

外商投资产业指导目录（2017年修订）
Catalogue of Industries for Guiding Foreign Investment
(2017 Revised Version)
(Unofficial English translated version)

Catalogue of Encouraged Foreign Investment Industries

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Catalogue of Encouraged Foreign Investment Industries

I. Agriculture, Forestry, Animal Husbandry and Fishery

1. Planting, development and production of woody edible oil, spices and industrial raw materials
2. Cultivation technologies development and production of green and organic vegetables (including edible fungus, watermelon and melon), dried and fresh fruit, and tea
3. Cultivation technologies development and production of such crops as sugar-yielding crops, fruit trees, and pasture grass
4. Production of flowers and plants, and construction and operation of nursery bases
5. Planting of rubber trees, oil palm, sisal and coffee trees
6. Planting and cultivation of traditional Chinese medicine herbs
7. Reusing in fields and comprehensive utilization of crop straw and the development and production of organic fertilizer resources
8. Breeding of aquatic offspring (exclusive of precious quality varieties peculiar to China)
9. Construction and operation of such ecological environment protection projects as tree and grass planting for preventing and controlling desertification and soil erosion
10. Breeding of aquatic products, net-cage culture in deep water, industrialized aquatic breeding and ecological oceanic species aquaculture

II. Mining

11. Exploration and exploitation of oil and natural gas (including oil shale, oil sands, shale gas, coal-bed methane and other unconventional oil and gas), and utilization of mine gas (limited to equity/cooperative joint venture operations)
12. Development and application of new technologies that can increase the recovery factor of crude oil (limited to the form of engineering services)
13. Development and application of new technologies for oil exploration and exploitation in areas of geophysical prospecting, drilling, well logging, mud logging and down-hole operation
14. Development and application of new technologies for enhancing the utilization of mine tailings and the comprehensive application of technologies for ecological restoration of mines
15. Exploration, mining and ore dressing of minerals in acute shortage in China (such as leopoldite ores and chromite)

III. Manufacturing

(I) Processing of food from agricultural products

16. Development of green and environment-friendly feeds and additives

17. Processing of aquatic products, purification and processing of shellfish, and development of seaweed health food
18. Processing of vegetables, dried and fresh fruit, and poultry and livestock products

(II) Food manufacturing

19. Development and production of baby foods, foods for the elderly, and health food
20. Development and production of forest foods
21. Development of new technologies for, and production of, natural food additives and natural spices

(III) Alcohol, beverage and refined tea manufacturing

22. Development and production of fruit and vegetable drinks, protein drinks, tea drinks, coffee drinks and botanical drinks

(IV) Textile industry

23. Production of multi-functional textiles of lightweight, high-strength, high/low temperature-resistance, chemical substance-resistance and light fastness for industrial use that are manufactured by using non-woven, weaving, knitting or their composite techniques
24. Printing, dyeing and post-processing of high-end textiles by using advanced energy efficient and emission reduction technologies and equipment
25. Processing of special natural fiber products (including cashmere and other special animal fiber, bamboo fiber, flax fiber, cocoon fiber and colored cotton) that comply with the requirements for ecological protection, comprehensive resource utilization and environmental protection

(V) Textile garment and apparel industry

26. Clothing production with the computer integrated manufacturing system
27. Production of functional and special clothing

(VI) Leather, fur and feathers and related products, and shoe manufacturing

28. Cleaning technical processing of leather and fur
29. Post ornament and processing of leather with new technology
30. Comprehensive use of leather waste

(VII) Wood processing and wood, bamboo, rattan, palm and straw products

31. Development of new technologies for the comprehensive utilization of three forest residues, namely, inferior quality lumbers, small-sized lumbers, firewood, and bamboo, and the development and production of the related new products

(VIII) Manufacturing of educational and cultural products, arts and crafts, and sports and entertainment products

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

(IX) Petroleum processing, coking and nuclear fuel processing

33. Phenol oil processing, washing oil processing, and high-end utilization of coal asphalt (excluding modified asphalt)

(X) Manufacturing of raw chemical materials and chemical products

34. Development and production of new downstream products of polyvinyl chloride (PVC) and organosilicon

35. Auxiliary raw materials of synthetic materials: production of hydrogen peroxide-based propylene oxide by using glycerol method, naphthalene dicarboxylate (NDC), 1,4-Cyclohexanedimethanol (CHDM), 1,4-Dicyanobutane with an annual capacity of over 50,000 t by using 1,3-Butadiene, and 1,6-Diaminohexane

36. Raw materials of synthetic fibers: production of nylon 66 salt and 1,3-propylene glycol

37. Synthetic rubber: production of solution styrene-butadiene rubber (excluding thermoplastic styrene-butadiene rubber), high cis butadiene rubber, butyl rubber, isoamyl rubber, polyurethane rubber, acrylate rubber, epichlorohydrin rubber, ethylene propylene rubber (EPR), fluorine rubber, silicon rubber and other special rubbers

38. Engineering plastics and plastic alloys: production of such products as non-phosgene polycarbonate (PC) with an annual capacity of over 60,000 t, polyoxymethylene (POM) by homopolymerization, polyphenyl thioether, poly(ether-ether-ketone), polyimide, polysulfone, polyether sulfone, polyarylate (PAR), and liquid crystal polymer (LCP)

39. Fine chemicals: new catalyst products and technologies; processing technologies for the commercialization of dyes (pigments); production of electronic chemicals and papermaking chemicals, leather chemicals (excluding N,N-Dimethylformamide), oilfield chemicals, surfactants, water treatment chemicals, adhesives, inorganic fibers, and nanomaterials; and deep processing of pigment encapsulation

40. Production of environment-friendly printing inks and aromatic oils

41. Production of natural spices, synthetic spices, and single ion spices

42. Production of high-performance coatings, high-solid coatings, solventless coatings, water-based industrial coatings, and auxiliary water-based resins

43. Production of high-performance fluororesin, fluorine coating materials, medical intermediates containing fluorine, environment-friendly refrigerant containing fluorine, detergent, and foaming agent

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

45. Development new forestry chemical products related technologies, and development and production of related new products

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

47. Development and production of new types of fertilizers: high potassium fertilizers, compound microbial inoculation agents, compound microbial fertilizers, decomposition agents for straws and refuse, and microbes with special functions
48. 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 the relevant clean production processes (process of ethylene-based acetochlor, or aqueous phase chlorpyrifos, process of recovery of methyl chloride with glyphosate, production of chiral and stereospecific pesticides by oriented synthesis, and synthetic technique of diethyl thiophosphoryl chloride)
49. Development and production of biological agricultural chemicals and biological control products: microbial pesticides, microbial fungicides, agricultural antibiotics, insect pheromones, natural enemies, and microbial herbicides
50. Comprehensive utilization, treatment and disposal of waste gas, liquid waste, and waste residue
51. 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, and lithium-ion battery diaphragms

