

Catalogue of Industries for Guiding Foreign Investment (Revision 2015)

Catalogue of Encouraged Industries for Foreign Investment

I. Agriculture, Forestry, Animal Husbandry and Fishery

1. Planting, development and production of woody plants that contain edible oils or are used as seasonings or industrial raw materials
2. Development of planting technologies for green food vegetables or organic vegetables (including edible fungi and melons), dried and fresh fruit, and tea, and relevant production
3. Development of new planting technologies for crops, such as sugar crops, fruit trees and pasture, and relevant production
4. Production of flowers and construction and operation of nurseries
5. Planting of rubber trees, oil palm, sisal and coffee
6. Planting or breeding of Chinese medicinal materials
7. Returning crop straw to farmland and the comprehensive utilization of crop straw; development and production of organic fertilizer resources
8. Breeding of aquatic fingerlings (excluding China's rare and endemic species)
9. Construction and operation of environment protection projects, such as the planting of trees and grass to combat desertification and soil erosion
10. Aqua farming, open sea-cage aquaculture, industrial aquaculture, and ecological mariculture

II. Mining Industry

11. Exploration and exploitation of oil and natural gas (including oil shale, oil sand, shale gas, coal-bed gas and other unconventional oil and gas) as well as utilization of mine gas (limited to Sino-foreign equity or contractual joint ventures)
12. Improvement in enhanced oil recovery (in the form of engineering services) as well as development and application of relevant new technologies
13. Development and application of new technologies for oil exploration and exploitation in areas such as geophysical prospecting, drilling, well logging, mud logging, and down-hole operation
14. Development and application of new technologies for enhancing utilization rate of mine tailings and the comprehensive application of ecological restoration technology in mining

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areas

15. Exploration and exploitation of mines in short supply in China (such as mines of sylvite and chromite) and mineral separation

III. Manufacturing Industries

(I) Agricultural and Sideline Food Processing

16. Development of pollution-free fodder and additives

17. Aquatic product processing, shellfish purification and processing, and development of algal health food

18. Processing of vegetables, dried and fresh fruit, and livestock and poultry products

(II) Food Manufacturing

19. Development and production of baby food, food 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 perfume

(III) Manufacturing of wine, beverage and refined tea

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

(IV) Textile Industry

23. Production of multifunctional industrial textiles that are lightweight, high/low-temperature resistant and chemical-resistant, with highperformance and good light fastness, using non-woven, weaving, knitting or their composite techniques

24. Dyeing and after finishing processing of high-end textiles, using advanced energy conservation and emission reduction technologies and equipment

25. Processing of special natural fibers (including but not limited to cashmere and other special animal fibers, bamboo fiber and bastose, silk, and colored cotton) that satisfy the ecological, comprehensive resource utilization and environmental protection requirements

(V) Textile, clothing and apparel sectors

26. Production of clothing by using compute integrated making system

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27. Production of special-purpose functional clothing

(VI) Leathers, Furs, Feathers and Related Products and shoemaking

28. Cleaning and processing of leathers and furs

29. Finishing of leather with new techniques

30. Multipurpose use of leather wastes

(VII) Wood Processing and Wood, Bamboo, Rattan, Palm fiber and Straw Products

31. Development of new technologies for the comprehensive utilization of three forest residues (logging residue, bucking residual and processing residual), "inferior quality lumbers, small-sized lumbers and firewood," and bamboo, and the development and production of relevant new products

(VIII) Manufacturing of supplies for culture and education, industrial arts, sports and entertainment

32. Production of high-end carpet, embroidery and drawnwork

(IX) Petroleum Processing, Coking and Nuclear Fuel Processing

33. Processing of carbolic oil and absorber oil, high-end utilization of coal tar pitch

(X) Manufacturing of Chemical Raw Materials and Chemical Products

34. Development and production of new downstream products of calcium hypochlorite (sodium process), polyvinyl chloride (PVC) and organosilicon

35. Auxiliary raw materials for the production of synthetic materials: production of hydrogen peroxide-based propylene oxide, naphthalene dicarboxylate (NDC), 1,4-Cyclohexanedimethanol (CHDM), butadiene adiponitrile and hexanediamine, with an annual production capacity of 50,000 tons or more

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

37. Synthetic rubber: production of isoamyl rubber, polyurethane rubber, acrylate rubber, epichlorohydrin rubber, fluorine rubber, silicon rubber, and other special rubbers

38. Engineering plastics and plastic alloys: production of non-phosgene polycarbonate (PC), homopolymerized polyoxymethylene (POM), polyphenylene sulfide, polyether-ether-ketone (PEEK), polyimide, polysulfone, polyether sulfone, polyarylate (PAR), polyphenylene sulfide and its modified materials as well as liquid crystal polymer, etc., with an annual production capacity of 60,000 tons or more

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39. Fine chemicals: new catalyst products and technologies, processing technologies for the commercialization of dyes (pigments), electronic chemicals and papermaking chemicals, leather chemicals (excluding N,N-Dimethylformamide), oilfield chemicals, surfactants, water treatment chemicals, adhesives, production of 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, solventless coatings, water-based industrial coatings, and auxiliary water-based resins
43. Production of high-performance fluororesin and fluorine coating materials, medical intermediates containing fluorine, and environment friendly fluorine-containing refrigerant, detergent and vesicant
44. Recovery of fluoride resources from the phosphorus chemical industry and aluminum smelters
45. Development of new technologies for forestry chemical products and development and production of relevant 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 inoculants, compound microbial fertilizers, decomposition agents for straws and refuse, and other microbial formulations with special functions
48. Development and production of new varieties, new formulations, special-purpose intermediates, or auxiliary agents of highly efficient, safe and environment-friendly agricultural chemicals and development and application of relevant clean production process (process of ethylenebasedacetochlor, 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, lithium-ion battery diaphragms, surface treatment

