene equipment with an annual capacity of 1 million tons and above: mixing granulators with an annual processing capacity of 400,000 tons and above, centrifuges with a diameter of 1,000 mm and above, and low-flow high-head centrifugal pump

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

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

184. Design and manufacturing of special production equipment for power batteries for automobiles

185. Design and manufacturing of precision die molds (punching dies with a precision higher than 0.02 mm and cavity molds with a precision higher than 0.05 mm)

186. Design and manufacturing of non-metal product molds

187. Manufacturing of beer bottling equipment with a capacity of 50,000 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

188. Production technology and manufacturing of key equipment for amino acid, enzyme and food additives

189. Manufacturing of complete set of equipment and key components for feed processing with a capacity of 189.10 tons or more per hour

190. Manufacturing of equipment for light corrugated boards and cartons with corrugation height of 0.75 mm and less

191. Manufacturing of sheet-fed and multi-color offset presses (width ≥ 750 mm, printing speed: single side and multiple color ≥ 16000 sheets per hour, and both sides and multiple color ≥ 13000 sheets per hour)

192. Manufacturing of single width single roll web-fed lithographic presses with a printing speed greater than 75,000 bisect sheets per hour (787 × 880 mm), double width single roll web-fed lithographic presses with a printing speed greater than 170,000 bisect sheets per hour (787 × 880 mm), and commercial web-fed lithographic presses with a printing speed greater than 50,000 bisect sheets per hour (787 × 880 mm)

193. Manufacturing of multi-color wide flexographic presses (printing width ≥ 1,300 mm and printing speed ≥ 350 m per second), inkjet digital presses (used for publication: printing speed ≥ 150 m per minute and resolution ≥ 800dpi; used for packaging: printing speed ≥ 30 m per minute and resolution ≥ 1,000dpi; used for variable data: printing speed ≥ 100 m per minute and resolution ≥ 300dpi)

194. Manufacturing of systems for ink color computer pre-mixing, 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 a speed of 75000 sheets per hour and remotely adjustable high-speed folding machines,
15. Automatic overlaying systems, cooling devices, silicone adding systems, and deviation adjustment devices
195. Manufacturing of electron-gun automatic coating machines
196. Deep processing technology and manufacturing of equipment for sheet glass
197. Manufacturing of complete sets of equipment such as new paper (including pulp) making machines
198. Manufacturing of equipment using new technology for post ornament and processing of leather
199. Manufacturing of equipment for soil pollution treatment and restoration
200. Development and manufacturing of new equipment for processing and storage of agricultural products: new equipment for processing, storage, preservation, grading, packaging and drying of food, oil plants, vegetables, dried and fresh fruit products, meat products, aquatic products and other products, testing instruments and equipment for quality of agricultural products, testing instruments and equipment for damage free quality of agricultural products, rheometers, farinograph, ultrafine crushing equipment, high-efficiency dehydration equipment, high-efficiency juice condensation equipment with five efficiency modes or more, sterilization equipment for liquid food and materials, aseptic packaging equipment for solid and semi-solid food, and disc-type centrifuge separation
201. 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, soil nutrient analysis equipment); tractors and the auxiliary farm implements with an engine power of 200 kW or more; diesel engines with low fuel consumption, low noise and low emission; sprayers auxiliary to large tractors and attached with residual droplets recovery 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; sugarcane harvesters; beet harvesters; and self-propelled grape harvesters
202. Manufacturing of forestry facilities and equipment: nursery and flower intelligent greenhouses, precision irrigation, fertilization, seedling and other equipment; nursery stem diameter, leaf and root runoff, seed vigor, soil nutrients and other analytical instruments; high-power (240KW) forest land operation chassis and supporting machines; multifunctional land preparation, tree planting, tending, felling and skidding machines; difficult site afforestation machinery; machines for collection, bundling, wood chips, smashing and their comprehensive utilization; large and medium-sized plant protection and application sprayers; small and medium-sized precision application equipment or bionic application robots; cone collection and oil fruit harvesters; large and medium-sized tree transplanters, shrub stubble equipment; and high-efficiency pruning equipment; and rapid measurement equipment for stock volume of forests; and equipment for rapid measurement of forest stock volume
203. Manufacturing of wood processing equipment: fast color difference recognition technology and equipment; fast solid wood board measuring scale equipment; fast scar detection equipment; solid wood surface defect detection equipment; complete sets of sawn wood
equipment and technology; fast artificial board surface defect detection equipment and online quality grading equipment; online quality inspection equipment for rotary veneer; solid wood furniture paint film grinding and dust treatment equipment; intelligent polishing robots; multicolor auto-switching spray-painting robots; furniture packaging, cutting and stacking robots; fast sorting equipment for panel furniture; and furniture manufacturing intelligent warehouses