(XI) Pharmaceutical products manufacturing

52. Production of new compound drugs or drugs with active ingredients (including drug substance and formulations)
53. Amino acids: production of tryptophan by using zymotechnics process, histidine, and methionine used in feed
54. Production of new anticarcinogenic drugs, new cardio-cerebrovascular drugs, and new nervous system drugs
55. Production of new types of drugs by employing bioengineering technology
56. Production of AIDS vaccines, Hepatitis C vaccines, and contraceptive vaccines, as well as new vaccines for cervical carcinoma, malaria, and hand, foot, and mouth disease
57. Development and production of marine drugs
58. Pharmaceutical formulations: production of new formulations and new products by employing such new technologies as slow release, controlled release, targeting, and percutaneous absorption
59. Development and production of new excipients
60. Production of special antibacterial drug substance for animals (including antibiotics and chemical synthesis)
61. Production of new products and new formulations of antibacterial drugs, anthelmintics, insecticides and anti-coccidiosis drugs for veterinary use
62. Production of new types of diagnostic reagents

(XII) Chemical fiber manufacturing

63. Production of high-tech chemical fibers (excluding viscose fibers), including differential chemical fibers, aramid fibers, carbon fibers, high-performance/high modulus polyethylene fibers, and polyphenylene sulfide (PPS) fibers
64. Production of new types of polyester for fiber or non-fiber use: polytrimethylene terephthalate (PTT), polyethylene naphthalate (PEN), polycyclohexylene dimethylene terephthalate (PCT), and polyethylene terephthalate glycol-modified (PETG)
65. Production of biomass fibers by utilizing new types of renewable resources and environment-friendly process, including new solvent spun cellulose fibers (Lyocell), regenerated cellulose fibers with bamboo or hemp as the raw material, poly lactic acid (PLA) fibers, chitin fibers, polyhydroxyalkanoates (PHA) fibers, and animal and plant protein fibers
66. Development and production of nylon 11, nylon 1414, nylon 46, long carbon chain nylon, high-temperature resistance nylon, and other new polyamide
67. Production of aramid fibers and cords for radial tires

(XIII) Rubber and plastic products

68. Development and production of new-type multi-functional photo-biological broad agricultural films
69. Recovery and reutilization of waste and worn-out plastics
70. Development of new soft plastic packaging technologies, and development and production of new varieties of soft plastic packaging products (including high-barrier and multifunctional films, and the relevant raw materials)

(XIV) Nonmetallic mineral products

71. Development and production of building materials characterized by energy conservation, environmental protection, waste recycling, light-weight, high-strength, high performance, and multiple functions
72. Production of energy-saving and high-efficiency chemical building materials by using plastic in lieu of steel and wood
73. Production of SBS/APP modified bitumen waterproof rolls with an annual output of 10 million m² or more; wide (over 2 m) ethylene propylene diene monomer (EPDM) rubber waterproof rolls, and relevant auxiliary materials; wide (over 2 m) polyvinyl chloride (PVC) waterproof rolls; and thermoplastic polyolefin (TPO) waterproof rolls
74. Development and production of functional glass by using new technologies: electromagnetic wave shielding glass; glass substrate for microelectronic use; infrared transmitting lead-free glass; electronic-grade large-scale quartz glass products (such as pipe, plate, crucibles and utensils); multiple-functional windshield glass with excellent optical performance; extreme materials and products for use in information technologies (including quartz glass bushing and ceramic wafer for waveguide-grade and high-precise optical fiber pre-fabricated rod); purification processing of raw materials for high pure ($\geq 99.998\%$) or ultrapure ($\geq 99.999\%$) crystal
75. Production of conductive glass for thin film batteries and glass for solar illuminator

76. Production of glass fiber products and special glass fibers: low dielectric glass fibers, quartz glass fibers, high silica glass fibers, high strength and high elastic glass fibers, and ceramic fibers as well as their products
77. 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
78. Standardized refinement of ceramics raw materials and production of high-grade decorative materials used in ceramics
79. Production of environment-friendly (non-chromizing) refractory materials used in furnaces, including cement, electronic glass, ceramics, and microporous carbon bricks
80. Production of aluminum nitride (AlN) ceramic substrates and porous ceramics
81. 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
82. Production of organic-inorganic composite cellular insulation materials
83. 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 300 °C or above, resin-based composite materials (including sports products, and light-weight and high-strength parts of vehicle), 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 ≥ 320 MPa), and large passenger aircraft tires
84. Production of raw materials for precision and high-performance ceramics: ultra-fine silicon carbide (SiC) powder (purity > 99%, average particle size < 1 μm), ultra-fine silicon nitride powder (Si₃N₄) (purity > 99%, average particle size < 1 μm), high-purity ultra-fine alumina powder (purity > 99%, average particle size < 0.5 μm), low-temperature sintered zirconia (ZrO₂) powder (sintering temperature < 1,350 °C), highly pure AlN powder (purity > 99%, average particle size < 1 μm), rutile titanium dioxide (TiO₂) powder (purity > 98.5%), white carbon black (particle size < 100 μm), and barium titanate (purity > 99%, particle size < 1 μm)
85. Development and production of high-quality artificial crystals and thin-film transistor products: 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 and synthetic diamond saw blade with the thickness of not more than 0.3 mm
86. Fine processing of nonmetallic minerals (ultra-fine grinding, high purifying, refining and modified performance)
 87. Production of ultra-high-power graphite electrodes
 88. Production of pearl mica (particle size of 3 – 150 μm)
 89. Production of multi-dimensional and multi-directional integral fabrics and shape fabrics
 90. Safe disposal of solid waste by using new dry process cement kilns
 91. Recycling of building waste
 92. Comprehensive utilization of industrial by-product gypsum
 93. Development and application of new technologies for comprehensive utilization of nonmetal mine tailings; and ecological restoration of mines

(XV) Nonferrous metals smelting and rolling processing

94. Production of silicon single crystals and polished wafers with a diameter of 200 mm or above
95. Production of new and high-tech nonferrous materials: compound semiconductor materials (gallium arsenide, gallium phosphide, indium phosphide and gallium nitride); 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; aluminum foils for radiators; medium- and high-voltage cathode capacitor aluminum foils; special large aluminum alloy sections; aluminum alloy precision forging dies; 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; high-temperature resistant and anti-senescence tungsten filaments; magnesium alloy castings; lead-free solder; magnesium alloys and their application products; foamed aluminum; titanium alloy smelting and processing; sponge zirconium at atomic energy level; and deeply processed tungsten and molybdenum products

(XVI) Metal products

96. Research, development, and manufacture of new light-weight and environment-friendly materials for aviation, aerospace, automobiles and motorcycles (including special-purpose aluminum sheets, aluminum-magnesium alloy materials and aluminum alloy motorcycle frames)
97. Research, development and manufacture of light metal semi-solid rapid prototyping materials

