

## Directory Catalogue on Readjustment of Industrial Structure

( 2005 version )

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### I. Catalogue of Encouraged Investment Industries

#### (I) Agriculture, forestry and related industries

1. Comprehensive improvement of low and medium yielding field and basic construction of stable high yielding field.
2. Construction of state-level agricultural product bases
3. Soilless cultivation of vegetables, flowers and plants
4. Development and application of high-quality, high-yield and highly-efficient and standard cultivation and breeding
5. Pest control and animal disease prevention and treatment
6. Genetic engineering and gene bank construction for agricultural crops, livestock, poultry, aquatic plants and animals and wildlife
7. Selection, breeding, protection and development of good strains of domestic animals and plants
8. Development and application of the de-poisoning technology for the seeds (seedlings).
9. Water-saving agriculture, protective cultivation, ecological agriculture, cultivation land quality construction and development of the rapid fertilization technology for newly-cultivated land
10. Development and application of the ecological plantation (breeding) technology
11. Development and application of the agricultural films non-pollution degradation technology and heavy metal degradation for farm land
12. Research and development of green and non-pollution feedstuff and additives
13. Inland large lake resource protection
14. Offshore fishing
15. Cattle breeding
16. Cattle and sheep embryo (in body) or sperm in-plant production

17. Research and development of agricultural clone technology
18. Cultivation land maintenance and management and the development of the measurement technology of land, fertility and water speed
19. Construction of the germplasm resources protection land and reserve for agriculture and forestry crops, as well as the collection, storage, appraisal, development and application of the germplasm resources.
20. Returning straw to the field and comprehensive utilization (including silage, aminated straw to raise cattle, return straw to the field and gasify and cultivation of the edible fungi)
21. Comprehensive utilization and development (marsh gas and ecological homeland) of renewable resources in the countryside
22. Leveling up polders and giving way to floods and returning cropland to lake
23. Cultivation of fungi for food and drug purpose
24. Comprehensive harnessing of grassland and forestry disasters
25. Grain for green project and natural grassland restoration
26. Development of the new diagnostic reagent and bacterin for animal diseases and low-toxin and low-residue new drug
27. Artificial plantation of the high-yield grazing
28. Plantation and production of the natural rubber
29. Development and application of the non-pollution agricultural products and the monitoring of the harmful elements in the environment of the place of origin
30. Development and application of the non-pollution treatment of the organic waste and the technology for organic fertilizer
31. Development and application of the non-pollution and green production technology for agriculture, husbandry and fishery products
32. Storage, transportation, preservation, processing and comprehensive utilization of agriculture, husbandry and fishery products
33. Protection of such natural resources as natural forest
34. Tree and grass plantation and seedling project
35. Development and application of the soil and water conservation technology
36. Ecological system restoration and rebuilding

37. Construction of natural reserves for forest, wild life, wet land, desert and grassland and ecological demonstration projects
  38. Protection forest project
  39. Stony desertification control and sand harnessing project
  40. Sand fixation, water preservation and production of new materials for soil improvement
  41. Cultivation and plantation of the salt and drought-resistance plants
  42. Fast growing and high yield forest project, industrial raw material forest project and new economic forest project
  43. Bamboo and rattan base construction and new products and technologies development
  44. Young-middled aged forest tending project
  45. Wild economic forest protection, improvement, development and utilization
  46. Protection of the rare and endangered wild animals and plant
  47. Forest gene resources protection
  48. In-depth processing of "sub-quality, small and firewood" lumber, sandland shrubs and three remnants and series products development
  49. Construction of the species breeding and cultivation base for wildlife and epidemic source and epidemic disease monitoring and early-warning system
  50. Breeding and plantation of the Chinese herbs and high-quality, high-yield, endangered animal and plant medicinal materials in short supply
  51. Artificial cultivation and development of such resources as flavor and wild flowers which is at the lower part of the forest
  52. Technological development of the wood-based compound materials
  53. Production and comprehensive utilization of the bamboo-based engineering materials and plant fibre
  54. Deep processing of forestry chemicals
  55. Development and application of such artificial weather technologies as artificial precipitation and hail-suppression
- (II) Irrigation works
1. Harnessing of big rivers and lakes and trunk and branch stream control

2. Trans-drainage area water diversion project
3. Water source project for places lacking of water sources
4. People and livestock's drinking water and water rebuilding in the countryside
5. Safety building for flood detention basin
6. Maintenance and construction of sea dike construction projects
7. Dredging of the rivers, lakes and reservoirs
8. Reinforcing for the dangerous reservoirs and dikes
9. Development and application of the dike trouble monitoring and restoration technologies
10. Waterlogging early-warning and flood control in cities
11. Estuary harnessing
12. Comprehensive utilization of irrigation works
13. Irrigation works in pasturing areas
14. Silt dam project
15. Development and manufacturing of the geosynthetics for irrigation works and new material development
16. Improvement of the large and medium-sized irrigation areas and support facilities building
17. Construction of the flood and drought control facilities
18. Efficient water distribution and transportation, water-saving and irrigation technologies and equipment manufacturing
19. Automatic monitoring of water condition and quality and development of the flood control and dispatching system
20. Manufacturing of the hydrological data collection devices and equipment

(III) Coal

1. Coalfield geology and geophysics prospecting
2. High-yield and efficient coal mine (including mine and open-air) with a yield of 1.2 million tons/year and above, coal preparation plant building
3. Mine disaster (gas, grime, mine drainage, fire and cofferdam) prevention

4. Development and production of environmentally-friendly coal for industrial and life purpose
5. Development and application of the coal water slurry technology
6. Development and application of the coal gasification and liquefaction technology
7. Coal bed gas prospecting, development and mine gas utilization
8. Development and utilization of low-heat value fuel (including coal slack) and associated coal mine resources and equipment manufacturing
9. Coal pipeline transmission
10. Development and application of the efficient washing and desulfurization technology for coal mine
11. Development and application of the water-saving coal preparation project
12. Subsidence treatment, mine water resource protection and utilization
13. Integrated building of coal power and coking coal (coke oven gas, coal tar deep processing)
14. Coal exploitation method to upgrade resource recycling rate, and technological development and application and equipment manufacturing