204. Manufacturing of forestry disaster monitoring equipment: forest area rapid rescue equipment, high-precision navigation and positioning equipment, drone fire and disaster monitoring and early warning equipment, fire extinguishing and pest disinfection equipment

205. Manufacturing of equipment for collection, bundling and comprehensive utilization of crop straws and stalks

206. Manufacturing of equipment for utilization of resource such as agricultural wastes and wastes from scale livestock and poultry breeding

207. Manufacturing of advanced intelligent manufacturing and processing equipment for leather, fur and related products

208. Manufacturing of fertilizer, pesticide (agricultural) and water-saving agricultural technology equipment

209, 209. Manufacturing of cleaning equipment for electromechanical wells and manufacturing equipment for cleaning agents

210. Manufacturing of electronic endoscopes

211. Manufacturing of fundus cameras

212. 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 diagnostic system and key components thereof

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

214. Manufacturing of boron neutron capture therapy equipment

215. Manufacturing of image-guided intensity modulated conformal radiotherapy systems

216. Manufacturing of hemodialysis machines and blood filtration machines

217. Manufacturing of automated biochemical monitoring equipment, five-part blood cell analyzer, automated chemiluminescence immunoassay analyzer, high-throughput gene sequencing system

218. New technology for drug quality control and manufacturing of new equipment

219. New technology for analyzing the active constituents in natural medicines, new extracting process, and development and manufacture of new equipment

220. R&D and manufacturing of biomedical auxiliary consumables production equipment

221. Manufacturing of multi-layer co-extrusion water-cooled blown film equipment for non-PVC medical infusion bags

222. Manufacturing of artificial intelligence medical aid equipment

223. Manufacturing of high-end radiotherapy equipment

224. Manufacturing of high-end surgical equipment, physical therapy and rehabilitation equipment and wearable intelligent health equipment