98. Manufacture and processing (including painting and processing inner and outer surface of the products) of metal packing products (thickness < 0.3 mm) used for packing all kinds of grain, oil and food, vegetables, fruit, beverages, and household products
99. Manufacture of nickel-saving stainless steel products

(XVII) General equipment manufacturing

100. Manufacture of high-end computer numerical controlled (CNC) machine tools and key spare parts: five-axis alignment CNC machine tools, CNC coordinate boring and milling processing center, CNC coordinate grinding machines, five-axis alignment CNC system and servomechanism installations, and high-speed ultra-hard cutting tools used for precision numerically controlled processing
101. Manufacture of multi-station forging forming machines of 1,000 t or above
102. Manufacture of equipment for dismantling, crushing, and post-processing and sorting of retired automobiles
103. Manufacture of flexible transfer lines (FTL)
104. Manufacture of vertical multi-joint industrial robots, welding robots and welding apparatus and equipment thereof
105. Manufacture of special processing machines: complete sets of laser cutting and welding equipment, laser precision processing equipment, computer numerically controlled low-speed wire-cut electrical discharge machines (LS-WEDMs) and sub-micron and ultra-fine grinders
106. Manufacture of wheeled and crawler cranes of 400 t or above
107. Design and manufacture of high-pressure plunger pumps and engines with working pressure ≥ 35 MPa, and low-speed large-torque engines with working pressure ≥ 35 MPa
108. Manufacture of integrated hydraulic-pressure multiple unit valve with working pressure ≥ 25 MPa, and electro-hydraulic proportional servo elements
109. Design and manufacture of pneumatic solenoid valves with power of less than 0.35 W and high-frequency electrically-controlled gas valves with power of more than 200 Hz
110. Design and manufacture of hydrostatic drive devices
111. Development and manufacture of non-contact gas film seals with pressure of more than 10 MPa and dry gas seals with pressure of more than 10 MPa (including experimental apparatus)
112. Development and manufacture of macromolecule material equipment for automobiles (such as friction plates, remodeled phenolic pistons and nonmetallic hydraulic master/sub-pumps)
113. Manufacture of third- and higher-generation car wheel hub bearings; bearings for high- and medium-grade computer numerically controlled (CNC) 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 various bearings; bearings of wind turbine generator set; and aircraft bearings

114. Manufacture of high-density, high-precision, complex-shaped powder metallurgical parts and chains used for automobiles, and engineering machinery
115. Manufacture of gear transmission used for wind power or high speed rail, gear transmission agent with adjustable blades used for vessels, and large-sized heavy-load gear boxes
116. Manufacture of high-temperature resistant insulation materials (of F and H insulation classes) and moulded insulation products
117. Development and manufacture of accumulator bladders, and rubber and plastic seals for hydropneumatic use
118. Manufacture of high-precision, high-strength (at the level of 12.9 or above), special-shaped, and assembly fasteners
119. Manufacture of miniature precision transmission junction pieces (clutches)
120. Manufacture of coupling shaft for heavy rolling mills
121. Remanufacture of machinery such as machine tools, engineering machinery, and railroad engine equipment; and remanufacture of automobile parts and components
122. Manufacture of digital cameras of 10 million pixels or higher
123. Manufacture of office machinery: all-in-one multifunction office equipment (printer, copier, fax machine, and scanner), color printing devices, heads of high-resolution color printers with precision of 2,400 dpi or more, and OPC drums
124. Manufacture of film machinery: 2K and 4K digital cinema projectors, digital cinema cameras, digital video production, and editing equipment

(XVIII) Special-purpose equipment manufacturing

125. Manufacture of trackless equipment for mining, loading and transport in mines, including: mechanically-driven tippers for mining with a capacity of 200 t or more; mobile crushers; bucket wheel excavators with a capacity of 5,000 m³ per hour or more; loaders for mining purposes with a capacity of 8 m³ or more; and electrically-dragged coal mining machines with power above 2,500 kW
126. Manufacture of equipment for geophysical exploration 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
127. Manufacture 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 m and the supporting subsea oil extraction, collection and transportation equipment
128. Manufacture 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, complete sets of large equipment with a pull-back force of more than 300 t for laying underground pipes and lines without digging, and underground diaphragm wall construction drilling rigs
129. Design and manufacture of large bulldozers of 520 hp or above

130. Design and manufacture of silt removers with a capacity of 100 m³ per hour or more, and dredging devices for dredgers with a capacity of 1,000 t or more
131. Design and manufacture of equipment for the construction of concrete cut-off walls used for flood prevention dike
132. Manufacture of underwater earthwork construction machinery: bulldozers, loaders and excavators operating 9 m underwater
133. Manufacture of equipment for maintenance and automatic testing of highway bridges
134. Manufacture of equipment for operational monitoring, ventilation, disaster prevention and rescue systems of highway tunnels
135. Design and manufacture of repair and maintenance machinery and inspection and monitoring equipment for large railway construction, railway tracks, bridges and tunnels, and their key parts and components
136. Manufacture of equipment for roofing (asphaltic) felt and equipment for producing metal roofs including galvanized steel sheets
137. Manufacture of equipment for environment-friendly, energy-saving, on-site polyurethane spraying waterproof and thermal insulation systems; technology of preparing polyurethane sealants and manufacture of the relevant equipment; and technology of preparing improved silicone sealants and manufacture of the relevant production equipment
138. Design and manufacture of high-precision strip mills (with thickness precision of 10 μm)
139. Manufacture of ore dressing equipment for multi-element, fine-particle and refractory metal minerals
140. Manufacture of the key equipment of complete sets of ethylene equipment with an annual capacity of 1 million t or more: mixing granulators with an annual processing capacity of more than 400,000 t, helical-conveyer centrifuges with a diameter of 1,000 mm or more, and low-flow high-head centrifugal pump
141. Design and manufacture of metal product molds (extrusion dies for pipes, rods and section bars made of copper, aluminum, titanium and zirconium)
142. Design and manufacture of punching dies for automobile body covers, large-sized injection molds for dashboard and bumper, and clamps and gauges for automobiles and motorcycles
143. Design and manufacture of special production equipment for power batteries for automobiles
144. Design and manufacture of precise die molds (punching dies with thickness precision of higher than 0.02 mm, and cavity molds with thickness precision of higher than 0.05 mm)
145. Design and manufacture of nonmetal product molds
146. Manufacture of beer bottling equipment with a capacity of 60,000 bottles per hour or above, hot- and medium-temperature beverage bottling equipment with a capacity of 50,000 bottles per hour or above, aseptic filling equipment with a capacity of 36,000 bottles per hour or above
147. Technology for producing, and manufacture of the relevant key equipment of, amino acids, enzyme preparations, and food additives

