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## **Guiding Catalogue of Foreign-Invested Industries (2007)**

The "Guiding Catalogue of Foreign-Invested Industries (Amended in 2007)" has been approved by the State Council, and is hereby promulgated. It shall be effective as of December 1, 2007. The implementation of the "Guiding Catalogue of Foreign-Invested Industries (Amended in 2004)" promulgated by the National Development and Reform Commission, the Ministry of Commerce on November 30, 2004, shall be ceased simultaneously.

MA Kai  
Director of the National Development and Reform Commission  
BO Xilai  
Minister of Commerce  
October 31, 2007

### **Catalogue of Encouraged Foreign-Invested Industries**

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

1. Transformation of cropland with low to medium yield
2. Planting, development and production of woody edible oil resources and spice, industrial raw-materials.
3. Development and production of nuisance-free cultivation technologies and product series for vegetables (including domestic fungus, watermelon, and muskmelon), dry and fresh fruits, tea
4. Development and production of new technologies for such agricultural crops as sugar plants, fruit trees, forage grass, etc.
5. Construction and operation of bases for flower production and seeding nursery
6. Planting of caoutchouc, sisal hemp, and coffee
7. Planting and cultivation of traditional Chinese medicinal materials (limited to Chinese-foreign equity and cooperative joint ventures)
8. Return to cropland and comprehensive utilization of straws of agricultural crops,

development and production of organic fertilizer resources

9. Building of forest trees (bamboos) and cultivation of improved varieties, cultivation of new varieties of polyploidy trees and transgenic trees
10. Breeding of aquatic product offspring (except for rare improved varieties owned by China exclusively)
11. Construction and operation for ecological environment protection projects such as tree and grass planting to prevent and control desertification and water loss and soil erosion
12. Aquatic breeding of aquatic products, deep-water live and wired cage aquatic breeding, industrial aquatic breeding, ecological oceanic planting and breeding

## **II. Mining Industry**

1. Prospecting and exploitation of coal-bed gas, utilization of miners and gas
2. Risk prospecting and exploitation of petroleum and natural gas (limited to Chinese-foreign equity and cooperative joint ventures)
3. Development of low-leakage oil and gas pools (or fields) (limited to Chinese-foreign equity and cooperative joint ventures)
4. Development and application of improving the percentage recovery of crude oil and relevant new technology (limited to Chinese-foreign equity and cooperative joint ventures)
5. Development and application of new technologies for prospecting and exploiting petroleum such as geophysical prospecting, well drilling, well logging, and under-well operation (limited to cooperative joint ventures)
6. Prospecting and exploitation of unconventional oil resources such as shale oil, oil sand, heavy oil, super heavy oil. etc. (limited to cooperative joint ventures)
7. Prospecting, exploitation, and mineral separation of iron ore mines and manganese ore mines
8. Development and application of new technologies for improving utilization rate of miners and tailing, comprehensive application of technologies for miner ecological recovery
9. Prospecting and exploitation of seabed natural gas hydrate (limited to cooperative joint ventures)

## **III. Manufacturing industries**

### ***(1) Agricultural and Sideline Food Processing Industry***

1. Development and production of biological feedstuff, straw feedstuff, aquatic feedstuff
2. Processing of aquatic products, cleaning and processing of shellfish, development of seaweed products
3. Storage and processing of vegetables, dry and fresh fruits, poultry and livestock products

## **(2) *Food Manufacturing Industry***

1. Development and production of geriatric foods, baby foods, functional foods
2. Development, production and processing of forest foods
3. Production of natural food additive, food ingredients (limited to Chinese-foreign equity and cooperative joint ventures)

## **(3) *Drink Manufacturing Industry***

1. Development and production of fruit and vegetable drink, protein drink, tea drink, coffee drink, botanic drink

## **(4) *Tobacco Products Industry***

1. Processing of cellulose acetate and its tow (limited to Chinese-foreign equity and cooperative joint ventures)
2. Production of tobacco slices in way of paper-making (limited to Chinese-foreign equity and cooperative joint ventures)
3. Processing and production of filter tip (limited to Chinese-foreign equity and cooperative joint ventures)

## **(5) *Textile Industry***

1. Production of special textile products for industries by adopting new high-technology
2. Weaving, dyeing, and subsequent assortment as well as processing of high-grade face fabric
3. Processing of special natural fibre products fulfilling requirements of comprehensive utilization of resources, of ecosystem and of environmental protection (including other animal fibre, bast fibre, bamboo fibre, mulberry silk, colourful cotton, etc. except for wools)
4. Production of clothes adopting computer-integrated manufacturing system
5. Production of high-grade carpet products, embroidery products, drawnwork products

**(6) Industry of Leather, Fur, Feather (Down) and Their Respective Products**

1. Processing of leather, fur by cleaning technology
2. Processing of subsequent leather finishing by new technology
3. Processing of high-grade leather (sofa leather, car cushion leather)

**(7) Industry of Wood Processing, Wood, Bamboo, Vine, Palm, and Grass Products**

1. Development of new technology for comprehensive utilization of three surplusages of forestry, "inferior, small, and firewood" wood, bamboo wood, development and production of new products

**(8) Paper-Making and Paper Products Industry**

1. Production of chemical wood pulp with single production line of the annual yield 300,000 tons or more based on forestry-paper integration construction, or chemical mechanical wood pulp with single production line of the annual yield 100,000 tons or more, and production of high-grade paper and paperboards under synchronized construction (limited to Chinese-foreign equity and cooperative joint ventures)

**(9) Petroleum Processing and Coking Industry**

1. Deep processing of needle coke and coal tar

**(10) Chemical Raw Materials and Chemical Products Manufacturing Industry**

1. Production of ethylene with the annual output of 800,000 tons or more (relatively controlled by the Chinese parties)
2. Processing and manufacturing of downstream products and derivatives of ethylene, comprehensive utilization of C4—C9 by-products of ethylene (except for butadiene-produced synthetic rubber)
3. Production of polyvinyl chloride resin with the annual output of 200,000 tons or more (ethylene method)
4. Production of deep-processing products of calcium hypochlorite, polyvinyl chloride, and organic silicon
5. Production of basic organic chemical raw materials such as benzene, toluene, xylene, glycol and their derivatives products
6. Production of auxiliary raw materials for synthetic materials: production of bisphenol A,

propylene oxide produced by the method of hydrogen peroxide oxidation propylene

7. Raw materials for synthetic fibre: production of pure p-phthalic acid, caprolactam, adipic acidhexamethylene diamine salt, melt-spun spandex.
8. Synthetic rubber: production of special rubber such as liquor buna s rubber (not including SBS), butyl rubber, synthetic polyisoprene, diisocyanate rubber, acrylic rubber, and chloro hydrin rubber, ethylene-propylene rubber, acrylonitrile-butadiene rubber, fluoro rubber, silicone rubber, etc.
9. Engineering plastics and plastic alloy: production of such products as PPO, engineering plastics nylon "11" and nylon "12", polyimide, polysulfone, PAR, liquid crystal polymer. etc.
10. Fine chemistry: new products and new technology for catalyzer, accessory, additive, processing technology of dyestuff (pigment) commercialization, production of hi-tech chemicals for electronics and paper making, food additive, feedstuff additive, leather chemicals(except for N-N-dimethylformamide), auxiliary agents for oilfields, surface active agents, amps, adhesive, inorganic fibre, and inorganic nanometer materials, as well as disposal and deep processing of pigment envelope
11. Production of low-hysteresis and high-wear-resistance carbon black
12. Production of environmentally-sound printing ink and environmentally-sound aromatic oil
13. Production of natural aroma chemicals, synthetic aroma chemicals, and isolate aroma chemicals
14. Production of high-performance coating compound, water automobile coating compound, auxiliary water resin
15. Production of substitutes of fluoro-chloro-hydrocarbon
16. Production of series of chemical products of organic fluorine ( except for chlorofluorocarbon, hydrogen chlorofluorocarbon, tetrafluoroethylene)
17. Production of recycling of fluorine resource from bonderizing, aluminum smelting
18. Production of large-scale coal chemicals (controlled by the Chinese parties)
19. Development and production of new technologies and new products for forestry chemicals
20. Production of ionic exchange film, inorganic separation film, function diaphragm for caustic soda
21. Development and production of organic, inorganic, and biological film for environmental

protection

22. Development and production of new fertilizers: bio fertilizer, heavy concentration potash fertilizer, compound fertilizer , controllable and slow-releasing fertilizer, compound microbial inoculation preparation, compound microbial fertilizer, straws and rubbish decomposing preparation, microbial chemical preparation with special function
23. Development and production of new products of high-efficiency and safe pesticides, and of new formulations of high-performance pesticides
24. Development and production of bio pesticides and bio prevention and control products: microbial pesticide, microbial antiseptic, agricultural antibiotics, insect pheromone, insect predators, microbial herbicide
25. Comprehensive utilization, handling, and disposal of waste gas, waste liquid, and waste residues
26. Production of organic polymer materials: organic silicone modified coating for ship shell, airplane coatings, rare-earth-cerium sulphide red dyestuff, lead-free electronic packaging materials, series of lithography stock for exclusive use of colour plasma display panels, superfine fibre with small diameter and large surface area, high-precision fuel filter paper, diaphragm of lithium-ion battery, multi-functional compound auxiliary agents for plastic processing, citric-acid-diglyceride, fludioxonil, cyazofamid

