SIDBI. GCFV Ref. No/ L002321508 May 08, 2024

The CMDs / MDs / CEOs of all Scheduled Commercial Banks
Small Finance Banks, All India Financial institutions and
Non-Banking Finance Companies

Green Climate Finance Vertical (GCFV) Circular No- 04/2024-2025

Madam / Dear Sir,

MSE Green Investment and Financing for Transformation (MSE-GIFT)

Green financing is becoming vital in driving sustainable development, with a focus on investments and financial products that support environmentally friendly projects. It plays a crucial role in addressing climate change, promoting renewable energy, and fostering sustainable practices across various sectors.

As part of national commitment to sustainable development and supporting environment friendly initiatives, **Ministry of Micro, Small & Medium Enterprises (MoMSME), Government of India** has launched the **"MSE Green Investment and Financing for Transformation (MSE-GIFT)"** to develop an ecosystem wherein institutional finance is made available to MSEs at a concessional cost to minimize/ overcome the incremental cost of clean/green technologies, which include energy from renewable sources like solar, wind, biogas, etc.; clean transportation that involves lower greenhouse gas emissions; energy-efficient projects like green building; waste management that includes recycling, efficient disposal, and conversion to energy, etc. **SIDBI has been designated as the implementing agency of the scheme**.

The key objectives of the scheme are:

- To promote adoption of sustainable and eco-friendly practices and technologies and renewable energy sources in the Micro and Small Enterprises (MSE) sector,
- To provide concessional financial assistance to MSEs for investments in adoption of green technologies and practices in their operations, and
- To create awareness among MSEs about the best practices and promote knowledge sharing and benefits of adoption of green technologies and practices.

The scheme aims to provide financial assistance to MSEs engaged in environmentally sustainable practices or seeking to adopt green technologies. Through MSE-GIFT, eligible MSEs can access affordable financing options, enabling them to invest in sustainable initiatives, thereby contributing to a greener future.

The Scheme has two components **(i) Interest Subvention Facility (ISF)** and **(ii) Risk Sharing Faciity (RSF)**. ISF means, all the loans under this financing facility will have an interest subvention of 2% per annum up to a term loan limit of INR 2 crores. The ISF will be available to MSEs for a maximum period of 5 years. The RSF would provide partial credit guarantee coverage of the loan (i.e., the guaranteed amount) to cover a share of the default risk that Participating Financial Institutions (PFIs) face in extending low-cost credit facilities to MSEs for green projects covered under the Scheme.

The summary of the scheme is given in the **Appendix**, and operational guidelines in the **Annexure**. Further, a Green MSME Portal has been developed for lodgment of interest subvention and risk sharing facility (issuance of guarantees) under the scheme. You can reach the Green MSME Portal at https://green.msme.gov.in/home

All Scheduled Commercial Banks, All India Financial Institutions (including SIDBI), Small Finance Banks and Non-Banking Financial Companies (NBFCs), would be eligible to participate in the Scheme, after signing a Memorandum of Understanding (MoU) with SIDBI.

Please bring the contents of the Circular to the notice of all offices attached to your Institution. Contact details of the Project Management Unit (PMU) at SIDBI is given at the Appendix.

Yours faithfully,

(Rajendra Prasad)
Deputy General Manager

Encls: a/a

Appendix

Summary

MSE Green Investment and Financing for Transformation (MSE-GIFT)

a. Interest Subvention Facility

Scheme Component	Key Features
Eligible borrowers	Udyam Registered Micro and Small Enterprises
Interest Subvention Facility (ISF)	2% p.a. interest subvention released on reimbursement basis to PFIs on an annual basis till tenure of the loan
Budget Outlay	INR 350 crore
Loan size	Min. INR 10 lakhs and Max. INR 2 crore
Repayment period	Maximum 5 years
Tenure	Interest subvention will be available for 5 years on all loans sanctioned under this financing facility upto and including 31.3.2026

b. Risk Sharing Facility (RSF)

Scheme Component	Key Features
Eligible borrowers	Udyam Registered Micro and Small Enterprises
Risk Sharing Facility (RSF)	Partial credit guarantee of 75% of the loan.
Budget Outlay	INR 125 crore
Max. permitted loan size	INR 2 crore
Guarantee Fee	Loans Above 10 lakh upto 50 lakh – 0.55% Loans Above 50 lakh upto 1 crore – 0.60% Loans Above 1 crore upto 2 crore – 1.20% per annum (plus applicable GST) on sanctioned amount (first year) and on the outstanding amount every subsequent year.
Additional concession/ relaxation in Guarantee fee	Women/SC/ST/Persons with Disability (PwD)/Agniveers: 10% concession NER including Sikkim, UT of Jammu & Kashmir and UT of Ladakh (Upto INR 50 Lakh)/ Aspirational District): 10% concession. ZED Certified MSEs: 10% concession

SIDBI Project Management Unit (PMU):

S.No	Name of the Person & Designation	Contact details
1	Shri Santhosh K R, AGM	SIDBI, Green Climate Finance Vertical, 12th Floor, Atma Ram House, 1 Tolstoy Marg, New Delhi – 110001 Telephone: 011-23448398 E-mail ID: santhoshkr@sidbi.in; gift_gcfv@sidbi.in; spice_gcfv@sidbi.in
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Escalation Matrix

Level	Name of the Person & Designation	Contact details
1	Shri Rajendra Prasad, DGM	SIDBI, Green Climate Finance Vertical, 12th Floor, Atma Ram House, 1 Tolstoy Marg, New Delhi – 110001 Telephone: 011-23448423 E-mail ID: rajendrapd@sidbi.in
2	Shri Himanshu Rajendra Asthana, GM	SIDBI, Green Climate Finance Vertical, 12th Floor, Atma Ram House, 1 Tolstoy Marg, New Delhi – 110001 Telephone: 011-23448300 E-mail ID: himanshu@sidbi.in

Ministry of Micro, Small & Medium Enterprises
Government of India

Scheme on MSE Green Investment and Financing for Transformation (MSE GIFT)

Scheme Guidelines

(May 2024)

CONTENTS

Scheme Guidelines for mobilizing Green Finance under
'MSE Green Investment and Financing for Transformation (GIFT)'

1. **Introduction:**

1.1 Micro, small, and medium enterprises (MSMEs) in India are defined by the Micro, Small, and Medium Enterprises Development Act, 2006, based on investment in core plant and machinery (for the manufacturing sector) or equipment (for the service sector) and turnover. MSMEs contribute to over 28% share of the national GDP and produce over 6000 different products, and therefore play a significant role in the overall economy. There are 63 million MSMEs providing employment to 111 million workforces, constituting 45% of the manufacturing and 40% of the exports. MSMEs in India are generally located in concentrated geographic "clusters", which produce similar products. Of the 63 million enterprises, about a third, i.e., 19.7 million (31%), are categorized as manufacturing, while the remaining are service and trade enterprises.

1.2 Though the impact of climate change is universal, the MSMEs which play an important role in the economy, are considered particularly vulnerable to climate events, due to their inherent weaknesses and limitations. India has over 6,000 MSME clusters[1], of which, about 400 clusters have been identified by various studies as 'energy-intensive'[2]. It has been estimated that the MSME manufacturing sector consumed about one-quarter (25%) of the total energy consumed by the industrial sector. According to CSTEP's estimates[3], GHG emissions owing to coal and petroleum products in the informal sectors of the MSMEs in India emitted 110 MtCO2e (million tonnes of CO2 equivalent) in 2015–16.

1.3 In MSMEs, the energy savings potential varies as per sector dynamics and ranges from 5% to 30% (Avg. 17.5%)[4]. Considering an average energy saving potential of 15%, the total estimated energy saving potential in MSMEs by 2031 would be ~16.65 mtoe.

2. **Rationale of the Scheme:**

2.1 India at the 26th session of the Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Glasgow,

[1] https://fmc.org.in/wp-content/uploads/2012/10/Promoting-Inovation-in-Clusters.pdf
[2] https://shaktifoundation.in/wp-content/uploads/2018/08/Factors-influencing-uptake-of-EE-initiatives-by-Indian-MSMEs.pdf
[3] http://www.ghgplatform-india.org/Images/Publications/CSTEP_GHG_emission_Informal%20sector.pdf
[4] Table 3: Energy savings potential across key industrial sectors in the MSME sector- https://shaktifoundation.in/wp-content/uploads/2018/08/Factors-influencing-uptake-of-EE-initiatives-by-Indian-MSMEs.pdf

United Kingdom, expressed to intensify its climate action by presenting to the World five nectar elements (Panchamrit) of India's climate action. This update to India's existing NDC translates the 'Panchamrit' announced at COP 26 into enhanced climate targets. The update is also a step towards achieving India's long-term goal of reaching net zero by 2070. India now stands committed to reducing the emissions intensity of its GDP by 45 percent by 2030, from the 2005 level, and achieving about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. The updated NDC also represents the framework for India's transition to cleaner energy for the period 2021-2030. It will lead to an overall increase in green jobs such as in renewable energy, and clean energy industries - in automotive, manufacturing of low emissions products like Electric Vehicles and super-efficient appliances, and innovative technologies such as green hydrogen, etc. Appropriate measures are being taken under these schemes and programs across many sectors, including water, agriculture, forest, energy and enterprise, sustainable mobility and housing, waste management, circular economy, resource efficiency, etc.

2.2 The organisation for Economic Co-operation and Development (OECD) in its recently released "Clean Energy Finance & Investment Roadmap for India – 2022", has emphasised the role of the Ministry of Micro, Small & Medium Enterprises (MoMSME) in Technology Upgradation through incentives to MSMEs to adopt energy efficient measures in their business operations.[5] In the same report, it has also been emphasised that SIDBI could take necessary measures to introduce a facility to provide some kind of guarantee (risk sharing) to address the concerns of MSMEs related to the non-availability of collateral to help them raise finance from banks / Financial Institutions. The report also emphasises the need for affordable finance by incentivising the MSMEs through interest subvention to help them invest in efficient technologies.

2.3 The present proposal largely covers the important areas proposed to accelerate investment in MSMEs requiring credit to invest in energy-efficient technologies. The realization of estimated energy-saving targets in MSMEs would require an investment of around INR 17,000 crore[6]. The resultant reduction in GHG emission[7] would be around 65 million tCO_2 eq. Further, it is estimated that the MSME sector

[5] OECD, Clean Energy Finance & Investment Roadmap for India – 2022

[6] Estimated based on the investment required to save 1 toe as per estimate given in UNNATEE report of BEE (INR 5x10^5 Cr./ 47.5 mtoe = INR 10500/toe), pg. no. xxiii, https://beeindia.gov.in/sites/default/files/UNNATEE%20Final%20Report.pdf

[7] Calculated based on estimated energy savings and corresponding emission reduction (185 million tCO2/ 47.5 mtoe = 3.89 tCO2/ toe).

has the potential to install Solar Rooftop with an estimated capacity of around 16 GWp[8], which may require an investment of upwards of INR 72,000 crore[9]. If these estimated investments are realized, this could result in a reduction in GHG emissions[10] of around 17.28 million tCO2 eq.

In view of above, the Government of India proposes to launch "MSE Green Investment and Financing for Transformation" with a budget outlay of **INR 478** crore to mobilize affordable green finance facilities to viable MSE projects. SIDBI is the implementing agency under the Scheme.

3. **Objective of the Scheme:**

The objective of the "MSE Green Investment and Financing for Transformation" is to provide an ecosystem wherein institutional finance is made available to MSEs at a concessional cost to minimize/ overcome the incremental cost of clean/green technologies. The scheme also aims to incentivize lending institutions to prioritize financing to green technologies in MSEs. The Scheme also aims to provide adequate technical handholding support for adopting environmentally sustainable projects and climate change adaptation and mitigation technologies while ensuring growth and competitiveness of MSEs**.** Environmentally sustainable projects include energy from renewable sources like solar, wind, biogas, etc.; clean transportation that involves lower greenhouse gas emissions; energy-efficient projects like green building; waste management that includes recycling, efficient disposal, and conversion to energy, etc[11].The specific objectives of the MSE Green Investment and Financing for Transformation are:

- To promote adoption of sustainable and eco-friendly practices and technologies and renewable energy sources in the Micro and Small and Medium Enterprises (MSE) sector,
- To provide concessional financial assistance to MSEs for investments in adoption of green technologies and practices in the operation of MSEs, and
- To create awareness among MSEs about the best practices and promote knowledge sharing and benefits of adoption of green technologies and practices.