225. Manufacturing of life support equipment for critical illness
226. Manufacturing of mobile and telemedicine equipment
227. Manufacturing of respirators, ECMO, monitor and PCR instruments
228. Development and manufacturing of minimally invasive surgery medical equipment: 3D imaging, electronic microscopy system, surgical robot, robotic arm etc.
229. R&D and manufacturing of holmium laser and carbon dioxide laser therapeutic products
230. Development and application of manufacturing technology for high-end implant intervention equipment and materials such as new stents and prosthesis etc.
231. Manufacturing of emergency rescue equipment
232. Development and manufacturing of new textile machinery, key parts and components and textile testing and experimental instruments
233. Manufacturing of computerized jacquard control artificial fur weaving machines
234. Manufacturing of special manufacturing equipment for manufacturing of solar cells
235. Manufacturing of equipment for capture, use, storage and monitoring of carbon dioxide
236. Manufacturing of air pollution prevention and control equipment: high temperature resistant and corrosion -resistant filter material, low NOx combustion device, catalyst for flue gas denitrification and complete set of denitrification devices, flue gas desulfurization equipment, flue gas dust removal equipment, industrial organic exhaust gas purification equipment, diesel vehicle exhaust purification unit, treatment unit for exhaust gas containing heavy metal
237. Manufacturing of water pollution prevention and control equipment: horizontal spiral centrifugal dehydrator, membrane and membrane materials, ozone generators with a capacity of more than 50 kg/h, chlorine dioxide generators with a capacity of more than 10 kg/h, UV disinfection unit, small domestic sewage treatment equipment in rural areas, and treatment unit for wastewater containing heavy metal
238. Manufacturing of solid waste treatment and disposal equipment: sewage plant sludge disposal and resource utilization equipment, complete set of refuse incineration equipment with a daily treatment capacity of more than 500 tons, landfill leachate treatment technology equipment, landfill anti-seepage geomembrane, building waste treatment and resource utilization equipment, devices for disposal of hazardous waste, devices for power generation with biogas in landfill, treatment equipment for ferrous waste, and centralized disposal facilities for medical waste
239. Development and manufacturing of equipment for comprehensive utilization of red mud from aluminum industry
240. Manufacturing of equipment for comprehensive utilization of mine tailings
241. Manufacturing of equipment for recycling, treatment and reutilization of waste and used plastics, electrical appliances, rubbers and batteries
242. Manufacturing of equipment for recycling of used and waste textiles
243. Manufacturing of equipment for remanufacturing of waste electromechanical products
244. Manufacturing of devices for comprehensive utilization of used and waste tires
245. Manufacturing of equipment for utilization of waste heat, pressure and gas
246. Environmental protection technology and manufacturing of equipment for aquatic ecosystem
247. Manufacturing of portable assembling water purifying equipment
248. Manufacturing of unconventional water treatment and reuse equipment and water quality monitoring instruments
249. Manufacturing of leak test equipment and instruments for industrial water pipeline networks and equipment (appliances)
250. Development and manufacturing of technologies and complete equipment for sea water desalination and cooling with a daily output of 100,000 cubic meters or more
251. Manufacturing of water saving equipment in high water consumption industries such as iron & steel, paper making, textile, petrochemical, chemical, metallurgy, etc.
252. Manufacturing of equipment for special meteorological observation and analysis
253. System development of seismic stations, networks and mobile seismic observation as well as manufacturing of instrument and equipment
254. Manufacturing of radial tyre building machines with four or more drums
255. Manufacturing of rolling resistance testers and tire noise laboratories
256. Manufacturing of new technical equipment for heat supply metering and temperature control devices
257. Manufacturing of equipment for preparation, storage and transportation and inspection system for hydrogen energy
258. Manufacturing of new heavy residual oil gasification and atomizing nozzles, high-efficiency steam trap valves with a leakage rate of 0.5% or less, and high-temperature ceramic heat exchanger with a capacity of 1,000 °C or more
259. Manufacturing of equipment for recovery of marine oil spill
260. Manufacturing of equipment for utilization of low concentration coal-mine gas and ventilation air methane
261. Development and utilization of clean coal technology products and manufacturing of relevant equipment (coal gasification, liquefaction, coal water slurry, industrial briquette)
262. Development of fire fighting and rescue technology and manufacturing of equipment for large public buildings, high-rise buildings, petrochemical facilities, forests, mountains, waters and underground facilities
263. Manufacturing of intelligent equipment for emergency medical rescue
264. Manufacturing of hydrologic monitoring
265. Design, R&D and manufacturing of nuclear reactor main process equipment

(XIX) Automobile manufacturing industry
266. Manufacturing of automobile engines and establishment of engine R&D organizations: gasoline engines with power of not less than 70 kilowatts per litre, diesel engines with power of not less than 50 kilowatts per litre and displacement of not more than 3 litres, diesel engines with power of not less than 40 kilowatts per litre and displacement of not less than 3 litres, and engines using new energy resources such as fuel cells and mixed fuels
267. Manufacturing of key automotive parts and R&D of key technologies: dual-clutch transmission (DCT), CVT, automated mechanical transmission (AMT), gasoline engine turbocharger, viscous coupling (for four-wheel drive), actuator of automatic transmission (solenoid valve), hydraulic retarder, eddy current retarder, automotive airbag gas generator, common rail fuel injection technology (with a maximum injection pressure of more than
2000 Pa), variable geometry turbocharging (VGT), variable nozzle turbocharging (VNT),
eengine emission control devices meeting Chinese Phase VI emission standards, intelligent
torque management (ITM) and coupler assembly, steer-by-wire systems, particulate trap
devices, dedicated axles for low floor large buses, energy absorbing steering systems,
low dragged disc brake assembly, aluminum steering knuckles, variable frequency air
conditioning system for large and medium buses, rubber automotive parts, and key parts
of the above parts and components