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self-healing materials and super-hydrophobic nano-coating materials

(XI) Pharmaceutical Industry

52. Production of new compound drugs or drugs with active ingredients (including drug substance and formulations)
53. Amino acids: production of tryptophan, histidine, methionine, etc. using the zymotechnics process
54. Development and production of new types of anticarcinogenic drugs, cardiovascular and cerebrovascular drugs, and nervous system drugs
55. Production of new types of drugs employing bioengineering and biotechnology
56. Production of HIV/AIDS vaccines, Hepatitis C vaccines, contraceptive vaccines, and new types of vaccines for cervical carcinoma, malaria, "hand, foot and mouth" disease, etc.
57. Development and production of marine drugs
58. Pharmaceutical formulations: production of new formulations and new products employing new technologies, such 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 API)
61. Production of new products and new formulations of antibacterial drugs, anthelmintics, insecticides and anti-coccidiosis drugs for veterinary use
62. Development and production of new types of diagnostic reagents

(XII) Chemical Fiber Manufacturing

63. Production of high-tech chemical fibers (excluding viscose fibers), including but not limited to 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 (PPT), polyethylene naphthalate (PEN), polycyclohexylenedimethylene terephthalate (PCT), and glycol-modified polyethylene terephthalate (PETG)
65. Production of biomass fibers by utilizing new types of renewable resources and environment-friendly process, including but not limited to new solvent spun cellulose fibers (Lyocell), regenerated cellulose fibers using bamboo, hemp, etc., poly lactic acid (PLA) fibers, chitin fiber, polyhydroxyalkanoates (PHA) fibers, and animal and plant protein fibers
66. Development and production of nylon 11, nylon 1414, nylon 46, long carbon chain

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nylon, high temperature resistance nylon and other new types of polyamide

67. Production of aramid fibers and cords for radial tires

(XIII) Rubber and plastic products

68. Development and production of new photoecological, multifunctional and wide-width agricultural films

69. Recycle and reutilization of plastic waste

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 relevant raw materials)

(XIV) Nonmetallic Mineral Products

71. Development and production of building materials featuring 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 using plastic to replace steel or wood

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

74. Development and production of functional glass 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, copple, instruments, 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, high-precise optical fiber preform 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, glass for solar illuminator and conductive glass used in construction

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, ceramic fiber, etc. and 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

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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 but not limited to 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 more than 300°C or above, resin-based composite material (including sports products and light-weight 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 glassbased composite materials and their products, metal-layered composite materials and their products, ultra high pressure composite rubber hoses (pressure \geq 320MPa), 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 μ m), ultra-fine silicon nitride powder (Si₃N₄) (purity >99%, average particle size < 1 μ m), high-purity ultra-fine alumina powder (purity > 99%, average particle size < 0.5 μ m), low-temperature sintered zirconia (ZrO₂) powder (sintering temperature < 1350 °C), high-purity aluminium nitride (AlN) powder (purity >99%, average particle size < 1 μ m), rutile titanium dioxide (TiO₂) powder (purity > 98.5%), white carbon black (particle size < 100nm), and barium titanate (purity > 99%, average particle size < 1 μ m)

85. Development and production of high-quality artificial crystals and thinfilm transistor products: artificially synthesized crystal (piezoelectric crystal and ultraviolet ray transmitting crystal); super-hard crystal (cubic boron nitride crystal); high-temperature resistant and highly-insulated artificially synthesized crystal (artificially synthesized mica); new electro-optic crystal; high-power laser crystal and large-scale scintillation crystal;

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diamond-film tool; ultrathin synthetic diamond saw blade with a thickness of not more than 0.3mm

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 μ m)

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

90. Safe disposal of solid wastes 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 the comprehensive utilization of nonmetal mine tailings; ecological restoration of mines

(XV) Nonferrous Metal Smelting and Rolling Industries

94. Production of silicon single crystals and polished wafers with a diameter of 200mm or more

95. Production of 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 and copper- and iron-based memory alloy materials); ultra-fine (nano) calcium carbide and ultra-fine (nano) crystal hard alloy; ultra-hard composite materials; precious metal composite materials; light metal composite materials and combination of dissimilar 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 products; foamed aluminum; smelting and processing of titanium alloy; sponge zirconium at atomic energy level; and deeply processed tungsten and molybdenum products

(XVI) Metal Products

96. Research, development and manufacturing of new types of light-weight and environment-friendly materials for aviation, aerospace, automobiles and motorcycles (including but not limited to special-purpose aluminum sheets, aluminum-magnesium alloy

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materials, and aluminum alloy motorcycle frames)

97. Research and development of light metal semisolid rapid formation materials

98. Manufacturing and processing (including painting and processing inner and outer surface of products) of metal packing products (thickness < 0.3mm) used for packing various kinds of grain, oil, food, vegetables, fruits, beverages, and household chemicals

99. Manufacturing of nickel-saving stainless steel products

(XVII) General Equipment Manufacturing

100. Manufacturing of high-end computerized 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 CNC processing

101. Manufacturing of multi-station forging forming machines of 1,000 tons or above

102. Manufacturing of equipment for dismantling, crushing, and postprocessing and sorting of retired automobiles

103. Manufacturing of flexible transfer lines (FTL)

104. Manufacturing of vertical multi-joint industrial robots and welding robots and relevant welding devices and equipment

105. Manufacturing of special processing machines: complete sets of equipment for laser cutting and welding, laser precision processing equipment, CNC low-speed wire-cut electrical discharge machines (LSWEDMs), and sub-micron and ultra-fine grinders

106. Manufacturing of wheeled or crawler cranes of 400 tons or above (limited to Sino-foreign equity or contractual joint ventures)

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

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

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

110. Design and manufacturing of hydrostatic drive devices

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

112. Development and manufacturing of equipment for automobile polymer materials (friction plates, remodeled phenolic pistons, nonmetallic hydraulic master/sub-pumps, etc.)