[8] https://www.climateinvestmentfunds.org/sites/cif_enc/files/knowledge-documents/final_scaling_up_rooftop_solar_in_sme_in_india.pdf?hootPostID=b8ff02a27dc240f956f83f6e487b0aa9
[9] Estimated based on an average cost of 1 MW solar roof top plant as INR 4.5 crores (USD 0.6 million)
[10] Calculated based on estimated energy generation and corresponding emission reduction (16,000 MW x 1350 MWh/MW x 0.80 tCO2/MWh).
[11] Green Finance in India: Progress and Challenges, RBI Bulletin January 2021

4. **Implementation Period of Scheme**:

- The Scheme will be operational from 2023-2024 to 2025-2026.
- Sunset clause: All the assistance sanctioned after the date of notification of the scheme by MoMSME, GoI would be in operation till such time the interest subvention corpus is fully committed or the tenure of the scheme, whichever is earlier.

5. **Government Budgetary Support**:

Budgetary support will be provided for investments towards energy transformation, interest subvention, and risk sharing, and the administrative costs of implementing the agency.

The scheme will be implemented in two Phases. In Phase I, Micro and Small Enterprises only will be eligible for the Interest Subvention component. In Phase II, Medium Enterprises will also be covered. However, the decision to cover Medium Enterprises will be taken by the Scheme Steering Committee. Risk Sharing Facility Component will be aligned with CGTMSE scheme.

The details are as below: -

Sr. No.	Name of the Facility	Norms
1	Interest Subvention for MSEs	All loans under this financing facility will have an interest subvention of **2% per annum** up to a term loan limit of INR 2 crores. This subvention will be available to MSEs for a maximum period of 5 years. (Interest subvention will be available on all loans sanctioned under this financing facility upto and including 31.3.2026. All the assistance sanctioned after the date of notification of the scheme by MoMSME, GoI would be in operation till such time the interest subvention corpus is fully committed or the tenure of the scheme, whichever is earlier.)
2	Risk Sharing Facility for Micro and Small Enterprises (MSEs)	All loans to MSEs up to INR 2 crore would be covered under the Risk Sharing Facility to be executed by SIDBI. The eligible MSEs would be offered financial assistance under the hybrid model, wherein the project assets, available collateral, and RSF would ascertain the risk mitigation to financial institutions. For such

		RSF, MSEs would require paying a guarantee fee following the Guarantee fee structure of CGTMSE, which is as under: Loans Above INR 10 lakh upto INR 50 lakh – 0.55% Loans Above INR 50 lakh upto INR 1 crore – 0.60% Loans Above INR 1 crore upto INR 2 crore – 1.20% per annum (plus applicable GST) on sanctioned amount (first year) and on the outstanding amount every subsequent year. Additional concession/relaxation in Guarantee fee to MSEs owned by weaker section/underserved section would be as follows: Women/SC/ST/Persons with Disability (PwD)/Agniveers: 10% concession NER including Sikkim, UT of Jammu & Kashmir and UT of Ladakh (Upto INR 50 Lakh)/ Aspirational District): 10% concession. ZED Certified MSEs: 10% concession
3	IEC (Information, Education & Communication) Facility	The project entails the capacity building of bankers/lenders to make them ready to take up project financing in the green segment. Also, there is a need to create awareness, induce orientation for adoption, do a few showcases of successful benefits models/benefits, and so on. Thus, the CB fund will be utilized towards organizing seminars, and sensitization programs for the benefit of MSME lending or absorption ecosystem. A suitable MIS system would also be required for monitoring and progress of the project.

6. **Eligible Projects**:

The following sectors (which can be expanded subsequently) impacting climate change are proposed to be covered under the project. The list of green technologies across the MSMEs in energy intensive clusters across India within these broad contours of the scheme are mentioned at **Annexure I.**

- Renewable energy (solar, wind, hydro)
- Mitigation including energy efficiency, cleaner production, resource efficiency, circular economy, etc.
- Adaptation (water management, water efficiency, wastewater treatment, etc.)
- Environmental protection (pollution control, prevention, and treatment)

- Green buildings, green products, and materials
- Transport (urban rail/metro, electric, hybrid, battery, EV charging stations)
- Waste management (recycling, waste treatment, disposal) including waste to energy, e-waste, etc.
- Cleaner & Greener fuels like Compressed Biogas, ethanol, LNG, smart grids, etc.
- Any new and innovative project with the potential for a high impact on climate even though such projects may appear to be highly risky.
- Any other activity which ensures a better environmental outcome

7. **Size of the Scheme and eligible beneficiaries**:

7.1 The proposed size of the Scheme is INR **478 crore** with the following three components.

I. Interest Subvention Facility for eligible MSEs
II. Risk Sharing Facility for MSEs
III. IEC Facility

Eligible MSEs can avail either I or II or both.

I. Interest Subvention Component of INR 350 crore

The component will address the need for availability of affordable finance to the MSEs to adopt green technologies. The low-cost financing provision provided through interest subvention support which will mitigate the perceived technology risks of MSMEs associated with the evolving green technologies and incentivize them to adopt such green technologies. The corpus of Rs.350 crores under this component will provide CAPEX support to MSEs. The corpus fund of Rs.350 crore towards interest subvention at the rate of 2 percent would help leverage the credit to the tune of Rs. 5,800 crores to 5800 MSEs, assuming the average loan size of Rs.1.00 Cr per project (Minimum loan size of Rs.10 lakhs and Maximum loan size of Rs. 2 crore), repayable over a period of 5 years. The interest subvention support of 2% p.a., for the beneficiary MSEs would be provided during the tenure of the loan. The interest subvention will be released on reimbursement basis to PFIs on annual basis after the claim is lodged by PFIs. PFIs shall submit the claim in the portal and to provide declaration that interest has been paid by the borrower for that FY.

The claim shall be submitted by PFIs for the respective FY till first quarter of next FY. All the eligible claims will be settled upon approval by SIDBI.

II. Risk Sharing Facility [Rs.125 crore]

The Risk Sharing facility of the scheme would address the perceived default risk in extending the credit facilities to MSEs in adopting the green technologies towards climate change mitigation and adaptation.

The Risk Sharing component would provide partial credit guarantee coverage of the loan (i.e., the guaranteed amount) to cover a share of the default risk that Participating Financial Institutions (PFIs) face in extending low-cost credit facilities to MSEs for green projects covered under the Scheme. The coverage would be in conformation with the extant CGTMSE guidelines, which are as follows:

Category	Max extent of Guarantee Coverage where credit facility is	
	Above Rs 10 Lakhs, upto Rs .50 lakhs	Above Rs.50 lakhs upto Rs. 2 Cr
Micro enterprises	75%	75%
MSEs located in Northeast Region (incl. Sikkim, UT of Jammu & Kashmir & UT of Ladakh)	80%	75%
Women entrepreneurs / SC/ST entrepreneurs / Person with Disability (PwD)/ MSE promoted by Agniveers / MSEs situated in Aspirational District / ZED certified MSEs	85%	85%
Other categories	75%	75%

III. IEC [Rs. 3 crores]

The IEC would be disbursed to SIDBI in three tranches to help it address the capacity gaps in MSMEs and financial institutions in adopting the green technologies, climate risk management framework, and green investments. The facility will support the scheme implementation and operationalize monitoring and evaluation framework of the scheme. The following activities will be covered under the IEC:

- Capacity Building Trainings/Awareness campaigns for MSMEs
- MSME Cluster development outreach and pilot technology demonstration interventions
- Green Technology manufacturing/ service providers consultations/ meetings
- Capacity Building workshops/ seminars for MLIs
- Voucher based support to MSEs for energy audits/benchmark studies.
- Knowledge management and dissemination (Studies/publication of best practices)
- Program Management (Loan processing and due diligence, Monitoring and Reporting system)
- Digital platform for Loan processing and management
- Administrative cost @0.5% of Scheme cost of INR 478 crores.

- Miscellaneous Cost

7.2 Eligibility Criteria for MSE beneficiaries

- All the MSEs certified under Udyam Registration (both in manufacturing and service sector) will be eligible for Interest Subvention component of the MSE-GIFT scheme.
- All Udyam certified Micro and Small Enterprises (MSEs) (both in manufacturing and service sector) would be eligible for the Risk Sharing Facility component of the MSE-GIFT scheme.
- MSEs availing benefit of guarantee cover under CGTMSE can not avail guarantee cover under MSE-GIFT scheme within the maximum limit permitted under CGTMSE.
- All the assistance sanctioned after the date of notification of the scheme by MoMSME, GoI and would be in operation till such time the interest subvention corpus is fully committed or the tenure of the scheme, whichever is earlier.
- To avail interest subvention for the first time after the project completion, the PFIs would submit following documents through online portal; (i) Sanction Letter, (ii) Declaration & Undertaking between the PFI and the borrower, (iii) Tax Invoice of eligible P&M covered under the project, (iv) Snapshot of geotagging of the project site, for review and approval at SIDBI.
- The names of the promoters/directors/partners/proprietor should not be appearing in various defaulter lists /CFR/CIBIL/RBI/IBA third party list/caution lists etc. as per Bank's guidelines.
- The MSE unit should not be defaulted to any Banks/FIs/NBFCs etc
- Any expenditure incurred on 'civil works or major construction' is excluded from the RAMP programme. Hence, the RAMP expenditure boundary will apply to MSE-GIFT scheme also.

The scheme will focus on MSEs in the energy intensive MSME clusters. The tentative list of clusters is provided in the **Annexure-II**.

8. **Participating Financial Institutions**:

All scheduled commercial banks, All India Financial Institutions including SIDBI, Small Finance Banks, and Non-Banking Financial Companies (NBFCs) are eligible to participate in the Scheme, after signing a Memorandum of Understanding (MoU) with

SIDBI, the implementing agency of the scheme. The financial institutions interested in empanelment with SIDBI under the scheme should fulfil the following eligibility criteria:

- Should be a Scheduled Commercial Bank or Non-Banking Financial Company (NBFC) registered with the Reserve Bank of India (RBI) or an All-India Financial Institution.
- Should not have been debarred under any act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.
- Should have a minimum CRAR as prescribed by Reserve Bank of India.
- Should be active in lending business for a minimum period of 3 years and should have profitable track record for a minimum of last 2 years.
- Any other criteria set by MoMSME and SIDBI from time to time.

9. **Project Management and handholding support**:

The fund will be managed and monitored through an online MIS platform. It will enable all the qualified PFIs to apply for the interest subvention under the scheme. At the back end, the platform will also provide multiple views of dashboards across the district; state, and national level PMUs to monitor the total sanctioned amount and number of borrowers, total interest subvention benefit availed, loan statement summary, demographic and geographic mix of borrowers and type of projects.

10. **Revisit the Scheme**:

The progress of the scheme will be assessed on half yearly basis for its effectiveness and the impact. Concurrent/mid-term third-party independent evaluation of the scheme in addition to end-line evaluation will be conducted as and when required.

11. The mode of disbursal / operationalisation:

The Interest subvention will be released to Banks and lending institutions through SIDBI. Disbursal of funds by lending entities to beneficiaries would be to their working capital accounts or adjusted against the repayments of the entity. The RSF component would be managed by SIDBI, and coverage would be offered to those PFIs who may have entered an MoU with SIDBI.

12. **Criteria for selection of Eligible Borrower**:

Lending institutions will decide on criteria for the selection of eligible borrowers in accordance with the term of the MoU with SIDBI and monitoring committees, PMUs

and keeping in mind the viability of the projects and safety of the investment with measurable/visible environmental / climate impact.

13. Other operational matter:

a. Definition of Green: The Ministry has adopted a document titled “Framework for Green Financing to MSEs” prepared by SIDBI, which defines “a deemed green activity as the one which substantially contributes to one of the following six environmental aims and does not harm the other five.
   i. Greenhouse gas Reduction [Carbon, Methane & Others)
   ii. Climate Change adaptation
   iii. Sustainable use and protection of water
   iv. Transition to a circular economy
   v. Pollution Prevention and Control
   vi. Protection and restoration of biodiversity and the ecosystem.

   For instance, a project which is primarily aimed at the reduction of greenhouse gases (CO2, methane & others) should not interfere with climate change adaptation or protection of natural resources or conversion to reusable resources, prevention & pollution, or restoration of biodiversity and ecosystem. Similarly, a climate change adaptation project should not interfere with the reduction of greenhouse gases or protection of natural resources or conversion to reusable resources, prevention & pollution, or restoration of biodiversity and ecosystem.

b. Likewise, projects that are E&S compliant may also be classified as green projects. Environmental (E) – pollution control, recycling & reuse, energy efficiency, climate change, natural resource efficiency, and environment management and Social (S) – working conditions, local communities, conflict, health and safety, employee relations, and diversity.

c. In addition, a stack of 890 technologies maintained by MoMSME, SIDBI and BEE shall be used as reference for financing under the program.

d. As regards viability assessment, to facilitate credit decisions, certain key parameters (such as Debt Equity Ratio, Break Even, Debt Service Coverage Ratio etc.) would be assessed and commented as part of project appraisal by the MLI.