148. Manufacture of complete sets of equipment for animal feed processing with a capacity of 10 t per hour or above and key parts of such equipment
149. Manufacture of equipment for lightweight corrugated boards and cartons with corrugation height of 0.75 mm or less
150. Manufacture of sheet-fed and multi-color offset presses (width \geq 750 mm; printing speed: single side and multiple color \geq 16,000 sheets per hour, and both sides and multiple color \geq 13,000 sheets per hour)
151. Manufacture 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 \times 880 mm), double-width single-paper path web-fed lithographic printing presses with a printing speed of more than 170,000 bisect sheets per hour (787 \times 880 mm), and commercial web-fed lithographic printing presses with a printing speed of more than 50,000 bisect sheets per hour (787 \times 880 mm)
152. Manufacture of multi-color and wide flexographic presses (printing width \geq 1,300 mm and printing speed \geq 350 m per second), inkjet digital printing presses (used for publication: printing speed \geq 150 m per minute and resolution \geq 600 dpi; used for packaging: printing speed \geq 30 m per minute and resolution \geq 1,000 dpi; used for variable data: printing speed \geq 100 m per minute and resolution \geq 300 dpi)
153. Manufacture of systems for ink color computer pre-setting, remote ink color control, water-ink speed tracking, automatic printing quality inspection and tracking; and high-speed automatic pasters and feeders with a speed of 75,000 sheets per hour by applying shaftless driving technology, remotely adjustable high-speed folding machines, automatic overprinting systems, cooling devices, silicon-adding systems, and deviation adjustment devices
154. Manufacture of electron-gun automatic coating machines
155. Technology for, and manufacture of equipment for, sheet glass deep processing
156. Manufacture of complete sets of new paper (including pulp) making machines
157. Manufacture of equipment featuring new leather post ornament and processing technology
158. Development and manufacture 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, 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 more than five effects; sterilization equipment for powder food materials; solid and semi-solid food aseptically packaging equipment; and disk-type centrifugal separators
159. Manufacture of agricultural machinery: agricultural facilities and equipment (automatic irrigation equipment for greenhouses, equipment for the automatic disposition of

- nutrient solutions and fertilization, high-efficiency vegetable seedling equipment and soil nutrient analysis equipment); tractors with an engine power of more than 120 kW and the 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 spacing; peanut harvesters; rapeseed harvesters; cane harvesters; and beet harvesters
160. Manufacture of forestry machinery and equipment featuring new technology
 161. Manufacture of equipment for collection, bundle and comprehensive utilization of straws and stalks of crops
 162. Manufacture of equipment for utilization of agricultural waste as resources and of waste generated from scale poultry and livestock breeding as resources
 163. Manufacture of fertilizer-, pesticide- and water-saving and agricultural technology-based equipment
 164. Manufacture of equipment for cleaning electromechanical wells and production equipment for cleaning medicines
 165. Manufacture of electronic endoscopes
 166. Manufacture of fundus cameras
 167. Manufacture of key components of medical imaging equipment (including high-field-strength superconducting magnetic resonance imaging equipment, X-ray computed tomography imaging equipment, and digital color diagnostic ultrasound equipment)
 168. Manufacture of (3D) ultrasonic transducers for medical use
 169. Manufacture of equipment for boron neutron capture therapy
 170. Manufacture of image-guided intensity modulated radiation therapy systems
 171. Manufacture of haemodialysis machines and hemofiltration machines
 172. Manufacture of fully-automated biochemical monitoring equipment, blood cell analyzers with five classifications, fully-automated chemiluminescence immunoassay analyzers, and high-throughput DNA sequencing systems
 173. New technology for and manufacture of new equipment for drug quality control
 174. Development and manufacture of new technology for analyzing, new process for extracting, and new equipment for, effective constituents in natural drugs
 175. Manufacture of multi-layer co-extrusion water-cooled blown film equipment for non-PVC medical infusion bags
 176. Development and manufacture of new textile machinery, key parts and components, and textile testing and experimental apparatus
 177. Manufacture of computer-aided jacquard artificial fur machines
 178. Manufacture of equipment specially for producing solar cells
 179. Manufacture of air pollution prevention and control equipment: high-temperature resistant and corrosion-resistant filtering materials, low-NO_x 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
180. Manufacture of water pollution prevention and control equipment: horizontal spiral centrifugal dehydrators, 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, ultraviolet disinfection devices, small domestic sewage treatment equipment used in rural areas, and heavy metal wastewater treatment equipment
 181. Manufacture of solid waste treatment and disposal equipment: sewage plant sludge disposal and resource recycling equipment, complete sets of refuse incineration equipment with a daily treatment capacity of more than 500 t, landfill leachate treatment technology equipment, anti-seepage geo-membranes in landfills, building waste treatment and resource recovery utilization equipment, devices for disposal of hazardous waste, devices for power generation with biogas in landfills, treatment equipment for ferrous waste, and soil remediation equipment
 182. Development and manufacture of equipment for comprehensive utilization of red mud from aluminum industry
 183. Manufacture of equipment for comprehensive utilization of mine tailings
 184. Manufacture of equipment for the recycling, disposal and reutilization of waste and used plastics, electrical appliances, rubbers and batteries
 185. Manufacture of reclamation equipment for waste textiles
 186. Manufacture of equipment for remanufacturing of waste and used mechanical and electrical products
 187. Manufacture of devices for the comprehensive utilization of waste and used tires
 188. Technology for and manufacture of equipment for environmental protection of aquatic ecosystems
 189. Manufacture of portable assembling water purification equipment
 190. Unconventional water treatment or recycling equipment and water quality monitoring instruments
 191. Leak test equipment and instruments for industrial water pipeline networks and equipment (appliances)
 192. Development of technology for, and manufacture of, complete sets of equipment for seawater desalination and circulating cooling with a daily capacity of 100,000 m³ or more
 193. Manufacture of special meteorological observation and analysis equipment
 194. Development of systems of seismic stations, networks and mobile seismologic observation technology, and manufacture of corresponding apparatus and equipment
 195. Manufacture of radial tire building machine with four or more drums
 196. Manufacture of rolling resistance testers and establishment of tire noise laboratories
 197. Manufacture of new technology equipment for heat supply metering and temperature control devices
 198. Manufacture of equipment for hydrogen energy preparation, storage, transportation and inspection systems

199. Manufacture 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 temperature of 1,000 °C or above
200. Manufacture of devices for recovery of marine oil spill
201. Manufacture of equipment for utilization of low concentration of coal-mine gas and methane
202. Development and utilization of products using clean coal technology and manufacture of the relevant equipment (coal gasification, liquefaction, coal water slurry and industrial coal)
203. Firefighting and rescue technology development and equipment manufacturing for large public buildings, high-rise buildings, petrochemical facilities, forests, mountains, waters, and underground facilities