113. Manufacturing of the third and more generation car wheel hub bearings; bearings for

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high- or medium-grade CNC machine tools or processing centers; high-speed wire rod or plate rolling mill bearings; high-speed railway bearings; low-noise bearings with vibration below Z4; P4 or P2 level bearings of various bearings; bearings of wind turbine generator set; and aircraft bearings

114. Manufacturing of high-density, high-precision and complex-shaped powder metallurgical parts and chains used for automobile, engineering machinery, etc.

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

116. Manufacturing of high-temperature resistant insulation materials (Fand H insulation classes) and moulded insulation products

117. Development and manufacturing of accumulator bladders and rubber and plastic seals for hydropneumatic use

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

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

120. Manufacturing of coupling shaft for heavy rolling mills

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

122. Manufacturing of digital camera with pixel of 10 million or more

123. Manufacturing of office machinery: multi-function integrated office equipment (copy, print, fax and scanning), colour printing equipment, high resolution printing head with precision of 2400dpi and more; and photosensitive drum

124. Manufacturing of film machines: 2 K and 4K digital film projector, digital film camera, digital imaging and editing equipment

(XVIII) Special-Purpose Equipment Manufacturing

125. Manufacturing of trackless equipment for excavation, loading and transport in mines, including but not limited to: mechanically-driven tippers for mining with a capacity of 200 tons or more; mobile crushers; bucket wheel excavators with a capacity of 5,000 cubic meters or more per hour; loaders for mining with a capacity of 8 cubic meters or more; and electrically-dragged coal mining machines of 2,500 kilowatt or more

126. Manufacturing of equipment for geophysical exploration (excluding gravity or magnetic measurement) 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

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127. Manufacturing of equipment for oil exploration, drilling, collection and transportation: floating drilling systems and floating production systems with an operating water depth of more than 1,500 meters and the supporting subsea oil extraction, collection and transportation equipment
128. Manufacturing of large-caliber rotary drilling rigs with a caliber of 2 meters or more and depth of 30 meters or more, push benches with a diameter of 1.2 meters or more, complete sets of large equipment with a pull-back force of 300 tons or more for laying underground pipes and lines without digging, and underground diaphragm wall construction drilling rigs
129. Design and manufacturing of large bulldozers of 520 horsepower or more
130. Design and manufacturing of silt removers with a capacity of 100 cubic meters or more per hour and dredging devices for dredgers with a capacity of 1,000 tons or more
131. Design and manufacturing of equipment for the construction of concrete cut-off walls used for flood prevention dikes
132. Manufacturing of underwater earthwork construction machinery: bulldozers, loaders, excavators, etc. operating nine meters underwater or deeper
133. Manufacturing of equipment for maintenance and automatic testing of highways and bridges
134. Manufacturing of equipment for operational monitoring, ventilation, disaster prevention and rescue systems of highway tunnels
135. Design and manufacturing of maintenance machinery and inspection and monitoring equipment for large-scale railway construction, railway tracks, bridges and tunnels and their key parts and components
136. Manufacturing of equipment for (asphaltic) linoleum tiles and equipment for producing galvanized steel sheets and other metal roofs
137. 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 improved silicone sealants and manufacturing of relevant production equipment
138. Design and manufacturing of high-precision strip mills (thickness precision of 10 microns)
139. Manufacturing of ore dressing equipment for multi-element, fineparticle and refractory metal minerals
140. Manufacturing of the key equipment of complete sets of ethylene equipment with an annual capacity of 1 million tons or more: mixing granulators with an annual processing capacity of 400,000 tons or more, helical-conveyer centrifuges with a diameter of 1,000 mm or more, and low-flow high-head centrifugal pump
141. Design and manufacturing of metal product molds (extrusion dies for pipes, rods and

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section bars made of copper, aluminum, titanium and zirconium)

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

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

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

145. Design and manufacturing of nonmetal product molds

146. Manufacturing of beer bottling equipment with a capacity of 60,000 bottles or more per hour, hot- and medium-temperature beverage bottling equipment with a capacity of 50,000 bottles or more per hour, and aseptic filling equipment with a capacity of 36,000 bottles or more per hour

147. Production technologies of amino acids, enzyme preparations, food additives, etc. and the manufacturing of key equipment

148. Manufacturing of complete sets of equipment for animal feed processing with a capacity of 10 tons or more per hour and the key parts of such equipment

149. Manufacturing of equipment for lightweight corrugated boards and cartons with corrugation height of 0.75 millimeter or less

150. Manufacturing of sheet-fed and multi-color offset presses (width \geq 750 millimeters; 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. Manufacturing of single-width single-paper path web-fed lithographic printing presses with a printing speed of more than 75,000 bisect sheets per hour (787 × 880 millimeters), double-width single-paper path web-fed lithographic printing presses with a printing speed of more than 170,000 bisect sheets per hour (787 × 880 millimeters), and commercial web-fed lithographic printing presses with a printing speed of more than 50,000 bisect sheets per hour (787 × 880 millimeters)

152. Manufacturing of multi-color wide flexographic presses (printing width \geq 1,300 millimeters and printing speed \geq 350 meters per second), inkjet digital printing presses (used for publication: printing speed \geq 150 meters per minute and resolution \geq 600dpi; used for packaging: printing speed \geq 30 meters per minute and resolution \geq 1,000dpi; used for variable data: printing speed \geq 100 meters per minute and resolution \geq 300dpi)

153. Manufacturing of systems for ink color computer pre-setting, remote ink color control, water-ink speed tracking, automatic printing quality inspection and tracking, and shaftless driving technology; manufacturing of high-speed automatic pasters and feeders with a speed of 75,000 sheets per hour, remotely adjustable high-speed folding machines, automatic overprinting systems, cooling devices, silicon-adding systems, and deviation