14. Process of disbursement of subsidy

(i) An MSE unit desirous of interest subvention / an MSE desirous of RSF may apply to a bank/PLI for a loan to finance the eligible investment.

(ii) The Bank/PLI approves the loan after due diligence, and carries out documentation, including additional documents for availment of the interest subvention / RSF.

(iii) RSF coverage to be obtained prior to disbursement of the loan after payment of RSF fee.

(iv) The Bank/PLI disburses the loan.

(v) The Bank/PLI ensures the acquisition of plant & machines completed after a site visit.

(vi) The Bank / PLI shall recommend the proposal for the interest subvention / RSF to SIDBI through online mode.

(vii) SIDBI shall examine the proposal in line with the guidelines of the scheme. Based on the information submitted, SIDBI would sanction the subsidy.

(viii) The interest subvention would be released by SIDBI into the account of the PLI of the applicant MSE on half yearly basis.

(ix) The beneficiary unit will have to remain in commercial production for a period of three years after the “reference date”, on which subsidy under the scheme has been availed.

(x) In case the disbursement is in more than one instalment, the date of disbursement of the last instalment will be referred as the “reference date”.

15. Conditions for Interest subvention:

(i) Term Loan sanctioned and disbursed by banks / PLIs for acquiring new plant & machinery for technology and process up-grade shall qualify for the interest subvention under the scheme. The second-hand / fabricated machines will not be considered to calculate the subsidy under the scheme.

(ii) All the eligible PLIs (excluding SIDBI) will have to execute a General Agreement (GA) for availing interest subvention under the scheme.

(iii) After sanctioning of the assistance, the eligible PLI will get an agreement executed with the concerned MSE unit. The format of the agreement to be executed by the eligible PLI is attached at the Appendix/Annexure.

(iv) The outstanding principal amount of the term loan account under this scheme from one lending agency to another lending agency, would be permitted only once subject to the condition that the entire portfolio (i.e., balance principal term

loan amount and interest due /payable thereon) remains unchanged and subject to the consent of the existing lending agency / PLI.

(v) The term loan sanctioned for availing the benefit of the scheme should not be for less than three years including moratorium period for MSEs.

(vi) In the event of fire /natural disasters/ theft during the monitoring / lock-in period, the amount of subsidy extended to the unit may be utilized to be adjusted against the outstanding term loan. In case, of insurance claim is transferred to the unit, the subsidy shall not be extended to the unit. In regard to sale of the machinery during the monitoring period, subsidy will have to be refunded to the Ministry along with interest thereon. The interest portion on the subsidy amount shall be as per the lending interest rate of the term loan and shall be borne by the beneficiary enterprise.

(vii) The issue(s) of change in ownership & legal entity of the unit or in its constitution will be dealt with in the framework of law on a case-to-case basis.

(viii) The eligible PLI will also be responsible for ensuring that the cases of interest subvention have been subjected to due scrutiny of documents and verification of eligibility of the beneficiaries in terms of the guidelines. The concerned PLI will also be responsible for ensuring compliance with the prescribed procedure and the terms and conditions associated with the disbursement of the subsidy. The sanction letter for a term loan to the beneficiary unit should clearly indicate that the above due diligence process has been duly observed. The claim for subsidy will accompany a copy of the sanction letter and the sanction letters without the said clause duly mentioned will not be entertained.

(ix) The credit risk under the scheme will be borne by the eligible PLI and as such, they will have to make their own commercial judgement while appraising the project. The credit decision of the eligible PLI will be final.

(x) SIDBI shall have the right to inspect the books of eligible PLIs and the loan accounts irrespective of whether refinance is availed or not from SIDBI under this Scheme and/or call for any other information as may be required by GoI from time to time.

(xi) The interest subvention claims will have to be submitted by the PLIs to SIDBI before the end of the quarter immediately following the quarter in which the bank disburses the final installment (reference date) of the existing term loan to the unit.

(xii) In the event of the beneficiary unit/s becoming defaulter in repayment of loan/s and the relevant account/s being declared NPA/s (as per extant Income

Recognition and Asset Classification (IRAC) norms), the benefit of the subsidy/subsidies would have to be immediately withdrawn and the related term deposit/s forfeited, and proceeds refunded to SIDBI.

(xiii) Machines purchased on or after the date of sanction of the term loan only shall be eligible for interest subvention. The purchase date shall be the date when full and final payment is made by the unit for machinery as evidenced by the bank transaction statement or the date of commercial invoice, whichever is later.

(xiv) In the event of detection of gross violation or departure in compliance with the terms & conditions prescribed under the scheme and/or specified in a particular approval, SIDBI shall have the right to immediately recall the entire amount of subsidy from the concerned PLIs irrespective of the fact whether the concerned PLIs have already recovered the subsidy from the beneficiary units or not.

(xv) Promoters' contribution, security, debt-equity ratio, upfront fee, etc. will be determined by the lending agency as per its existing norms.

(xvi) Units which have already availed subsidy in the scheme up to the maximum permissible limit cannot claim additional subsidy. However, the units which have availed the subsidy less than maximum permissible limit will be eligible to claim the balance subsidy up to the maximum permissible limit, within the tenure of the scheme.

(xvii) In order to limit the disbursement of subsidy within the prescribed maximum permissible limit, the PLI will certify the subsidy amount availed earlier by the unit itself.

(xviii) In case of imported machinery, the following shall be included while calculating the value of plant & Machinery, namely: -

a. Import duty (excluding miscellaneous expenses as transportation from the port to the site of the factory, demurrage paid at the port).
b. The shipping charges.
c. Custom clearance charges; and
d. GST.

Indicative formats, draft Undertaking letters are given at **Appendix I-VII**.

16. **Operational modalities for RFS:**

a. All the proposals qualifying to be Green would be eligible for coverage under the RFS. The maximum permitted loan is Rs.2 crores would be eligible for risk coverage as mentioned in Para 7(II) above, as on the date of default. The MLIs

would require entering into an agreement with SIDBI, as per the attached formats (copies enclosed as Appendices I to VII).

b. For the invocation of the guarantee, the PFIs are required to inform the date on which the account was classified as NPA in a particular calendar quarter, by end of subsequent quarter. The scheme shall pay 75% of the guaranteed amount (75% of 75%) on preferring of eligible claim by the PFI, within 30 days, subject to the claim being otherwise found in order and complete in all respects. The balance 25% (25% of 75%) of the guaranteed amount will be paid on conclusion of recovery proceedings by the PFIs or after three years of obtention of decree of recovery, whichever is earlier. PFIs, however, should undertake to refund any amount received / recovered from the beneficiaries account in respect of cases covered under the Scheme.

17. **Monitoring & Evaluation Framework (MEF)**:

The scheme will be monitored by a Programme Steering Committee having members from MoMSME, SIDBI, experts, and practitioners from the field. The overall scheme would be monitored by the Scheme Steering Committee (SSC). The Additional Secretary and Development Commissioner (MSME) will be the Chairperson of the committee. SSC would also periodically review the functioning of the scheme. The evaluation of the Scheme would be done by the third-party audit as per the mandate of the RAMP Program of this Ministry.

18. Scheme Steering Committee

Composition of the Scheme Steering Committee (SSC) is as under:

Sl. No.	Name of the Ministry/Department	Designation
1	Additional Secretary and Development Commissioner (MSME), Office of DC(MSME), Ministry of MSME	Chairman
2	Joint Secretary or equivalent level officer	Member
3	Representative of Ministry of Environment, Forest and Climate Change (Not Below the Rank of Joint Secretary)	Member
4	Economic Adviser, IF Wing, Ministry of MSME	Member
5	Representative of SIDBI (Not below the Rank of GM)	Member
6	Any other invitee as and when required co-opted by the Chairman	Member
7	Director, Ministry of MSME dealing with the subject matter.	Member Secretary

The Terms of Reference (ToR) of SSC are as under:

a. The Committee shall be responsible for Monitoring and Tracking the Progress of the Scheme Implementing at least quarterly.

b. Committee may approve for release of Funds to SIDBI.

c. Any change/ course correction in the scheme guidelines may be effected on the recommendation of the SSC and with the approval of the Minister, MoMSME.

***

Appendix – I

Indicative format of Certificate for claiming Interest Subvention
(soft copy to be submitted to SIDBI)

Name of Lending Institution:

(Amount in INR)

Term Loan Amount Disbursed Under the Project*			Amount of Interest relief Claimed		
MSE (Manufacturing)	MSE (Service Sector)	Total (1+2)	MSE (Manufacturing)	MSE (Service Sector)	Total (4+5)
1	2	3	4	5	

* All accounts which are NPA or have turned NPA during the period to be excluded.

We hereby certify that the amounts of Incremental new Loan disbursements and interest relief being claimed thereon, as shown above, have been correctly calculated in conformity with the SIDBI Circular. No. ---------- dated ---------- ----------. We undertake that in the event of any inaccuracy detected later during audit or otherwise, we shall immediately refund to SIDBI any excess amount received by us.

(Authorised Signatory)
Place & Date

Appendix – II

Indicative format for PFI / Branch wise data to be submitted
(Soft version only to be submitted)

(Amount in INR)

S.No	Branch Name and Code	Incremental Term Loan Amount Disbursed*			Loan Amount disbursed eligible for subsidy			Amount of Interest Relief Claimed		
		MSE (Manufacturing)	MSE (Service Sector)	Total (3+4)	MSE (Manufacturing)	MSE (Service Sector)	Total (6+7)	MSE (Manufacturing)	MSE (Service Sector)	Total (9+10
1	2	3	4	5	6	7	8	9	10	11

Appendix – III

Indicative format for PFI / Branches to provide account wise information
(Soft version to be submitted to SIDBI)

(Amount in Rupees)

S.No	Account No.	Name of the MSE unit	Incremental Term Loan Amount Disbursed*					
			MSE type (Manufacturing / Service Sector)	GST No.	ROI Charged	Total Amount Disbursed	Total amount of Interest Charged	Total Relief Claimed

Unit wise data to include, date of sanction, Outstanding as on 31/03/_____, incremental TL disbursed, date of disbursement, interest rate, tenor, category, sector, industry, demographic, economic and social data of beneficiary units and promoters. This data is to be provided in excel sheet in soft copy form for consolidation and transmission to MoMSME.

Appendix - IV

{Draft of undertaking to be executed by lending institution}

To

The General Manager
Small Industries Development Bank of India,
12th Floor, Atmaram House,
New Delhi - 110001**.**

Dear Sir,

In consideration of the **Small Industries Development Bank of India** (hereinafter referred to as "SIDBI" which expression shall, unless repugnant to the context, also include its successors and assigns), agreeing to guarantee under the MSE Green Investment and Financing for Transformation (a copy whereof is hereto annexed and which is hereinafter referred to as "the Scheme"), certain credit facilities granted by us to eligible borrowers in the micro and small enterprises sector, we _____ (Name of lending institution), do hereby agree with the SIDBI as follows :

1. That the provisions of this Undertaking shall be in addition to, and not in derogation of, the provisions of the Scheme and the guidelines and instructions issued by SIDBI from time to time.

2. That the provisions of the Scheme and such modifications as may be made thereto from time to time shall be deemed to be incorporated in this Undertaking and shall be binding on us, in so far, they relate to the credit facilities granted by us to borrowers which have been or are eligible for being guaranteed thereunder.

3. That the provisions of the Scheme along with modifications, if any, along with modifications, if any, and this Undertaking shall be applicable to or in relation to all credit facilities eligible for guarantee under the Scheme.

4. That we shall claim the benefit of the guarantee under the Scheme only in respect of the credit facilities specified in the Scheme and to the extent provided therein and that we shall for this purpose obtain and preserve affidavits or other documents from the borrowers concerned or otherwise satisfy ourselves by reference to the borrowers' books of account or other records that the borrowers in respect of whom the benefit of the guarantee has been or is to be provided by SIDBI are eligible for the guarantee under the Scheme.

5. That we agree that a borrower who ceases to be so eligible will, in accordance with and subject to the provisions of the Scheme, be excluded from the benefit of any guarantee and that for this purpose, we shall obtain from the borrower concerned every quarter or at such other intervals as may be required by SIDBI, such information declarations as may be deemed necessary.

6. That the books of accounts, ledgers and other documents relating to eligible credit facilities, covered by the Scheme shall, as far as may be practicable, be segregated and maintained in a proper manner so as to facilitate such scrutiny or inspection as may be undertaken by The Small Industries Development Bank of India (SIDBI) or by the Government of India (GOI) or or by any other person nominated by SIDBI in this behalf.

7. That we undertake to make available to the Officers of GOI / SIDBI or of any agency which may be specified by the SIDBI in this behalf, as the case may be, all our books and records and provide such other facilities as may be required for such scrutiny and inspection.