(IV) Power

1. Water power
2. Construction of thermal power station with generating unit capacity of 600,000 kilowatts and over
3. Heat and electricity cogeneration for centralized heat supply unit with generating unit capacity of 300,000 kilowatts and over and heat, electricity and cooling cogeneration.
4. Construction of thermal power station with large air coolinggenerating unit with generating unit capacity of 600,000 kilowatts and over in water-shortage areas
5. Wind power and the development and utilization of such renewable energie as solar energy, geothermal energy, ocean power and biomass power
6. Gas and steam combined and recycling power generation
7. Construction of clean coal power station adopting 600,000 kilowatts and over circulating fluidized bed, pressurized fluidized bed and overall coal gasification circulating power generation

8. Power generation adopting circulating fluidized bed boiler and using coal slack and inferior coal with a unit capacity of 200, 600 kilowatts.

9. AC/DC power transmission and transformation of 500 kilovolts and above

10. Power generation unit desulfurization rebuilding

11. Power grid rebuilding and construction in cities and countryside

12. Development of power relay and protection technology, safety monitoring for power grid operation

13. Intensive design and automatic technology development for large power station and transformer station of large power grid

14. Development of power grid inter-connectivity technology

15. Popularization and application of new power transmission and transformation technology

16. Development and application of technologies to cut down power wastage in transmission, transformation and distribution

17. Development and application of distributed power supply

(V) Nuclear energy

1. Geological exploration of uranium mine and uranium mine mining and metallurgy

2. Low-temperature nuclear heating reactor, fast breeder reactor, fusion reactor, advanced research reactor and high-temperature gas-cooled reactor

3. Nuclear power station construction

4. High-performance nuclear fuel manufacturing

5. Spent fuel after-treatment

6. Nuclear analysis, nuclear prospecting instruments and meters manufacturing

7. Development of isotope, accelerator and radiation technology

8. Development of advanced uranium isotope separation technology

9. Development of radiation protection technology and manufacturing of the monitoring equipment

10. Development of the nuclear facilities protection instruments and meters

**(VI) Petroleum and natural gas**

1. Petroleum and natural gas exploration and exploitation
2. Natural gas hydrate exploration and exploitation
3. Storage and transportation of the crude oil, natural gas and finished oil and construction of the pipeline transmission facilities and network
4. Comprehensive utilization of the petroleum and gas associated resources
5. Development and utilization of technology and facilities to upgrade the petroleum and gas field exploitation rate and ensure the production safety, ecological environment restoration and pollution control project
6. Reclamation and utilization of the discharged natural gas

**(VII) Iron & steel**

1. Black metal ore alternative resources exploration and key exploration technologies development
2. Construction of a new generation of large-cubage mechanized coke oven with a 6m-high and 500 mm-width coking chamber, as well as dry coke quenching, coal loading and coke pushing and dust removal device
3. Application of the technology of stamp charging coking and cokemaking process with briquetted coal
4. Application of the dry quenching, transfer oil exchanger technology
5. Oxidation ball production as chain grate machine- rotary kiln with a capacity of above 1.2 million tons/year and tape pellet firing machine
6. Iron making of above 150 000 tons/year by using direct reduction method
7. Development and application of the advanced and appropriate smelting reduction technology
8. Steel scrap processing (classification, cutting and packing, excluding steel making)
9. Development and application of the alloy steel billet, slab, round billet, abnormal billet and near-net-shape continuous cast technology
10. Development and application of modern hot rolled broad-band steel rolling mill and key part manufacturing
11. Development and application of key technologies in slab continuous rolling and key part manufacturing

12. High-intensity steel production
13. Production of steel for high-speed heavy-duty railway
14. Production of oil well pipe for petroleum exploitation, high-pressure boiler pipe for power station and steel pipe used in the long-distance transportation of oil and gas
15. Production of H-shaped steel, screw-thread steel bars of 400 Mpa and above
16. Development and application of key technologies in cold continuous casting and key part manufacturing
17. Production of cold rolled silicon steel sheet
18. Application of the controlled rolling, controlled cooling technology
19. Production of the super-power graphite electrodes with a diameter of above 550 mm
20. Production of micro-hole carbon brick used for blast furnace
21. Production of high-quality synthetic and irregular-shaped refractories
22. Development and application of the iron alloy technologies
23. Completed gas-fired heat-electricity co-generation
24. Application of the accumulative-heat burning technology
25. Application of the comprehensive automation technology

(VIII) Non-ferrous metal

1. Non-ferrous metal ore's alternation of resource exploration and key exploration technology development
2. Construction of medium-sized copper, aluminium, lead, zinc and nickel mines
3. In-depth exploration of shortage resources and mineral bed which is hard to explore
4. Development and application of the non-pollution strengthened smelting of sulfide mineral
5. Development of the efficient extracting equipment and technology
6. Production of high-precision copper plate, band, foil and pipeline materials and technological development
7. Development of the production technology of high-precision aluminium plate, band, foil and high-speed thin band casting and rolling technology and equipment

manufacturing

8. Manufacturing of the high-performance metal materials used for rail traffic
9. Development and application of the non-ferrous metal synthetic materials
10. Production of high-performance, high-precision rigid alloy, deep processing products and ceramic materials
11. Deep-processing of rare and rare earth metal and application
12. Production of tin compounds and antimony compounds (excluding antimony oxide)
13. Manufacturing of high-performance magnetic materials
14. Super-thin powder materials, electronic slurry and related products production
15. Manufacturing of the amorphous alloy ribbon
16. Manufacturing of new-type braking materials
17. Casting of high-quality magnesium alloy and development of the slab, pipeline and type materials
18. Testing of the production process of non-ferrous metals and development of the control technology
19. Development and application of baking, pre-oxidation of hot-press and gold extraction process by bacterial oxidation technologies