268. R&D and manufacturing of automotive electronic devices: engine and chassis electronic
control and key parts, vehicle electronic technologies (automotive information system and
navigation system), automotive electronic bus network technologies, electronic control
system input (sensor and sampling system) and output (actuator) components, electronic
controller for electric power steering system, embedded electronic integrated system,
electronic air spring, electronically controlled suspension system, electronic valve system
devices, electronic instrument combination, ABS/TCS/ESP system, brake-by-wire system
(BBW), transmission control unit (TCU), tire pressure monitoring system (TPMS), on-board
diagnostics (OBD), engine anti-theft system, automatic collision avoidance system, testing
system for automobile and motorcycle testing and maintenance, autopilot system, on-
board electronic operating system, on-board electronic operating system application
development (APP), head display technology, intelligent connected automobile dodging
steering assistance system, collision warning system (FCW), automatic brake control
system (ABC), automatic emergency brake system (AEB), electronic parking vehicle braking
system (EPB), line-by-wire control system, adaptive cruise system (ACC), forward-view
camera system, wheel speed sensor, vehicle networking technology

269. R&D and manufacturing of key parts and components of new energy vehicles: monomers
of energy-based power batteries; cathode materials of batteries (specific capacity ≥
180mAH/g, cycle life of 2,000 times with not less than 80% of initial discharge capacity)
and precursor materials of batteries, anode materials of batteries (specific capacity ≥
500mAH/g, cycle life of 2,000 times with not less than 80% of initial discharge capacity),
separators of batteries (thickness ≤ 12μm, porosity 35%? 60%); battery management
systems, motor controllers, and electronic control integration of electric vehicles; motor
system for driving of electric vehicles (high-efficiency area: 85%, efficiency in working
area ≥ 80%), vehicle DC/DC (input voltage 100V? 400 V), high power electronic devices
(IGBT, voltage class ≥ 750V, current ≥ 300A); plug-in hybrid electromechanical coupling
drive systems; fuel cell engines (mass specific power ≥ 350W/kg), fuel cell stacks (volume
specific power ≥ 3kW/L), membrane electrodes (platinum consumption ≤ 0.3g/kW), proton
exchange membranes (proton conductivity ≥ 0.08S/cm), bipolar plates (metal bipolar plate
thickness ≤ 1.2mm, and other bipolar plate thickness ≤ 1.6mm), low platinum catalyst,
carbon paper (resistivity ≤ 3mw · cm), air compressors, hydrogen cycle pumps, hydrogen
ejectors, humidifiers, fuel cell control systems, booster DC/DC, 70MPa hydrogen cylinders,
on-board hydrogen concentration sensors; heat pump air conditioners for electric vehicle;
special 32-bit or more chips for motor drive control (at least 2 hardware cores with main
frequency of no less than 180MHz, with hardware encryption functions, etc.); integrated
electric drive assemblies (power density ≥ 2.5kW/kg); high-speed reducers (maximum
input speed ≥ 12,000 rpm and noise below 75dB)
270. Technical development and manufacturing of equipment for on-board charger (efficiency ≥ 95% under full load output condition), two-way on-board charger, non-on-board charger (output voltage 250V?950 V, efficiency in voltage range ≥ 88%) and high-power density, high conversion efficiency and high applicability, wireless charging, mobile charging

271. R&D and manufacturing of key parts and components of intelligent vehicles: sensors, on-board chips, central processing unit, on-board operating system and information control system, vehicle network communication system and equipment, visual identification system, high-precision positioning device, and wired chassis system; new intelligent terminal module, multi-core heterogeneous intelligent computing platform technology, high-precision positioning and map technology for all-weather complex traffic scenes, sensor fusion and perception technology, key technology for vehicle wireless communication, and basic cloud control platform technology; new security isolation architecture technology, software and hardware identification technology, terminal chip security encryption and application software security protection technology, wireless communication security encryption technology, secure communication, certification and authorization technology, data encryption technology; R&D of testing and evaluation system architecture, virtual simulation, vehicle road testing and other technologies and verification tools, vehicle level and system-level testing and evaluation methods, and development of basic testing database.