## **(11) Pharmacy**

1. Production of new-type compound medicines or active ingredient medicines (including active pharmaceutical ingredients and preparations)
2. Amino acid: production of serine, tryptophan, and histidine, methionine for feedstuff, etc.
3. Production of new-type anticancer pharmaceuticals and new-type pharmaceuticals for blood vessel of brain and heart , and new-type pharmaceuticals for nervous system
4. Production of new-type, high-efficient, economical contraceptives and anti-conceptives
5. Production of new-type medicines by adopting biotechnology
6. Production of high-physiological activity medicines containing fluorine such as heterocyclic fluoride, production of their intermediates
7. Production of gene engineering vaccine (AIDS vaccine, B-type hepatitis vaccine, contraception vaccine, etc.)
8. Production of biological vaccine
9. Production of BCG(Bacillus Calmette Guerin) vaccine, poliomyelitis vaccine

10. Development and production of sea medicines
11. Medicine preparations: production of new products, new dosage forms adopting such new technology as slow release, controlled release, targeting, skin-infiltrating absorption, etc.
12. Development and production of adjuvant for new-type medicines
13. Production of biomedical materials and products (except for processing of human cadaver and its specimen, human organs and tissues, their specimens)
14. Production of antibacterial active pharmaceutical ingredients for animals (including antibiotics and chemical synthesis)
15. Development and production of new products and new dosage forms of antibacterial medicines, antihelmintic, vermifuge, anti-coccidium medicines for animal
16. Production of new-type diagnostic reagent

### ***(12) Chemical Fibre Manufacturing Industry***

1. Production of such hi-tech chemical fibres as differentiated chemical fibres, carbon fibre and ultra high molecular weight polyethylene, polyphenylene sulfide
2. Production of environmentally-sound chemical fibres such as cellulose fibre by new solvent method
3. Production of new-type polyester for fibre and non-fibre: polytrimethylene terephthalate (PTT), polyethyleneglycol sebacate (PEN), polybutylene terephthalate (PBT)
4. Production of new-type fibre materials by utilization of renewable resource and biomass engineering technology: polylactic acid (PLA) fibre, polyols PDO fibre by biological method, etc.
5. Production of polyamide with single production line of 100 tons or more daily output
6. Production of aramid fibre and cord for radial tire

### ***(13) Plastic Product Industry***

1. Development and production of new technologies for agricultural film, and new products (including photolysis film, multifunctional film, raw materials, etc.)
2. Counteracting and recycling of waste and used plastics
3. Development and production of new technologies for plastic soft packages, new products (high obstructing and multifunctional film and raw materials)

## **(14) *Non-Metal Mineral Product Industry***

1. Development and production of new-type building materials for energy saving and environment protection: light high-strength multifunctional wall materials, high-grade environmental protection type decoration materials, high-quality waterproof sealing materials, high-efficiency heat preservation materials
2. Production of energy saving and high-efficiency chemical building materials and products replacing steel with plastic or replacing wood with plastic
3. Production of good elastomer plastomer modified bituminous waterproof rolling materials with the annual output 10,000,000 m<sup>2</sup> or more, wide-width(2 meters or more) and high-quality EPDM rubber waterproof rolling materials and their auxiliary materials, durable polyvinyl chloride rolling materials, TPO waterproof rolling materials
4. Production of shielding electromagnetic wave glass, glass substrate for microelectronics, infrared transmitting lead-free glass, electron-grade and large-size silica glass diffuser tube, super second generation or third generation micro-channel sprue, fibre-optic face panel and image inverters, and glass cone
5. Production of glass reinforced plastics products and glass fibre with the annual output of 50,000 tons or more (including production line of tank furnace drawn wire technique)
6. Production of continuous glass fibre strand mat, glass fibre surface mat, glass fibre cloth for microelectronics, as well as tissues
7. Production of image fibre bundles and laser medical bundles
8. Production of sanitation porcelain with the annual output of 1,000,000 pieces or more
9. Standardized refining of ceramics raw materials, production of high-grade decoration materials for ceramics
10. Production of high-grade fire-resistant materials for kilns of cement, high-grade (electron) glass, ceramics, glass fibre, micropore carbon brick, and etc.
11. Production of ceramics carriers, AlN ceramics substrate, multi-pore ceramics for automobile catalytic devices
12. Production of inorganic non-metal materials and products: artificial lens, carbon/carbon compound materials, special ceramics, special sealing materials, high-speed oil sealing materials, special cementing material, special latex materials, hydro acoustic rubber products, thermal insulation materials with 0.025W/mK or less coefficient of normal temperature thermal conductivity, etc.
13. Production of high-technology compound materials: continuous fibre reinforced thermoplastic compound materials, prepreg, technical auxiliary materials for resin matrix compound materials with thermo tolerance of more than 300°C, resin matrix compound

materials-made blade, high-grade resin matrix compound materials-made sports goods, special-performance glass fibre reinforced plastic pipe (pressure > 1.2Mpa), special-function compound materials and their products, compound material products used for deepwater or diving, medical or rehabilitative compound material products, carbon/carbon compound materials and brake shoe, high-performance ceramic matrix compound materials and products, metal matrix compound materials and products, metal layer compound materials and products, super-pressure compound plastic pipe (pressure ≥ 320MPa), aviation tire for large airliner

14. Production of high-performance fine ceramics and functional ceramics materials: micro-powder particles of Sic (purity > 99%, average particle diameter < 1 μm), micro-powder particles of Si<sub>3</sub>N<sub>4</sub> (purity > 99%, average particle diameter < 1 μm), high-purity micro-powder of alumina (purity > 99.9%, average particle diameter < 0.5 μm), low-temperature-sintered powder particles of ZrO<sub>2</sub> (sinter temperature < 1350°C), high-purity powder particles of AlN (purity > 99%, average particle diameter < 1 μm), powder particles of rutile TiO<sub>2</sub> (purity > 98.5%), white carbon black (particle diameter < 100nm), barium titanate (purity > 99%, particle diameter < 1 μm)
15. Production of diamond film tools and ultrathin man-made diamond saw blade with the thickness of 0.3mm or below
16. Deep processing of non-ferrous metal (superfine grinding, high purity, refining, and modification)
17. Production of UHP graphite electrode
18. Production of pearl mica (particle diameter 3-150 μm)
19. Production of multidimensional, multi-directional integrated weaving fabric and modeling fabric
20. Utilization of cement kiln with new-type dry process in harmless disposal of combustible industrial wastes and house wastes

### ***(15) Non-Ferrous Metal Smelting and Calendering Industry***

1. Production of silicon with the diameter of more than 200mm, polished wafer, polycrystalline silicon
2. Production of high-new-technology non-ferrous materials: new type high-performance hydrogen storage materials, electrode materials for lithium Ion battery, compound semiconductor material (gallium arsenide, gallium phosphide, indium phosphide, gallium nitride), high-temperature superconducting material, memory alloy material (titanium nickel, copper-matrix and ferrous matrix memory alloy material), superfine (nanometer) calcium carbide and superfine (nanometer) crystal hard alloy, super-hard compound material, precious metal compound material, aluminium foil for radiator, medium and

high voltage aluminium foil of cathode capacitance, special large-scale aluminium alloy profiles, precise aluminium alloy die forging, electrified railway overhead wire, super-thin copper strip, erosion and heat-resistant copper alloy tube for exchanger, high-performance copper-nickel, copper ferroalloy strip, processed materials of berrillium copper strip, wire, tube, bars, high temperature and senescence resistant tungsten filament, magnesium alloy cast, lead-free solder, magnesium alloy and its applicable products, foamed aluminium, titanium alloy strip material and titanium welding tube, atomic energy level sponge zirconium, products through deep processing of tungsten or molybdenum

### ***(16) Metal Product Industry***

1. Manufacture of new environmentally-sound materials for weight lightening of automobile, motorcycle (automobile body's aluminium sheet, aluminium magnesium alloy material, aluminium alloy frame of motorcycle, etc.)
2. Development and production of hardware for high-grade buildings, hot-water heating apparatus and hardware
3. Manufacture and processing of metal packing products (thickness of below 0.3mm) for all kinds of rice and oil, foods, fruits and vegetables, drinks, chemical products for daily use, etc.(printing and coating processing of internal and external walls of products)