8. That we shall furnish to SIDBI a statement in a form and manner required by SIDBI, showing the outstanding balances with break-up of principal and interest / other expenses details in respect of the eligible credit facilities covered under the Scheme, as and when required by SIDBI.

9. That we shall furnish to thereafter such statements or information as SIDBI may require about the eligible credit facilities in such form and manner, and at such intervals, as may be required by SIDBI.

10. Term Loan sanctioned and disbursed by banks / PLIs for acquiring new plant & machinery for technology and process up-grade shall qualify for the interest subvention under the scheme. The second-hand / fabricated machines will not be considered to calculate the subsidy under the scheme.

11. The outstanding principal amount of the term loan account under this scheme from one lending agency to another lending agency, would be permitted only once subject to the condition that the entire portfolio (i.e., balance principal term loan amount and interest due /payable thereon) remains unchanged and subject to the consent of the existing lending agency / PLI.

12. The term loan sanctioned for availing the benefit of the scheme should not be for less than three years including moratorium period for MSEs.

13. In the event of fire /natural disasters/ theft during the monitoring / lock-in period, the amount of subsidy extended to the unit may be utilized to be adjusted against the outstanding term loan. In case, of insurance claim is transferred to the unit, the subsidy shall not be extended to the unit. In regard to sale of the machinery during the monitoring period, the fixed deposit will be forfeited, and subsidy will have to be refunded to the Ministry along with interest thereon. The interest portion on the subsidy amount shall be as per the lending interest rate of the term loan and shall be borne by the beneficiary enterprise.

14. The issue(s) of change in ownership & legal entity of the unit or in its constitution will be dealt with in the framework of a legal angle on case-to-case basis.

15. The eligible PLI will also be responsible for ensuring that the cases of interest subvention have been subjected to due scrutiny of documents and verification of eligibility of the beneficiaries in terms of the guidelines. The concerned PLI will also be responsible for ensuring compliance with the prescribed procedure and the terms and conditions associated with the disbursement of the subsidy. The sanction letter for a term loan to the beneficiary unit should clearly indicate that the above due diligence process has been duly observed. The claim for subsidy will accompany a copy of the sanction letter and the sanction letters without the said clause duly mentioned will not be entertained.

16. The credit risk under the scheme will be borne by the eligible PLI and as such, they will have to make their own commercial judgement while appraising the project. The credit decision of the eligible PLI will be final.

17. SIDBI shall have the right to inspect the books of eligible PLIs and the loan accounts irrespective of whether refinance is availed or not from SIDBI under this Scheme and/or call for any other information as may be required by GoI from time to time.

18. The interest subvention claims will have to be submitted by the PLIs to SIDBI before the end of the quarter immediately following the quarter in which the bank disburses the final installment (reference date) of the existing term loan to the unit.

19. In the event of the beneficiary unit/s becoming defaulter in repayment of loan/s and the relevant account/s being declared NPA/s (as per extant Income Recognition and Asset Classification (IRAC) norms), the benefit of the subsidy/subsidies would have to be immediately withdrawn and the related term deposit/s forfeited, and proceeds refunded to SIDBI.

20. Machines purchased on or after the date of sanction of the term loan only shall be eligible for interest subvention. The purchase date shall be the date when full and final payment is made by the unit for machinery as evidenced by the bank transaction statement or the date of commercial invoice whichever is later.

21. In the event of detection of gross violation or departure in compliance with the terms & conditions prescribed under the scheme and/or specified in a particular approval, SIDBI shall have the right to immediately recall the entire amount of subsidy from the concerned PLIs irrespective of the fact whether the concerned PLIs have already recovered the subsidy from the beneficiary units or not.

22. Promoters' contribution, security, debt-equity ratio, upfront fee, etc. will be determined by the lending agency as per its existing norms.

23. Units which have already availed subsidy in the scheme up to the maximum permissible limit cannot claim additional subsidy. However, the units which have availed the subsidy less than maximum permissible limit will be eligible to claim the balance subsidy up to the maximum permissible limit, within the tenure of the scheme.

24. In order to limit the disbursement of subsidy within the prescribed maximum permissible limit, the PLI will certify the subsidy amount availed earlier by the unit itself.

25. That we shall secure for SIDBI or its appointed agency the right to inspect the business and factory premises and books of account of the borrowers if and when considered necessary by SIDBI.

26. That we shall secure for SIDBI or its appointed agency the right to list the defaulted borrowers' names and particulars on the web site by SIDBI.

27. That notwithstanding anything to the contrary contained in the Scheme, if any loss occurs in respect of an account covered by the Scheme owing to actions / decisions taken contrary to or in contravention of the guidelines issued by SIDBI, we shall not make and shall not also be entitled to any claim on SIDBI in respect of the said account.

28. That all applications, documents, receipts, statements and other papers shall be signed on behalf of our institution by the Chief Executive Officer or by other persons in our employment who shall be deemed to be authorised by us to sign all such applications, documents, receipts, statements and other papers and that any irregularity in the

signature, or want of authority of the persons so signing shall not in any way affect or prejudice the rights of SIDBI or affect our liability in respect thereof.

29. That all data, including applications, periodical returns, funds transfer, updated or transferred to SIDBI in the electronic form, shall be deemed to be signed on behalf of our institution by the Chief Executive Officer or by other persons in our employment who shall be deemed to be authorised by us to sign all such applications, documents, receipts, statements and other papers and that any irregularity in the use of member-id, or want of authority of the persons so signing shall not in any way affect or prejudice the rights of SIDBI or affect our liability in respect thereof.

30. That we shall introduce and follow such accounting arrangements as may be necessary or as may be required by SIDBI or take such other steps as may be necessary or expedient for protecting its interests in respect of the outstanding balances on account of credit facilities in regard to which the facility covered under the scheme.

31. That this Undertaking shall take effect from the first day of _____.

32. That the stamp duty payable on this Undertaking shall be borne by us.

Yours faithfully,

For and on behalf of _____
Signature _____
Name _____
Designation _____

Place:_____
Date : _____

Note :

(i) This Undertaking is to be executed by the lending institution for getting itself registered as Member to avail of the guarantee facility extended by SIDBI.

(ii) This Undertaking is to be executed by an official authorised by appropriate authority of the lending institution.

(iii) This Undertaking is to be stamped as an agreement. The value of stamp duty will depend upon the place where it is executed and/ or acted upon.

(iv) Kindly enclose resolution from your Board of Directors, approving enrolment as member under the scheme.

Appendix - V

Guarantee Application Form

1. **Name of Participating Financial Institution (PFI)**
2. **PFI Reference No.**
3. **PFI Branch Name & Branch Code**
4. **Borrower Details**

Whether borrower covered under RSF previously : YES / NO
If yes, details thereof_____

Borrower Constitution

- ⇒ *Proprietary / Individual*
- ⇒ *Partnership*
- ⇒ *LLP*
- ⇒ *Pvt. Lt.*
- ⇒ *Public*
- ⇒ *HUF*
- ⇒ *Trust*
- ⇒ *Society / Co-op Society*
- ⇒ *Group Concern*

Name of the Borrower :

Address of the Borrower :

District :

PIN Code :

ITPAN of the Borrower :

5. **Promoters Details:**

Chief Promoter's Information:

- ⇒ *Name*
- ⇒ *Gender*
- ⇒ *Whether belongs to Minority Community: Yes / No (If yes, details_____)*
- ⇒ *physically handicapped : Yes / No*
- ⇒ *Category* (SC / ST / OBC)
- ⇒ Date of Birth
- ⇒ IT PAN

Other Promoter's Information (for each promoter)

- ⇒ *Name*
- ⇒ *IT Pan*
- ⇒ *Date of Birth*

Whether unit assisted is a new unit : YES / NO
Whether unit assisted is a Women operated and / or women owned : YES / NO
Collateral Security Taken : YES / NO
If yes, details of the collaterals…….

6. Project Details

Category of the Borrower (Micro / Small /)
Name of the MSE
Total EE/ Green Investment Project Cost
EE/ Green Investment loan amount sanctioned
Loan sanction date
Tenure of the loan
Loan Termination Date

7. Means of Finance

Total Loan Sanctioned
Promoter's contribution
Subsidy / Equity Support, if any
Project Cost
Disbursement Schedule
Repayment Schedule

- ⇒ Moratorium
- ⇒ First Installment Due Date
- ⇒ Periodicity
- ⇒ No. of installments

Outstanding Amount (as applicable)
Declarations / Certification for the following terms and conditions

- ⇒ Account is standard and regular as on date of application
- ⇒ Eligible EE project / EE Loan / Green Investment in accordance with the Operational Guidelines
- ⇒ Eligible Borrower in accordance with the Operational Guidelines

*****

Appendix - VI

{Draft of undertaking to be executed by lending institution}

To

The General Manager
Small Industries Development Bank of India,
12th Floor, Atmaram House,
New Delhi - 110001**.**

Dear Sir,

In consideration of the **Small Industries Development Bank of India** (hereinafter referred to as "SIDBI" which expression shall, unless repugnant to the context, also include its successors and assigns), agreeing to guarantee under the MSE Green Investment and Financing for Transformation (a copy whereof is hereto annexed and which is hereinafter referred to as "the Scheme"), certain credit facilities granted by us to eligible borrowers in the micro and small enterprises sector, we _____ (Name of lending institution), do hereby agree with the SIDBI as follows :

1. That the provisions of this Undertaking shall be in addition to, and not in derogation of, the provisions of the Scheme and the guidelines and instructions issued by SIDBI from time to time.

2. That the provisions of the Scheme and such modifications as may be made thereto from time to time shall be deemed to be incorporated in this Undertaking and shall be binding on us, in so far, they relate to the credit facilities granted by us to borrowers which have been or are eligible for being guaranteed thereunder.

3. That the provisions of the Scheme along with modifications, if any, along with modifications, if any, and this Undertaking shall be applicable to or in relation to all credit facilities eligible for guarantee under the Scheme.

4. That we shall claim the benefit of the guarantee under the Scheme only in respect of the credit facilities specified in the Scheme and to the extent provided therein and that we shall for this purpose obtain and preserve affidavits or other documents from the borrowers concerned or otherwise satisfy ourselves by reference to the borrowers' books of account or other records that the borrowers in respect of whom the benefit of the guarantee has been or is to be provided by SIDBI are eligible for the guarantee under the Scheme.

5. That we agree that a borrower who ceases to be so eligible will, in accordance with and subject to the provisions of the Scheme, be excluded from the benefit of any guarantee and that for this purpose, we shall obtain from the borrower concerned every quarter or at such other intervals as may be required by SIDBI, such information declarations as may be deemed necessary.

6. That the books of accounts, ledgers and other documents relating to eligible credit facilities, covered by the Scheme shall, as far as may be practicable, be segregated and maintained in a proper manner so as to facilitate such scrutiny or inspection as may be undertaken by The Small Industries Development Bank of India (SIDBI) or by the Government of India (GOI) or or by any other person nominated by SIDBI in this behalf.

7. That we undertake to make available to the Officers of GOI / SIDBI or of any agency which may be specified by the SIDBI in this behalf, as the case may be, all our books and records and provide such other facilities as may be required for such scrutiny and inspection.

8. That we shall furnish to SIDBI a statement in a form and manner required by SIDBI, showing the outstanding balances with break-up of principal and interest / other expenses details in respect of the eligible credit facilities covered under the Scheme, as and when required by SIDBI.

9. That we shall furnish to thereafter such statements or information as SIDBI may require about the eligible credit facilities in such form and manner, and at such intervals, as may be required by SIDBI.

10. That in order to enable SIDBI to ascertain whether a claim made on it is on account of any eligible credit facility which has been so covered, we shall preserve in good order the detailed statement or statements referred to in clauses 7, 8 and 9 hereof as also the relevant documents relating to the credit facility.

11. That we shall, in respect of every eligible credit facility, exercise due diligence in recovering the dues, and safeguarding the interest of SIDBI. We shall, in particular, refrain from any act of omission or commission either prior to or subsequent to invocation of guarantee, which may adversely affect the interest of SIDBI as the guarantor and obtain prior permission of SIDBI before entering into any compromise or agreement with the borrower or any other party which may have the effect on discharge of assets.

12. That for invoking the guarantee under the Scheme we undertake to submit to SIDBI an application in such form as may be specified by SIDBI and furnish such other information as may be required of us by SIDBI.

13. That we shall secure for SIDBI or its appointed agency the right to inspect the business and factory premises and books of account of the borrowers if and when considered necessary by SIDBI.

14. That we shall secure for SIDBI or its appointed agency the right to list the defaulted borrowers' names and particulars on the web site by SIDBI.