(IX) Chemical industry

1. Chemical raw material mineral resources exploration and chemical raw material mine construction
2. Construction of resource-saving and environmentally-friendly nitrogenous fertilizer device and localized and economic rebuilding of the raw materials
3. Production of high-quality and compound fertilizer, potash fertilizer and various compound fertilizers
4. Development and production of highly-efficient, low-toxin and safe new pesticides and intermediate
5. Construction and rebuilding inorganic chemical production device with clean production technology
6. Production of environmentally-friendly paints

7. Production of new-type of biological & chemical products, specialized fine chemicals and film materials
8. Development and production of efficient and pollution-free catalyzer
9. Production of organic silicon, organic fluorin and high-performance inorganic fluorin products
10. Production of inorganic nanometer and functional materials
11. Development and production of new dyes and intermediate
12. Construction of large aromatic hydrocarbons production device
13. Rebuilding of the refinery device to upgrade oil grade and energy-saving and consumption-reduction device
14. Large ethane building (800 000 tons/year and above in east and coastal region and 600 000 tons/year and above in west region) and existing ethane rebuilding
15. Development of large synthetic resin and new technologies and new products on synthetic resin
16. Development of caprolactam, ethylene glycol and acrylonitrile production technology and complete equipment manufacturing
17. Development of synthetic rubber, synthetic latex and thermoplastic elastomer technologies and new products manufacturing
18. Production of such chemicals as new-type of environmentally-friendly oil solution and auxiliary
19. Production of compound materials, functional macromolecular materials, engineering plastics and new plastics alloy
20. Production of basic organic chemical materials with advanced technologies
21. Production of high-grade asphalt, polymer modified asphalt and special asphalt
22. Comprehensive utilization of the low-sulfur acidic heavy crude oil
23. Development of new-type of auxiliary, new-type of adsorbent, high-performance additives and compound technology
24. Making of polyvinyl chloride of 200 000 tons/year and above by oxychlorination
25. Production of titanium dioxide powder by chlorination
26. Production of high-grade radial ply tyre and auxiliary materials and equipment
27. Methanol and ether fuel production

(X) Building materials

1. Development of new-type dry method cement production device with a daily production capacity of 4000 tons and above of clinker (above 2000 tons in west region)
2. Development and production of new-type energy-saving and environmentally-friendly wall material, heat and noise insulation materials, waterproof materials, architectural sealing materials and building coating.
3. Production of high-quality and environmentally-friendly friction and sealing materials
4. Development and production of non-alkali fibreglas kiln fibre technology and high-performance fibreglas and products of 30000 tons/year and above
5. Production of high-quality energy-saving compound window and door and hardware products
6. Technological development and manufacturing of new-type pipeline materials (pieces)
7. High-quality float glass production technology and equipment, development of energy-saving and safe flat glass deep processing technology
8. Development and production of toilet with washing water volume of no more than 6 L, water-saving urinal, squatting pan and water-saving device.
9. Development and manufacturing of fine processing mineral materials production and technical equipment meeting high-tech and environment protection industries' requirements on purity, fineness and nature modification.
10. Development of key technologies and equipment for non-pollution handling industrial waste, urban waste and silt as new-type of dry method cement and new-type of wall materials
11. Development of mechanized moulding technology of fibreglas enhanced plastic products (glass fiber reinforced plastic)
12. Development of bulk cement technology
13. Development and production of high-performance concrete using admixture
14. Development and production of the artificial sand production line and technological device of 500 000 tons/year
15. Construction of large cement grind mill of one million tons/year

16. Production of large stone materials of 200 000 cubic meters/year and super thin compound stone materials of 300 000 cubic meters/year
17. Development of the high-quality artificial crystal materials

(XI) Medicine

1. Development and production of new drugs with independent property rights
2. Development and production of key epidemic disease prevention bacteria and drugs
3. Development and production of new-type of diagnostic reagent and biological chips
4. Development and production of new-type of family-planning drugs and tools (including 3rd generation of hormone contraceptives and 3rd intra uterine device)
5. Development and production of natural drugs and oceanic drugs
6. Development and production of excipient for preparations
7. Development and production of key medical intermediates
8. Development of new technologies and new products for medicinal biological engineering
9. Development and application of new-type of medical preparations
10. Development and application of medical peptide and nucleic acid compounding, fermentation and purification technology
11. Development and application of the film technology, supercritical extracting technology, chiral technology and self-control technology
12. Development and application of the clean production technology of raw material medicines
13. New-type of medicine packing materials and technological development
14. Modernization of traditional Chinese medicine (TCM) (development of the artificial breeding of endangered animals and plants for medicine purpose; application of advanced agricultural technologies in the standard planting and breeding of TCM; development and application of the extracting, purification and quality control technology for effective components of TCM; development and application of processing control technology and equipment for modern TCM pharmaceuticals)
15. Development and production of the medicines of ethnic minorities
16. Development and manufacturing of digitalized medical imaging products and

medical information technology

17. Development and manufacturing of early-period diagnostic medical device
18. Development and manufacturing of equipment and instrument used in micro-invasive surgery and intervention treatment
19. Development and manufacturing of technical devices used in medical first-aid and rehabilitation
20. Breeding of experimental animals
21. Microorganism development and utilization

(XII) Machinery

1. Manufacturing of key parts and cutting tools of numerical controlled machine tool
2. Manufacturing of high-speed and precision numerical controlled machine tool with the joint action of three axis and above, numerical controlled system, AD server device, beeline electric machinery
3. Development and manufacturing of new-type of sensor
4. Manufacturing of sedan bearing, railway bearing, precision bearing, low-noise bearing
5. Manufacturing of mixed-flow, axial flow hydropower equipment with a rotary wheel diameter of 8.5 m and above and key auxiliary unit
6. Manufacturing of large cross-flow and pumped-storage hydropower unit and key auxiliary unit
7. Technological development of 600 000 kilowatt and above ultra supercritical and ultra supercritical thermal power unit complete equipment, equipment manufacturing and manufacturing of key auxiliary unit
8. Manufacturing of circulating fluidized bed of 300 000 kilowatt and above
9. Manufacturing of gas and steam combined circulating equipment of 400 000 kilowatt and above
10. Technological development of large, precision and special casted and forged pieces and equipment manufacturing
11. Manufacturing of super high voltage AC/DC power transmission and transformation complete equipment of 500 kilovolt and above
12. Manufacturing of clean energy power generation equipment (nuclear power, wind

power, solar energy and tide etc.)