### ***(17) General Machinery Manufacturing Industry***

1. Manufacturing of high-grade numerically-controlled machines and key parts: five-axis linkage numerically-controlled machines, numerically-controlled coordinate-measuring milling processing centre, numerically-controlled coordinate-measuring grinding machine, five-axis linkage numerically-controlled system and its servomechanism installation, high-speed super-hard cutter tools for precise numerically-controlled processing
2. Manufacturing of multi-stage forging machine of 1,000 tons or more
3. Manufacturing of equipments for disparting, breaking and disposing invalid automobiles
4. Manufacturing of FTL flexible cone production line
5. Manufacturing of vertical multiple-joint industrial robots, welding robots and welding installation equipment
6. Manufacturing of special processing machinery: laser cutting and welding suite, precise laser processing suite, numerically controlled low-speed cross-threading, electric-spark line cutting machine, submicro-grade superfine desintegrator
7. Manufacturing of crawler or wheeled crane machinery of 300 tons or more (limited to Chinese-foreign equity and cooperative joint ventures)

8. Design and manufacturing of general axis high-pressure plunger pump of 35-42MPa and motor, low-speed high-torque motor with the pressure 35-42Mpa
9. Manufacturing of electro-hydraulic proportion servomechanism component
10. Design and manufacturing of integral multi-way valve with the pressure (21-31.5Mpa) , pneumatic solenoid valves with the power below 0.35W, high-frequency electric controlled air valve of more than 200Hz
11. Design and manufacturing of hydrostatic driving installation
12. Development and manufacturing of non-contact gas film sealing with the pressure 10Mpa or more, dry-gas sealing with the pressure 10Mpa or more (including experiment facilities)
13. Development and manufacturing of polymer materials and equipments for automobile (including friction plates, modified phenolic pistol, non-metal hydraulic cylinder, etc.)
14. Manufacturing of the third or fourth generation automobile boss bearing (functional parts of boss bearing with sensor and flange in outer and internal ring of bearing), bearing for high-intermediate grade numerically-controlled machine and processing centre ( those processing centres have more than three-axis linkage function, their positioning repetition accuracy 3-4 $\mu$ m), high-speed wire rod, plate mills' bearing (single-purpose wire rod mill with the speed of 120m/s or more, supporting plate of sheet mill with processing plate of thickness 2mm or more, and work roller bearing), bearing for high speed railway (driving speed >200km/h), low noise bearing of vibration value Z4 (noise levels: Z4、 Z4P、 V4、 V4P), P4 or P2 level bearing for all kinds of bearing
15. Manufacturing of high temperature resistant insulating materials (insulating degrees: F and H) and paper moulded insulating parts
16. Development and manufacturing of rubber-plastic sealing parts for hydraulic and pneumatic use
17. Manufacturing of high-strength fasters of 12.9 level or more
18. Manufacturing of precisely-forged or precisely moulded blanks for automobiles and motorcycles
19. Re-manufacturing of machines' and automobiles' parts (except for five assemblies), engineering machinery

### ***(18) Special-Purpose Equipments Manufacturing Industry***

1. Manufacturing of miner equipments for trackless mining, loading and transportation: mechanically-actuated self-uploading dump truck of 1,000 tons or more for mine, movable crusher, bucket wheel excavator of 3,000 cubic meters / h or more, mining

loader of more than 5 cubic meters, electric coal mining machine of more than 2,000 KW, etc.

2. Manufacturing of equipments for geophysical exploration and logging: MEME earthquake detector, digital seismograph, system for digital imaging, numerically-controlled logging, apparatus and equipments for horizontal well, directional well and drilling rig, MWD while-drilling logging apparatus
3. Manufacturing of equipments for prospecting and exploitation, well drilling, centralized transportation of petroleum: floating drilling system with operating water depth of more than 500 meters and floating production system, equipments for seafloor petroleum production and centralized transportation with operating water depth of more than 600 meters, deep-sea petroleum drilling rig with winch of more than 3,000 KW power, top driving force of more than 850KW, well drilling pump of more than 1,800 KW power, land petroleum drilling rig and desert petroleum drilling rig with drilling depth of more than 9,000 meters, reciprocating compressor with 80 tons or more piston force for refinery apparatus of 10,000,000 tons/year, numerically-controlled deep-well logging tools, equipments for fastening holes with petroleum drilling-generated mud
4. Design and manufacturing of system integration of shield machine with the diameter of more than 6 meters, design and manufacturing of system integration of full-section hard-rock tunnelling boring machine with the diameter of more than 5 meters, big-calibre spinning drilling machine with the calibre of more than 1M, the depth of more than 30M), design and manufacturing of pipe jacking machine with the diameter of more than 1.2 meters, manufacturing of large-scale no-dig underground line seepage suite with the towing force of more than 200 tons, manufacturing of underground continuous wall working drilling machine, manufacturing of automatic vertical drilling system
5. Design and manufacturing of large pipe handlers of 100 tons or more, large ditcher of 320 HP or more
6. Design and manufacturing of crawler bulldozer with the ground pressure of 0.03MPa or less, power of 220 HP or more, large-scale bulldozer of 520 HP or more
7. Design and manufacturing of silt cleaner of 100 cubic meters/h or more, mud digging apparatus for mud digging ship of 1,000 tons or more
8. Design and manufacturing of equipments for concrete impervious wall working equipments used for flood prevention dams
9. Manufacturing of machinery for underwater earthwork: bulldozer, loading machine, excavator with the water depth of below 9 meters, etc.
10. Manufacturing of equipments for maintenance and automatic testing of roads and bridges
11. Manufacturing of operating, monitoring, ventilation or disaster prevention and rescue

system equipments for roads and tunnels

12. Design and manufacturing of large-scale railway working machinery, large-scale road maintenance machinery, operating safety equipments
13. Manufacturing of (asphalt) roofing shingle equipments, metal roof production equipments such as galvanized steel
14. Manufacturing of environmentally-sound energy-saving waterproof temperature-protection system equipment of field spray polyurethanes, polyurethane sealant formulation technology and equipment, modified silicone sealant formulation technology and production equipment
15. Design and manufacturing of thin slab continuously-casting machine, high-precision strip rolling mill (thickness precision of 10 micrometers)
16. Manufacturing of equipments for DRI and smelting reduction iron
17. Manufacturing of large-power dc- electric arc furnace of 50 tons or more
18. Manufacturing of equipments for colourful coating plate or plating plate
19. Manufacturing of mineral separation apparatus for poly-elements and fine-particle refractory metallurgical miners
20. Manufacturing of key equipments of ethylene complete-set equipment of 800,000 tons or more: cracked gas, propylene refrigerant ethylene centrifugal compressors, mixing granulator with 100,000 tons or more annual processing capability, centrifuge with the diameter 800 mm or more, high-temperature and high-pressure corrosion resistance pump with working temperature more than 250°C, and working pressure more than 15Mpa, and valves, low-temperature pump of below -55°C and cryogenic pump, etc. (limited to Chinese-foreign equity and cooperative joint ventures)
21. Manufacturing of large-scale coal chemical complete-set equipment (limited to Chinese-foreign equity and cooperative joint ventures)
22. Design, manufacturing and repair of metal product moulds (such as copper, aluminium, titanium, zirconium pipes, bars and profile extrusion die)
23. Design and manufacturing of stamping moulds for automobile body external panel, design and manufacturing of clamping mould and inspection clamping mould for automobile and motorcycle
24. Design and manufacturing of precise stamping mould with the precision of more than 0.02 mm (including 0.02 mm), precise cavity mould with the precision of more than 0.05 mm (including 0.05 mm), standard mould
25. Design and manufacturing of non-metal products moulds