(XIX) Automobile manufacturing

204. Manufacture of automobile engines and establishment of engine research and development institutions: gasoline engines with power of not less than 70 kW per liter, diesel engines with power of not less than 50 kW per liter and displacement of less than 3 l, diesel engines with power of not less than 40 kW per liter and displacement of more than 3 l, and engines using new energy resources such as fuel cells and mixed fuels
205. Manufacture of key automobile parts and components and research and development of key technologies: dual-clutch transmission (DCT), automated mechanical transmission (AMT), gasoline engine turbochargers, viscous couplings (for four-wheel drive), actuators for automatic transmission (electromagnetic valve), hydraulic retarders, eddy current retarders, gas generators for automobile safety air-bags, common rail fuel injection technology (with 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 V pollutant emission standards, intelligent torque management (ITM) systems and coupler assembly, steer-by-wire systems, diesel particulate trap devices, special-purpose axles for low-floor large buses, energy-absorbing steering system, variable frequency air-conditioning system for large and medium buses, special rubber automobile accessories, and key parts and components of the abovementioned parts and components
206. Manufacture and research and development of automobile electronic devices: electronic control systems and key parts and components of engine and chassis; vehicle electronic technologies (automobile information system and navigation system); automobile electronic bus network technologies; input (sensor and sampling system) and output (actuator) components of electronic control systems; electronic controllers for electric power steering systems; embedded electronic integrated systems; electronically-controlled air springs; electronically-controlled suspension systems; electronic valve system devices; electronic combination instruments; 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 automobiles and motorcycles testing and maintenance

207. Manufacture of key parts and components of new energy automobiles: high energy power batteries (energy density ≥ 110 Wh/kg, cycle life $\geq 2,000$ times and the proportion of foreign investment of not exceeding 50%), anode materials of batteries (specific capacity ≥ 150 mAh/g, cycle life of 2,000 times with not less than 80% of initial discharge capacity), battery separators (thickness of 15-40 μ m, porosity of 40%-60%); battery management systems, motor management systems, and electronic control integration of electric vehicles; driving motors of electric vehicles (peak power density ≥ 2.5 kW/kg, high-efficiency area: 65%, efficiency in working area $\geq 80\%$), vehicle DC/DC (input voltage of 100-400 V), high-power electronic devices (IGBT, voltage class ≥ 600 V, current ≥ 300 A); plug-in hybrid electromechanical coupling drive systems

(XX) Railway, vessel, aviation and aerospace, and other transportation equipment manufacturing

208. Manufacture of engine emission control devices for high-emission (>250 ml) motorcycles that meet China's Phase III emission standards for motorcycles
209. Track transportation equipment (limited to equity/cooperative joint venture operations)
210. Design, manufacture and maintenance of civil aircrafts: aircrafts for trunk and tributary lines and general aircrafts that are above 6 t and have more than nine seats (with Chinese parties as the controlling shareholders)
211. Manufacture and maintenance of civil aircraft parts and components
212. Design and manufacture of civil helicopters: (those of 3 t or more shall be controlled by Chinese parties)
213. Manufacture of civil helicopter parts and components
214. Manufacture of ground-effect and water-effect aircrafts, and design and manufacture of UAV and aerostats (with Chinese parties as the controlling shareholders)
215. Design, manufacture and maintenance of aircraft engines and engine parts and components, and aircraft auxiliary power systems
216. Design and manufacture of airborne equipment for civil aviation
217. Manufacture of aviation ground equipment: civil airport facilities, civil airport operation guarantee 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 manufacture of aeronautical materials, civil aircraft ground reception and application equipment, carrier rocket

- ground testing equipment, equipment for carrier rocket mechanics and environmental experiments
- 218. Manufacture of photoelectric and electromechanical products for spacecrafts, temperature control products for spacecrafts, inspection equipment for satellite-borne products, and spacecraft structure and mechanism products
 - 219. Manufacture of light gas turbines
 - 220. Design of cruise ship and deepwater (3,000 m or more) marine engineering equipment
 - 221. Manufacture and repair of marine engineering equipment (including modules) (with Chinese parties as the controlling shareholders)
 - 222. Design of low- and medium-speed diesel engines of vessels and parts and components thereof
 - 223. Manufacture of low and medium-speed diesel engines of vessels and bent axles (with Chinese parties as the controlling shareholders)
 - 223. Design and manufacture of cabin machinery of vessels
 - 224. Design and manufacture of vessel communication and navigation equipment: vessel communication system equipment, vessel electronic navigation equipment, radars for vessel use, electric gyrocompass automatic rudders, and vessels' internal broadcasting systems
 - 225. Design and manufacture of yachts

(XXI) Electric machinery and equipment manufacturing

- 226. Manufacture of key auxiliary equipment used for 1 million kW ultra-supercritical thermal power units: safety valves, and control valves
- 227. Manufacture of denitration equipment of sintering machines in coal-fired power stations and steel industry
- 228. Design and manufacture of seals of thermal power equipment
- 229. Manufacture of large castings and forgings for coal fired power station and hydro power station equipment
- 230. Manufacture of key auxiliary equipment for hydro-power generating units
- 231. Manufacture of power transmission and transformation equipment
- 232. Manufacture of complete sets of equipment or key equipment for power generation with new energy resources: equipment for photovoltaic power generation, geothermal power generation, tidal power generation, wave power generation, garbage power generation, biogas power generation, and wind power generation with the capacity of 2.5 MW or more
- 233. Manufacture of large pumped power storage units with rated power of 350 MW or more: pump-turbines and speed controllers, large variable speed reversible pump-turbine units, generator-motors and excitation, starters and other ancillary equipment
- 234. Manufacture of Stirling power generating units
- 235. Development and manufacture of linear motors and plane motors, and their drive systems

236. Manufacture of high-tech green batteries: nickel-metal hydride batteries, nickel-zinc batteries, silver-zinc batteries, lithium-ion batteries, solar batteries, and fuel batteries (excluding energy-type power batteries for new energy vehicles)
237. Manufacture 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, and ground source)
238. Manufacture of solar air conditioning and heating systems and solar drying devices
239. Manufacture of biomass drying pyrolysis systems and biomass gasification devices
240. Manufacture of alternating current variable voltage variable frequency traction devices