13. Manufacturing of the ammonia synthesis complete equipment of 300 000 tons/year and above
14. Development and application of ethene complete equipment of 600 000tons/year
15. Development and manufacturing of DCS control system and intelligent site instruments and meters
16. Development and manufacturing of precision instrument
17. Manufacturing of new-type of hydraulic pressure, air driven and sealed parts, components and device
18. Development of automatic welding equipment and equipment manufacturing
19. Design and manufacturing of large, precision mould and auto mould
20. Development of controllable atmosphere and vacuum thermal treatment technology and equipment manufacturing
21. Design and manufacturing of safe production and environmentally friendly testing instruments
22. Manufacturing of urban waste treatment equipment
23. Manufacturing of complete equipment for fly ash storage, transportation and utilization
24. Manufacturing of junk electric appliance, plastic and junk rubber reclamation and utilization equipment
25. Manufacturing of equipment for seawater desalting and seawater direct use
26. Development and manufacturing of industrial robot and its complete system
27. Manufacturing of equipment for comprehensive mining of 5 million tons/year and above, loading and large coal mine washing machinery equipment
28. Manufacturing of large strip mine complete equipment of 20 million tons/year and above
29. Manufacturing of large petroleum and gas transportation equipment
30. Manufacturing of automatic, high-speed and multi-color printing equipment
31. Manufacturing of equipment for the efficient seeding, fertilizing, irrigating and drug administration and uch agricultural tools for protective cultivation
32. Development and manufacturing of seed processing complete equipment of 5

tons/hour and above

33. Manufacturing of complete equipment for the automatic breeding of fowl and livestock
34. Manufacturing of agricultural equipment
35. Manufacturing of equipment for the deep processing of agriculture, forestry, fishery and husbandry products and comprehensive resources utilization
36. Manufacturing of key equipment for the comprehensive straw utilization
37. Manufacturing of agricultural harvest machinery as cotton, rice, wheat, rice, bean, potato and feedstuff.
38. Development and manufacturing of equipment for forest tree planting and artificial vegetation industrialized production
39. Development and manufacturing of large project construction machinery and key parts and components
40. Development and manufacturing of electricity-controlled internal combustion machine and key parts and components
41. Development of coldness and heat accumulation technology and equipment manufacturing
42. Design and manufacturing of complete set of large energy reclamation device
43. Design and manufacturing of complete set of deep-well drilling machine of 7000 m and above
44. Manufacturing of high-performance silt-clearance equipment
45. Manufacturing of medical waste centralized treatment equipment
46. Development of the automatic meteorological station system and equipment manufacturing
47. Manufacturing of equipment for special climate monitoring and analysis
48. Development of seismic stations, seismic network and movable earthquake observation technical system and instrument and equipment manufacturing
49. Research and development of new technologies and equipment for earthquake disaster monitoring and harnessing technology
50. Manufacturing of poisonous gas purification equipment
51. Related technologies and equipment on food quality and safety testing and inspection

52. Manufacturing of equipment for scrapped auto dismantling and smashing treatment

(XIII) Auto

1. Design and development of auto, motorcycle and their engines and key parts
2. Manufacturing of such key auto parts and components as automatic transmission box, transmission box for heavy-duty cars and advanced and appropriate auto and engine with independent property rights
3. Manufacturing of light autos and environmentally-friendly new materials
4. Precision forging, multiple workplace moulding and forging of key auto parts
5. Development and manufacturing of the testing system for auto and motorcycle type test and maintenance
6. Research, development and manufacturing of new-energy autos as those using compressed natural gas, hydrogen fuel, compound fuel, liquified petroleum gas and methanol and ether as well as mixed power autos, electric-driven auto, fuel battery auto and their key parts
7. Advanced small-displacement economic passenger vehicle, container transportation vehicle and multiple-axis special vehicle
8. Development and manufacturing of diesel engine used for sedans
9. Development and manufacturing of low-chassis bus in cities

(XIV) Vessel

1. Design and manufacturing of high-tech, high-performance and special vessel and vessel of 100 000 tonnage and above
2. Manufacturing of passenger vehicle, ro/ro passenger vessel, ro/ro cargo vessel, passenger vessel, train ferry of above 10000 tonage
3. Manufacturing of liquefied petroleum gas and liquefied natural gas boat of 5000 cubic meters and above
4. Manufacturing of container boats of 3000 TEU and above
5. Manufacturing of the power system for boat, power station and special auxiliary machine
6. Design and manufacturing of such oceanic engineering equipment as large oceanic

shipping boat and maritime drilling boat, drilling platform and floating oil storage liner

7. Manufacturing of such boat equipment as vessel control and automation, communication and navigating, instruments and meters.

(XV) Aviation and aerospace

1. Manufacturing of civil planes and their spare parts
2. Development and manufacturing of aeroplane engines
3. Development and manufacturing of airborne equipment
4. Development and manufacturing of helicopter, rotor system and driven system
5. Development and manufacturing of new-type of materials for aviation and aerospace
6. Manufacturing of gas turbine for aviation and aerospace
7. Manufacturing of satellite, carrier rocket and parts and components
8. Application of aviation and aerospace technologies and development and production of software and hardware products and terminal products
9. Development and manufacturing of aircraft ground simulated drilling system
10. Development and manufacturing of aircraft ground maintenance, servicing and testing equipment
11. Satellite system building and equipment manufacturing

(XVI) Light industry

1. Forest-paper integrated wood slurry, paper and cardboard production
2. Development and manufacturing of complete set of slurry and paper-making machinery by using high tech
3. Design, processing and manufacturing of non-metal mould
4. Development of biological degradable plastics and series products
5. Development and production of plastic water-saving facilities and multi-tier film for agriculture purpose
6. Development of high-tech ceramics (including industrial ceramics) and equipment

