

Section 4: Metal Products, Machinery and Transport Equipment

Activities	Conditions	Incentives
4.1 Manufacture of metal products including metal parts		
4.1.1 Products from metal or alloy powder	Project must have sintering process.	A 3
4.1.2 Metal products or metal parts	Project must have metal forming process continuing from iron/steel casting process (using induction furnace) or iron/steel forging process, i.e. machining and stamping within the same project.	A 3

Activities	Conditions	Incentives
4.1.3 Other metal products including other metal parts	<ol style="list-style-type: none"> 1. Continuous forming process from pressing, pulling casting or forging of non-ferrous metal within the same project. 2. Forming process, i.e. machining and stamping. 	A 4 B 1
4.2 Surface treatment or anodized surface treatment (except coating or coloring treatment for decoration purpose)	For anodized surface treatment, project must have the following process, e.g. anodizing, etching and engraving.	B 1
4.3 Heat Treatment	Cyanide is prohibited in the process of heat treatment.	A 4
4.4 Manufacture of multi-purpose engines and equipment	<ol style="list-style-type: none"> 1. Project must have forming process of main engine parts, e.g. cylinder head, crank case, crankshaft, camshaft, connecting rod, piston and flywheel. 2. Assembling of multipurpose engine or equipment. 	A 4 B 1
4.5 Manufacture of machinery, equipment and parts 4.5.1 Automation machinery and/or automation equipment with engineering design 4.5.2 Machinery, equipment and parts and/or repair of mould and die 4.5.3 Assembling of machinery and machinery equipment 4.5.4 Assembling of Robots or Automation Equipment and/or Automation Parts	Projects must design control system using an embedded system. Projects must have part forming process and/or with engineering design. Projects must have assembling process as approved by the Board.	A 2 A 3 A 4 A 3
4.6 Manufacture of general automobile	Not eligible for merit-based incentives.	B 1
4.7 Manufacture of automobile engines	<ol style="list-style-type: none"> 1. Project must have part forming, not less than 4 out of 5 parts, as follows: Cylinder Head, Cylinder Block, Crankshaft, Camshaft and Connecting Rod. 2. Assembling of engine. 	A 3 A 4

Activities	Conditions	Incentives
4.8 Manufacture of vehicle parts 4.8.1 Manufacture of vehicle parts using high technology including: 4.8.1.1 Substrate for Catalytic Converter 4.8.1.2 Electronic Fuel Injection System 4.8.1.3 Automotive Transmission 4.8.1.4 Electronic Control Unit (ECU)		A 2
4.8.2 Manufacture of automobile safety and energy-saving parts 4.8.2.1 Anti-Lock Brake System (ABS) or Electronic Brake Force Distribution (EBD) 4.8.2.2 Electronic Stability Control (ESC) 4.8.2.3 Regenerative Braking System 4.8.2.4 Idling Stop System 4.8.2.5 Autonomous Emergency Braking System		A 2
4.8.3 Manufacture of parts for Hybrid, Electric Vehicle (EV) and Plug-in Hybrid Electric Vehicles (PHEV) 4.8.3.1 Battery 4.8.3.2 Traction Motor 4.8.3.3 Air-condition system		A 2
4.8.4 Manufacture of rubber tires for vehicles		A 2

Activities	Conditions	Incentives
4.8.7 Manufacture of Engine System Parts including 4.8.7.1 Turbocharger	Projects must have part forming process and assembling process as approved by the Board.	A 3
4.8.7.2 Turbocharger Parts including Turbine Blade, Turbine Housing and Bearing Housing		A 4
4.8.7.3 Cylinder Head		A 4
4.8.7.4 Cylinder Block		A 4
4.8.7.5 Crankshaft		A 4
4.8.7.6 Camshaft		A 4
4.8.7.7 Connecting Rod		A 4
4.8.7.8 Valve		A 4
4.8.7.9 Piston		A 4
4.8.7.10 Gear		A 4
4.8.8 Manufacture of Safety Parts including		
4.8.8.1 Air Bags/Safety Belts		A 4
4.8.8.2 Air Bags Inflator, Gas Generators, Gas Generant		A 3
4.8.8.3 Parts for Air Bags, i.e. Initiators and Coolant Filters		A 4
4.8.8.4 Parts for Safety Belts, i.e. Interlock and Retractor		A 4