(XXII) Computer, telecommunications and other electronic equipment manufacturing

241. Manufacture of high-definition and digital camcorders and digital sound playing equipment
242. Manufacture of TFT-LCD, PDP, OLED and other panel displays and materials (excluding TFT-LCD glass substrate for the first generation through the sixth generation)
242. Manufacture of key parts for large-screen color projection displays, including optical engines, light sources, projection screens, high-resolution projection tubes and micro-display projection modules
243. Manufacture of digital audio/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;
244. digital television ground broadcasting single frequency network (SFN) equipment; equipment for satellite digital television uplink stations
245. Design of integrated circuit; manufacture of large-scale digital integrated circuits with a line width of 28 nm or less; manufacture of analog or digital-analog integrated circuits with a line width of 0.11 μm or less, MEMS and compound semiconductor integrated circuits; and BGA, PGA, CSP, MCM, and other advanced encapsulation and testing
246. Manufacture 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, and large industrial controlling machines and controllers
247. Manufacture of computer digital signal processing system and boards
248. Manufacture of graphic and image recognition and processing systems
249. Development and manufacture of high-capacity optical and disk drives as well as their components
250. Manufacture of high-speed memory systems and intelligent memory devices with a capacity of 100 TB or more
251. Manufacture of computer-aided design (three-dimensional CAD) systems, electronic design automation (EDA) systems, computer-aided testing (CAT) systems, computer-

aided manufacturing (CAM) systems and computer-aided engineering (CAE) systems, and other computer application systems

252. Development and production of software products
253. Development and manufacture of materials exclusively for electronic purposes (excluding development and manufacture of optical fiber pre-fabricated rods)
254. Manufacture of equipment, testing instruments, tools and molds exclusively for electronic purposes
255. Manufacture of new electronic components and devices: chip components and devices, sensitive components and devices 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, flex printed circuit boards, rigid-flex printed circuit boards and packaging boards
256. Manufacture of touch control system (such as touch control screens, and touch components)
257. Manufacture of high-brightness light-emitting diodes (LEDs) with luminous efficiency of more than 1,401 m/W, LED epitaxial wafers (blue light) with luminous efficiency of more than 1,401 m/W, and white luminous tubes with luminous efficiency of more than 1,001,401 m/W and power of more than 200 mW
258. Development and production of key parts of high-density digital disk drive
259. Production of recordable disks
260. Design and manufacture of civil satellites, and manufacture of civil satellite payloads (with Chinese parties as the controlling shareholders)
261. Manufacture of parts and components of civil satellites
262. Manufacture of equipment for satellite communication systems
263. Manufacture of optical communication measuring instruments, and optical transceivers with a speed of 40 Gb/s or more
264. Manufacture of ultra-wideband (UWB) communication equipment
265. Manufacture of wireless local area network (including being WAPI-supportive), and wide area network equipment
266. Manufacture of time division multiplex equipment (TDM) with a rate of 100 Gbps or more, dense wavelength division multiplexing (DWDM) equipment, broadband passive network equipment (including EPON, GPON, and WDM-PON), next-generation DSL silicon and equipment, optical cross connect (OXC) equipment, automatically switched optical network (ASON) equipment, transmission equipment for optical fiber communication at more than 40 G/sSDH
267. Development and manufacture of next generation Internet system equipment, terminal equipment, testing equipment, software, and chips based on IPv6
268. Development and manufacture of the third generation and subsequent mobile communication cell phones, base stations, core network equipment, and network testing equipment

- 269. Development and manufacture of high-end routers and network switches of more than 1 Gb
- 270. Manufacture of equipment for air traffic control systems
- 271. Development and manufacture of auxiliary electronic teaching equipment for traditional Chinese medicine that is based on sound, light, electricity, touch control and other computer information technologies, virtual pathology, and physiological human model equipment

(XXIII) Manufacturing of instruments and meters

- 272. Manufacture of industrial process automatic control systems and devices: fieldbus control systems, large-scale programmable logic controllers (PLCs), two-phase flow meters, solid flow meters, new-type sensors, and field measuring meters
- 273. Development and manufacture of large precision instruments
- 274. Manufacture of high-precision digital voltmeters and ammeters (with a span of more than seven and a half bits)
- 275. Manufacture of reactive power auto-compensation devices
- 276. Manufacture of new instruments and equipment for work safety
- 277. Manufacture of VXI bus automatic testing systems (in conformity to IEEE1155 international standards)
- 278. Development and manufacture of coal mine underground monitoring and hazard forecasting systems, and coal safety testing and management systems
- 279. Manufacture of engineering surveying and geophysical observation equipment
- 280. Manufacture of environmental monitoring instruments
- 281. Manufacture of instruments and equipment for hydrological data collection, processing, and transmission, and for early warnings on flood control
- 282. Manufacture of instruments and equipment for marine exploration monitoring

(XXIV) Comprehensive utilization of waste resources

- 283. Coal dressing, and comprehensive utilization of coal ash (including desulfurized gypsum) and coal gangue
- 284. Production of completely biodegradable materials
- 285. Recycling and treatment of waste electrical and electronic products, automobiles, mechanical and electrical equipment, rubbers, metals, and batteries

IV. Electricity, Heating, Gas and Water Production and Supply Industries

- 286. Construction and operation of ultra-supercritical power stations with single unit power of 600,000 kW or more
- 287. Construction and operation of power stations for heat-power co-generation units of back-pressure (extraction-back) type, heat-power-cool multi-generation units, and heat-power co-generation units of or above 300,000 kW
- 288. Construction and operation of power stations with large air-cooled generation units with single unit power of 600,000 kW or more in regions suffering from water shortage

289. Construction and operation of projects of generation via integrated gasification combined cycle and other clean coal power generation projects
290. 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, middling, and coal slurry
291. Construction and operation of hydroelectric power stations with the main purpose of power generation
292. Construction and operation of nuclear power stations (with Chinese parties as the controlling shareholders)
293. Construction and operation of new energy power stations (including solar energy, wind energy, geothermal energy, tidal energy, current energy, wave energy, and biomass energy)
294. Construction and operation of power grids (with Chinese parties as the controlling shareholders)
295. Seawater utilization (direct utilization or seawater desalination)
296. Construction and operation of water supply plants
297. Construction and operation of renewable water plants
298. Construction and operation of sewage treatment plants
299. Construction and operation of vehicle charging stations, and battery replacement stations
300. Construction and operation of Hydrogenation stations

V. Transport, Warehousing and Postal Services Industries

301. Construction and operation of network of trunk railway lines (with Chinese parties as the controlling shareholders)
302. Construction and operation of intercity railways, urban (suburban) railways, railways for resource development and branch railway lines, and related bridges, tunnels, ferries and station facilities
303. Comprehensive maintenance of infrastructures of high-speed railway lines, passenger railway lines, and intercity railways
304. Construction and operation of highways, independent bridges, and tunnels
305. Road freight companies
306. Construction and operation of public dock facilities in ports
307. Construction and operation of civil airports (with Chinese parties as the controlling shareholders)
308. Air transportation companies (with Chinese parties as the controlling shareholders, and the investment of a single foreign investor and its affiliated enterprises not exceeding 25%)
309. General airline companies for agriculture, forestry, and fishery (limited to equity/cooperative joint venture operations)
310. Scheduled or non-scheduled international marine transportation services
311. International container multimodal transportation services