26. Manufacturing of beer filling equipments of 60,000 bottles/h or more, middle-temperature or hot filling equipments of 50,000 bottles/h or more for beverage, aseptically filling equipments of 36,000 bottles/h or more
27. Manufacturing of production technologies and key equipment for amino acid, enzyme preparation, and food additive, etc.
28. Manufacturing of complete-set equipment and key parts for feedstuff processing at the speed of 10 tons or more per hour
29. Manufacturing of light corrugated fibreboard with the flute height of 0.75 mm or less and paper box equipment
30. Manufacturing of folio sheet-fed multi-colour planographic press with the printing speed of more than 16,000 folios/h (720×1020 mm), perfecting folio sheet-fed multi-colour planographic press with the printing speed of more than 13,000 folios/h (720×1020 mm), full sheet-fed multi-colour planographic press with the printing speed 13,000 folios/h (1000×1400mm)
31. Manufacturing of single-web single-paper road roll-fed planographic press with the printing speed of more than 75,000 folios/h (787×880mm), double-web single-paper road roll-fed planographic press with the printing speed of more than 170,000 folios/h (787×880mm), commercial roll-fed planographic press with the printing speed of more than 50,000 folios/h (787×880mm)
32. Manufacturing of multi-colour flexographic presses with the speed of more than 300 meters/minute, the width of more than 1,000 mm
33. Manufacturing of computer colour presetting system, colour remote-control system, ink speed track system, print quality auto-testing and track system, shaft-less driving technology, high-speed automatic paper receiving machine with the speed of 75,000 pieces/h, paper feeding machine, high-speed paper folding machine which may be automatically remote-controlled, automatic overprint system, cooling apparatus, silicone addition system, bias-adjustable devices, etc.
34. Deep processing technology of flat glass and manufacturing of equipments
35. Manufacturing of sewing machines for special industries with high technological contents
36. Manufacturing of complete-set equipment such as new-type paper (pulp)-making machines
37. Manufacturing of new technological equipment for subsequent leather finishing
38. Development and manufacturing of new equipments for processing and storage of agricultural products: new equipments to store, keep fresh of, classify, pack, dry, transport, and process foods, oil plants, nuts and fresh fruits, meet foods, and aquatic

products, etc., testing devices and equipments for agricultural products' quality, testing devices and equipments for no damages of agricultural products' quality, rheometer, farinograph, super-slight smash equipment, high-efficiency dehydration equipment, high-efficiency juice-condensed equipment of more than five functions, sterilization equipment for powdery food material, aseptic packaging equipments for containing solid and half-solid food, packaging materials for aseptic packaging, DVS for cream cheese products, disk separation centrifuge

39. Manufacturing of agricultural machinery: agricultural facilities and equipments (automatic irrigation equipments for glasshouse, nourishment liquid auto-collocation and fertilization apparatus, equipments for high-efficiency vegetables' breeding, analytical devices for soil nutrients), tractor with equipped engine of more than 120 KW and auxiliary agricultural tools, low fuel consumption, low-noise, low discharging diesel engine, sprayer with reclamation apparatus of remained particles equipped to large-scale tractor, high-performance rice transplanter, cotton picking Machine and cotton picking head, automatic combine harvester for corns applicable for many kinds of row ranges (hydraulic- pressure drive, machinery-drive)
40. Manufacturing of new technological equipment for agricultural tools
41. Manufacturing of equipments to return straws of agricultural crops to cropland and for comprehensive utilization of them, manufacturing of equipment for comprehensive utilization of rice shells
42. Manufacturing of equipments for comprehensive utilization of agricultural wastes and wastes from large-scale livestock and poultry breeding
43. Manufacturing of fertilizer-saving, (agricultural) pesticide-saving, water-saving agricultural technology equipments
44. Manufacturing of electromechanical well cleansing equipment and production of pharmaceuticals
45. Manufacturing of electronic endoscope
46. Manufacturing of eye-ground camera
47. Manufacturing of key parts of medical imaging equipments (high field superconducting MRI、CT、X ray computer tomography, type-B ultrasonic, etc.
48. Manufacturing of ultrasonic transducer (3D) for medical use
49. Manufacturing of entrapping treatment equipment with boron neutron
50. Manufacturing of X-ray three-dimensional directional radiation treatment system
51. Manufacturing of blood dialyzer, blood hemofilter

52. Manufacturing of full-automatic enzyme immunity system equipment (including some functions as application of sample, micro-plate reader, incubation, and subsequent data processing)
53. Manufacturing of new technologies and new equipment for control over quality of pharmaceutical products
54. Development of new technologies for analysis of effective substances in traditional Chinese medicines, development of new techniques to distil such substances, and manufacturing of new equipment to distil such substances
55. Manufacturing of new-type packing materials and cases for medicines and advanced pharmaceutical equipment
56. Development and manufacturing of new-type textile machinery, key parts and textile testing and experimental devices
57. Manufacturing of computer jacquard weaving artificial fur machine
58. Manufacturing of special-purpose equipments for solar battery production
59. Development and manufacturing of pollution prevention equipments
60. Manufacturing of equipments for disposal of urban waste and comprehensive utilization of countryside organic waste
61. Manufacturing of equipments for recycling, disposal, utilization, regeneration of used plastics, electronics, rubber, batteries
62. Manufacturing of equipments for and environmental protection technology of aquatic eco-systems
63. Development and manufacturing of complete-set equipments and seawater desalination, recycling and cooling technology with the daily output of 100,000 cubic meters or more
64. Manufacturing of special kind equipments for weather observation and analysis
65. Development of technology system for seismic station, station network, portable seismic observation and manufacturing of devices and equipments
66. Manufacturing of forming machine for radial tyre of 3 drums or more
67. Manufacturing of rolling resistance testing machine and tire noise laboratory
68. Manufacturing of new technology equipments for heating metering and temperature control apparatus
69. Manufacturing of hydrogen energy generation, reservation and transportation equipment and checkout system

70. Manufacturing of new-type heavy residual oil atomizing nozzle, high-efficiency steam draining valve with the leakage rate 0.5% or less, high temperature( $\geq 1000^{\circ}\text{C}$ ) ceramic heat exchanger
71. Manufacturing of apparatus for comprehensive utilization of used and old tires

**(19) *Communication and Transportation Equipment  
Manufacturing Industry***

1. Manufacturing of entire automobiles (the proportion of foreign capital not more than 50%) and construction of automobile research and development institutions
2. Manufacturing of automobile engines, manufacturing of engine regeneration, and construction of engine research and development institutions: petrolic engine with the power per litre of not less than 50 KW, diesel engine with the power per litre of not less than 40KW, the displacement of not more than 3 litres, diesel engine with the power per litre of not less than 30KW, the displacement of more than 3 litres, other new energy engines such as fuel cell, compound fuel, etc.
3. Research and development of automobile components and parts: caliper type brake assembly, driving axle assembly, automatic transmission case, diesel engine fuel injection pumps, engine admission turbochargers, viscous coupling (used for four-wheel drive), hydraulic pressure jib, electronic cluster gauge, crank shaft and connecting rod for automobile (diesel engine of 8 litres), anti-lock braking system (ABS, ECU, valve body, sensor), electronic stability program (ESP), brake by wire (BBW), electronic braking device, traction control system, gas generator for SRS, electronic diesel injection system, fuel common rail injection technology (the maximum injection pressure of more than 1600 Pa), variable turbocharger charging technology(VGT), variable nozzle turbocharger technology(VNT), engine discharging control installations achieving the China's IV level of pollutants discharge standard, intelligent torque-rotating management system, coupling assembly, controlled-by-wire steering system, diesel particulate filter, intelligent air cylinder, special rubber accessory for automobile
4. Manufacturing, research and development of automobile electronic devices: engine and chassis electronic control system and their key components and parts, automobile electronic technology (automobile information system and navigation system), automobile electronic bus network technology (limited to Chinese-foreign equity), input (sensor and sample- data system) and output (final controlling element) parts for electronic control system, electronic controller for electric power steering system (limited to Chinese-foreign equity), embedded electronic integrated system (limited to Chinese-foreign equity and cooperative joint ventures), electronic control air spring, electronic control air suspension system, electronic throttle system apparatus, electronic throttle, lithium-ion power battery (lithium-ion, nickel hydride) and control system (limited to Chinese-foreign equity), integral electric machine and control system (limited to Chinese-foreign equity), in-wheel motor driven electric vehicles, multi-functional

controller (limited to Chinese-foreign equity), fuel cell stack and its components and parts, hydrogen storage for automobile, testing system for experiment and repair of automobile and motorcycle

5. Manufacturing of key components and parts of motorcycle: electronic-controlled fuel injection technology for motorcycle (limited to Chinese-foreign equity and cooperative joint ventures), engine discharging control installations achieving the China's III level of pollutants discharge standard for motorcycle
6. Equipments for rail and communication transportation (limited to Chinese-foreign equity and cooperative joint ventures): research, development, design and manufacturing of vehicles and key components and parts (traction-drive system, control system, braking system) of transportation equipments for communications of high-railway, railway passenger dedicated line, inter-city railway, main-line railway, urban rail; research, development, design and manufacturing of passenger service facilities and equipments for communications of high-railway, railway passenger dedicated line, inter-city railway, urban rail, design, research and development of relevant information system in informationization construction, research, development, design and manufacturing of rail and bridge equipments of high-railway, railway passenger dedicated line, inter-city railway, research, development, design and manufacturing of telecommunication signals system for rail communication transportation, manufacturing of equipment and devices for electrified railways , railway noise and vibration control technology and their research and development, manufacturing of equipments for pollutant emission of railway passenger trains, manufacturing of equipments for transportation safety supervision
7. Design, manufacturing and repair of civil aircrafts: main-line, secondary-line-aircraft (controlled by the Chinese parties), commonly-used airplanes (limited to Chinese-foreign equity and cooperative joint ventures)
8. Manufacturing and repair of components and parts of civil aircrafts
9. Design and manufacturing of civil helicopters: 3 tons or more (controlled by the Chinese parties), below 3 tons (limited to Chinese-foreign equity and cooperative joint ventures)
10. Manufacturing of components and parts of civil helicopters
11. Manufacturing of ground or surface effect aircrafts (controlled by the Chinese parties)
12. Design and manufacturing of no-man aircrafts, aerostatics (controlled by the Chinese parties)
13. Design, manufacturing and repair of aero engine and its parts and components aeronautic auxiliary propulsion system (limited to Chinese-foreign equity and cooperative joint ventures)
14. Design and manufacturing of civil airborne equipment(limited to Chinese-foreign equity

and cooperative joint ventures)