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adjustment devices

154. Manufacturing of electron-gun automatic coating machines

155. Deep processing technology for sheet glass and manufacturing of relevant equipment

156. Manufacturing of complete sets of equipment such as new types of paper (including pulp) making machines

157. Manufacturing of equipment using new leather post ornament and processing technology

158. Development and manufacturing of new agricultural product processing and storage equipment: new equipment for the processing, storage, preservation, grading, packaging, and drying of grains, oil plants, 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 five or more effects; sterilization equipment for powder food materials; solid and semisolid food aseptically packaging equipment; and disk-type centrifugal separators

159. Manufacturing of agricultural machinery: agricultural equipment (automatic irrigation equipment for greenhouses, equipment for automatic disposition of nutrient solutions and fertilization, high-efficiency vegetable seedling equipment, and soil nutrient analysis equipment); tractors with an engine power of 120 kilowatts or more 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 spacings; peanut harvesters; rapeseed harvesters; cane harvesters; and beet harvesters

160. Manufacturing of forestry machinery and instruments using new technology

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

162. Manufacturing of equipment for the resource utilization of agricultural waste and waste from livestock and poultry breeding meeting a certain scale

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

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

165. Manufacturing of electronic endoscopes

166. Manufacturing of fundus cameras

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167. Manufacturing of key components of medical imaging equipment (including but not limited to high-field-strength superconducting magnetic resonance imaging equipment, X-ray computed tomography imaging equipment, and digital color diagnostic ultrasound equipment)
168. Manufacturing of (3D) ultrasonic transducers for medical use
169. Manufacturing of equipment for boron neutron capture therapy (BNCT)
170. Manufacturing of image-guided intensity modulated radiation therapy systems
171. Manufacturing of haemodialysis machines and hemofiltration machines
172. Manufacturing of equipment for full-automatic biochemistry monitoring, five-classified blood cytoanalyze, full-automatic chemiluminescence immunity analyzers, and high throughput gene sequencing system
173. New technology for drug quality control and manufacturing of new equipment for drug quality control
174. Development of new analysis technology and new extracting process for active substance in natural drugs; development and manufacturing of new extracting equipment
175. Manufacturing of multi-layer co-extrusion water-cooled blown film equipment for non-PVC medical infusion bags
176. Development and manufacturing of new textile machinery, key parts and components, and textile testing and experimental apparatus
177. Manufacturing of computer-aided jacquard artificial fur machines
178. Manufacturing of equipment specially for producing solar cells
179. Manufacturing of air pollution prevention and control equipment: hightemperature resistant and corrosion-resistant filtering materials, low-NOx 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. Manufacturing of water pollution prevention and control equipment: horizontal spiral centrifugal dehydrators, membrane and membrane materials, ozone generators with a capacity of more than 50kg/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. Manufacturing 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 500 tons or more, 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 wastes, and

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soil remediation equipment

182. Development and manufacturing of equipment for the comprehensive utilization of red mud from aluminum industry

183. Manufacturing of equipment for the comprehensive utilization of mine tailings

184. Manufacturing of equipment for the collection, treatment and recycling

of used and waste plastics, electrical appliances, rubbers, and batteries

185. Manufacturing of reclamation equipment for used and waste textiles

186. Manufacturing of equipment for the remanufacturing of used and waste mechanical and electrical products

187. Manufacturing of devices for the comprehensive utilization of used and waste tires

188. Environmental protection technology for aquatic ecosystems and the manufacturing of relevant equipment

189. Manufacturing 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 technologies for seawater desalination and circulating cooling with a daily capacity of 100,000 cubic meters or more and manufacturing of relevant complete sets of equipment

193. Manufacturing of special meteorological observation and analysis equipment

194. Technology system development for seismic stations, networks and mobile seismologic observation and manufacturing of relevant apparatus and equipment

195. Manufacturing of radial tire building machine with four or more drums

196. Manufacturing of rolling resistance testers and establishment of tire noise laboratories

197. Manufacturing of equipment using new technology for heat supply metering and temperature control devices

198. Manufacturing of equipment for hydrogen energy preparation, storage and transportation and inspection systems

199. Manufacturing of new heavy residual oil gasification and atomizing nozzles, high-efficiency steam trap valves with a leakage rate of 0.5% or below, and high-temperature ceramic heat exchanger with temperature of 1,000 °C or above

200. Manufacturing of devices for recovery of marine oil spilling

201. Manufacturing of equipment for utilization of low concentration coalmine gas and

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ventilation air methane

202. Development and utilization of clean coal technologies and products as well as manufacturing of relevant equipment (coal gasification and liquefaction, coal water slurry and industry shape-coal

203. Development of technologies for fire prevention and control and rescue to be used in large-scale public buildings, high-rise buildings, petrochemical facilities, forest, mountains or water areas and underground facilities

(XIX) Automobile Manufacturing

204. Manufacturing of automobile engines and establishment of engine research and development institutions: gasoline engines with power of not less than 70 kilowatts per liter, diesel engines with power of not less than 50 kilowatts per liter and displacement of less than 3 liters, diesel engines with power of not less than 40 kilowatts per liter and displacement of more than 3 liters, and engines using new energy resources such as fuel cells and mixed fuels

205. Manufacturing of key automobile parts and components and research and development of key technologies: dual-clutch transmission (DCT), continuously variable transmission (CVT), automated mechanical transmission (AMT), gasoline engine turbocharger, viscous coupling (for four-wheel drive), actuator for automatic transmission (electromagnetic valve), hydraulic retarder, eddy current retarder, gas generators for automobile safety air-bags, common rail fuel injection technology (with 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 lowfloor 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 above parts and components

206. Manufacturing 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 (limited to Sino-foreign equity); input (sensor and sampling system) and output (actuator) components of electronic control system; electronic controllers for electric power steering system (limited to Sino-foreign equity); embedded electronic integrated systems; electronically-controlled air springs; electronically-controlled suspension systems; electronic valve system devices; electronic combination instrument; ABS/TCS/ESP systems; Brake-By-Wire (BBW) system; gearbox transmission control unit (TCU); tire-pressure monitoring system (TPMS); on-board diagnostics (OBD); engine anti-theft system; automatic bump-shielded system; and testing systems for automobile and

