

List of eligible technologies under DHI CG scheme

Source : 12th FYP Working Group Report on Capital Goods

<p>Machine Tools: Technologies needed:-</p> <ul style="list-style-type: none"> • High precision machine tools with 5 and more axes • Multi-axes, multi-function machines • Heavy duty machine tools • Metal forming machines of various types • Critical mechanical elements, • Machine tool electronics and other sub-systems • Software for design/analysis/simulation, machining and manufacture 	<p>Earth Moving , Mining and Construction Equipments: Technologies needed:-</p> <ul style="list-style-type: none"> • Electronic controls, hydraulic systems and engines, adhering to latest emission norms for these equipments like Dumpers, Dozers Shovels, Draglines and Excavator etc. • Higher ranges of these equipments such as:- <ul style="list-style-type: none"> ◇ High capacity Electric Dump Trucks ~ 190 ton – 240 ton ◇ High capacity Rope shovels ~ 42 Cum ◇ Walking Draglines ~ 72 m - 33 Cum; 150m - 50 Cum ◇ Hybrid Drive Loaders of high capacity ~ 10 cum bucket ◇ Electronically Controlled Emission Compliant engine ~ 2500 HP ◇ Fully Automatic Electronically Modulated Transmission ~ 1500HP ◇ Long Wall Mining systems and Continuous miners for underground mines ◇ Axial piston pumps and motors ◇ Cutter Suction Dredgers and Trailer Suction Hopper Dredgers • Safety standards and testing, • Technologies leading to reduction in cost per ton , energy and other resources.
<p>Process Plant Equipments: technologies needed:-</p> <ul style="list-style-type: none"> • SubSea Equipment • Oil well drilling • Process gas Boilers for Ethylene and Gas Crackers 	<p>Heavy Electrical Equipments: Technologies Needed:-</p> <ul style="list-style-type: none"> • Advanced ultra super critical technology • Maturity in super critical technology intending to provide self sufficiency in domestic capabilities • Development of higher capacity nuclear power equipment up to 1000 MW
<p>Plastics Processing Machines: Technologies needed:-</p> <ul style="list-style-type: none"> • Metal Injection Moulding (MIM), • Polyurethane Reaction Injection Moulding Machines, • Machinery for milk-packaging containers and retortable bottles • Design and fabrication of 3D printers 	

- Development of ultra high voltage transmission equipments & systems.
- Development of Energy efficient technologies like IGCC, UGCC , Concentrated Solar Thermal Project.

Metallurgical Machines: technologies Needed:-

- Steel Plant Equipments and components:
 - Technologies for Higher capacities, productivity, energy efficiency, global standards for pollution control
 - Import substitution by local manufacture of :-

Area	Typical components
Mineral beneficiation	Pneumatic jigs, wet high intensity magnetic separators
Coke oven complex	Anchorage springs
Pellet / DR plant	Induration / briquetting machines, disc pelletizer components
Sinter plant	Mixing & nodulising drum, circular sinter cooler
Blast furnace	Coal dust injection system, bell-less top
Steel melt shop	Oxygen lance system, gunniting equipment, slag arrestor system
Cont. casting plant	Mould assembly, automatic mould level controller, EMS (electromagnetic stirring) equipment
Rolling mills	Special rolls, roll grinding m/c, AGC (Automatic Gauge Control) cylinder, universal mill stand, large Mill Stands for Hot Strip Mills / Plate Mills
Processing lines	Flash butt welders, jet finishing equipment for hot dip coatings, tension levelers, special spray nozzles, rotating hydraulic cylinders, laser welders, zinc coating pots with inductors
Material handling	Ship loaders / un-loaders
Oxygen plant	Compressors & cryogenic pumps
Gas holders	Fabric seals
Furnaces	Furnace burners, Furnaces for roasting, melting, heating & heat-treatment
Metal Foundries & Metallurgical industry	Moulding machines & Moulds, Die casting machines and other miscellaneous machines used in metal foundries & metallurgical industry.

- High Priority

- Beneficiation/Utilization (Pelletization) of slimes
- Beneficiation of low grade iron ore (Fe: 30~40%)
- Development of technology for palletization of hematite/ geothetic ore
- Recovery of ultra fine iron mineral from slime
- Coal gasification
- Developments of smelters e.g. COREX, FINEX etc.
- Use of energy saving technologies e.g. CDQ (coke dry quenching), TRT(top gas recovery turbine) , HEC (high efficiency combustion) regenerative burners etc.
- Chemical absorption of CO₂ and storing it underground
- Development of microbial treatment for effluent treatment
- Level-3 automation
- Extensive use of Process/ Supervisory Models
- Blast Furnace equipment
- Mud Gun
- Slag granulation plant
- Tap hole Drilling Machine
- Top Charging equipment
- Tuyeres, Tuyere coolers
- Copper stave coolers & SG iron stave coolers
- Coke Oven Machines with pollution control measures
- Electromagnetic devices (EMS/EMBR)
- Moulds & mould cooling equipment

- Mould Oscillator
- Tundish equipment
- Raw Material Handling Plants
- Stackers & Reclaimers
- Wagon Tippers
- Higher capacity Wagon Pushers
- Bucket Wheel Excavators
- Rolling Mill Equipment
- Large Mill Stands for plate mills & hot strip mills (around 350t single or 500t 3-piece design)
- Heavy duty Hydraulic dividing Shears
- Heavy duty hydraulic plate leveller
- Straightening Machines for long products
- CNC Roll grinding machines
- Large reducers for plate mill & hot strip mill main drives
- Large back-up rolls (up to ~300t) and work rolls (up to ~75t)
- Equipment for sorting, stacking and bundling of long products
- Ultra fast plate cooling equipment (up to ~25/300 C/sec)
- Large size roll bearings
- Steel Melting
- Torpedo Ladles
- Convertors
- Secondary refining units (LF, RH Degasser, VAD, VOD)
- Continuous Caster
- Caster Segments & segment cooling equipment

- Medium Priority
 - Injection of Natural Gas/CBM / coal gas
 - Hot charging facility to convey DRI to steel melting shops
 - Development of DRI/Metallic nuggets by RHF process
 - High strength good toughness steel through HTP/ Bainitic route.
 - Wire Injection for close control on alloying elements

Textile Machines: Technologies needed:-

- High end compact spinning
- High speed OE
- High speed winders
- High speed woolen / worsted frames
- Air Jet technology
- Extruders
- Spinning beams
- Godets
- Winders
- Opening, Cleaning, Blending
- Spinning
- Filament yarn testing (on / offline)
- Shuttleless looms (rapier >400 rpm; air jet > 800 rpm; water jet > 800 rpm)
- High speed circular knitting machinery (Microprocessors)
- Warp knitting
- Environmentally sustainable processing
- High speed wide width processing
- Special purpose processing and finishing machinery (e.g. plasma-finishing)
- Hi-tech industrial stitching/sewing machinery (lockstitch, overlock, coverstitch, bar tacking, pocket set, button holes, etc)