15. Design and manufacturing of civil carrier rocket
16. Manufacturing of aero-ground equipments: civil airport facilities, protective equipment for civil airport operation, ground equipment for aviation experiment, aviation simulation and training equipment, aeronautic test and measurement equipment, aero ground test equipment, comprehensive test devices for airborne equipment, specialized equipment for aeronautic manufacture, specialized equipment for trial manufacture of aeronautic material, ground reception and application equipment of civil spacecraft, ground test equipment for carrier rocket, mechanic and environmental test equipment for carrier rocket
17. Manufacturing of optical mechanical and electronic products for spacecraft, temperature control product for spacecraft, test equipment for satellite-related product, structural and institutional product for spacecraft
18. Manufacturing of light combustion gas turbine
19. Design of new high-technology watercrafts and equipments for ocean engineering (limited to Chinese-foreign equity and cooperative joint ventures)
20. Repair, design and manufacturing of watercrafts (including section fabrication), and equipments for ocean engineering (controlled by the Chinese parties)
21. Design of low, intermediate, high-speed diesel engines of watercrafts (limited to Chinese-foreign equity and cooperative joint ventures)
22. Design and manufacturing of components and parts of diesel engines of watercrafts (limited to Chinese-foreign equity and cooperative joint ventures)
23. Design and manufacturing of low, intermediate-speed diesel engines of watercrafts, and crankshaft (controlled by the Chinese parties)
24. Design and manufacturing of accommodation machinery of watercrafts, deck machinery (controlled by the Chinese parties relatively)
25. Design and manufacturing of communication and navigation equipments of watercrafts: communication system equipments for watercrafts, electronic navigation equipments for watercrafts, radar for watercrafts, electrical gyro pilot, internal public broadcasting system of watercrafts, etc.
26. Design and manufacturing of deep-sea fishing vessel and yachts (limited to Chinese-foreign equity and cooperative joint ventures)

## **(20) *Electric Machines and Equipments Manufacturing Industry***

1. Manufacturing of key equipments for power stations of supercritical units of 600,000

KW or 1,000,000 KW (limited to Chinese-foreign equity and cooperative joint ventures): boiler feed pumps, circulating pumps, main-steam circuit high-temperature and high-pressure valve with the working temperature of more than 400°C, the working pressure of more than 20Mpa

2. Manufacturing of key equipments for 1,000,000 KW level nuclear power stations (limited to Chinese-foreign equity and cooperative joint ventures): pumps and valves at nuclear level I and II
3. Manufacturing of equipments for and technology of desulfurization, denitration, cloth dust collector of power stations
4. Design and manufacturing of obturators of nuclear power and power equipments
5. Manufacturing of heavy casting and forging used for nuclear power equipments
6. Electricity transmission and transformation equipment (limited to Chinese-foreign equity and cooperative joint ventures): amorphous state alloy transformer, bushing used for high-pressure electrical appliance of 500 KV or more, actuating mechanism used for high-pressure switch, autonomous integral contact, dry-type reactor for HVDC, design and manufacturing of large-power crystal valve pipe for DC converter Valve of 6 inches, manufacturing of materials of electrical appliance's contacts fulfilling the EU RoHS Orders, and Pb,Cd-free solder
7. Manufacturing of power generation suite or key equipments for new energy ((limited to Chinese-foreign equity and cooperative joint ventures): equipments for photovoltaic generation, geothermal power generation, tide power generation , wave power generation, waste power generation suite, marsh gas power generation, wind driven power generation of 1.5 MW or more
8. Manufacturing of sterling generator group
9. Development and manufacturing of linear and flat electric machines and their driving system
10. Manufacturing of solar air-conditioning and heating system and solar drying unit
11. Manufacturing of biomass pyrolysis system and biomass gasifying equipment
12. Manufacturing of alternating frequency-modulation regulating traction apparatus
13. Manufacturing of intelligent moulded case circuit breaker (voltage 380v, electric current 1000A), intelligent cabinet-type or open frame circuit breaker for large engineering, distribution suite with bus-type intelligent electric control

***(21) Communication Equipments, Computers and Other Electronic Equipments Industry***

1. Manufacturing of digital video cameras and recorders, digital sound reproduction equipment, production, editing, playing-back equipments pf digital players
2. Manufacturing of materials for TFT-LCD、 PDP、 OLED、 FED flat panel display, panel display (including SED, etc.)
3. Manufacturing of such key parts as optical engine, light source, projection screen, high-definition project tube and micro-projection equipment module used for colour projection display of large screen
4. Manufacturing of digital audio and video frequency decoders, digital broadcasting and television studio equipment, digital CATV system equipment, and digital audio frequency broadcasting transmitting equipment, digital television converter, digital television ground broadcasting SFN equipment, satellite digital television broadcasting uplink station equipment, SMATV head-end equipment
5. Manufacturing of high-performance digital single-lens reflex camera with the pixel of more than 6,000,000
6. Design of integrated circuits and manufacturing of large-volume integrated circuits with the line width of 0.18 micron or less, manufacturing of emulation, signal integrated circuits with the line width of 0.8 micron or less, advanced packaging and testing of BGA、 PGA、 CSP、 MCM, etc.
7. Manufacturing of medium to large-volume computers, high-performance computers with 100 trillion times, portable microcomputers, high-grade servers with 1 trillion times/second, or more, large-scale simulation and emulation system, large-scale industrial controlling machine and controlling unit
8. Manufacturing of computer digital signal processing system and board
9. Manufacturing of picture, image identification and processing system
10. Development and manufacturing of bulk-memory CD-ROM, disk drivers and their parts
11. Manufacturing of high-speed, high-capacity (100TB or more) memory system and intelligent memory equipments
12. Manufacturing of wide-roll, high-resolution colour printing equipment (the web width of more than 900mm), printing head of high-resolution colour printer (the precision of 2400dpi or more), wide-roll, high-definition colour Xerox equipment (the web width of more than 900mm)
13. Manufacturing of CAD, CAT, CAM, CAE, and other computer application systems
14. Development and production of software products
15. Development and manufacturing of specialized electronic materials (except for

development and manufacturing of optical fibre pre-form)

16. Manufacturing of specialized electronic equipment, testing instruments, and tools as well as moulds
17. Manufacturing of new-type electronic components and parts: piece-like parts and components, sensitive components and parts as well as sensors, frequency control and selection components and parts, hybrid integrated circuits, electronic devices for electric power, optoelectronic devices, and new-type electromechanical components and parts, high density interconnecting build-up board, multi-layer flexible board, rigid flexible printed circuit board, package substrates
18. Manufacturing of hi-tech "green" batteries such as dynamical nickel-hydrogen batteries, zinc nickel storage battery, zinc silver storage battery, lithium ion battery, high-volume closed-cycle maintenance-free lead acid batteries, solar batteries, cylindrical-model zinc-gas batteries
19. Manufacturing of high-brightness light-emitting diode (LED) with the light-emission efficiency of more than 50lm/W, LED epitaxial wafer (blue light) with the light-emission efficiency of more than 50lm/W, white luminotron with the light-emission efficiency of more than 50lm/W and the power of more than 200mW
20. Development and manufacturing of RFID chip
21. Development and production of key parts for high-density digital optical disk drives
22. Copy of read-only discs and production of recording discs
23. Design and manufacturing of commercial satellites (controlled by the Chinese parties)
24. Manufacturing of useful load for commercial satellites (controlled by the Chinese parties)
25. Manufacturing of components and parts for commercial satellites
26. Manufacturing of satellite communication system equipment
27. Manufacturing of satellite navigation, position and receiving equipment and key components and parts
28. Manufacturing of light communication measuring equipment, and light transceiver with the speed rate of 10Gb/s or more
29. Manufacturing of UWB communication equipment
30. Manufacturing of equipments for wireless local area network (wide area network)
31. Manufacturing of OXC equipments, automatic switch optical network equipments, fibre communication equipment with more than 40G/s SDH, fibre communication wavelength-

division multiplexer (CWDM)

