

# Section 4: Metal Products, Machinery and Transport Equipment

Activities	Conditions	Incentives
<p>4.1 Manufacture of metal products including metal parts</p> <p>4.1.1 Products from metal or alloy powder</p> <p>4.1.2 Metal products or metal parts</p> <p>4.1.3 Other metal products including other metal parts</p>	<p>Project must have sintering process.</p> <p>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.</p> <p>1. Continuous forming process from pressing, pulling casting or forging of non-ferrous metal within the same project.</p> <p>2. Forming process, i.e. machining and stamping.</p>	<p>A 3</p> <p>A 3</p> <p>A 4</p> <p>B 1</p>

Activities	Conditions	Incentives
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	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	Projects must design control system using an embedded system.	A 2
4.5.2 Machinery, equipment and parts and/or repair of mould and die	Projects must have part forming process and/or with engineering design.	A 3
4.5.3 Assembling of machinery and machinery equipment	Projects must have assembling process as approved by the Board.	A 4
4.6 Manufacture of general automobile	Not eligible for merit-based incentives.	B 1
4.7 Manufacture of automobile engines	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
4.8 Manufacture of vehicle parts		
4.8.1 Manufacture of vehicle parts using high technology including:		A 2
4.8.1.1 Substrate for Catalytic Converter		
4.8.1.2 Electronic Fuel Injection System		
4.8.1.3 Automotive Transmission		

Activities	Conditions	Incentives
4.8.1.4 Electronic Control Unit (ECU)		
4.8.2 Manufacture of automobile safety and energy-saving parts		A 2
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		
4.8.3 Manufacture of parts for Hybrid, Electric Vehicle (EV) and Plug-in Hybrid Electric Vehicles (PHEV)		A 2
4.8.3.1 Battery		
4.8.3.2 Traction Motor		
4.8.3.3 Air-condition system		
4.8.4 Manufacture of rubber tires for vehicles		A 2
4.8.5 Manufacture of Fuel System Parts including	Projects must have part forming process and assembling process as approved by the Board.	A 3
4.8.5.1 Fuel Pump		
4.8.5.2 Injection Pump		
4.8.5.3 Injector		
4.8.6 Manufacture of Transmission System Parts including		A 3
4.8.6.1 Sun Gear		

Activities	Conditions	Incentives
4.8.6.2 Ring Gear		
4.8.6.3 Shift Gear		
4.8.6.4 Transfer Case	Projects must have part forming process and assembling process as approved by the Board.	
4.8.6.5 Torque Converter	Projects must have part forming process and assembling process as approved by the Board.	
4.8.6.6 Carrier	Projects must have part forming process and assembling process as approved by the Board.	
4.8.6.7 Propeller Shaft	Projects must have part forming process and assembling process as approved by the Board.	
4.8.6.8 Driver Shaft	Projects must have part forming process and assembling process as approved by the Board.	
4.8.6.9 Universal Joint	Projects must have part forming process and assembling process as approved by the Board.	
4.8.6.10 Differential	Projects must have part forming process and assembling process as approved by the Board.	
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		A 4
4.8.7.2.1 Turbine Blade		
4.8.7.2.2 Turbine Housing		
4.8.7.2.3 Bearing Housing		

Activities	Conditions	Incentives
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 Engine Valve		A 4
4.8.7.9 Piston		A 4
4.8.8 Manufacture of Safety Parts including		
4.8.8.1 Air Bags		A 4
4.8.8.2 Parts for Air Bags		
4.8.8.2.1 Inflator		A 3
4.8.8.2.2 Initiator		A 4
4.8.8.2.3 Coolant Filter		A 4
4.8.9 Manufacture of Brake System Parts including		A 4
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 Pipe Brake Set		
4.8.10 Manufacture of Suspension System Parts including		A 4
4.8.10.1 Shock Absorber	Projects must have part forming process and assembling process as approved by the Board.	
4.8.10.2 Ball Joint		

Activities	Conditions	Incentives
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	Projects must have part forming process and assembling process as approved by the Board.	A 4
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

Activities	Conditions	Incentives
<p>4.11 Manufacture or repair of aerospace, including equipment or components</p> <p>4.11.1 Airframe, airframe components, major components, e.g. engine, propeller, and avionic equipment</p> <p>4.11.2 Other aircraft parts, and aircraft interior (except disposable and reusable aircraft utilities and supplies)</p> <p>4.11.3 Repair of aerospace, components and equipment</p>		<p>A 1</p> <p>A 3</p> <p>A2</p>
<p>4.12 Manufacture of motorcycles (except less than 248 cc engine displacement)</p>	<ol style="list-style-type: none"> <li>1. Project must have forming process of engine parts, as follows:               <ul style="list-style-type: none"> <li>Cylinder Head, Cylinder Block, Crankshaft, Crankcase, Camshaft and Connecting Rod</li> <li>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.</li> <li>1.2 For manufacturing of motorcycles with more than 500 cc engine displacement, project must have forming of 2 out of 6 parts.</li> </ul> </li> <li>2. Project must have structural welding process and spray painting process.</li> <li>3. Investment plan for manufacturing and utilization of parts must be submitted and approved by the Board of Investment.</li> </ol>	<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