15. That notwithstanding anything to the contrary contained in the Scheme, if any loss occurs in respect of an account covered by the Scheme owing to actions / decisions taken contrary to or in contravention of the guidelines issued by SIDBI, we shall not make and shall not also be entitled to any claim on SIDBI in respect of the said account.

16. That all applications, documents, receipts, statements and other papers shall be signed on behalf of our institution by the Chief Executive Officer or by other persons in our employment who shall be deemed to be authorised by us to sign all such applications, documents, receipts, statements and other papers and that any irregularity in the signature, or want of authority of the persons so signing shall not in any way affect or prejudice the rights of SIDBI or affect our liability in respect thereof.

17. That all data, including applications, periodical returns, funds transfer, updated or transferred to SIDBI in the electronic form, shall be deemed to be signed on behalf of our institution by the Chief Executive Officer or by other persons in our employment who shall be deemed to be authorised by us to sign all such applications, documents, receipts, statements and other papers and that any irregularity in the use of member-id,

or want of authority of the persons so signing shall not in any way affect or prejudice the rights of SIDBI or affect our liability in respect thereof.

18. That we shall introduce and follow such accounting arrangements as may be necessary or as may be required by SIDBI or take such other steps as may be necessary or expedient for protecting its interests in respect of the outstanding balances on account of credit facilities in regard to which the SIDBI's guarantee is invoked by us.

19. That this Undertaking shall take effect from the first day of _____.

20. That the stamp duty payable on this Undertaking shall be borne by us.

Yours faithfully,

For and on behalf of _____
Signature _____
Name _____
Designation _____

Place:_____
Date : _____

Note :

(i) This Undertaking is to be executed by the lending institution for getting itself registered as Member to avail of the guarantee facility extended by SIDBI.

(ii) This Undertaking is to be executed by an official authorised by appropriate authority of the lending institution.

(iii) This Undertaking is to be stamped as an agreement. The value of stamp duty will depend upon the place where it is executed and/ or acted upon.

(iv) Kindly enclose resolution from your Board of Directors, approving enrolment as member under the scheme.

Appendix - VII

Guarantee Letter for PFI

Format of Guarantee Letter

[*To be issued on the letterhead of the PEA*]

To

[•]
[*Insert name of the PFI*]
[*Insert address of the PFI*]

[*Insert date*]
[*Insert place*]

Subject: Request for Guarantee in terms of MGA for loan of Rs. [•] ("**EE/ Green Loan**") for the [•] project ("**EE/ Green Project** ") provided/to be provided by the PFI to [•] ("**the Borrower**").

A. **BACKGROUND**

(i) The PFI has been empanelled with the SIDBI to lend to MSMEs for implementing one or multiple energy efficiency / green projects (each, an "**EE/ Green Project**").

(ii) A Master Guarantee Agreement (MGA) dated [……] was executed by and between SIDBI and the PFI to provide guarantees in relation to various EE/ Green Loan(s) provided by the PFI for the EE/Green Project(s).

(iii) For each EE/ Green Loan (as defined in the MGA), SIDBI shall issue a guarantee letter ("**Guarantee Letter**") *inter alia* specifying the details of the specific EE/ Green Loan, details of the EE/ Green Project for which EE/ Green Loan has been provided and special condition (if any) to be read with the terms of the MGA.

(iv) Pursuant to the payment of the Guarantee Fee in accordance with the terms of the MGA, the PFI, though its application no. [•], dated [•] requested SIDBI to provide Guarantee in relation to the EE/ Green Loan of Rs. [●] provided by it to the [•] for [*describe the EE / Green Project*].

B. **GUARANTEE**

(i) This Guarantee Letter is in relation to the EE/ Green Loan of Rs. [•] provided by the PFI to [●] on the terms and conditions detailed in the EE/ Green Loan Agreement dated [•] and other financing documents for the EE / Green Project described above.

(ii) **Guarantee Fee**: A non-refundable, annual Guarantee Fee at the rate (…%) of the EE/ Green loan along-with applicable GST (%) shall be payable within 30 days from the date of this letter on a pro-rata basis for the current financial year and thereafter on annual basis, at the beginning of each financial year in advance, by April 30th of every year.

- Guarantee Fee for the current FY
- GST (%)
- Total

Note: For the broken period (first and last year of guarantee period), guarantee fee will be calculated on the basis of no. of days of the guarantee in the FY divided by total no. of days in the FY.

(iii) This Guarantee Letter shall be valid only upon receipt of the Guarantee Fee of Rs.[•] against this Guarantee Letter in accordance with the terms of the MGA, and shall be effective from later of the date of: (a) the date of first disbursement of the relevant EE/ Green Loan by the PFI to MSE), and (b) start of the operational period of the relevant EE/ Green Project undertaken by the MSE, and shall continue in force till the earlier of the date when the Guarantee obligation of SIDBI under this Guarantee Letter read with the MGA is exhausted, or the MGA expires, terminated or is suspended in accordance with its terms.

(iv) The Guarantee Coverage Percentage shall be [•] %[and the Guarantee Coverage amount in relation to the EE/ Green Loan under this Guarantee Letter is Rs. [•]], however, it is clarified that any Eligible Guarantee Claim under this Guarantee Letter is always limited to the Maximum Guarantee Amount (as defined in the MGA) and subject to the terms of MGA including receipt by SIDBI of a satisfactory report from the MVA regarding the appropriateness of the Eligible Guarantee Claim and Maximum Guarantee Amount.

(v) Payment of any Demand in respect of the restructured EE/ Green Loan shall be in accordance with terms of the MGA.

(vi) It is clarified that that the PFI's right to receive payment of any Eligible Guarantee Claim or payment of any Demand, shall always be subject to availability of funds with the PEA

(vii) The Guarantee shall be valid for a Guarantee Period of [•]and shall be valid from the Effective Date in terms of MGA and paragraph B(iii) above.

C. **CONFLICT**

This Guarantee Letter shall always be read together with the MGA and in case of conflict between this Guarantee Letter and MGA, the MGA shall prevail to the extent of such conflict.

D. **DEFINITIONS**

All the terms not defined herein shall have meaning ascribed to it in the MGA.

Signed and delivered by

SMALL INDUSTRIES DEVELOPMENT BANK OF INDIA, acting as PEA

By: [•]

[Authorized Signatory]

Acceptance by Authorised Signatory of PFI

Name: [•]

Title: [•]

S.No.	Eligible Equipment / Technology	Energy Saving		Other Advantages	Sector
		min	max		
		A	B		
1	Variable Frequency Drives	30	40	Extended equipment life, reduced maintenance, reduced peak demand, safety against power fluctuations	General Engineering (Electricals)
2	Energy Efficient Transformers	2	5	Increased efficiency at no and low loads	General Engineering (Electricals)
3	Energy Efficient Fluorescent Lamps	15	25	Longer life, less heat produced	General Engineering (Electricals)
4	Compact Fluorescent Lamps	15	25	Produce little to no heat	General Engineering (Electricals)
5	Metal Halides Lamps	15	25	Longer life, equally suited for indoor and outdoor use	General Engineering (Electricals)
6	High Pressure Sodium Vapor Lamps	15	25	Long life, emits more light energy in the yellow/orange/ red region of the spectrum	General Engineering (Electricals)
7	Light Emitting Diode	50	60	High reliability, highly rugged, produce no UV radiation and little heat	General Engineering (Electricals)
8	Microprocessor Based Intelligent Control	20	30	Reduces energy cost by regulating light output according to available daylight, increases lamp life	General Engineering (Electricals)
9	Exclusive Transformer for Lighting	2	3	Compact, easy to install, power quality enhancement, provide speed/torque control, safety enhancement	General Engineering (Electricals)
10	Servo Stabilizer	2	5	Gives stable output under severe unbalanced voltage, increases equipment life, low internal impedance, works over wide input frequency range and no waveform distortion	General Engineering (Electricals)
11	Electronic Ballast	2	5	Low internal core loss, improved light output quality, operate at a much higher frequency than magnetic ballasts, instant glow with no flickering increases tube life, no heat generated	General Engineering (Electricals)
12	Energy Efficient Air Compressors / Blowers	30	40	Easy to install and operate	General Engineering (Electricals)
13	Capacitors	5	7	Improve Power Factor, Release System Capacity, Improve Motor and Lighting Performance, Reduce Current and Losses	General Engineering (Electricals)
14	Automatic Powerfactor Controller	5	7	Reduce reactive power, reduce total current from the source	General Engineering (Electricals)
15	Soft Starter for Motors	5	7	Provides smooth and stepless acceleration and deacceleration of AC Induction Motor, less mechanical stress, improved power factor, lower maximum demand	General Engineering (Electricals)
16	Maximum Demand Controller	5	7	Energy Saving achieved by monitoring power end use turn off non- essential loads during higher power end use	General Engineering (Electricals)
17	Automatic Temperature Controller	6	8	Accurate temperature regulation, prolongs life of equipment	General Engineering (Electricals)
18	High-frequency Induction Irradiation	5	7	Higher efficiency due to skin effect by high frequency, non- contact in nature, less risk of workpiece contamination	General Engineering (Electricals)
19	High-frequency Melting Furnace	10	15	Small volume, less environmental pollution	General Engineering (Electricals)
20	Highly Sensitive and Responsive Arc Furnace	10	15	Reduce electrode usage and refractory wear, wide range of current setting, hot and cold phase compensation, longer furnace life	General Engineering (Electricals)
21	High-performance Electrolytic Furnace	25	30	Uninterrupted production & better product quality, prolonged equipment life	General Engineering (Electricals)
22	Electromagnetic Irradiation	30	40	Selective heating (heats water rather than substrate or surrounding air), ideal for materials with non-uniform moisture content	General Engineering (Electricals)
23	Common Incinerator Alongwith Power Generation Facilities	50	60	Destruction of hazardous and toxic waste	General Engineering (Electricals)
24	Computer Desktop Virtual Machine	50	60	Multiple OS environments can exist, high reliability, disaster recovery system	General Engineering (Electricals)
25	Cooling Towers (Fills with PVC Honey Comb)	30	35	Extended contact area having high heat transfer efficiency	General Engineering (Electricals)
26	Wide Belt Sander	10	15	Easy to operate and monitor the operation	General Engineering (Electricals)
27	Spindle Moulder	10	20	Higher productivity due to higher spindle speed	General Engineering (Electricals)
28	Multi-boring machine	10	15	With advance PLC control for higher productivity	General Engineering (Electricals)
29	Visicooler	45	50	High quality cooling performance, Forced air evaporator provides frost free operation, except in static models	General Engineering (Electricals)
30	Robot Arms	50	60	High efficient, automated operation	General Engineering (Electricals)
31	Enginator based on Natural Gas	20	30	Increase in fuel efficiency due to use of cleaner fuel	General Engineering (Electricals)
32	CNC Router	20	40	Improved product quality, less rejection, higher productivity	General Engineering (Electricals)
33	Vacuum forming machine with thermostat control	30	40	PLC controlled, easy to operate	General Engineering (Electricals)
34	Edge Bander Sprint with Power- PC Control	50	60	Fast heat-up time	General Engineering (Electricals)
35	Enterprise Resource Planning (ERP) (with PPC module)	40	50	Integration of design, planning & production	General Engineering (Electricals)