272. Manufacturing of L3/L4/L5 autopilot related hardware: laser radar, millimeter-wave radar

273. Manufacturing of charging piles and charging piles for energy storage.

(XX) Manufacturing of railway, vessel, aerospace and other transportation equipment

274. Manufacturing of engine emission control device for motorcycles with high emission capacity (emission capacity>250ml) which attain the Phase 4 motorcycle emission standard in China

275. Design, manufacturing and maintenance of civil aircrafts: trunk and regional aircrafts, and utility aircrafts.

276. Manufacturing of civil aircraft parts and components

277. Design and manufacturing of civil helicopters

278. Manufacturing of civil helicopter parts and components

279. Manufacturing of wing-in-ground effect, wing-in-water effect aircrafts, design and manufacturing of drones and stratospheric airship

280. Design, manufacturing and maintenance of aircraft engine parts and components, and aircraft auxiliary power system

281. Development and manufacturing of new materials for aviation and aerospace use

282. Design and manufacturing of civil aviation airborne equipment

283. Manufacturing of aviation ground equipment: civil airport facilities, civil airport operations assurance facilities, civil airport security facilities, flight test ground facilities, 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
284. Design and manufacturing of civil satellites, and manufacturing of civil satellite payload
285. Manufacturing of civil satellite parts and components
286. Manufacturing of testing equipment for satellite-related products
287. Design of cruise ship and deepwater (> 3,000 m) marine engineering equipment
288. Design of seabed mineral resources development equipment
289. Design of low and medium-speed diesel engine of vessel and parts and components thereof
290. Design of cabin machinery of vessel
291. Design of vessel communication and navigation equipment
292. Design of yacht
293. Design of smart ships and R&D of relevant smart system
294. R&D and manufacturing of passenger ship navigation and communication system

(XXI) Electrical machinery and equipment manufacturing
295. Manufacturing of key auxiliary equipment used for 1 million KW ultra-supercritical thermal power units: safety valve and control valve
296. Manufacturing of denitrification equipment for sintering machine in steel industry
297. Design and manufacturing of seals for thermal power equipment
298. Manufacturing of large castings and forgings for coal-fired power station and hydropower station equipment
299. Manufacturing of key auxiliary equipment for hydropower units
300. Manufacturing of transmission and transformation equipment and key components
301. Manufacturing of new energy power generation equipment in set or key equipment: photovoltaic power generation, photothermal power generation, geothermal power generation, tidal power generation, wave power generation, garbage power generation, biogas power generation, wind power generation of 2.5 MW and above
302. Manufacturing of sterling generator set
303. Development and manufacturing of linear motors, plane motors and their driving systems
304. Manufacturing of hi-tech green batteries: nickel-hydrogen batteries, nickel-zinc batteries, sodium salt batteries, silver zinc batteries, lithium-ion batteries, solar cells, fuel cells, etc.
305. Manufacturing of refrigeration compressors for air conditioning with motor adopting direct current speed control technology, refrigeration compressors for air conditioning adopting CO2 natural refrigerants, refrigeration equipment for air conditioning applying renewable energy (air source, water source, ground source)
306. Manufacturing of solar air conditioning and heating systems and solar drying devices
307. Manufacturing of devices for biomass drying pyrolysis systems and biomass gasification
308. Manufacturing of devices for biogas raw material pretreatment, feed, fermentation, purification, biogas liquor treatment
309. Manufacturing of alternating current frequency modulation traction devices
310. Manufacturing of high-voltage vacuum components and switching equipment, intelligent medium voltage switching components and complete equipment, environment-friendly insulated switch cabinets using medium pressure gases, intelligent (communicable) low-voltage electrical appliances, amorphous alloy, coiled iron core, etc.
(XXII) Computer, communication and other electronic equipment manufacturing