7. Development and application of ceramics clean production technology
8. Development and manufacturing of optical, machinery and electronic integrated sewing machinery and special industrial sartorius
9. Development of technologies on natural flavor and compound flavor and product manufacturing
10. Research, development and production of new-type and ecological packing materials (easy-to-degrade, easy-to-reclaim and reusable)
11. Development and manufacturing of new-type of plastic heat-preservation board, large-calibre plastic pipeline materials (with a pipe diameter of above 1.5 m), super-low noise plastic drainage pipe, penetration-proof geo membrane and plastics for medical purpose
12. Development and application of high-tech, digital printing technology and HD plate making system
13. High-tech green battery product manufacturing (mercury-free alkaline Zn/MnO<sub>2</sub> batteries, MH/Ni battery, Lithium Ion Battery, high-capacity, sealed, maintenance-free lead acid battery, fuel cell, zinc-air battery, solar battery)
14. Manufacturing of articles specially for ethnic minorities
15. Development and application of raw materials for natural food additives and production technologies
16. Development and application of ECF and TCF chemical slurry bleaching technology

(XVII) Textile

1. High-grade textile production, dyeing and rear-processing
2. Production of high-grade fibre surface materials by adopting hi-fi processing technology
3. Production of differentiated and functional chemical fibre and high-tech fibre
4. Production of fibre and non-fibre polyester ( polytrimethylene terephthalate, polyethylene terephthalate )
5. Processing of special natural fibre meeting the requirements on ecology, comprehensive resources utilization and environmental protection (including other animal fibre other than wool, ramie fibre, bamboo fibre, mulberry silk, color cotton)
6. Production of special textile for industries adopting high-tech

7. Manufacturing of new-type high-tech textile machinery and key parts and components
8. Production of high-grade carpet, drawnwork and embroidery products
9. High-grade garment production adopting computer integrated manufacturing system
10. New fibre production adopting renewable resources (polylatic acid fiber, solvent extraction produces cellulose fibre green fiber, animal and plant protein fibre)
11. Manufacturing of testing and inspection instrument for textile and spinning machine enterprises

(XVIII) Building material

1. Development of energy and space saving buildings & green buildings
2. Development of high-storied building and spatial structure technology
3. Development and manufacturing of low-noise building construction machinery tools
4. Manufacturing of high-performance external encircling structural materials and parts for residence
5. Development of new-type of architectural structure system
6. Building shock-absorption structure and product R&D and promotion
7. Development of water, energy, space and material-saving technology for buildings
8. Production of intelligent building products and equipment and study of integration technology
9. Centralized heating in residence and public buildings and application of heat computational technology
10. Development of commodity concrete, commodity mortar and construction technology

(XIX) Urban infrastructure and real estate

1. Production of basic spatial information data in cities and key technology development
2. Public traffic construction in cities

3. Urban road and intelligent traffic system building
4. Technological development for urban traffic control system and equipment manufacturing
5. Underground pipeline construction in cities and towns
6. Water supply and drainage network project, water supply source and purified water works in cities and towns
7. Gas project in cities and towns
8. Centralized heat supply and rebuilding in cities and towns
9. Rainfall collection and utilization in cities
10. Manufacturing of energy-saving and low-pollution heating equipment
11. Afforestation and ecological community building in cities and towns
12. Vertical parking lot building in cities
13. Research, development and promotion of advanced and applicable complete set technology and product for building
14. Gas automobile gas-filling station project
15. Development of informatization technology for urban construction
16. Development of key technologies for urban ecological system
17. Development, construction and vehicle manufacturing for inter-city express, urban rail traffic
18. Development and application of water-saving technology in cities
19. Development of intelligent lighting, green lighting products and system
20. Construction of residence demonstration project

(XX) Railway

1. New railway route construction
2. Acceleration and capacity expansion for existing routes
3. Development and construction of special passenger transportation line and high-speed railway system
4. Development of synchronical locomotive manipulation, electropneumatic brake, heavy-duty freight with an axial weight of 25 tons and above

5. Development of railway passenger and freight transportation safety guarantee system and equipment
6. Manufacturing of equipment for formation station automation and loading and unloading operation mechanization
7. Development of railway transportation information system
8. Development and construction of railway container transportation system
9. Development and manufacturing of AC driven locomotive, motor coach train, and locomotive salvage equipment
10. Manufacturing of AC driven core parts (including IGCT, IGBT)
11. Development of railway contact net with a per hour speed of 200 km and above, switch and engine power supply technology and equipment manufacturing
12. Development of factor compensation technology for engine power-supply power of electrified railway
13. Development of railway circuit testing, locomotive vehicle monitoring and equipment manufacturing
14. Development and manufacturing of large road-maintenance machinery, multi-purpose road-maintenance machinery, track testing equipment and special purpose equipment
15. Development of dispatching and commanding automation technology
16. Mending of concrete structure and development of technologies and materials to upgrade durability
17. Development and application of high-speed magnetic suspending traffic system and materials
18. Toilet for railway trains and ground reception and treatment of the waste

(XXI) Highway

1. Construction of the trunk of the state way, highway for West Development and high-speed highway network of the state
2. Development and construction of intelligent highway transportation system
3. Development and construction of rapid highway passenger and cargo transportation system
4. Development and construction of highway management information system

5. Development and production of new materials for high way projects
6. Design and manufacturing of highway projects and new maintenance machinery equipment
7. Highway container and compartment transportation
8. Super big bridge construction and maintenance technology development
9. Super big tunnel construction and maintenance technology development
10. Development and construction of passenger and cargo transportation network in the countryside.
11. Highway construction in the countryside

(XXII) Water transportation

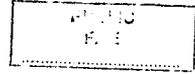
1. Construction of deep-water berth (10000 tonnage for coastal areas and 1000 tonnage for freshwater)
2. Construction of deep-water sea route and trunk sea routes in freshwater and buildings open to traffic
3. Automatic loading/unloading in large ports
4. Development of electronic data exchange system for ocean shipping
5. Development of maritime safety guarantee system and salvage equipment
6. Freshwater shipping and vessel standardization
7. Manufacturing of special engineering machinery equipment for port, deep-water sea routes and navigational hinge
8. Multi-modal co-transportation of container and maritime container transportation
9. Maritime high-speed passenger transportation
10. Vessel transportation of crude oil, finished oil and natural gas
11. Vessel oil spill monitoring and construction and development of emergent lifting system
12. Maritime multi-modal co-transportation and bulk transportation by water way
13. Construction of the information system for water transportation industry
14. International oil tanker transportation