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motorcycle testing and maintenance

207. Manufacturing of key parts and components of new energy automobiles: high energy power batteries (energy density $\geq 110\text{Wh/kg}$, cycle life $\geq 2,000$ times, and the proportion of foreign investment not exceeding 50%), anode materials of batteries (specific capacity $\geq 150\text{mAh/g}$, and cycle life of 2000 times with not less than 80% of initial discharge capacity), battery separators (thickness of 15-40 μm , 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 $\geq 2.5\text{kW/kg}$, high-efficiency area: 65%, efficiency in working area $\geq 80\%$), vehicle DC/DC (input voltage of 100V-400V), high-power electronic devices (IGBT, voltage class $\geq 600\text{V}$, current $\geq 300\text{A}$); and plug-in hybrid electromechanical coupling drive systems

(XX) Manufacturing of railways, ships, aircrafts and other transportation equipment

208. Manufacturing of engine emission control devices for motorcycles with large engine capacity (engine capacity $> 250\text{ml}$) that meet China's Phase III pollution discharge standards for motorcycles

209. Manufacturing of track transportation equipment (limited to Sino-foreign equity or contractual joint ventures)

210. Design, manufacturing and maintenance of civil aircrafts: aircrafts for trunk lines and regional aircrafts (With Chinese party as the controlling shareholder); and utility aircrafts (limited to Sino-foreign equity or contractual joint ventures)

211. Manufacturing and maintenance of civil aircraft parts and components

212. Design and manufacturing of civil helicopters: three tons or more (With Chinese party as the controlling shareholder)

213. Manufacturing of civil helicopter parts and components

214. Manufacturing of ground-effect and water-effect aircrafts and design and manufacturing of unmanned aircrafts and aerostats (With Chinese party as the controlling shareholder)

215. Design, manufacturing and maintenance of aircraft engines, engine parts and components and aircraft auxiliary power systems

216. Design and manufacturing of airborne equipment for civil aviation

217. Manufacturing 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 manufacturing of aeronautical materials, civil aircraft ground reception and application equipment, carrier rocket ground testing

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equipment, and equipment for carrier rocket mechanics and environmental experiments

218. Manufacturing 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. Manufacturing of light gas turbines

220. Design of cruise ship and deepwater (3,000 meters or more) marine engineering equipment

221. Manufacturing and repair of marine engineering equipment (including modules) (With Chinese party as the controlling shareholder)

222. Design of low- and medium-speed diesel engines of vessels and their parts and components

223. Manufacturing of low and medium-speed diesel engines of vessels and bent axle (With Chinese party as the controlling shareholder)

224. Design and manufacturing of cabin machinery of vessels (With Chinese party as the relatively controlling shareholder)

225. Design and manufacturing of vessel communication and navigation equipment: vessel communication system equipment, vessel electronic navigation equipment, radars for vessel use, electric gyrocompass automatic pilot, and internal broadcasting system of vessels, etc.

226. Design and manufacturing of yachts

(XXI) Electric Machinery and Equipment Manufacturing

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

228. Manufacturing of denitration equipment of sintering machines in coal-fired power plants and steel industry

229. Design and manufacturing of seals of thermal power equipment

230. Manufacturing of large castings and forgings for coal-fired power station and hydropower station equipment

231. Manufacturing of key auxiliary equipment for hydropower generating units

232. Manufacturing of power transmission and transformation equipment

233. Manufacturing of complete sets of equipment or key equipment for new energy power generation: 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 a capacity of 2.5 megawatts or more

234. Manufacturing of large pumped power storage units with rated power of 350MW or

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more: pump-turbines and speed controllers, large variable speed reversible pump-turbine units, generator-motors, and excitation, starters and other ancillary equipment

235. Manufacturing of Stirling generator sets

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

237. Manufacturing of high-tech green batteries: nickel-metal hydride (Ni-MH) batteries, nickel-zinc batteries, silver-zinc batteries, lithium-ion batteries, solar batteries, fuel batteries, etc. (excluding energy type of new energy vehicle batteries)

238. Manufacturing of refrigeration compressors for air conditioning with motor adopting DC speed control technology, refrigeration compressors for air conditioning adopting CO₂ natural refrigerants, and refrigeration equipment for air conditioning applying renewable energy (air source, water source or ground source)

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

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

241. Manufacturing of alternating current (AC) variable voltage variable frequency (VVVF) drive devices

(XXII) Manufacturing of Computers, Communication and Other Electronic Equipment

242. Manufacturing of HD digital cameras and digital sound playing equipment

243. Manufacturing of TFT-LCD, PDP, OLED and other panel displays and materials of displays (excluding TFT-LCD glass substrate for the 6th generation and below)

244. Manufacturing of key parts for large-screen color projection displays, including but not limited to optical engines, light sources, projection screens, high-resolution projection tubes, and micro-display projection modules

245. Manufacturing of digital audio and video coding and decoding equipment; equipment for digital broadcasting and television studios; equipment for digital cable television systems; digital audio broadcasting transmission equipment; digital television up-and-down converters; digital television ground broadcasting single frequency network (SFN) equipment; and equipment for satellite digital TV uplink stations

246. Design of integrated circuits; manufacturing of large-scale digital integrated circuits with a line width of 28 nanometers or less; manufacturing of analog or digital-analog integrated circuits with a line width of 0.11 micron or less, MEMS and compound semiconductor integrated circuits; and BGA, PGA, CSP, MCM, and other advanced encapsulation and testing

247. Manufacturing of large- and medium-sized electronic computers, highperformance computers with a computing capacity of 10,000 trillion calculations per second, portable minicomputers, large analog simulation systems, and large industrial controlling machines