311. Manufacturing of high-definition digital camcorders and digital sound playing equipment
312. Manufacturing of TFT-LCD, OLED, AMOLED, laser display, quantum dot, 3D display and other flat panel displays and display materials (excluding TFT-LCD glass substrate for the 6th generation and below)
313. R&D and manufacturing of polarizer substrates and diffusion films
314. R&D and manufacturing of electronic book materials (electronic ink screens, etc.)
315. Manufacturing of silicon monocrystals with a diameter of 8 inches and above
316. Manufacturing of silicon wafers with a diameter of 12 inches and above
317. Manufacturing of key parts for large-screen color projection displays such as optical engines, light sources, projection screens, high resolution projection tubes and microscopic projection equipment modules etc.
318. Manufacturing of laser projection equipment
319. Manufacturing of ultra-high definition and high-tech video products: 4K/8K ultra-high definition television sets, 4K cameras, monitors and key end-to-end hardware and software for high-tech videos such as interactive video, immersive video, VR video and cloud games etc.
320. Manufacturing of digital audio and video coding and decoding equipment; equipment for digital broadcasting and television studios; digital cable television system and equipment; digital audio broadcasting transmission equipment; digital television up-and-down converters; digital television terrestrial broadcasting single frequency network (SFN) equipment; equipment for satellite digital TV uplink stations
321. Integrated circuit design; manufacturing of large-scale digital integrated circuit with a line width of 28nm and below; manufacturing of analog and digital-analog integrated circuit with a line width of 0.11 micron and below; manufacturing of mask plates; manufacturing of MEMS and compound semiconductor integrated circuits; and BGA, PGA, CSP, MCM and other advanced packaging and testing
322. Manufacturing of large- and medium-sized electronic computers, high-performance computers with computing speed of 10,000 trillion computing speed per second, portable minicomputers, large-scale simulation systems, industrial controlling machines and controllers
323. R&D and manufacturing of quantum, brain-like and other new mechanism computer systems
324. Development and manufacturing of etching machines for manufacturing very large scale integrated circuits, PVD, CVD, oxidizing furnaces, washing machines, diffusion furnaces, MFC etc.
325. Manufacturing of integrated circuit packaging and testing equipment
326. Manufacturing of computer digital signal processing system and boards
327. Manufacturing of graphic and image recognition and processing system
328. Development and manufacturing of high-capacity optical and disk drives and their parts
329. Manufacturing of memory system of 100TB and above, SSD solid state hard disk of 8TB and above, and intelligent memory equipment
330. 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

331. Development and production of software products

332. Development and manufacturing of materials exclusively for electronic purposes (excluding development and manufacturing of optical fiber preform)

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

334. Manufacturing of new electronic components: chip components, sensitive components and sensors, frequency control and selection components, hybrid integrated circuit, power electronic devices, optoelectronic devices, new electromechanical components, polymer solid capacitors, supercapacitors, passive integrated components, high-density interconnection laminates, single-layer, double-layer and multi-layer flexible boards, rigid-flex printed circuit boards and packaging boards, high-density, high-fine circuit (line width/linewidth ≤ 0.05mm) flexible circuit boards and others

335. Manufacturing and assembly of touch system (touch screens, touch components, etc.)

336. R&D and manufacturing of Virtual Reality (VR) and Augmented Reality (AR) equipment

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

338. Development and production of key parts of high-density digital disc drive

339. Production of Compact Disk-Recordable (CD-R)

340. R&D and manufacturing of 3D printing equipment and key components thereof

341. Manufacturing of equipment for satellite communication system

342. Manufacturing of optical communication measuring instruments and optical transceivers with a rate of 40 Gbps or above

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

344. Manufacture of wireless local area network (including supporting WAPI) and wide area network equipment.

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

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

347. Development and manufacturing of 4G, 5G and subsequent mobile communication cell phones, base stations, core network equipment, optical transmission equipment, and network testing equipment

348. Development and manufacturing of visual sensors (digital camera, digital camera, 3D sensor, laser radar, millimeter-wave radar etc.) applied to fifth-generation mobile terminals (mobile phones, automobiles, unmanned aerial vehicles, virtual reality and enhanced display,
etc.) and their core component components (optical lens and lens, lasers, sensitive chips, motors, photoelectric modules, etc.), Internet of Things terminals

349. Development of cloud computing equipment (including server, storage equipment, cloud and cloud service equipment, etc.), software and system

350. Development and manufacturing of high-end routers with a complete processing capacity greater than 64 Tbps (two way) and switches with a switching capacity greater than 40 Tbps

351. Manufacturing of equipment for air traffic control system

352. Development and manufacturing of auxiliary electronic teaching equipment for traditional Chinese medicine based on sound, light, electricity, touch control and other computer information technology, virtual pathology and physiological human model equipment

353. Manufacturing of wearable intelligent equipment, intelligent unmanned aerial vehicles, service consumption robots and other intelligent consumption equipment