36	Automatic Book Sewing Machine	10	15	Easy operation, quick make- ready, high quality sewing and high output	General Engineering (Electricals)
37	Tunnel Dryer for mosquito coil industry	40	50	Environmental friendly and less pollution	General Engineering (Electricals)
38	Induction Lighting	40	60	Unmatched durability, Extremely long life (100,000 hours), Instant ignition, No flickering or cycling, Performs well in extreme cold, Superior color rendering index (CRI) > 80	General Engineering (Electricals)
39	SCADA system	15	25	Reduced operation cost,improves efficiency of the setup, can make immediate corrections in the operational systems thus increasing life period of the equipment	General Engineering (Electricals)
40	Water-tube Boiler (by replacing conventional Smoke-tube Boiler)	10	15	Handle high pressure and high temperature, recover faster than smoke-tube	General Engineering (Thermal)
41	Energy Efficient Boilers	6	10	Reduces carbon dioxide emissions by around 12	General Engineering (Thermal)
42	Energy Efficient Refrigeration System	15	20	Less heat dissipation, increase in refrigeration capacity, low noise levels	General Engineering (Thermal)
43	Automatic Combustion Control for Boilers / Furnaces	5	10	Ensures optimal fuel and air ratio, reduce fuel wastage, safe & stable operation, improves equipment life	General Engineering (Thermal)
44	Regenerative Burners for Furnace	20	30	Increase in production, furnaces size smaller for new installations	General Engineering (Thermal)
45	Heat Recovery Systems for Boilers (Economizer, Air Pre- heater)	5	10	Reduce equipment size, reduce auxiliary energy consumption, reduce pollution	General Engineering (Thermal)
46	Outdoor Intake Control / Variable Air Volume / Heat exchanger	40	60	Efficient air distribution in buildings enables control for better indoor air quality, air supply provdied on local thermal load and occupancy	General Engineering (Thermal)
47	High Efficiency DG Set for Power Generation (Low Fuel Consumption with Pollution Control & Canopy)	40	45	Better power quality, lower emissions	General Engineering (Thermal)
48	Thermal Insulation for Hot & Cold Systems	6	10	Reduces surface heat loss, emissions and increase safety	General Engineering (Thermal)
49	Dehumidification Dryer	20	25	Adsorbent is non toxic / non flammable & fully water washable, minimum heat carry over	General Engineering (Thermal)
50	Energy Eficient Air Conditioner	20	40	Inverter based technology, Individual control, Self demand control, Wide Working Range, Flexible Refrigerant Piping and connectable indoor units, Refrigerant Piping and connectable indoor units, Compact and light design	Commercial Buildings
51	Energy Eficient Refrigerators (High Efficiency Compressors, Improved Insulation and Precise Temperature and Defrost Mechanisms to Improve Energy Efficiency)	10	20	Precise temperature and defrost control, improve insulation	Commercial Buildings
52	Vapour Absorption Refrigeration	20	30	Less operating cost, work on lower evaporator pressure without affecting COP, no effect on load reduction on performance, easy automatic operation to control capacity	Commercial Buildings
53	Energy Efficient Elevators	30	40	Smooth & quiet performance, does not require extra lubrication, less heat generation	Commercial Buildings
54	Equipment, Machinery and Construction Material Contributing to Increased Energy Savings	10	25	Eco-friendly construction material saves water, metal, timber and other natural resources; improves occupants health	Commercial Buildings
55	Heat Reclaim Ventilation / Air Conditioning System	50	60	Compact, smooth & quiet operation, good indoor air quality, load reduction 20-30 of air conditioning load	Commercial Buildings
56	High Efficiency Escalator	15	25	Reduce operational cost, operates smoothly in all climatic conditions, caters continuous and large crowd, safe and reliable	Commercial Buildings
57	Inorganic Textile Insulator	5	10	Versatile and corrosion resistant material, used in both reinforced and non- reinforced applications, good fire- proofing	Commercial Buildings
58	Forming Plastic Insulator	30	40	Durable & moisture resistant	Commercial Buildings
59	Heat insulating opening material	25	35	Thermal insulation stops transfer of heat between inside & outside room	Commercial Buildings
60	Air Sealing Support Material	30	40	Controls hot or cold temperatures, fills cracks and crevices preventing bugs and vermices from entering home	Commercial Buildings
61	Heat Absorbing Glass / Low Emissivity Glass (Window Panel)	30	50	Makes room warmer in winter and cooler in summer	Commercial Buildings
62	Municipal Solid Waste Based Power Generation	30	40	Reduces GHG emissions, reduces waste by 60-90, slurry produced can be used as fertilizer	Renewable Energy Technologies
63	Semi/Automatic Solar PV Module manufacturing Line	10	15		Renewable Energy Technologies
64	Common Effluent Treatment Plant	30	40	Reduce capital cost & operating cost, less space requirement, proper disposal of treated waste, improve recycling and reuse possibilities	Others
65	Biorector with PLC	20	25	Automatic pH Control, Automatic Temperature Control, Automatic Vessel Sterilization	Others
66	Batching Plant with Microprocessor Control	15	30	Smooth Operation with highest reliability	Others
67	Wire Condensor Welding Machine equipped with PLC	20	30	High speed of operation for high product volume, flexible and less maintenance	Others
68	2 Stations Auto Balancing Machine equipped with PLC	15	30	Dynamic Balancing, Ability to handle a wide variety of part shapes and sizes, easy to operate , touch screen computer	Others
69	Compact Scan Digitizing System	3	5	Low maintenance cost, High quality measurement data, Fast scanning for large components	Others
70	Standing Seam Roofing and Curving Machine	10	20	Save labour, time and cost	Others
71	Waste Heat Recovery from Regenerative Tank Furnace	10	15	Utilization of waste heat, reduction in flue gas equipment sizes	Glass
72	Waste Heat Recovery from Recuperative Tank Furnace	10	15	Utilization of waste heat, Reduction in flue gas equipment sizes, Reduction in fuel consumption	Glass
73	Mechanical Conveyor for Soda Ash (by Replacing Pneumatic Conveyor)	20	30	Reduce cycle time, productivity improvement, reduce wastage	Glass
74	Natural Gas Fired Pot Furnace with Recuperator	20	25	Utilize clean energy source, productivity improvement, less harmuful to workforce	Glass
75	Natural Gas Fired Muffle Furnace	15	20	Utilize clean energy source, productivity improvement, less harmuful to workforce	Glass
76	Oxy-Fuel Fired Glass Melting Technology	10	15	Increase production, improve glass quality	Glass
77	Automatic Controllers & Recorders for Furnace Temperature / On-Line Oxygen Analyzer	3	10	Productivity improvement, furnace efficiency improvement	Glass
78	LPG Fired Bead Making Furnace	15	20	Better temperature, improve product quality	Glass
79	Horizontal Flat and Bent Glass Electric Furnace for Tempering with Automatic Controller and Recorders	5	15	Improve production & product quality, easy in operation	Glass
80	Convectional Horizontal Roller Hearth Tempering Furnace	15	20	PC based programmable logic control system	Glass
81	CNC Based Glass Cutting Machine	45	50	Can cut different shapes, can optimize layout with optimization software	Glass
82	Insulation for Kiln, Top Chamber & Furnace	3	10	Heat loss reduction, improve safety, prevents damage to equipment from exposure to fire or corrosive atmosphere	Ceramics
83	Low Thermal- mass Cars	15	20	Productivity improvement, reduce cycle time	Ceramics
84	Recuperator for Kiln (Hot Air Generation)	28	30	Utilize waste heat from Kiln cooling zone, elimination of fuel for drying zone	Ceramics
85	Variable Frequency Drives for Circulation Air Fans in Vertical Dryer	15	35	Energy saving depends on the motor loading, reduce motor heating and stress	Ceramics

86	Roller Kiln (by Replacing Conventional Tunnel Kiln)	40	50	Productivity improvement, reduce cycle time to half	Ceramics
87	Ballmill with High Alumina Tile Lining, High Alumina Balls of Different Size (Raw Material Processing)	10	15	Improvement in grinding, reduction in grinding time	Ceramics
88	Isostatic Press, Fettling Machine, Stacking Equipment (Fabrication)	10	20	Reduce breakage & cracking, reduce rejection & wastage	Ceramics
89	Fully Automatic Vertical Copying Machine for Insulator (Fabrication)	10	20	Reduce breakage & cracking, reduce rejection & wastage	Ceramics
90	Roller Head Machine for Cup & Saucer (Fabrication)	10	20	Reduce breakage & cracking, reduce rejection & wastage	Ceramics
91	Pressure Casting Plant (Fabrication)	4	10	Reduce breakage & cracking, reduce rejection & wastage	Ceramics
92	Humidity Driver Chamber (Drying)	25	30	Less drying time, less tiles breakage	Ceramics
93	Gas / Oil Fired Roller Hearth Kiln (Firing Section)	25	30	Uniform temperature distribution, ease of operation	Ceramics
94	Gas / Oil Fired Tunnel Kiln (Firing Section)	20	30	Lower maintanance, productivity improvement	Ceramics
95	Gas / Oil Fired Shuttle Kiln (Firing Section)	20	30	Lower maintanance, productivity improvement	Ceramics
96	Automatic Tile Pressing Unit	5	10	Uniform force on tiles, productivity improvement, wastage reduction	Ceramics
97	Recuperator	20	25	Utilize waste heat, reduce flue gas equipment sizes, reduce fuel consumption	Ceramics
98	Control Instruments for Firing System	5	10	Productivity improvement, quality improvement, redcue cycle time	Ceramics
99	Continuous Tunnel Dryer with Indirect Fired Hot Air Generator	20	30	Higher safety, easy to operate, less maintenance	Ceramics
100	Vertical Vibrating Machine	15	25	High productivity, 15- 20 material saving, better quality spigot and socket	Ceramics
101	Mixing Plant with Pan Mixture Alongwith Attachment, Computerized Weighing Setup	15	25	PLC controled, 15- 20 material saving, accurate quality of spigot and socket, higher productivity, less wear and tear	Ceramics
102	Squaring Line	20	25	Equipped with PLC control, frequency inverter and heavy duty type grinding assembly	Ceramics
103	Glazed Line	25	33	High quality performance & stability	Ceramics
104	Ceramic Tiles Printing Machine (Double Chain Print)	20	30	Equipped with AC Variable Frequency Drive, All operations run with Programmable Logic Card (PLC). It ensures automatic operations of machine.	Ceramics
105	Variable Frequency Drive (by Replacing Dyno Drives)	30	40	Extend equipment life, reduce maintenance, reduce peak demand, safety against power fluctuation	Pulp and Paper
106	Seven-effect Free Flow Falling Film Evaporator	40	50	Liquid does not get overheated due to short hold- up time	Pulp and Paper
107	Chemical Recovery Unit for Spent Liquor	20	30	Utilise spent liquor as fuel, saving in chemicals like Urea and DAP in effluent treatment plant	Pulp and Paper
108	High Efficiency Turbine Pump for Water Intake	50	70	Flexibility of operation, low initial cost, minimal maintenance cost	Pulp and Paper
109	Heat Recovery Boilers for Waste Combustion	25	30	Reduction in equipment size, reduction in auxillary energy consumption	Pulp and Paper
110	High-concentration size press	40	50	High-concentration size fluid, reduced drying load, and makes high- speed coating possible	Pulp and Paper
111	High-concentration pulper	15	23	Easy maceration, by slowly whirling and agitating it at a high concentra- tion of about 15, consumes same level of power as a low- concentration pulper.	Pulp and Paper
112	Dryer with dryer bars installed inside for paper- making machine	15	20	By installing 25 bars on one- third of the dryers, productivity is increased by 20 and specific steam con-sumption is decreased by 20	Pulp and Paper
113	Steam- recompression heat pump	20	25	The hood on the dryers is sealed to minimize the leakage of air from outside. The circulating water is recycled back to the condenser top	Pulp and Paper
114	Integration of punched metal screen, slit screen and maceration machine for processing waste paper	25	30	Shorter operation period and energy saving	Pulp and Paper
115	Multi-functional combined screen	24	50	Primary and secondary screens are operated at high rejection rates,high internal recycle rate, high rate of separation and a high yield at the same time.	Pulp and Paper
116	Crown controlling roll	39	60	Non-contacting pressuring part to reduced friction loss.	Pulp and Paper
117	High-temperature soft calender for paper making	30	40	The high-temperature soft calender to make the coated paper smooth and glossy	Pulp and Paper
118	Adoption of AC Driving for Papermaking Machine and Winder System	20	30	Energy Efficient	Pulp and Paper
119	Calendaring Machine with AC Variable Frequency Drive	30	35	Low specific power consumption due to VFD, Eazy to operate, Higher production rate	Pulp and Paper
120	Wide Web Inspection Re- winder with VFD controls	30	40	A handy and invaluable machine.The output of the Printing Machine is screened for printing defects such as mis- register, blade lines, shade variations etc. 100 defect free reels are obtained.	Pulp and Paper
121	Rewinding Machine with VFD controls	25	30	Extended equipment life, reduced maintenance, reduced peak demand, safety against power fluctuation, reduced installation and operating cost	Pulp and Paper
122	Armature Paper Inserting Machine equipped with PLC	10	30	Self Lubricating, Low noise	Pulp and Paper
123	Armature Winding Machine equipped with PLC	10	30	Improved Servicebility, stability, easy maintenance	Pulp and Paper
124	Heat Recovery System for Stress Relieving Furnaces	5	25	Waste heat recovery system, reduction in equipment size	Foundry
125	Oil Fired Core Drying Oven	40	50	Complete combustion, easy to operate, low maintenance cost, better product quality	Foundry
126	Gas fired Aluminium Melting Furnace (replace Oil Fired Furnace)	5	25	Reduction in Thermal Energy consumption	Foundry
127	Gas Fired Cupola	5	10	Eco friendly, higher tapping temperature, better melt quality, reduce thermal energy consumption, de-sulphrization not required	Foundry
128	Oil Fired Rotary Furnace	10	20	Reduce initial / subsequent heating time, auto on/off control	Foundry
129	Induction Furnace with Cooling Tower & Water Treatment Plant	10	25	Flexibility to produce ferrous castings, flexibility to select charge mix, better melt quality	Foundry
130	Induction Ladle Refining Furnace	10	25	Value added casting, eco friendly	Foundry
131	Natural Gas Based Power Generating Set	5	10	Environmental-friendly, high efficient, low emission	Foundry
132	Intensive Mixers (Molding / Core)	5	10	Reduce defective casting, better cast surface finish	Foundry
133	Simultaneous Jolt / Squeeze Moulding Machine	23	30	Higher productivity, dimensional accuracy, less skill requirement	Foundry
134	Spun Pipe Casting Machine	10	15	Easy to install, resistance to corrosion, high impact resistance, durable with high load taking capacity	Foundry
135	Induction Hardening Equipment (100KW, 500Hz to 3KHz)	50	60	Higher productivity, consistency in quality, can lead to saving in heat-treatment operation	Foundry
136	Removable Hearth Type Chamber (F/C upto 1200 deg C with Computer Compatible Temperature Controller)	5	15	Better temperature control, improve quality	Foundry
137	CNC Lathe Machine	55	60	Higher productivity, dimensional accuracy, less skill requirement, improve quality	Foundry
138	CNC Milling (Pattern Shop)	55	60	Higher productivity, dimensional accuracy, less skill requirement, improve quality	Foundry
139	Exothermic / Insulating Sleeves (Oven for Baking Sleeves, Molding Machines, Vacuum System)	15	25	Insulating and exothermic sleeves improves feeding efficiency upto 20 and 25 respectively	Foundry
140	Waste Heat Recovery System for Exhaust Gases	15	25	Utilise waste heat, reduce pollution, reduce auxiliary energy consumption	Foundry
141	Automatic Pouring System	10	15	Higher-quality casting with precision pouring, eliminates underpours and wasteful overpours	Foundry
142	Energy Efficient Thermal Reclamation Plant	5	10	Thermal reclamation is economical compared to mechanical reclamation	Foundry
143	Energy Efficient Short Blasting Machine	10	15	Rugged design of the machine reduces fettling cost, save labour cost, tooling cost, reduce rejection	Foundry
144	High Efficiency Centrifugal Fans	25	30	Long life, abrasion resistant	Foundry
145	High Efficiency Power Generating Set	5	10	Able to the rated load within 10 seconds in a single step, high reliability, low life cycle cost, low operating and maintenance cost	Foundry