32. Manufacturing of ATM and IP data communication system
33. Development and manufacturing of mobile phones of , base stations of, core network equipments, network testing equipments for the third generation and subsequent mobile communication system
34. Development and manufacturing of high-extreme routers and network exchangers of 1,000 mega-bit or more
35. Manufacturing of equipments for the Air Traffic Control System (limited to Chinese-foreign equity and cooperative joint ventures)

***(22) Industry of Manufacturing Instruments and Meters as well as Machines for Cultural and Office Purposes***

1. Manufacturing of on-the-spot bus control system and its key components and parts
2. Development and manufacturing of large-scale precise equipments: including electron microscope, laser scanning microscope, scanning tunnelling microscope, optical maser with the power of more than 2KW, electron probe, optical emission spectrometer, Raman spectrometer, mass spectrograph, liquid phase chromatograph, industrial chromatograph, gas chromatography-mass spectrometry, nuclear magnetic resonance spectrometer, energy disperse spectroscopy, X-Ray fluorescence spectrometer, diffract meter, industrial CT, large-scale dynamic balancing machine, automatic testing system for online mechanical quantity, over-speed ultra centrifuge with the rotating speed of more than 100000r/min, large-scale metallurgical microscopy, tri-coordinate gauging machine, laser comparator, electric reconnoitring apparatus, aviation electric and drgama energy chart measuring apparatus of more than 500m, under-well gravity and three-heft magnetometer, high-precision measuring apparatus for tiny-gal gravity and aviation gravity, on-the-spot field fast analytic apparatus for chemical elements, portable geologic radar
3. Manufacturing of high-definition numeric voltmeter, high-definition numeric ampere meter (with measuring range of more than seven bit and a half)
4. Manufacturing of non-work automatic compensation device
5. Manufacturing of two pass flow meter and solid flow meter
6. Manufacturing of automatic film plating machine with electron gun
7. Manufacturing of industrial X-ray defectoscope with the voltage of 800KV or more
8. Manufacturing of new technology equipment for instruments for safe production and environmental protection detecting

9. Manufacturing of VXI bus automatic test system fulfilling the IEEE1155 international standards
10. Development and manufacturing of measuring and disaster-forecasting apparatus for underground coal mine, comprehensive management system for coalmine safety detecting
11. Manufacturing of equipments for engineering measuring and globe physical observation: digital triangle measuring system, numerically-controlled forming system for three-dimensional topography model (acreage>1000×1000mm, horizontal error<1mm, vertical error <0.5mm), super-wide frequency band seismograph ( $\phi$ <5cm, frequency band0.01-50HZ, equivalent quaking speed noise<10<sup>-9</sup>m/s), earthquake data processing system, extensive under-well earthquake and auspice measuring apparatus, precise controlled epicenter system, engineering acceleration measuring system, high-precision GPS receiver (precision 1mm + 1ppm), INSAR graphics receiving and processing system, absolute gravimeter with the precision of less than 1microgal, satellite gravimeter, Doppler weather radar adopting coherent technology or dual polarization technology, visibility measuring apparatus, meteorological sensor (including temperature, pressure, humidity, wind, precipitation, cloud, visibility, radiation, frozen soil, snow depth ), anti-lightning stroke system, multilevel soot and dust sampler, 3-D ultrasonic anemometer, high-precision wisdom total stations instrument, three-dimensional laser scanner, high-performance diamond bit for boring, no-cooperative target laser rangefinder, wind profiler (with RASS), GPS digital sounding instrument system, CO<sub>2</sub>/H<sub>2</sub>O flux observation system. boundary layer Doppler laser radar, granule spectrometer ( (3nm-20 $\mu$ m) ), high-performance data acquisition equipment, underwater glider
12. Manufacturing of new technology equipments for environmental protection detecting instruments: new technology equipments for air quality detecting, water quality and fume online detecting instruments, instruments for emergency response disposal, new-type differential optical multiple analyzing system developed from suite system, self-calibration, composite, low-drift, networking telemetry, remote-control instruments and system, etc.
13. Manufacturing of equipments for atmospheric pollution prevention and control: high temperature resistant filtering material, corrosion-resistant filtering material, wet desulfurization suite for coal-fired power plant, low NOX combustion equipment, stack-gas denitrification catalyst and denitrification suite, industrial organic waste gas purifier, purifying device for exhaust air emitted by diesel oil automobile
14. Manufacturing of equipments for water pollution prevention and control: horizontal screw centrifugal dehydrator, membrane and membrane materials, ozonator of more than 10kg/h, chlorine dioxide generator of more than 10kg/h, ultraviolet disinfection unit, small-scale countryside housing waste water disposal equipment
15. Manufacturing of equipments for solid waste disposal: anti-seepage geo-membrane for waste landfill, apparatus for dangerous waste disposal, power generation device by marsh

gas in the landfill, equipments for comprehensive utilization of wastes from scale livestock and poultry breeding

16. Manufacturing of environment monitoring instruments: SO<sub>2</sub> automatic sampler and calcimeter, NO<sub>x</sub>, NO<sub>2</sub> automatic sampler and calcimeter, O<sub>3</sub> automatic monitor, CO automatic monitor, automatic sampler and calcimeter for flue gas and dust, automatic sampler and calcimeter for flue gas, portable calcimeter for harmful and toxic gas, automatic analyzer for organic pollutants in the air, COD automatic online monitor, BOD automatic online monitor, automatic online monitor for turbidity, DO automatic online monitor, TOC automatic online monitor, automatic online monitor for ammonia nitrogen, radiation dose monitor, ray analyzer
17. Manufacturing of instruments and equipments for hydrographic data gathering, processing, transmission, and flood prevention early-warning
18. Manufacturing of instruments and equipments for oceanic prospecting and monitoring: underwater video camera for intermediate/deep ocean, underwater camera, multi-beam probe, low and intermediate-bottom section probe, navigating CTD probe, fluxgate compass, hydraulic wireline winch, underwater sealed electronic connector, energy recycling apparatus for counter-osmosis seawater desalination with the efficiency of more than 90%, high-pressure pump for counter-osmosis seawater desalination with the efficiency of more than 85%, counter-osmosis seawater desalination membrane (desalination rate of more than 99.7%), low temperature multi-efficient distilling desalinator with daily output of 20,000 tons, marine ecosystem monitoring buoy, section prospecting buoy, disposable measuring instrument of electrical conductivity, temperature and depth (XCTD), on-the-spot water quality measuring apparatus, intelligent transducer for monitoring the water quality of the ocean (continuously working for 3-6months), electromagnetic current meter, acoustic Doppler current profiler(self- containing, direct-read, watercraft type), acoustic responding emancipator, tide measuring system for deep-sea and ocean (set at bottom of sea)

### ***(23) Other Manufacturing Industries***

1. Development and utilization of clean coal technology products (coal gasification, coal liquefaction, water gas, and industrial section coal), and manufacturing of equipments
2. Coal dressing by washing and comprehensive utilization of fly ash (including devulcanizing gypsum), gangue, etc.
3. Manufacturing of biologically degradable materials

## **IV. Industries of Production and Supply of Electric Power, Coal Gas, and Water**

1. Construction and operation of power plants adopting the clean combustion technology

including the integrated gasified cooperative cycling (IGCC), cycling fluidized bed of 300,000 KW or more, pressure enforced fluidized bed cycling (PFBC) of 100,000 KW or more

2. Construction and operation of back pressure power plants with combined heat and power
3. Construction and operation of power plants with priority to electricity generation
4. Construction and operation of nuclear power plants (controlled by the Chinese parties)
5. Construction and operation of new energy source power plants (including solar energy, wind energy, magnetic energy, terrestrial heat energy, tide energy, biomass energy, etc.)
6. Utilization of seawater (direct utilization of seawater, desalination of seawater), rationalization of industry of disposal, recycling and utilization of industrial waste water
7. Construction and operation of urban water supply plants

## **V. Communication Transportation, Warehousing, Post Industries**

1. Construction and operation of railway trunk network (controlled by the Chinese parties)
2. Construction and operation of feeder railways, local railways, and their bridges, tunnels, ferry and stations facilities (limited to Chinese-foreign equity and cooperative joint ventures)
3. Comprehensive repair of fundamental facilities for high-railway, railway passenger dedicated line, inter-city railway (controlled by the Chinese parties)
4. Construction and operation of highways, independent bridges, and tunnels
5. Road cargo transportation companies
6. Construction and operation of public terminal facilities for ports
7. Construction and operation of airports for civil use (controlled by the Chinese parties relatively)
8. Air transportation companies (controlled by the Chinese parties)
9. Agriculture, forestry, and fishery general-purpose airline companies (limited to Chinese-foreign equity and cooperative joint ventures)
10. Regular or irregular international ocean transportation businesses
11. International container multi-modal transport business
12. Construction and operation of petroleum (gas) delivery pipes, petroleum (gas) depots,

and docks specialized for petroleum

13. Construction and operation of coal pipe transportation facilities
14. Construction and operation of warehousing facilities related to transportation business