- 312. Construction and operation of oil (gas) pipelines and oil (gas) depots
- 313. Construction and operation of coal pipeline transportation facilities
- 314. Construction and operation of elevated three-dimensional automatic warehousing facilities, and integrated warehousing facilities related to packaging, processing and distribution services

VI. Wholesale and Retail Industries

- 315. Common distribution of general commodities, low-temperature distribution of live and fresh agricultural products, special medicine and other logistics, as well as the relevant technological services
- 316. Rural chain distribution
- 317. Construction and operation of pallet and container unit sharing systems

VII. Leasing and Commercial Services Industries

- 318. Accounting and auditing
- 319. International economic, scientific and technological, environmental protection, and logistics information consulting services
- 320. Engagement, by way of undertaking outsourced services, in outsourced information technology and business process services, including, among other things, system application management and maintenance, information technology support management, bank back-office services, financial settlement, software development, off-shore call centers, and data processing
- 321. Venture capital companies
- 322. Intellectual property rights services
- 323. Home service

VIII. Scientific Research and Technological Services Industries

- 324. Bioengineering and biomedical engineering technology, and biomass energy development technology
- 325. Isotope, radiation and laser technology
- 326. Marine development and marine energy exploitation technology, technology for comprehensive utilization of marine chemical resources, development and refinement/deep processing of related products, and marine medicine and biochemical product development technology
- 327. Ocean monitoring technology (ocean tidal waves, weather, and environmental monitoring), seabed detection and oceanic resources exploration and assessment technology
- 328. Technologies of high value-added utilization of seawater chemical resources, including production of salt, extraction of potassium, bromine, magnesium and lithium, and deep processing by comprehensively utilizing desalinated dense seawater
- 329. Offshore oil pollution cleaning and ecology recovery technology and the relevant product development, prevention and treatment technology of sea water

- eutrophication, prevention and treatment technology of marine life explosive growth disaster, and coastal zone ecological environment recovery technology
- 330. Energy saving and environmental protection technology development and services
 - 331. Development and application of technologies for recycling and comprehensive utilization of resources, and for recycling emissions and discharges from enterprise production
 - 332. Environmental pollution treatment and monitoring technology
 - 333. New technology for energy efficiency in chemical fiber production and printing and dyeing processing, and for the disposal of exhaust gas, waste liquid and waste residue
 - 334. Desertification prevention and desert treatment technology
 - 335. Comprehensive management technology for grassland-livestock balance
 - 336. Civil satellite application technology
 - 337. Research and development centers
 - 338. High and new technology, new product development, and enterprise incubation centers
 - 338. Development and application of technologies for the Internet of Things
 - 339. Industrial design, architectural design, costume design, and other creative industries

IX. Water Conservancy, Environmental, and Public Facilities Management Industries

- 340. Construction and operation of comprehensive hydro-junctions (with Chinese parties as the controlling shareholders)
- 341. Construction and operation of urban enclosed roads
- 342. Construction and operation of urban subway, light railway and other track transport
- 343. Construction and operation of garbage treatment plants, hazardous waste treatment and disposal plants (incineration plants and landfills), and environmental pollution treatment and control facilities

X. Education

- 344. Occupational skills training

XI. Health and Social Work

- 345. Service institutions for the elderly, the disabled, and children
- 346. Institutions for the aged

XII. Cultural, Sports, and Entertainment Industries

- 347. Operation of performance sites
- 348. Operation of sports grounds, body-building, contest performance and sports training, and intermediate services

Catalogue of Restricted Foreign Investment Industries

I. Agricultural, Forestry, Livestock and Fishery

1. Selection and cultivation of new varieties of crops, and production of seeds (with Chinese parties as the controlling shareholders)

II. Mining

2. Exploration and exploitation of special and rare kinds of coal (with Chinese parties as the controlling shareholders)
3. Exploration and exploitation of precious metals (gold, silver and platinum group)
4. Exploration and exploitation of graphite
5. Exploitation and ore dressing of lithium mines

III. Manufacturing

6. Processing of edible oil and fats from soybean, rapeseed, peanut, cottonseed, camellia seed, sunflower seed, and palm (with Chinese parties as the controlling shareholders), processing of rice, flour and crude sugar, and deep processing of corn
7. Production of biological liquid fuels (fuel ethanol and biodiesel) (with Chinese parties as the controlling shareholders)
8. Smelting of rare metals including tungsten, molybdenum, tin (excluding tin compounds), and antimony (including antimony oxides and antimony sulphides)
9. Smelting and separation of rare earth (limited to equity/cooperative joint venture operations)
10. Manufacture of automobile whole vehicles, special use vehicles and motorcycles: Chinese parties shall hold at least 50% of the shares. One foreign investor may establish two or less equity joint ventures in China to manufacture the same category of whole vehicle products (namely, the category of passenger cars, the category of commercial vehicles or the category of motorcycles), provided that the foregoing restrictions on the maximum of two joint ventures are not applicable if the same foreign investor engages in the merger of other domestic auto manufacturers jointly with its Chinese joint venture partners.
11. Repair, design and manufacture of vessels (including sections) (with Chinese parties as the controlling shareholders)
12. Production of satellite telecasting ground receiving facilities and key components

IV. Power, Thermal Power, Gas and Water Production and Supply Industries

13. Construction and operation of, in small grids, power stations using coal-fired and steam condensation thermal generation units each with a capacity of 300,000 kW or less, and

- thermoelectric power stations using coal-fired, steam condensation and extraction thermal generation units each with a capacity of 100,000 kW or less
14. Construction and operation of pipeline networks for gas, heat, water supply and sewage in cities with the population over 500,000 (with Chinese parties as the controlling shareholders)

V. Transport, Warehousing and Postal Services Industries

15. Railway passenger transport companies (with Chinese parties as the controlling shareholders)
16. Highway passenger transport companies
17. Water transport companies (with Chinese parties as the controlling shareholders)
18. General aviation companies for business flights, air sight-seeing tours, photography, prospecting and industrial purposes (with Chinese parties as the controlling shareholders)
19. Telecommunications companies: value-added telecommunications services (with the proportion of foreign investment not exceeding 50%, excluding e-commerce); basic telecommunications services (with the proportion of foreign investment not exceeding 49%)

VI. Wholesale and Retail Industries

20. Purchase of grains, wholesale of grains and cotton, and construction and operation of large-scale agricultural products wholesale markets
21. Vessel agencies (with Chinese parties as the controlling shareholders) and ocean shipping tally companies (limited to equity/cooperative joint venture operations)
22. Construction and operation of gas stations (in the case of those having established more than 30 chain gas stations funded by the same foreign investors and selling product oil of different varieties and brands from multiple suppliers, the Chinese parties shall be the controlling shareholders)