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and controllers

248. Manufacturing of computer digital signal processing system and boards

249. Manufacturing of graphic and image recognition and processing system

250. Development and manufacturing of high-capacity optical and disk drives and their components

251. Manufacturing of high-speed memory system and intelligent memory device with a capacity of 100TB or more

252. Manufacturing of computer-aided design (three-dimensional CAD) systems, electronic design automation (EDA), computer-aided testing (CAT) systems, computer-aided manufacturing (CAM) systems, computer-aided engineering (CAE) systems, and other computer application systems

253. Development and production of software products

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

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

256. Manufacturing of new electronic parts and components: chip components, sensitive components and sensors, frequency control and selection components, hybrid integrated circuits, power electronic devices, optoelectronic devices, new electromechanical components, polymer solid capacitors, super-capacitors, passive integrated components, high-density interconnect (HDI) boards, flex printed circuit (FPC) boards, rigid-flex printed circuit (R-FPC) boards, and packaging boards

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

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

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

260. Production of recordable disks

261. Design and manufacturing of civil satellites, and manufacturing of civil satellite payloads (With Chinese party as the controlling shareholder)

262. Manufacturing of parts and components of civil satellites

263. Manufacturing of equipment for satellite communication systems

264. Manufacturing of optical communication measuring instruments and optical transceivers with a speed of 40 Gb/s or more

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

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- 266. Manufacturing of equipment for wireless local area networks (including WAPI support) and wide area networks
- 267. Manufacturing of time division multiplex equipment (TDM) with rate of 100Gbps or more, dense wavelength division multiplexing equipment (DWDM), broadband passive network equipment (including EPON, GPON, WDM-PON, etc.), next-generation DSL silicon and equipment, optical cross connect (OXC) equipment, automatically switched optical network (ASON) equipment, and transmission equipment for optical fiber communication at more than 40G/sSDH
- 268. Development and manufacturing of IPv6-based next generation Internet system equipment, terminal equipment, testing equipment, software, and chips
- 269. Development and manufacturing of the third generation and subsequent mobile communication cell phones, base stations, core network equipment, and network testing equipment
- 270. Development and manufacturing of high-end routers and network switches of one gigabit or more
- 271. Manufacturing of equipment for air traffic control systems
- 272. Development and manufacturing of electronic teaching aiding equipment for traditional Chinese medicines based on sound, light, electricity or touch-controlled computer information technologies and human body model with virtual pathology and physiology.

(XXIII) Manufacturing of Instruments and Meters

- 273. Manufacturing of industrial process automatic control system and devices: fieldbus control systems, large-scale programmable logic controller (PLC), two-phase flow meters, solid flow meters, and new-type sensors and field measuring meters
- 274. Development and manufacturing of large precision instruments
- 275. Manufacturing of high-precision digital voltmeters and ammeters (with a span of seven and a half bits or more)
- 276. Manufacturing of reactive power auto-compensation devices
- 277. Manufacturing of new instruments and equipment for production safety
- 278. Manufacturing of VXI bus automatic testing systems (meeting IEEE1155 international standards)
- 279. Development and manufacturing of coal mine underground monitoring and hazard forecasting systems and coal safety testing and management systems
- 280. Manufacturing of engineering surveying and geophysical observation equipment
- 281. Manufacturing of environmental monitoring instruments
- 282. Manufacturing of instruments and equipment for hydrological data collection,

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processing, and transmission and for flood control early warning

283. Manufacturing of instruments and equipment for marine exploration monitoring

(XXIV) Comprehensive utilization of waste resources

284. Coal dressing and comprehensive utilization of coal ash (including desulfurized gypsum), coal gangue, etc.

285. Production of completely biodegradable materials

286. Recycling and treatment of waste and used electrical and electronic products, automobiles, mechanical and electrical equipment, rubbers, metals, and batteries

IV. Production and Supply of Electric Power, Heating Power and Fuel Gas

287. Construction and operation of ultra-supercritical unit power station with the capacity of a single unit of 600,000-kilowatt or more

288. Construction and operation of back-pressure combined heat and power stations, combined cooling heating and power stations, and combined heat and power stations with capacity of 300,000 kilowatt or more

289. Construction and operation of large air cooling unit power stations with the capacity of a single unit of 600,000-kilowatt or more in water-deficient areas

290. Construction and operation of integrated gasification combined cycle power generation and other clean coal power generation projects

291. Construction and operation of power generating projects with the capacity of a single unit of 300,000-kilowatt or more by using fluidized bed combustion boilers and coal gangue, middings and coal slime, etc.

292. Construction and operation of hydropower stations for the primary purpose of power generation

293. Construction and operation of nuclear power stations (With Chinese party as the controlling shareholder)

294. Construction and operation of new energy power stations (including but not limited to solar energy, wind energy, geothermal energy, tidal energy, tidal current energy, wave energy, and biomass energy)

295. Construction and operation of power grid ((With Chinese party as the controlling shareholder)

296. Seawater utilization (direct utilization of seawater or seawater desalination)

297. Construction and operation of water supply plants

298. Construction and operation of renewable water plants

299. Construction and operation of sewage treatment plants

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300. Construction and operation of vehicle charging stations and battery replacement stations

V. Transportation, Warehousing and Postal Service Industries

301. Construction and operation of network of trunk railway lines (With Chinese party as the controlling shareholder)

302. Construction and operation of intercity railway, urban (suburban) railway, resource-oriented development railway, 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 party as the relatively controlling shareholder)

308. Air transportation companies (With Chinese party as the controlling shareholder, and the proportion of investment by the foreign investor and its affiliated enterprise shall not exceed 25% of the total amount of investment)

309. General airline companies for agriculture, forestry, and fishery (limited to Sino-foreign equity or contractual joint ventures)