354. Manufacturing of intelligent home platform system and equipment

(XXIII) Instruments manufacturing industry

355. Manufacturing of equipment for monitoring soil moisture content

356. Manufacturing of industrial process automatic control system and devices: fieldbus control system, large-scale programmable controller (PLC), two-phase flow meter, solid flow meter, and new-type sensors and field measuring instruments

357. Manufacturing of automatic, intelligent and multi-functional mechanical performance testing instrument for materials, and non-destructive testing equipment such as industrial CT and three-dimensional ultrasonic flaw detectors

358. Development and manufacturing of large precision instruments and high-resolution microscopes (with a resolution of less than 200nm)

359. Manufacturing of high-precision digital voltmeters and ammeters (with a span of more than seven and a half bits)

360. Manufacturing of automatic reactive power compensation devices

361. Manufacturing of new instruments and equipment for work safety

362. Manufacturing of VXI bus automatic testing systems (complying with IEEE 1155 international standards)

363. Development and manufacturing of underground coal mine monitoring and disaster forecasting system and coal safety inspection integrated management system

364. Manufacturing of equipment for engineering surveying and geophysical observation

365. Manufacturing of environmental monitoring instruments

366. Manufacturing of wireless remote transmission intelligent water meters

367. Manufacturing of intelligent monitoring instrument for reservoir dam safety

368. Manufacturing of instruments and equipment for hydrological data collection, processing and transmission and flood control early warning

369. Manufacturing of monitoring instruments and equipment for marine exploration

370. Manufacturing of leakage monitoring instruments for municipal pipe network and water pipeline

371. R&D and manufacturing of nuclear instruments and meters
(XXIV) Comprehensive utilization of waste resources
372. Coal dressing and comprehensive utilization of coal ash (including gypsum), coal gangue, etc.
373. Production of completely biodegradable materials
374. Recycling and treatment of waste and used electrical and electronic products, automobiles, mechanical and electrical equipment, rubbers, metals and batteries
375. Comprehensive utilization of red mud and other smelting residue

IV. Power, heating, gas and water production and supplying industries

376. Construction and operation of ultra-supercritical power stations with single unit power of 600,000 KW or more
377. Construction and operation of power stations with backpressure cogeneration unit, thermoelectric cooling polygeneration unit, ultra-critical cogeneration unit of 300,000 KW or more
378. Construction and operation of power stations with single unit of 600,000 KW or more in water-deficient areas
379. Construction and operation of clean coal generation projects such as integrated gasification combined cycle power generation etc.
380. Construction and operation of power generation projects with single unit power of 300,000 KW or more that use fluidized bed boilers and coal gangue, medium coal, coal slurry
381. Construction and operation of large hydropower stations and pumped storage power stations with the main purpose of power generation
382. Construction and operation of nuclear power stations
383. Construction and operation of new energy power stations (including solar energy, wind energy, geothermal energy, tidal energy, current energy, wave energy and biomass energy, etc.)
384. Construction and operation of natural gas peak-shaving power stations and natural gas distributed energy stations in areas with important load centers and guaranteed gas sources
385. Development and application of complementary system for power generation with gas and renewable resources
386. Construction and operation of waste incineration power plants
387. Construction and operation of clean energy micro-grids
388. Construction and operation of regional energy supply (cold and heat) projects driven by natural gas, electric power and renewable energy resources
389. Utilization of seawater (direct utilization of seawater, desalination), utilization of brackish water
390. Design, construction and operation of water supply plants
391. Design, construction and operation of renewable water plants
392. Design, construction and operation of sewage treatment plants
393. Construction and operation of motor vehicle charging stations and battery replacement stations
394. Construction and operation of hydrogenation stations
395. Construction and operation of biogas projects
396. R&D, application and production of green plant insulation oil
V. Transportation, warehousing and post industries