**(XXII) Air transportation**

1. Airport construction
2. Public air transportation
3. General aviation
4. Air traffic control and communication and navigational system construction
5. Aircraft maintenance
6. Aviation computer management and network system development and construction
7. Aviation POL facilities construction
8. Development and manufacturing of special aviation vehicles, stack equipment, storage equipment, cargo holder, high-performance airport safety inspection equipment, high-performance airport fire-fighting equipment
9. Construction of maritime air supervision, patrolling and salvage facilities

**(XXIV) Information industry**

1. Construction of optical synchronical transmission system of 2.5GB/S and above
2. Manufacturing and construction of digital micro-wave synchronical transmission system of 155 MB/S and above
3. Manufacturing and construction of satellite communication system and earth station equipment
4. Construction of such communication support network as network administration monitoring, No. 7 signal, clock synchronization and billing
5. Manufacturing and construction of digital communication network equipment
6. Manufacturing and construction of such new business network as intelligent network
7. Manufacturing and construction of broadband network equipment
8. Construction of digital beehive mobile communication network
9. IP business network construction
10. Postal saving network construction
11. Postal comprehensive business network construction
12. Automatic mail handling

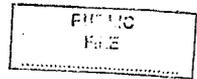


13. Construction of satellite digital TV/broadcasting system
14. Construction of value-added telecom business platform
15. Manufacturing of 32 wave and above optical-fibre wave division multiplex transmission system
16. Manufacturing of digital synchronical series optical-fibre communication system of 10GB/S and above
17. Manufacturing of new technological equipment of support communication network
18. Manufacturing of stratospheric communication system equipment
19. Manufacturing of such network equipment as digital mobile communication (including GSM-R), access network system, digital trunking communication system and router and gateway
20. Manufacturing of large and medium-sized computer and high-performance computer, work station and server
21. Design and manufacturing of large integrated circuit with a line width of 1.2 mm and below
22. Manufacturing of large integrated circuit
23. Manufacturing of new-type of electronic parts (electronic parts in pieces, frequency electronic parts, hybrid integrated circuit, power electronics device, Optoelectronic devices, sensing parts and sensor, new-type of machinery and electronic parts, high-density printed circuit board and flexible circuit board)
24. Manufacturing of special electronic materials
25. Software development and production
26. Development and production with CAD, CAT, CAM, CAE system
27. Manufacturing of electronic equipment, instrument and tools and moulds
28. Manufacturing of large-capacity optical and disk driver and their parts and storage card for digital products
29. Development and manufacturing of new-type display device, color kinescope of medium and high resolution and glass envelop
30. Manufacturing of new-type single-mode fibre and fibre pre-made stick
31. Manufacturing of digital audio/video broadcasting system
32. Manufacturing of high-intensity digital laser disk player

33. Production of read-only disk and recordable disk
34. Manufacturing of digital camcorder, digital video recorder, digital TV product
35. Manufacturing of ordinary paper facsimile
36. Manufacturing of information security products and network supervision equipment
37. Manufacturing of digital multi-functional telephone
38. Manufacturing of monocrystalline silicon, multicrystalline silicon and wafer
39. Manufacturing of Doppler radar technology and equipment
40. Manufacturing of auto electronic products
41. Manufacturing of medical electronic products
42. Manufacturing of financial electronic equipment and system construction
43. Development of wireless LAN (WI-FI short-distance wireless communication technology) and equipment manufacturing
44. Development of e-business and e-government system
45. Satellite navigating system development and equipment manufacturing

(XXV) Other service industry

1. Construction of e-business and modern logistics service system as well as chain supermarket, convenient store and specialized store
2. Construction of modern storage facilities for grain, cotton, sugar, edible oil, fertilizer and petroleum
3. Construction of modern agricultural products circulation facilities and integration of agriculture, trade and industry
4. Construction of idle equipment, junk goods and junk motor vehicle transaction market
5. Building of socialized service system for small and medium-sized enterprises
6. Building of socialized service system for agriculture and forestry
7. Leasing service
8. Socialized logistics service
9. Community service network construction in cities

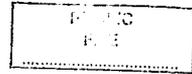


10. Real estate brokery service and property management service
11. Socialized endowment service
12. Construction of the service facilities for the disabled
13. Construction of facilities for basic medical, family planning, prevention and health care services
14. Bloodstation construction
15. Remote medical services
16. Construction and industrial operation of culture and art, press and publication, radio, TV and film, popular culture, popular science and sports facilities
17. Relic protection and facilities construction
18. Infant education, compulsory education, high school education, higher education, occupational and technical education and special education
19. Construction of remote educational system
20. Construction of activity site for the minor and children's social welfare facilities
21. Construction of infrastructure for tourism and tourism information service system development
22. Development and construction of industrial tourism, agricultural tourism, forest tourism, ecological tourism and comprehensive development of other tourism resources
23. Credit card and its network service
24. Tourism commodities and souvenir development
25. Employment and pioneering consulting, tutorship, brokerage and training services
26. Construction of state-level engineering (technological) research center, state certified enterprise technology center, key lab, high-tech pioneering and service center, new product development and design center, science study mid-test base and experimental base
27. High-tech services as science popularization, technology popularization, high-tech exchange, technological consulting, intellectual property rights and weather, environmental protection, mapping and measurement, earthquake, ocean and technical supervision
28. Such consulting services as economy, planning, engineering, management, accountant, auditing, law and environmental protection'

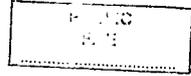
29. Co-construction and sharing of such science study conditions as science instrument, experimental animals, chemical reagent and literature information
30. Commodity quality certification and quality test
31. Development and application of anti-counterfeit technology
32. Credit investigation and rating service system construction
33. Cartoon making