310. Scheduled or non-scheduled international marine transportation services (limited to Sino-foreign equity or contractual joint ventures)

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 and special drugs, as well as other logistical services and

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relevant technological services

316. Rural chain distribution

317. Construction and operation of pallet and container unit sharing system

VII. Leasing and Commercial Service Industries

318. Accounting and auditing (the managing partner shall have Chinese nationality)

319. International economic, science and technology, environmental protection, and logistical information consulting services

320. By contracting outsourced services, engaging in system application management and maintenance, information technology support management, bank back-office services, financial settlement, software development, off-shore call centers, data processing, and other outsourced information technology and business process services

321. Venture capital enterprises

322. Intellectual property right services

323. Home service

VIII. Scientific Research and Technical Services

324. Bioengineering and biomedical engineering technologies 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 or deep processing of related products, and marine medicine and biochemical product development technology

327. Ocean monitoring technology (ocean tidal waves, weather, environmental monitoring) and seabed detection and oceanic resources exploration and assessment technologies

328. Technologies for high value-added utilization of seawater chemical resources, including but not limited to production of salt and extraction and deep processing of potassium, bromine, magnesium and lithium by comprehensively utilizing desalinated dense seawater

329. Offshore oil pollution cleaning and ecology recovery technology and relevant product development, technology for prevention and treatment of sea water eutrophication, technology for prevention and treatment of marine life explosive growth disaster, and

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coastal zone ecological environment recovery technology

330. Development of energy saving and environmental protection technologies and related services

331. Development and application of technologies for recycling and comprehensive utilization of resources and for recycling of emissions and discharges from enterprise productions

332. Environmental pollution treatment and monitoring technologies

333. New technologies for energy efficiency in chemical fiber production and printing and dyeing processing and for the treatment of exhaust gas, waste liquid and waste residue

334. Desertification prevention and desert treatment technologies

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

339. Development and application of internet of things technology

340. Industrial design, architectural design, costume design and other creative industries

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

341. Construction and operation of comprehensive water control projects (with Chinese party as the controlling shareholder)

342. Construction and operation of urban enclosed roads

343. Construction and operation of urban subway, light railway and other track transport

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

X. Education

345. Non-academic vocational training institutions

XI. Health and Social Services

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346. Service institutions for seniors, the disabled and children

347. Nursing institutions for the aged

XII. Cultural, Sports and Entertainment Industries

348. Operation of performance sites

349. Operation of sports grounds and body-building, contest performance and sports training and intermediate services

Catalogue of Restricted Industries for Foreign Investment

I. Agriculture, Forestry, Animal Husbandry and Fishery

1. Selection and cultivation of new varieties of crops and production of seeds (With Chinese party as the controlling shareholder)

II. Mining Industry

2. Exploration and exploitation of special and rare kinds of coal (With Chinese party as the controlling shareholder)

3. Exploration and exploitation of noble metals (gold, silver, and platinum group)

4. Exploration and exploitation of graphite

5. Exploitation and mineral separation of lithium mines

III. Manufacturing Industries

6. Processing of edible oils and fats from soybean, rapeseed, peanut, cottonseed, camellia seed, sunflower seed, palm, etc. (With Chinese party as the controlling shareholder), processing of rice and flour, processing of raw sugar, and deep processing of corn

7. Production of biological liquid fuels (fuel ethanol and biodiesel) (With Chinese party as the controlling shareholder)

8. Printing of publications (With Chinese party as the controlling shareholder)

9. Smelting of rare metals including but not limited to tungsten, molybdenum, tin (except for tin compounds) and antimony (including antimony oxide and antimony sulfide)

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10. Smelting and separation of rare earth elements (limited to Chinese-foreign equity or contractual joint ventures)
11. Manufacturing of complete automobiles, special purpose motor vehicles and motorcycles: the proportion of Chinese shares shall not be less than 50%. A foreign investor may set up at most two joint ventures to manufacture compete products of the same kind (including passenger vehicles, commercial vehicles and motorcycles), but such limitation can be ignored if the foreign investor, jointly with its Chinese equity partner, acquires other Chinese automobile manufacturers
12. Repair, design and manufacturing of ships (including subsections) (with the Chinese Party as the controlling shareholder)
13. Manufacturing of satellite telecasting ground receiving facilities and key components

IV. Production and Supply of Electric Power, Heating Power, Fuel Gas and Water

14. Within small grids, construction and operation of power plants using coal-fired and steam condensation thermal generator sets with a single generator capacity of 300,000 kilowatts or less and thermoelectric power stations using coal-fired, steam condensation and extraction thermal generator sets with a single generator capacity of 100,000 kilowatts or less
15. Construction and operation of pipeline networks for gas, heat, and water supply and sewage in cities with a population of more than 500,000 (With Chinese party as the controlling shareholder)

V. Transportation, Warehousing and Postal Service Industries

16. Railway passenger transport companies (With Chinese party as the controlling shareholder)
17. Road passenger transport companies
18. Water transport companies (With Chinese party as the controlling shareholder)
19. General airlines for official duties, sightseeing, photography, prospecting, industries and other purposes (With Chinese party as the controlling shareholder)

VI. Information Transmission, Software and Information Technology Services

20. Telecommunication companies: value-added telecommunication services (with the

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proportion of foreign investment not exceeding 50%, except for e-commerce); basic telecommunication services (with the proportion of foreign investment not exceeding 49%)

VI. Wholesale and Retail Industries

21. Purchase of grains; and wholesale of grains and cotton, construction and operation of large-scale agricultural product wholesale markets
22. Vessel agencies (with Chinese party as the controlling shareholder) and ocean shipping tally companies (limited to Sino-foreign equity or contractual joint ventures)
23. Wholesale of product oil and construction and operation of gas stations (in the case of the same foreign investors selling product oil of different varieties and brands from multiple suppliers through more than 30 chain gas stations, the Chinese parties shall be the controlling shareholders)