Activities	Conditions	Incentives
4.8.9 Manufacture of Brake System Parts including 4.8.9.1 Brake Booster 4.8.9.2 Brake Caliper 4.8.9.3 Brake Master Cylinder 4.8.9.4 Brake Wheel Cylinder 4.8.9.5 Wheel Hub 4.8.9.6 Brake Pipe Tube 4.8.9.7 Brake Set		A 4 A 4 A 4 A 4 A 4 A 4
4.8.10 Manufacture of Suspension System Parts including 4.8.10.1 Shock Absorber 4.8.10.2 Ball Joint	Projects must have part forming process and assembling process as approved by the Board. Projects must have part forming process and assembling process as approved by the Board.	A 4 A 4
4.8.11 Manufacture of Steering System Parts including 4.8.11.1 Power Steering Pump 4.8.11.2 Rack and Pinion Steering	Projects must have part forming process and assembling process as approved by the Board.	A 4
4.8.12 Manufacture of Cooling System Parts including 4.8.12.1 Water Pump	Projects must have part forming process and assembling process as approved by the Board.	A 4
4.8.13 Manufacture of Exhaust System Parts including 4.8.13.1 Catalytic Convertor 4.8.13.2 Exhaust Catalyst	Projects must have part forming process and assembling process as approved by the Board.	A 4

Activities	Conditions	Incentives
4.8.14 Manufacture of Air Conditioning System Parts including 4.8.14.1 Air Compressor	Projects must have part forming process and assembling process as approved by the Board.	A 4
4.8.15 Manufacture of Ultimate Tensile Strength Steel	Projects must use Ultimate Tensile Strength (UTS) Steel higher than 700 MPa.	A 4
4.8.16 Manufacture of Ball Bearing for Vehicles	Projects must manufacture steel ball.	A 4
4.8.17 Manufacture of other vehicle parts		B 1
4.9 Building or repair of ships 4.9.1 Building or repair of ships not less than 500 tons gross 4.9.2 Building or repair of ships less than 500 tons gross (only steel or fiber glass ships with installed engine and equipment)	Projects must obtain ISO 14000 within 2 years from starting date of operation.	A 2 A 2
4.10 Manufacture of trains or electric trains or equipment or parts (only rail system)		A 2
4.11 Manufacture or repair of Aircraft, or Aerospace Devices and Equipment 4.11.1 Manufacture of Aircraft or Aircraft Parts such as airframe, critical parts (e.g. Engine and parts, Propeller), appliance (e.g. Flight recorder, Radar), equipment and other components 4.11.2 Manufacture of Onboard devices and equipment (except disposable and reusable aircraft utilities and supplies) such as seats, life vests, trolley, galley, etc. 4.11.3 Repair of Aircraft or Aircraft parts.		A 1 A 3 A2

Activities	Conditions	Incentives
<p>4.11.4 Repair of Onboard Devices and Equipment (except disposable and reusable aircraft utilities and supplies)</p> <p>4.11.5 Manufacture of Aerospace Devices and Equipment such as devices or equipment related to rockets/spacecraft/ space vehicles/propulsion units and auxiliary equipment, etc.</p> <p>4.11.6 Aerospace Operating Systems such as search, detection, navigation, guidance, aeronautical, nautical systems and instruments, etc.</p>	<p>Must be approved by related agencies such as Geo-Informatics and the Space Technology Development Agency (Public Organization).</p> <p>Must be approved by related agencies such as Geo-Informatics and the Space Technology Development Agency (Public Organization).</p>	<p>A 4</p> <p>A 1</p> <p>A 1</p>
<p>4.12 Manufacture of motorcycles (except less than 248 cc engine displacement)</p>	<ol style="list-style-type: none"> 1. Project must have forming process of engine parts, as follows: <ul style="list-style-type: none"> Cylinder Head, Cylinder Block, Crankshaft, Crankcase, Camshaft and Connecting Rod 1.1 For manufacturing motorcycles with more than 248 cc engine displacement but less than 500 cc, project must have forming of not less than 4 out of 6 parts. 1.2 For manufacturing of motorcycles with more than 500 cc engine displacement, project must have forming of 2 out of 6 parts. 2. Project must have structural welding process and spray painting process. 3. Investment plan for manufacturing and utilization of parts must be submitted and approved by the Board of Investment. 	<p>A3 (must follow conditions 1-3)</p> <p>B1 (must follow conditions 2-3)</p>
<p>4.13 Manufacture of Fuel Cells</p>		<p>A 2</p>
<p>4.14 Fabrication industry or platform repair for petroleum industry</p> <p>4.14.1 Fabrication industry or platform repair with engineering design</p>		<p>A 3</p>

Activities	Conditions	Incentives
4.14.2 Fabrication industry or platform repair for petroleum industry		A 4
4.15 Manufacture of science equipment 4.15.1 Scientific equipment using high technology 4.15.2 Other scientific equipment	Scientific equipment must be able to measure parameter value, process data and self-report the result or automatically measure and control the parameter.	A 2 A 3