## **VI. Wholesale and Retail Industries**

1. Selection and delivery of general goods
2. Modern logistics

## **VII. Leasing and Business Service Industries**

1. Accounting and audit (limited to the Chinese-foreign equity and cooperative joint ventures)
2. Consulting services for international economic, science and technology, and environmental protection information
3. Those engaging in information technology and business procedure outsourcing services such as management and maintenance of system application, information technology supporting management, bank's back-office service, financial settlement, human resource service, software development, call centre, etc. by the outsourcing mean of undertaking business

## **VIII. Industries of Scientific Research, Technology Service, Geological Prospecting**

1. Biological engineering and biomedical engineering technologies
2. Isotope, radiation, and laser technologies
3. Ocean development and ocean energy development technologies, comprehensive utilization technology of ocean chemical resources, development and further processing technology of relevant products, ocean medicine and bio-chemical products development technology
4. Ocean monitoring technologies (ocean tide, weather, environment monitoring), seafloor surveying and oceanic resource prospecting evaluation technology
5. High value-added utilization technology for seawater chemical resources, such as salt-making by comprehensive utilization of condensed seawater after seawater desalination, extraction and deep-processing of potassium, bromine, magnesium, lithium
6. Energy-saving development technologies
7. Resource regeneration and comprehensive utilization technologies, development re-

utilization technology of enterprises' production emissions, and its application

8. Environmental pollution control and monitoring technologies
9. Energy-saving, wastage-reducing, three wastes recovery new technology for chemical fibre production
10. Anti-desertification and desertification control technologies
11. Comprehensive management technology for grass-livestock balance
12. Commercial satellite application technologies
13. Research and development centre
14. High technology, new products development, and enterprise incubation centres

## **IX. Water, Environment, Public Facilities Management Industries**

1. Construction and operation of comprehensive hydro junctions (controlled by the Chinese parties)
2. Construction and operation of urban closed-type roads
3. Construction and operation of rail communication such as urban metros, light rails, etc. (controlled by the Chinese parties)
4. Construction and operation of sewage and waste processing factories, factories to handle and dispose dangerous wastes (burning factories and landfill) and facilities to prevent and control environmental pollution

## **X. Education**

1. Higher education Institutions (limited to Chinese-foreign equity and cooperative joint ventures)

## **XI. Health, Social Security, Social Welfare Industries**

1. Service institutions for the aged, the disabled, and children

## **XII. Culture, Sports, Entertainment Industries**

1. Operation of show business places (controlled by the Chinese parties)
2. Operation of gymnasiums, body-building, tournament performance, sports training and intermediary services

# Catalogue of Restricted Foreign-Invested Industries

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

1. Breeding selection of new breeds of agricultural crops, development and production of seeds (controlled by the Chinese parties)
2. Processing of crude wood of rare species of trees (limited to Chinese-foreign equity and cooperative joint ventures)
3. Processing of cotton (seed-cotton)

## II. Mining Industry

1. Prospecting and exploitation of special and rare coal varieties (controlled by the Chinese parties)
2. Prospecting and exploitation of barites (limited to Chinese-foreign equity and cooperative joint ventures)
3. Prospecting and exploitation of noble metal (gold, silver, and platinum)
4. Prospecting and exploitation of noble non-metal ores such as diamond
5. Exploitation and mineral separation of phosphate rock
6. Exploitation of boromagnesite and magnesioludwigite
7. Exploitation of celestite
8. Exploitation of ocean manganese nodules and sea sand (controlled by the Chinese parties)

## III. Manufacturing Industry

### ***(1) Agricultural and Sideline Food Processing Industry***

1. Processing of soy bean and rapeseed edible fats and oils (controlled by the Chinese parties), deep-processing of corn
2. Production of biological liquid fuel (fuel ethanol, biological diesel oil) (controlled by the Chinese parties)

### ***(2) Drink Manufacturing Industry***

1. Production of yellow wine and well-know and high-quality distilled spirit (controlled by the Chinese parties)

2. Production of soda pop

**(3) Tobacco Products Industry**

1. Processing and production of re-dried tobacco leaf by threshing

**(4) Printing Industry and Reproduction of Recording Mediums**

1. Printing of publications (controlled by the Chinese parties, except for printing of decoration publications)

**(5) Petroleum Processing and Coking Industries**

1. Construction and operation of refineries with the annual output of 8,000,000 tons or less

**(6) Chemical Feedstock and Chemical Products Industry**

1. Production of sodium hydroxide, potassium hydroxide
2. Production of photorecording materials
3. Production of benzidine
4. Production of easily-making toxicant chemicals (ephedrine, 3, 4-methylenedioxyphenyl-2-propanone, phenylacetic acid, 1-phenyl-2-propanone, heliotropin, safrole, isosafrole, and acetic anhydride)
5. Production of chlorofluorocarbons or hydrogen chlorofluorocarbons, tetrafluoroethylene, aluminium fluoride, hydrogen fluoride
6. Production of polybutadiene rubber, SBR of emulsion polymerization, styrene-butadiene-styrene copolymer rubber (SBS)
7. Production of methane chloride (except for methyl chloride), polyvinyl chloride by calcium carbide process
8. Production of sulfuric acid method titanium dioxide and potassium permanganate by open-hearth process
9. Processing of boron, magnesium, and iron ores
10. Production of barium salt, strontium salt

**(7) Pharmacy**

1. Production of chloramphenicol, penicillin G, cillimycin, gentamycin, dihydrostreptomycin, AMK, tetracycline hydrochloride, terramycin, medemycin, leucomycin, ciprofloxacin, norfloxacin, and ofloxacin
2. Production of benzalagen, acetaminophen, vitamin B1, vitamin B2, vitamin C, vitamin E,

multi-vitamin formulations, oral calcium agents

3. Production of vaccine (except for bacille calmette guerin and vaccine for poliomyelitis), bacterin, antitoxin, and toxoid (DPT, measles, encephalitis B, and epidemic cerebrospinal meningitis, etc.) for the state planning immunity
4. Production of medicine raw materials for stupefacient drug and psychotropic drugs of category I (controlled by the Chinese parties)
5. Production of blood products
6. Production of non-self-destruction-type injectors, apparatus infusions, apparatus transfusions, and blood bags

### ***(8) Chemical Fibre Manufacturing Industry***

1. Production of chemical fibre spinning for regular slice textile
2. Production of mucilage glue cut fibre

### ***(9) Rubber Products Industry***

1. Renovation of used tires (except for belt tires), production of low-performance industrial rubber fittings

### ***(10) Non-Ferrous Metal Smelting and Calendering Industry***

1. Smelting of rare metals such as tungsten, molybdenum, tin (except for tin compounds), antimony (including antimony trioxide, antimony trisulfide), etc.
2. Smelting of non-ferrous metals such as electrolytic aluminium, copper, lead, zinc, etc.
3. Smelting and abstraction of rare earth (limited to Chinese-foreign equity and cooperative joint ventures)

### ***(11) Metal Products Industry***

1. Production of containers

### ***(12) Generally-Used Equipments Manufacturing Industry***

1. Manufacturing of all kinds of bearings (PO) of ordinary level and components (steel balls, solid cage), blanks
2. Manufacturing of crawler or wheeled crane machinery of less than 300 tons (limited to Chinese-foreign equity and cooperative joint ventures)

### ***(13) Specialized Equipment Manufacturing Industry***

1. Manufacturing of low to medium-grade B-type ultrasound image displaying instruments

2. Manufacturing of equipments for general terylene filament and cut fibre
3. Manufacturing of dozers of 320 horse power or less, oil-hydraulics excavators of 30 tons level or less, wheeled loaders of 6 tons level or less, graders of 220 or less horse power, rollers, fork lift trucks, non-road self-uploading dump truck of 135 tons level or less, mechanical equipments to level and overhaul road surface, gardening machinery and tools, mixing concrete machines (pitot pumps, mixer trucks, mixer stations, pump truck)

***(14) Communication and Transportation Equipment  
Manufacturing Industry***

1. Repair, design and manufacturing of watercrafts (including section fabrication) (controlled by the Chinese parties)

***(15) Communication Equipment, Computer and Other Electronic  
Equipment Manufacturing Industry***

1. Production of ground receiving facilities for satellite television broadcast and key parts
2. Manufacturing of fiscal cash register products