146	Automatic Flaskless Molding Machine	10	15	Higher production efficiency, mold hardness is excess of 85	Foundry
147	Core Setter and Automatic Mold Conveyor	5	15	High-precision mould transport with no shifting, distortion or displacement of moulds	Foundry
148	Compact Vertical Moulding Machine	15	20	Higher production capacity upto 350 moulds/hour (uncored), PLC system for optimum production, less space requirement	Foundry
149	Automatic Cold Box Core Shooter	5	15	Can shoot in volume of 5 to 20 kgs, the average cycle time is from 10 second onwards without gassing, shoot and exhaust	Foundry
150	Electrically Heated Die- Heating Furnace	25	30	Uniform temperature, pollution free compared to conventional furnace, Auto controll, noise free	Foundry
151	Mechanized Moulding Machines (with PLC control)	25	60	High static & high dynamic squeeze force results in high quality moulds, uniform moulds properties, reduce rejection, reduce mould preparation costs	Foundry
152	Mechanical Sand Reclamation (PLC controlled)	50	60	Low running cost	Foundry
153	Automatic On-line Sand Controller	50	60	Low running cost	Foundry
154	Variable Speed Sand Mixer	10	30	Improved flowability, permeability,reduced operating moisture level, efficient mixing	Foundry
155	Computer Controlled Sand Cooler-Mixer	5	10	Streamlined sand handling, transport equipment, and reduced maintenance, more evenly, higher efficiency of the sand , a direct reduction in the loss of the excipients	Foundry
156	Liquid Metal Supply	25	30	Re-heating is avioded	Foundry
157	Automatic Manganese Phosphating Plant	30	40	Innate lubrication properties, these phosphate coatings can also absorb large proportions of lubricants by their porosity.	Foundry
158	Automatic Core blowing machine	15	20	Fully automatic process and PLC controlled	Foundry
159	High Efficiency Atomizers in Humidification Plant	10	20	No cleaning required, 1/3 water flow required, lower flow due to better atomization, atomized water density is adjusted	Textiles
160	Energy Efficient Fans	20	25	Lesser heat generated, reduced maintenance requirements	Textiles
161	Variable Frequency Drive for Humidification Fan	25	30	Eliminates external humidification controller	Textiles
162	Variable Frequency Drive for Autocore Suction Motor	15	30	Smooth start / stop operation, better process control	Textiles
163	Transvector Nozzle for Cleaning Application	5	10	Sucks atmospheric air along with airjet, reduce air consumption by 50	Textiles
164	Yarn Conditioning Machine	15	20	Non corrosive stainless steel used for construction, precise software with multi- cycle process facility, maintenance free trolley feeding unit, can run on electricity, steam, oil	Textiles
165	Automatic Rotor Spinning Machine with MRPS System	20	25	Every spinning position shows production rate, spinning components are directly accessible & replaceable without tools	Textiles
166	Open-width Continuous Scouring and Bleaching Range with Microprocessor Control	15	20	Controlled cloth tension, low chemical consumption	Textiles
167	Ring Frame Machine	15	20	Higher production rate	Textiles
168	Speed Frame Machine	10	15	Smooth start / stop operation, better process control	Textiles
169	Extruction Lamination Line with Frequency Control Motors	10	30	Smooth start / stop operation, better process control	Textiles
170	High Speed Mouldar Mounter	20	30	Improvements in actual throughput	Textiles
171	Warp / Raschel Knitting Machine (Manufacturing of Knitted Fabric)	25	30	Inverters to control speed, operate conveniently	Textiles
172	High Speed Computerized Warping Machine for Knitting	15	25	Broken & lost end can be memorised	Textiles
173	Modern Industrial Humidification System (for Controlling Relative Humidity & Temperature)	50	60	Ease to maintain, longer life, multiple axial fans with direct drive, PVC diffusers	Textiles
174	Wet Fabric Spreading and Squeezing Machine (Dyeing)	20	30	Excellent squeezing and spreading performance, increase roller life	Textiles
175	Roller Steamer / Polymeriser (Dyeing)	10	20	Less maintenance and operating cost	Textiles
176	Washing Range with Arrangement of Tension Free Fabric Drying and Reduced Water Consumption / Water Reuse System (Dyeing)	5	10	Improvement in product quality	Textiles
177	Hydro Extractor (Dyeing)	15	20	Very high speed results in quick and maximum hydro extraction, AC Inverter drive for soft start / stop, dynamically balanced to high accuracy	Textiles
178	Tumble Dryer (Dyeing)	15	20	Fully programmable electronic control, cool down feature minimizes wrinkling & guarantees longer fabrics life, timer controlled operation	Textiles
179	Multi Chamber Stenter (min 4 Chambers) with Arrangement of Oil / Gas Heating (Finishing)	10	20	Close circuit air circulation chamber, wide internal chamber space for easy cleaning, zig-zag arrangement of motors	Textiles
180	Radio Frequency / Infrared Radiant Gas Fired / Microwave / Loop / Relax Dryer (Finishing)	15	20	Optimum residual shrinkage with softer, fuller, bulkier handle of fabrics, shape stability	Textiles
181	Heat Recovery System for Stenters	25	30	Utilise waste heat	Textiles
182	Balloon Padding Machine	10	15	Compact in size, high durability, motors controlled by A.C. invertors	Textiles
183	Slit Opener with Squeeze Mangle	30	40	Excellent Squeezing performance, increase in roller life	Textiles
184	PLC Based Compacting Machine	20	30	Sensitive load cells, variable frequency drive, PLC control, lowest residual shrinkage values	Textiles
185	PLC Based Mercerizing Machine	20	30	Saving of dyestuff in subsequent processing, increase penetration of printing paste, improve response to sueding or raising	Textiles
186	Fabric Reversing and Slit Opening Machine	5	15	Smooth and fast working	Textiles
187	Air Tight Hot Air Stenter Machine (using AC Interver Drive)	25	30	Electronic air flow control, high efficient drying zone, unique air flow system with individual blower for top / bottom jet box	Textiles
188	Energy Efficient Boiler with Combustion Control System (Steam Heating System)	10	15	Measures & monitors for design parameters, safe working range, facility for alarm & tripping during emergency	Textiles
189	Thermo Pac (Heating System)	10	25	Easy access to parts for maintenance, easy to monitor	Textiles
190	High Speed / Ultra High Speed Knitting Machines	20	30	Higher production rate, less maintenance, vibration absorbing system for machine legs, inverter controller motor system, tripping during emergency	Textiles
191	3 Thread Fleece Machines (Ploy Plating)	15	30	Higher production rate, needle detector, inverter controlled motor, anti- dust device, tripping during emergency	Textiles
192	Interlock Knitting Machines	5	20	Higher production rate, needle detector, inverter controlled motor, anti- dust device, tripping during emergency	Textiles
193	RIB Pointel Jacquard Machines	10	30	Higher production rate, needle detector, inverter controlled motor, anti- dust device, tripping during emergency	Textiles
194	RIB Knitting Machines	20	30	Higher production rate, needle detector, inverter controlled motor, anti- dust device, tripping during emergency	Textiles
195	High Speed Single Jersey Knitting Machines	10	25	Higher production rate, less maintenance, anti- dust device Quality Wheel fear box, High quality cam surface for improving sinkers & needle lifetime and tripping during emergency	Textiles
196	Single Jersey Machines with Open Width Take Up System	15	30	Higher production rate, require less manpower, less maintenance, smooth fabric edge cutting, compressor not required, tripping during emergency	Textiles
197	Single Jersey Auto Striper Machines	5	10	Faster pattern setting, generous stitch-forming area, minimum strain on yarn, reliable striping of even extreme fabric	Textiles
198	Terry Knitting Machines	15	30	Higher production rate, Inverter motor control, RS- 485 communication interface, less maintenance, Vibration Absorbing system for machine legs, frame design to withstand at high speeds, Anti-dust device and tripping during emergency	Textiles
199	Float Plating Denim Machine	15	30	Higher production rate, less maintenance, high quality cam surface, increase needle life, tripping during emergency	Textiles
200	Double Knit Electronic Jacquard Machine	20	30	Latest generation electronics	Textiles
201	Woven Like Corduroy Machine	5	15	Higher production rate, less maintenance, tripping during emergency	Textiles
202	High Speed Circular Knitting Machines	20	25	Higher production rate, less maintenance, vibration absorbing system for machine legs, inverter controller motor system, tripping during emergency	Textiles
203	High Speed Flexible Chip Shooter	30	40	Sixth generation high- speed modular chip shooter, combined with the laser centering system gives more accurate components	Textiles
204	Grey Heat Setting	20	30	PLC, suitable for removal of snarling and curling effects, stabilise moisture level in dry yarn, variable frequency drive systems	Textiles
205	Soft Flow / Jet Flow Dyeing Machine (Low MLR of 1:5 or Lower)	30	35	Variable frequency drive for centrifugal pump in jet-dyeing machine, energy saving by avoiding pressure loss across control valve	Textiles
206	Squeezer with Slit Opener	15	30	PLC, magnetic stretcher, variable frequency drive	Textiles