397. Construction and operation of trunk railway network and special railway lines
398. Construction and operation of intercity railways, urban (suburban) railways, railways for resource development and branch lines, and related bridges, tunnels, ferries and station facilities
399. Comprehensive maintenance of infrastructures of high-speed railways and intercity railways
400. Construction and operation of highways, independent bridges and tunnels
401. Road freight transportation companies
402. Construction and operation of public dock facilities in ports
403. Construction and operation of civil airports (excluding air traffic control)
404. Public air transport companies
405. General airline companies for agriculture, forestry and fishery
406. International maritime transport companies
407. International maritime transportation service for cruise passengers
408. 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
409. International ship management organizations and organizations engaged in overseas assignment of crew
410. Construction and operation of oil (gas) pipelines and oil (gas) depots (excluding aviation oil pipelines and oil depots)
411. Construction and operation of coal pipeline transportation facilities
412. Construction of warehousing facilities related to logistics business, especially construction and operation of elevated three-dimensional automatic warehousing facilities, and integrated warehousing facilities related to packaging, processing and distribution businesses
413. R&D and application of technical equipment and green packaging relating to courier service, R&D and application of green logistics facilities and equipment
414. Construction and operation of shared system of pallets and container units
415. Chain distribution in rural and community areas
416. Provision and application of logistics such as joint distribution of general merchandises, cold chain logistics of fresh agricultural products, low-temperature distribution of special medicines, and relevant technical services
417. Construction of distribution center for imported and exported bulk commodities

VI. Wholesale and retail trade

418. Cross-border e-commerce retail
419. Cross-border e-commerce supply chain Companies
420. Construction of a unified distribution network for commercial and trading enterprises;
421. Operation of helium
422. Construction and operation of fueling stations for vehicles
VII. Information transmission, software and technology services

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

VIII. Leasing and business services

425. International economic, technology, environmental protection, logistics information, commerce, accounting and tax consulting services
426. Engineering consulting services
427. Engagement in system application management and maintenance, information technology support and management, banking back-office services, financial settlement, software development, off-shore paging centers, data processing, and other outsourced information technology and business process services in the form of undertaking outsourced services
428. Maintenance and repair of modern high-end equipment, reconstruction and integration of digital production line, professional maintenance services and supply chain services
429. Conference, exhibition and related services
430. Venture capital enterprises
431. Intellectual property services
432. Home service

IX. Scientific research and technology services

433. R&D of bioengineering and biomedical engineering technology, biomass energy development technology
434. R&D of DNA-encoded compound library technology
435. Veterinary and pet nutrition scientific research and technical services
436. R&D and application of artificial intelligence technologies such as intelligent devices, robots, neural network chips and neuron sensors
437. R&D of isotope, radiation and laser technology
438. 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
439. R&D of ocean monitoring technology (ocean tidal waves, weather, environmental monitoring), seabed detection and ocean resources exploration and evaluation technology
440. 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
441. R&D of offshore oil pollution cleaning and ecological restoration technology and the relevant product development, prevention and treatment of sea water eutrophication,
prevention and treatment of marine life explosive growth disaster, coastal zone ecological environment restoration technology

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

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

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

445. Development of clean production technology and services

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

447. 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

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

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

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

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

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

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

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

455. R&D and application of new pesticide

456. R&D of civil satellite application technology

457. Inspection, testing and certification services

458. R&D centers

459. Centre for new technology, new product development and enterprise incubation

460. R&D and application of mobile communication technology of the fifth generation

461. R&D and application of Internet of things

462. R&D and application of block chain technology

463. Creative industries such as industrial design, architectural design, costume design

464. Urban and rural planning preparation services (except for urban and township master planning services)

X. Water Conservancy, Environment and Public Utility Management

465. Control of Water environment of rivers and lakes, restoration, management, protection and operation of aquatic ecology

466. Construction and management of urban closed roads

467. Construction and operation of urban subway, light rail and other track transport

468. Construction and operation of garbage treatment plants, hazardous waste treatment and disposal plants (incineration plants and landfills), and environmental pollution treatment facilities
469. Construction and operation of urban parking facilities
470. Construction and operation of public transport systems such as taxis, trams and public transport

**XI. Education**

471. Non-academic vocational training institutions
472. Non-academic language training institutions (except for those for pre-school education, compulsory education and senior high school education)

**XII. Health and social work**

473. Service agencies for the elderly, the disabled and children (excluding child welfare agencies, minor rescue and protection agencies, and adoption registration agencies)
474. Elderly care institutions, community and home-based elderly care services
475. Medical institutions
476. Mental rehabilitation institutions
477. Psychological consultation institutions

**XIII. Culture, Sports and Entertainment**

478. Operation of performance venues
479. Operation of sports grounds, body-building, competition performance and sports training, and intermediary services
480. Construction of tourism infrastructure and tourism information services