(XXVI) Environmental protection and comprehensive resources utilization

1. Mine ecological environment restoration
2. Ocean development and ocean environment protection
3. Biological diversification protection
4. Development and utilization of light salt water, inferior water and sea water and seawater desalting
5. Development and utilization of ozone consumption substitute
6. Construction of medical waste disposal center
7. Construction of hazardous waste disposal center
8. Construction of regional junk auto disposal center
9. Monitoring of outflow's radiation on the environment
10. Environmental monitoring and development of new-type of environmental protection technology
11. Development and manufacturing of the safe disposal technologies and equipment for radwate and other hazardous waste
12. Development and application of moving pollution sources (trains, vessels and autos) prevention technology
13. Urban traffic noise and vibration control and material production
14. Development of electromagnetic radiation control technology for power grid and information system
15. Development and application of technologies to cut down and control dioxin discharge
16. Development and application of the substitute of lasting organic pollutants



17. Development and application of technologies to dispose lasting organic pollutants
18. Comprehensive utilization and harnessing of three wastes
19. Development and production of biological bacteria and additives for harnessing of three wastes
20. Development and application of Hg reclamation technology for Hg-containing waste and complete equipment manufacturing
21. Development of technologies for water reuse and equipment manufacturing
22. Highly-efficient and low-energy-consumption waste water treatment and newable technology development and equipment manufacturing
23. Comprehensive utilization of waste and other solid waste in cities and towns
24. Production of anti-penetration film for waste burying
25. Development and production of new-type of water treatment medicament
26. Dust-removal, desulfurization and denitrification for coal gas and smog and device development and complete equipment manufacturing
27. Technologies for the wall to absorb noise and material development
28. Development and application of AC frequency-change, speed-regulation and energy-saving technology
29. Development and application of fuel-saving technology for motor vehicle, internal combustion engine
30. Development and production of new-type of energy-saving and environmental protection appliance and key parts and components
31. Production of water and energy-saving products
32. Monitoring instrument development and production with water
33. Development of new-type of energy-saving lighting products and technologies and auxiliary materials and equipment
34. Development and application of energy and water saving, environmentally-friendly technologies and equipment manufacturing
35. New-type dry method cement production with 2000 tons/day yield and power generation with the remaining heat
36. Reclamation of blast furnace, rotary furnace and coke furnace gas and comprehensive utilization



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37. Energy-saving and environmentally friendly rebuilding for petroleum, petrochemical and chemical industries which has high energy consumption and serious pollution
38. Efficient and energy-saving mining and dressing technology, equipment development and complete equipment manufacturing
39. Comprehensive utilization of multi-element mineral resources
40. Development of low-grade and complicated mine and comprehensive utilization
41. Comprehensive utilization of such resources as gangue and residue
42. Industrialization of the reclamation of renewable resources

## II. Catalogue of Restricted Investment Industries

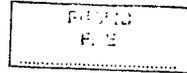
### (I) Agriculture and forestry industries

1. Excessive pasture on natural grassland
2. High or medium-density fiberboard project with the single line of less than 50,000 m<sup>3</sup> per year
3. Wooden flakeboard project with the single line of less than 30,000 m<sup>3</sup> per year
4. Rosin production project of less than 1000 tons per year

### (II) Coal

1. The coal mine projects with single well less than the scale as follows: 300,000 tons per year for Shanxi, Shaanxi and Inner Mongolia; 150,000 tons per year for Xinjiang, Gansu, Ningxia, Qinghai, Beijing, Hebei, Northeast China and East China; 90,000 tons per year for the west and central south area; and 30,000 tons per year for extreme thin coal bed
2. Coal mine project with non-machinery exploitation
3. Coal mine project in which the coaling recycle rate fails to reach national requirements
4. Coal mine project without the approval of national or provincial coal industry administration on mining regions

### (III) Power industry



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1. Conventional coal-burning thermal power units with a generating unit capacity of 300,000 kilowatts below except for small-scale electric networks in Tibet, Xinjiang and Hainan
2. Power units with coal consumption of over 300 gram coal equivalent/ kilowatts and the power units with cooling generating units of coal consumption of over 305 gram coal equivalent/ kilowatts except for small-scale electric networks in Tibet, Xinjiang and Hainan

(IV) Petroleum, petrochemical and chemical industries

1. DMT polyester device of 100,000 tons per year below
2. Polypropylene device of 70,000 tons per year below (continuous process and batch process)
3. Acrylonitrile device of 100,000 tons per year below.
4. ABS resin device of 100,000 tons per year below (except for styrene continuous process)
5. Ethylene device of 600,000 tons per year below
6. Normal and reduced pressure oil-refining device of 8,000,000 tons per year below
7. catalytic cracking device of 500,00 tons per year below, continuous reforming device of 400,000 tons per year below, hydro-cracking device of 800,000 tons per year below and delayed coking device of 800,000 tons per year below
8. Polyethylene device of 200,000 tons per year
9. Polyvinyl chloride device by oxychlorination process of ethane of 200,000 tons per year below and polyvinyl chloride device by calcium carbide process of 120,000 tons per year below.
10. Cinnamene device of 200,000 tons per year below (except for ethylbenzene by dry gas)
11. Polystyrene device of 100,000 tons per year below.
12. PTA device of 225,000 tons per year below
13. Ethylene oxide or glycol device of 200,000 tons per year below
14. CPL device of 100,000 tons per year below
15. Ethane-acetate device of 200,000 tons per year below and acetate by oxo synthesis of 100,000 tons per year below