VII. Financial Industry

24. Banks (the proportion of investment in capital in a Chinese-funded commercial bank by a foreign financial institution and the affiliated party under common control as promoter or strategic investor shall not exceed 20%, while the proportion of investment in capital in a Chinese-funded commercial bank by more than one foreign financial institutions and the affiliated party under common control as promoter or strategic investor shall not exceed 25%, and the foreign financial institutions investing in China's small or middle-sized financial intuitions in rural areas must be banking financial institutions)
25. Insurance companies (in the case of life insurance companies, the proportion of foreign investment shall not exceed 50%)
26. Securities companies (limited in establishment to underwriting and sponsoring of A-shares, B-shares, government and corporate bonds, brokerage of B-shares, brokerage and proprietary trading of government and corporate bonds, qualified companies which have been established for two years or more may apply for expansion of business scope; and the proportion of foreign investment shall not exceed 49%) and securities investment fund management companies (with the proportion of foreign investment not exceeding 49%)
27. Futures companies (With Chinese party as the controlling shareholder)

IX. Leasing and Commercial Service Industries

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- 28. Market survey (limited to Sino-foreign equity or contractual joint ventures, and radio and television ratings surveys shall be conducted by enterprises with the Chinese party as the controlling shareholder)
- 29. Credit investigation and rating service companies

X. Scientific Research and Technical Service

- 30. Surveying and mapping companies (With Chinese party as the controlling shareholder)

XI. Education

- 31. Higher learning institutions (limited to Sino-foreign contractual joint ventures, with Chinese party as the leader?)
- 32. Ordinary senior high schools (limited to Sino-foreign contractual joint ventures, with Chinese party as the leader)
- 33. Pre-school educational institutions (limited to Sino-foreign contractual joint ventures, with Chinese party as the leader)

XII. Health and Social Services

- 34. Medical institutions (limited to Sino-foreign equity or contractual joint ventures)

XIII. Cultural, Sports and Entertainment Industries

"With Chinese party as the leader" refers to the principal or person primarily in charge of administration shall have Chinese nationality, and the number of Chinese members of the board of governors, the board of director or joint administrative committee of a Sino-foreign contractual educational institution shall be not less than 50% (the same below)

- 35. Production of radio and television programs and movies (limited to contractual joint ventures)
- 36. Construction and operation of movie theaters (With Chinese party as the controlling shareholder)
- 37. Construction and operation of large theme parks

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38. Performance brokerage agencies (With Chinese party as the controlling shareholder)

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

Catalogue of Prohibited Industries for Foreign Investment

I. Agriculture, Forestry, Animal Husbandry and Fishery

1. Research and development, breeding, and planting of China's rare and special varieties and production of relevant breeding materials (including quality genes in planting industry, animal husbandry, and aquaculture)
2. Breeding of genetically modified crops, livestock and poultry and aquatic fingerlings and production of genetically modified seeds
3. Fishing in the sea area and inland waters under China's jurisdiction

II. Mining Industry

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 Industries

(I) Pharmaceutical Industry

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

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(II) Petroleum Processing, Coking and Processing of Nuclear Fuels

9. Smelting and processing of radioactive minerals, and production of nuclear fuels

(III) Special-Purpose Equipment Manufacturing

10. Manufacturing of weapons and ammunitions

(IV) Other Manufacturing

11. Ivory carving

12. Tiger bone processing

13. Production of Xuan paper and Chinese ink ingot

IV. Production and Supply of Electric Power, Heating Power, Fuel Gas and Water

14. Outside small grids, construction and operation of power plants using coal-fired and steam condensation thermal generator sets with a single generator capacity of 300,000 kilowatts or less and thermoelectric power stations using coal-fired, steam condensation and extraction thermal generator sets with a single generator capacity of 200,000 kilowatts or less

V. Transportation, Warehousing and Postal Service Industries

15. Air traffic control

16. Postal companies; domestic express delivery of letters

VI. Wholesale and retail Industries

17. Wholesale and retail of tobacco, cigarette, redrying tobacco and other tobacco products

VII. Leasing and Commercial Service Industries

18. Social survey

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19. Chinese legal affairs consulting (except to the providing of information relating to the influence of Chinese legal environment)

VIII. Scientific Research and Technical Services

20. Development and application of human stem cell and genetic diagnosis and treatment technologies

21. Geodetic surveying, marine charting, aerial photography for surveying and mapping purposes, administrative boundary surveying and mapping, compilation of topographic map, world administrative map, national administrative map, administrative map at provincial level or below, national school map, local school map, true three-dimensional map and navigating digital map, local geological mapping, and survey for mineral geology, physical geography, geochemistry, hydrogeology, environmental geology, geological disasters, remote sensing geology and so on.

IX. Water Conservancy, Environmental, and Public Facility 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 and military, police, politics, Party and other education institutions in special fields

XI. Cultural, Sports and Entertainment Industries

25. News agencies

26. Publishing of books, newspapers, and periodicals

27. Publishing and production of sound and video recordings 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)

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- 29. Radio and television program production and operation companies
- 30. Movie production companies, distribution companies, and theater companies
- 31. Operation of news websites, online publishing service, online audio and video programs, business premises for Internet-access services, and Internet cultural business (excluding music)
- 32. Auction enterprises and cultural relic stores to engage in auction of cultural relics
- 33. Construction and operation of golf courses and villas

XI. Other Industries

- 34. Projects endangering the safety and performance of military facilities
- 35. Lottery industry (including gambling racecourses)
- 36. Pornographic industry

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

Notes: If the Mainland and Hong Kong Closer Economic Partnership Arrangement and its supplements, the Mainland and Macau Closer Economic Partnership Arrangement and its supplements, the Cross-strait Economic Cooperation Framework Agreement and its subsequent agreements, and the free trade zone agreements signed by and between China and other relevant countries provide otherwise, the relevant provisions shall prevail.

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