VII. Finance Industry

23. Banks (a single overseas financial institution and the affiliated parties under its control or joint control are only allowed to invest in not more than 20% of the shares of a single Chinese-funded commercial bank as promoters or strategic investors; multiple overseas financial institutions and the affiliated parties under their control or joint control are only allowed to invest in a total of not more than 25% of the shares of a single Chinese-funded commercial bank as promoters or strategic investors; and, overseas financial institutions investing in rural commercial banks shall be banking financial institutions)
24. Insurance companies (in the case of life insurance companies, the proportion of foreign investment shall not exceed 50%)
25. Securities companies (a securities company is limited to engaging in the underwriting and sponsorship of ordinary RMB-denominated shares, foreign shares, treasury bonds and corporate bonds, the brokerage of foreign shares, and the brokerage and

- proprietary trading of treasury bonds and corporate bonds upon establishment, and may apply for expanding its business scope two years after establishment if it satisfies the relevant conditions. The proportion of foreign investment in a securities company shall not exceed 49%), and securities investment fund management companies (with the proportion of foreign investment not exceeding 49%)
26. Futures companies (with Chinese parties as the controlling shareholders)

VIII. Leasing and Commercial Services Industries

27. Market investigations (limited to equity/cooperative joint venture operations)
28. Credit investigation and rating service companies

X. Scientific Research and Technological Services Industries

29. Surveying and mapping companies (with Chinese parties as the controlling shareholders)

XI. Education

30. Institutions of higher learning (limited to cooperative joint venture operations led by Chinese parties)
31. Ordinary senior high schools (limited to cooperative joint venture operations led by Chinese parties)
32. Nursery and pre-school education (limited to cooperative joint venture operations led by Chinese parties)

XII. Health and Social Work

33. Medical institutions (limited to cooperative joint venture operations)

XIII. Cultural, Sports, and Entertainment Industries

34. Production of radio and television programs and movies (limited to cooperative joint venture operations)
35. Production of audio-visual products and electronic publications (with Chinese parties as the controlling shareholders)

XIV. Other Industries Restricted by State Laws and Regulations or by the International Treaties that China Has Concluded or Acceded to

Catalogue of Prohibited Foreign Investment Industries

I. Agricultural, Forestry, Livestock and Fishery

1. Research and development, breeding and planting of precious quality varieties peculiar to China, and production of the relevant breeding materials (including quality genes in planting industry, husbandry and aquaculture)
2. Seed selection of the genetically modified varieties of crop seeds, breeding livestock and poultry, and aquatic fingerlings, and the production of their genetically modified seeds (fingerlings)
3. Fishing in the sea area and inland waters under China's jurisdiction

II. Mining

4. Exploration and exploitation of tungsten, molybdenum, tin, stibonium, and fluorite
5. Exploration, exploitation and ore dressing of rare earth
6. Exploration, exploitation and ore dressing of radioactive minerals

III. Manufacturing

(I) Pharmaceutical products manufacturing

7. Processing of traditional Chinese medicinal materials listed in the Regulations on the Protection of Wild Medicinal Resources and the Catalogue of China's Rare, Precious and Endangered Plants under Protection
8. Application of such processing techniques as steaming, stir-frying, moxibustion, and calcination for making small pieces of ready-for-use traditional Chinese medicines; and production of traditional Chinese patent medicine of secret prescriptions

(II) Petroleum processing, coking and nuclear fuel processing

9. Radioactive mineral smelting and processing, and nuclear fuel production

(III) Special-purpose equipment manufacturing

10. Manufacturing of weapons and ammunition

(IV) Other Manufacturing Industries

11. Ivory carving
12. Tiger bone processing
13. Production of Xuan paper and Chinese ink ingot

IV. Power, Thermal Power, Gas and Water Production and Supply Industries

14. Construction and operation of, within grand grids, power stations using coal-fired and steam condensation thermal generation units each with a capacity of 300,000 kW or

less, and thermoelectric power stations using coal-fired, steam condensation and extraction thermal generation units each with a capacity of 200,000 kW or less

V. Transport, Warehousing and Postal Services Industries

15. Air traffic control
16. Postal companies; and domestic express delivery business of mails

VI. Wholesale and Retail Industries

17. Wholesale and retail of tobacco leaves, cigarettes, re-dried tobacco leaves and other tobacco products

VII. Leasing and Commercial Services Industries

18. Social investigations
19. Consulting on Chinese legal affairs

VIII. Scientific Research and Technological Services Industries

20. Development and application of human stem cell, genetic diagnosis and treatment technology
21. Geodetic surveying, marine charting, aerial photography for surveying and mapping purposes, administrative boundary surveying and mapping, compilation of topographic maps, maps of world political zones, national administrative divisions and administrative divisions at and below the provincial level, national teaching maps, local teaching maps and true three-dimensional maps, compilation of electronic maps for navigation purposes, regional geological mapping, mineral geology, geophysics, geochemistry, hydrogeology, environmental geology, geological disasters, geological remote sensing, and other surveys

IX. Water Conservancy, Environmental, and Public Facilities Management Industries

22. Construction and operation of natural reserves and internationally important wetlands
23. Development of wild animal and plant resources originated in and protected by China

X. Education

24. Compulsory education institutions, education institutions in military affairs, police, politics and Party schools, and other special fields

XI. Cultural, Sports, and Entertainment Industries

25. News agencies
26. Publishing of books, newspapers, and periodicals
27. Publishing of audio-visual products and electronic publications
28. All radio stations, television stations, radio and television channels (frequencies), radio and television transmission and coverage networks (transmitting stations, relay stations,

- radio and television satellites, satellite uplink stations, satellite receiving and transmitting stations, microwave stations, monitoring stations, and cable radio and television transmission and coverage networks)
29. Radio and television program production and operating companies
 30. Movie production companies, and distribution companies
 31. Operation of news websites, online publication services, online audio and video program streaming services, business premises for Internet access services, and Internet cultural business (excluding music)
 32. Auction houses and cultural relics shops engaging in the auction of cultural relics
 33. Construction of golf courses and villas

XI. Other Industries

34. Projects endangering the safety and performance of military facilities
35. Gambling and lottery industry (including horse race tracks for gambling purposes)
36. Pornography industry

XII. Other Industries Prohibited by State Laws and Regulations or by International Treaties China Has Concluded or Acceded to

Notes: if there are other provisions in the Closer Economic Partnership Arrangement between Mainland and Hong Kong and its supplementary agreements, the Closer Economic Partnership Arrangement between Mainland and Macau and its supplementary agreements, the Cross-strait Economic Cooperation Framework Agreement and its follow-up agreements, and the free trade zone agreements or investment agreements concluded and signed by and between China and other relevant countries, such provisions shall prevail.