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16. Ammonia-soda device of 1,000,000 tons per year below
17. Soda device of 300,000 tons per year below
18. Sulphuric acid production device of 200,000 tons per year below and Pyrite acid production device of 100,000 tons per year below
19. Nitric acid device by normal pressure process and synthesis process
20. Fertilizer production project with petroleum as raw materials (except for high-sulfur petroleum coke)
21. Titanium dioxide powder production line by vitriol process (except for waste acid and ferrite for composite usage, which are in accordance with international quality standards and required discharge)
22. Lead chrome yellow production line of 1000 tons per year below
23. Ferric oxide red paint device of no more than 5000 tons per year
24. calcium carbide furnace project of below 25000 kilovolt ampere (capacity is smaller than 45000 tons) and above 25000 kilovolt ampere which can't meet the access requirements in environmental protection and energy consumption
25. Electrolyzed oxidation of manganese production base of below 5000 tons/year
26. Soda device of below 150 000 tons/year
27. Potassium hydroxide device of below 20000 tons/year
28. Production device with a single line of below 20000 tons/year or have calcium roasting chromium compounds
29. Mercuric chloride catalyst project
30. Hydrofluoric acid production device with a single unit of below 10000 tons/year (except those for self-use or electronic high-purity hydrofluoric acid)
31. Single set of reaction vessel of less than 6000 tons/year, F22 production device with a rear-treatment of below 30000 tons/year (except those for deep processing as the raw materials)
32. Organic silicon production device of below 20000 tons/year
33. Methane chlorides production project of below 80000 tons/year (excluding methyl chloride production project)
34. Methane chlorides product project of below 80000 tons/year and has no corresponding treatment facilities for the byproduct of carbon tetrachloride
35. Diagonal tyre project

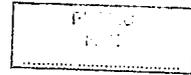
36. Cycle tyre project (tyre of handcart)
37. Poisonous pesticide (methamidophos, parathion, methylparathion, monocrotophos, Omethoate, isocarbophos, isofenphos-methyl, Phorate, phosfolan methyl, phosfolan ethyl, terbufos, methidathion, Methyl Bromide, methom, aldicarb, Carbofuran, zinc phosphide, Diphacin, Warfarin, Counmatetralyl, Bromadiolone, Brodifacoum) production project
38. Dicofol production project with DDT as the raw materials
39. Sodium pentachlorophenol production project with Hexachlorobenzen as the raw materials
40. Lindane production project
41. Diosgenin production device of below 300 tons/year (except those for comprehensive utilization)

(V) Information industry

1. Laser video player production line (VCD series products)
2. Simulated CRT B/W and color TV project

(VI) Iron and steel

1. Coke furnace projects having not equipped with coke dry quenching, coal loading and coke pushing and dust removal devices at the same time in iron& steel enterprises and water lacking regions
2. Sinter machine project of less than 180 sq. m
3. Iron making blast furnace projects with a valid capacity of below 1000 cubic meters or above 1000 cubic meters but such devices as coal powder blowing device, dust removal device, residual pressure power generation device, energy consumption, new water consumption haven't reached the standard
4. Steel making rotary furnace projects with a metric capacity of below 120 tons meters or above 120 tons but such devices as gas reclamation, dust removal device, residual pressure power generation device, energy consumption, new water consumption haven't reached the standard
5. Steel making rotary furnace projects with a metric capacity of below 70 tons meters or above 70 tons but such devices as gas reclamation, dust removal device, residual pressure power generation device, energy consumption, new water consumption

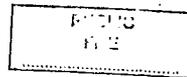


haven't reached the standard

6. Hot-rolled steel sheet projects of below 800 mm
7. Hot-dip galvanizing sheet project of below 250 000 tons/year
8. Color coated strip steel project of 100000 tons/year
9. Steel alloy mine hot oven project of below 25000 kilovolt ampere and 25000 kilovolt ampere and above but the requirements on environmental protection and energy consumption have not met (small hydropower stations in mid and west China and key poverty-stricken regions having mineral resources advantages, single hot oven capacity  $\geq$  12500 kilovolt ampere)
10. Chromium containing refractory production line
11. Ordinary power and high-power graphite electrode production line
12. Super-high power graphite electrode production line with a diameter of 550 mm and a capacity of below 20000 tons/year
13. Carbon block of below 50000 tons/year and carbon graphite production line of below 40000 tons/year
14. One-segment fixed coal-gas generator project (excluding powdered coal gas gasifying furnace)

(VII) Non-ferrous metals

1. Tungsten, molybdenum, tin, antimony and rare earth mine exploitation, metallurgical projects and antimony oxide and lead and tin welding material production projects (except rebuilding projects)
2. Crude copper smelting project with a single unit size of 100000 tons/year
3. Electrolytic aluminum project (except self-baked cell production capacity replacement project and environmental protection reconstruction project)
4. Lead smelting project with a single unit size of 50000 tons/year
5. Zinc smelting project with a single unit size of 100000 tons/year
6. Magnesium smelting project (except the comprehensive utilization project)
7. Secondary aluminium reverberatory furnace project of below 4 tons
8. Reverberatory furnace project directly burning coals in renewable non-ferrous metal production



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9. Wet method fluoride salt in the production of aluminum
10. Project of independent carbonaceous materials used in the production of aluminium of below 100000 tons/year
11. Ion-type rare earth mine bath leaching project
12. Secondary lead of below 10000 tons/year

(VIII) Gold

1. Independent cyanidation project with a daily gold mine treatment capacity of below 50 tons
2. Independent gold mineral processing project with a daily ore treatment capacity of below 100 tons and have no auxiliary mining system
3. Fire-method smelting project with a daily gold mine treatment capacity of below 50 tons
4. Independent pile dreg field (except for Qinghai-Tibet Plateau) with an ore treatment capacity of below 50000 tons/year
5. Project with a daily rocky gold ore processing capacity of below 50 tons
6. Gold dust exploitation project with a daily gold dust treatment capacity of below 200000 cubic meters/year
7. Project of exploiting gold in forest area, agricultural field and rivercourse

(IX) Building material

1. Non-float or ordinary float flat glass production line with a daily smelting volume of less than 500 tons
2. Building ceramics brick production line with a capacity of below one million sq. m/year
3. Tunnel kiln sanitary ceramics production line of below 500 000 pieces/year
4. Upright kiln cement machine, dry-method hollow kiln, lepol kiln, and wet method kiln; newly establishment of new-type dry-method cement production line with a daily production capacity of below 1500 tons
5. Paper-surface gypsum board production line of 20 million sq. m/year
6. Paper-based asphalt felt production line, modified asphalt waterproof coil