**IV. Industries of Production and Supply of Electric Power,  
Coal Gas, and Water**

1. Construction and operation of coal-fired, condenser thermal power stations with the unit capacity of 300,000 KW or less, heat and power cogeneration power plants with the unit capacity of 100,000 KW or less by coal-fired, condenser and bled steam dual-use units, within the scope of small electric networks of Xizang, Xinjiang, Hainan, etc.
2. Construction and operation of electric networks (controlled by the Chinese parties)

**V. Communication Transportation, Warehousing, Post  
Industries**

1. Railway cargo transportation companies
2. Railway passenger transportation companies (controlled by the Chinese parties)
3. Highway passenger transportation companies
4. Entry and exit automobile transportation companies
5. Water transportation companies (controlled by the Chinese parties)
6. General airline companies for photographing, mineral prospecting, industry, etc. (controlled by the Chinese parties)
7. Telecommunication companies: the value-added telecommunication business (proportion

of foreign capital not more than 50%), mobile sound and data services in fundamental telecommunication (proportion of foreign capital not more than 49%), domestic and international business in fundamental telecommunication (proportion of foreign capital not more than 35%, the proportion of foreign capital 49% or less, will be permitted no later than 11 December, 2007)

## **VI. Wholesale and Retail Trade Industries**

1. Commercial companies such as direct sale, mail-order selling, online sale, franchise operation, sales agency, business administration, etc.
2. Wholesale and retail, selection and delivery of foods, cotton, plant oil, sugar, medicines, tobacco, automobiles, crude petroleum, pesticide, agricultural films, chemical fertilizers (those chains which have established more than 30 branches, sell different kinds of commodities with different brands from many suppliers, shall be controlled by the Chinese parties)
3. Distribution of audiovisual products (except for movies) (limited to the cooperative joint ventures and controlled by the Chinese parties)
4. Auction of commodities
5. Shipping service agencies (controlled by the Chinese parties), customs brokerage for foreign ships (limited to Chinese-foreign equity and cooperative joint ventures)
6. Wholesale of product oil and construction and operation of fuelling stations (those chains of fuelling stations which have established more than 30 branches by the same foreign investors, sell different kinds of product oil with different brands from many suppliers, shall be controlled by the Chinese parties)

## **VII. Finance industry**

1. Banks, financial lease companies, financial companies, trust and investment companies, money brokerage companies
2. Insurance companies (the proportion of foreign capital not more than 50% in life insurance companies)
3. Securities companies (limited to the underwriting business of A stock, and the underwriting and transactions of B stock, H stock, government bonds, corporate bonds, the proportion of foreign capital not more than 1/3), securities investment fund management companies (the proportion of foreign capital not more than 49%)
4. Insurance brokerage companies
5. Futures companies (controlled by the Chinese parties)

## **VIII. Real Estate Industry**

1. Land tract development (limited to Chinese-foreign equity and cooperative joint ventures)
2. Construction and operation of high-grade hotels, villas, high-grade office buildings and international exhibition centres
3. Those companies engaging in transactions on the secondary market of real estate, real estate intermediary or brokerage companies

## **IX. Leasing and Business Service Industry**

1. Legal advice
2. Market survey (limited to Chinese-foreign equity and cooperative joint ventures)
3. Credit investigation and rating service companies

## **X. Industries of Scientific Research, Technical Services, Geological Prospecting**

1. Surveying and mapping companies (controlled by the Chinese parties)
2. Companies for inspection, authentication, and certification of import and export goods
3. Photographic services (including the special effect cinematography service such as aerial photography, however, not including aerial photograph of surveying and mapping, limited to cooperative joint ventures)

## **XI. Water, Environment and Public Facilities Management Industries**

1. Construction and operation of pipe networks for fuel gas, heat, and water supply and drainage in large cities (controlled by the Chinese parties)

## **XII. Education Industry**

1. Ordinary high school education institutions (limited to Chinese-foreign equity and cooperative joint ventures)

## **XIII. Health, Social Security and Social Welfare Industries**

1. Medical Institutions (limited to Chinese-foreign equity and cooperative joint ventures)

## **XIV. Culture, Sports and Entertainment Industries**

1. Production projects of radio and TV programs and production projects of films (limited

to cooperative joint ventures)

2. Construction and operation of movie theatres (controlled by the Chinese parties)
3. Construction and operation of grand theme parks
4. Performing arts brokerage institutions (controlled by the Chinese parties)
5. Operation of entertainment places ((limited to Chinese-foreign equity and cooperative joint ventures)

## **XV. Other industries restricted by the provisions in international treaties concluded by China or to which China has acceded**

### **Catalogue of Prohibited Foreign-Invested Industries**

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

1. Breeding and planting of China's rare and particular improved varieties (including high-quality gene of crop production, animal husbandry, and aquaculture)
2. Development and production of seeds of gene-transferred plants, breeding livestock and poultry as well as aquatic product offspring
3. Harvesting of aquatic products in sea areas and inland waters under the Chinese jurisdiction

#### **II. Mining Industry**

1. Prospecting and exploitation of tungsten, molybdenum, tin, antimony and fluorite
2. Prospecting, exploitation, and mineral separation of rare earth
3. Prospecting, exploitation, and mineral separation of radioactive minerals

#### **III. Manufacturing Industries**

##### ***(1) Drink Manufacturing Industry***

1. Processing of green tea by China's traditional techniques and special tea (well-known tea, dark tea, etc.)

##### ***(2) Pharmacy***

1. Processing of traditional Chinese medicinal materials listed into the “Regulations on

Protection of Wild Medicinal Materials Resources” and the “Name List of China’s Rare and Endangered Protected Plants”

2. Application of roasting and boiling technology of traditional Chinese medicines prepared in ready-to-use forms, such as steaming, roasting, cauterizing, calcining, and production of prepared Chinese medicines based on secret prescriptions

### ***(3) Non-Ferrous Metal Smelting and Calendering Industry***

1. Smelting and processing of radioactive minerals

### ***(4) Specialized Equipment Manufacturing Industry***

1. Manufacturing of firearms and ammunition

### ***(5) Electro-Machines and Equipments Manufacturing Industry***

1. Manufacturing of open-type (acid fog direct discharging) lead batteries, mercury-contained button silver oxide batteries, paste Zn/ MnO<sub>2</sub> batteries, nickel-cadmium batteries

### ***(6) Industrial Products and Other Manufacturing Industries***

1. Ivory carving
2. Processing of tiger bones
3. Production of remolded lacquer works
4. Production of enamel products
5. Production of rice paper and ink ingots
6. Production of products causing cancer, abnormality, and revulsion and permanent organic pollutants

## **IV. Industries of Production and Supply of Electric Power, Coal Gas, and Water**

1. Construction and operation of coal-fired, condenser thermal power stations with the unit capacity of 300,000 KW or less, heat and power cogeneration power plants with the unit capacity of 100,000 KW or less by coal-fired, condenser and bled steam dual-use units, beyond small electric networks of Xizang, Xinjiang, Hainan, etc.

## **V. Communication Transportation, Warehousing, Post Industries**

1. Air traffic control companies

2. Post companies

## **VI. Leasing and Business Services Industry**

1. Social survey

## **VII. Industries of Scientific Research, Technical Services, Geological Prospecting**

1. Development and application of human stem cells, genetic diagnostics, therapeutic technology
2. Geodetic survey, oceanic survey, aerial photograph of surveying and mapping, survey and draw of boundary lines of administrative regions, topographic map making of map making, making of navigation electronic map of ordinary map making

## **VIII. Water, Environment and Public Facilities Management Industries**

1. Construction and operation of natural reserves and important international wetland
2. Development of wild animals and plants resources being native to China under the state's protection

## **IX. Education Industry**

1. Compulsory education institutions, education institutions in special fields such as military affairs, police, politics, party school, etc.

## **X. Culture, Sports and Entertainment Industry**

1. Press institutions
2. Publication, overall distribution, and import businesses of books, newspapers, and periodicals
3. Publication, production, and import businesses of audiovisual products and electronic publications
4. Broadcasting and television stations, broadcasting and television channels (frequency), broadcasting and television transmission coverage network (transmit stations, rebroadcast stations, broadcasting and television satellites, satellite uplink stations, satellite receiving and re-transmitting stations, microwave stations, monitoring stations, cable broadcasting and television transmission coverage network)
5. Companies that produce and operate broadcasting and television programs

6. Movie production companies, movie distribution companies, cinema online companies
7. Operation of news websites, network audio-visual program services, business places providing internet online services, internet culture
8. Video projection companies
9. Construction and operation of golf courses
10. Gambling and lottery industries (including hippodromes for gambling)
11. Pornographic industry

## **XI. Other Industries**

1. Projects endangering the safety and using performance of the military installations

## **XII. Other industries prohibited by the provisions in international treaties concluded by China or to which China has acceded**