207	Balloon Padding	10	25	Compact in size, high durability	Textiles
208	Relax Dryer	5	25	Optimum residual shrinkage with softer, fuller, bulkier handle of fabrics, shape stability	Textiles
209	Specialty Fabric Finisher such as Brushing, Sueding, Raising, and Compacting	5	15	Creaseless drying	Textiles
210	PLC Based Package Dyeing Machine	10	15	PLC controlled, highly reliable	Textiles
211	Automatic Hank / Yarn Dyeing Machine	15	20	Variable conveyor speed, low fibre loss, equipped with moisture controller or automatic control for moisture retention prior to blending / spinning	Textiles
212	Direct-drive, High Speed, Lockstitch Machine with Automatic Thread Trimmer	5	10	Increase in feed, broadend sewing range, prevent sewing problem	Textiles
213	Lockstitch Machine with Automatic Thread Trimmer	5	10	Easy to operate, sure thread trimming mechanism	Textiles
214	Semi-dry-head, High Speed, Overlock Stitch Machine	10	15	Eliminate oil stains on sewing product, cutting edge dry technology to achieve lubrication free mechanism	Textiles
215	Computer- controlled, High Speed, Lockstitching Buttonholing Machine	20	25	30 stitch patterns for buttonhole	Textiles
216	Computer- controlled, High- speed, Lockstitch, Button Sewing Machine	20	25	Different sewing patterns, better seam quality, auto lifter mechanism, oil stains are eliminated, sewing starting point can be corrected	Textiles
217	High-speed, Flatbed, Top & Bottom Coverstitch Machine	20	25	Stitch type as per sewing items, simplified maintenance mechanism	Textiles
218	High-speed, Cylinder- bed, Top & Bottom Coverstitch Machine	20	25	Stitch type as per sewing items, simplified maintenance mechanism	Textiles
219	Computer- controlled, High- speed, Bartacking Machine	10	30	Faster speed, high productivity, better seam quality, wider sewing area, different sewing pattern	Textiles
220	Servo-motor Stitching Machines	50	60	Clutch-less operation, variable speed, Reverse Motor rotation Up to 4000 RPM / High Torque 400 watts,	Textiles
221	Clutch Motor Stitching Machines with 3-phase Motor	7	10	Accurate clutch operation permits instant start / stop, vibration & noise is minimized	Textiles
222	Computerized Embroidery Machine	15	20	Advance Dahoo program gives high quality performance, colour LCD displays current embroidery design, use servomotor, high precision	Textiles
223	Automatic Printing Machine	10	30	Auto start / stop with auto counters, aluminium honey comb pallets, half index to clean screen	Textiles
224	Industrial Washing / Drying Machine / Tumble Dryers	10	15	Programmable electronic control, timer controlled operation, cool down feature to minimize wrinkle to guarantee longer fabric life	Textiles
225	Draw Winder	40	50	Inverter driven motor drive system offers stepless parameter setting in running condition	Textiles
226	Air Draw Texturising Machine	40	50	Inverter driven motor drive system offers stepless parameter setting in running condition	Textiles
227	Draw Texturising Machine	40	50	Inverter driven closed loop speed control for individual drives	Textiles
228	Filament Twisting Soultions	40	50	Electronic NXG Power Saver Control System	Textiles
229	Spun Twisting Solutions	40	50	Electronic NXG Power Saver Control System	Textiles
230	Industrial Twisting Solutions	40	50	Electronic NXG Power Saver Control System	Textiles
231	Thread Manufacturing Solutions	40	50	Electronic NXG Power Saver Control System	Textiles
232	Crepe Yarn Solutions	40	50	Electronic NXG Power Saver Control System	Textiles
233	Automatic Cone Winder	15	20	Variable frequency draive controlled, vacuum sensor & electronic circuit to optimize suction pressure	Textiles
234	Yarn Guided Machine with Precision Crossing with Inverter Control	10	30	High winding, Electronic yarns sensor	Textiles
235	Tape Winder (Using Frequency Drive)	10	30	Highest precision and flawless quality	Textiles
236	High Speed Shuttleless Velcro Machine	5	20	Even feeding of yarn and efficient operation	Textiles
237	Water Jet Looms	40	50	High Speed, low vibration, lowest power consumption per meter of fabric manufactured	Textiles
238	Air Jet Looms	40	50	Lowest power consumption per meter of fabric manufactured	Textiles
239	Rapier Looms	40	50	Lower production cost due to higher efficiency	Textiles
240	Jacquard Machine with Electronic Control	40	50	Easy to adapt and versatile, Easy Integration, Extremely resilient, Minimum Maintenance	Textiles
241	Heat Recovery Systems for Boilers (Economizer, Air Pre-heater)	5	10	Reduce auxiliary energy consumption, equipment size, fuel consumption, pollution	Textiles
242	High Efficiency Diesel Generating Sets with High Specific Energy Generation Ratio	5	10	Able to the rated load within 10 seconds in a single step, high reliability, low life cycle cost, low operating and maintenance cost	Textiles
243	Energy Efficient Fan, Blower, Pump	25	30	Lesser heat generated, reduced maintenance requirements	Textiles
244	Automatic Power Factor Controller	5	10	Reduce reactive power, reduce total current from the source	Textiles
245	Polishing Line with High Efficient Electric Motors using AC drives	10	30	Follows International Design and quality, easy operation and maintenance	Textiles
246	Circular Weaving Machine	20	25	Optimum output of fabric and quality from the machine corresponding to the quality of tape	Textiles
247	Tape Extrusion Line	25	30	Equipped with automatic screen changer with in-line gear pump system	Textiles
248	Cheese Winder	20	30	Capable of producing high quality packages even at the highest operating speed, flexibility in changing wind ratios for processing variety of tapes	Textiles
249	Automatic Stitching Machine	20	25	High nonstop speeding machine	Textiles
250	Bridge Guiding machine	20	25	High Accuracy and faster operation	Textiles
251	Blow Room machinery	15	20	Higher efficiency rates, Longer lives of clothings and spinning components, Increased economic efficiency, Clean ambient air	Textiles
252	Open width knitted Inspection machine for fabric with Inverter control	25	30	Variable Speed drives, Inverters with built in PLC drive, Easy to operate, Piece- end detector automatically stops machine & thus saves power	Textiles
253	Circular Grain Knitting Machine	20	25	Excellent design, solid structure and easy operation, Reduction in the wastage of material and power	Textiles
254	Four Needle Chain Stitch Machine	10	15	Micro adjustment for needle feeding amount, Full Automatic Lubrication, Retractable Looper mechanism for Easy Threading	Textiles
255	Automatic Saddle Stitchers (with Variable Frequency Drive)	10	15	Reduced energy consumption, High net output, Quick and safe setup, Simple operation, Exceptional process reliability	Textiles
256	Armflat Lock Machine	10	15	Different sewing patterns, Easy to operate, Low power consumption, Faster speed, High productivity, Better seam quality, Simple maintenance	Textiles
257	Automatic Package Winder	10	15	High quality, High Productivity, Easy Operation	Textiles
258	Overhead travelling cleaner using energy efficient motor and PLC control system	50	60	Precision design and construction standards for ensuring consistent performance,New design power duct that adds longer service life to brushes, Comes with option of adjustable blowing attachment, Compatible in nature More durable Easily avail this from the market at attractive prices	Textiles
259	Ultrasonic Cutting Machine	10	15	Efficient Performance, Reduce/Eliminate operators intervention	Textiles
260	VFD/Servo/ PLC driven High Speed Shuttleless Weaving Machine	10	20		Textiles
261	VFD/Servo/PLC driven High Speed Warping Machine	10	20		Textiles
262	Automatic VFD/ Servo/PLC driven Fabric Straightening System Machine	10	15		Textiles
263	Hollow Heading Machine	10	15	High speed, fully automatic, high mass production	Textiles
264	Heading Machine with Semi Cover	10	15	High speed, fully automatic, high mass production	Textiles
265	Energy Efficient Air Compressors	30	50	Easy to install and operate	General Engineering (Electricals)
266	Heat of Compression Air Dryers (Replacing Desiccant Air Dryer)	30	40	Replacement of desiccant air drier with refrigerated dryer, less maintenance as no moving parts	General Engineering (Electricals)
267	Variable Frequency Drive for Oil Pimp in Hydraulic Power Pacs	25	30	Smooth start / stop, increase life	General Engineering (Electricals)
268	Energy Efficient Exhaust Fans	20	25	Improve in suction	General Engineering (Electricals)

269	Variable Frequency Drive for Hot Air Circulation Fan for Preheating Furnace	25	30	Smooth start / stop, increase life	General Engineering (Electricals)
270	Air Preheater (for Furnace Flue Gas Waste Heat Recovery)	5	25	Reduce auxiliary energy consumption, equipment size, fuel consumption, pollution	General Engineering (Thermal)
271	CNC Cutting Machine with End Former	45	50	Higher productivity, dimensional accuracy, require less manpower skill, consistency in quality	General Engineering (Electricals)
272	Full Automatic CNC Return Bender	45	50	Automatic feed, produce return bends at high production speed	General Engineering (Electricals)
273	Automatic Ring Sizing and Loading Machine	45	50	Higher productivity, require less maintenance	General Engineering (Electricals)
274	CNC Verticial Machining Centre	45	50	Higher productivity, dimensional accuracy, require less manpower skill, consistency in quality	General Engineering (Electricals)
275	Vacuum Holding for Non-Ferrous Components for High Speed Milling	25	30	Higher productivity, higher accuracy	General Engineering (Electricals)
276	CNC Co-ordinate Measuring Machine	25	30	Higher productivity, higher accuracy	General Engineering (Electricals)
277	CNC Sharpening and Profile Grinding, Automatic Broach Shappening Machine	15	30	Higher productivity, dimensional accuracy, require less manpower skill, consistency in quality	General Engineering (Electricals)
278	Turning Machine with Variable Frequency Drive with Regenerative Braking System	30	35	Variable frequency drive, high speed machining	General Engineering (Electricals)
279	Servo Electric Turret Punch Machine	10	20	Punching force: 20 / 30 ton, compact size, low maintenance	General Engineering (Electricals)
280	Abrasive Assisted High Pressure Water Jet Cutting	20	25	High cutting speed, Improve cutting quality, no material deformation caused by heat, no change in metal structure, no heat affected zones, No hazardous fumes and vapours	General Engineering (Electricals)
281	Inverter Based Welding Machine	50	60	Faster response time, low ripple, smaller in size & lighter in weight hence portable, better weld quality	General Engineering (Electricals)
282	CNC Plasma Cutting Machine	40	45	High- precision and control	General Engineering (Electricals)
283	Double Polishing Machine (with Inverter Control)	20	30	High efficiency and High quality product output	General Engineering (Electricals)
284	Pressure Die Casting Machine	25	30	Optimum flexibility with processes and procedures	General Engineering (Electricals)
285	Semi Automatic Pillar Type Hydraulic Hot Moulding Press (with PLC Control)	30	40	High product quality and high product efficiency	General Engineering (Electricals)
286	CNC Electronic Spring Control Machine	15	20	Micro stepping drive for accurate positioning and loading control, Programmable Control	General Engineering (Electricals)
287	Fully Automatic Hydraulic Hot Chamber with Diesel Burner	20	25	Well and High Quality Control	General Engineering (Thermal)
288	Rotary Table Machine for Surface Finishing and Polishing (with Inverter Speed Regulation)	10	30	Precision, efficiency, rigidity, stability	General Engineering (Electricals)
289	CNC Punching Forming Machine	25	30	Consistent quality and dimensional precision	General Engineering (Electricals)
290	CNC Based Gear Tester	20	30	User friendly and reduced cycle time	General Engineering (Electricals)
291	Open Back Double Point Press – PLC Controlled	30	40	High precision, high strength, high rigidity	General Engineering (Electricals)
292	Automatic Transfer Unit	35	40	Independent of the type of switchgear,Up to 32 cubicles with the same remote control unit.	General Engineering (Electricals)
293	CNC Garter Spring Former	35	40	High speed production capability	General Engineering (Electricals)
294	Electro-Hydraulic CNC Punching Machine	25	30	Machine equipped with standard accessories and CE certified oil pump	General Engineering (Electricals)
295	Automatic NC Control Bending Machine	50	65	Volume production pieces or changing requirements	General Engineering (Electricals)
296	Sensor Oxy – Height Control (OHC) and Sensor Plasma Height Control (PHC)	10	20	Operator input is reduced, accuracy improves and productivity increases	General Engineering (Electricals)
297	Insulated Gate Bipolar Transistor Based Inverter	30	40	High power factor (0.95), can start up at any load, automatic power & frequency tracking	General Engineering (Electricals)
298	Cylinder Block Boring and Milling Machine (with Variable Speed and Cycle Control)	10	30	Easy operation, Life long quality Service, Automatic central lubrication	General Engineering (Electricals)
299	Duplex Roller Polishing Machine	40	50	Consistent cleaning, 60 time saving in brushing operation, easy brush replacement, hi-speed turbine blower for inside hole cleaning	General Engineering (Electricals)
300	NC Cutter and Rotary	30	40	High precision slitting, easier operation, higher efficiency and reduced down-time for change- over.	General Engineering (Electricals)
301	Radial CNC Multi Spindle Drilling Machine	25	35	Greater precision and reliability	General Engineering (Electricals)
302	Electrically heated Nitriding Furnace	30	40	Nitriding quickly,Low brittleness,Stable performance,Easy operation	General Engineering (Electricals)
303	CAM Machine	45	60	Enables very high accuracy levels in large- scale production. Usually speeds up production of low- volume products. Reduction in energy consumption to produce a perticular product	General Engineering (Electricals)
304	Travelling head clicking machine	15	20	Quality improvement, higher productivity with high precision. Less consumption of energy. Minimum intervention of manpower. Better utilisation of raw material with less wastage	General Engineering (Electricals)
305	Aluminium Profiling Extrusion Machines (Hydraulic using Variable Pumps with PLC Controlled)	10	30	Simple operation, safe and convenient service to check of mechanization and automation, reduction in labour required, increased productivity	General Engineering (Electricals)

306	Single Spindle Verticle Honing Machine with VFD control	15	30	Equipped with energy efficient motor and other electrical items, VFD to control Spindle rpm, Simple and eazy to operate, Time saving process	General Engineering (Electricals)
307	Slant Bed CNC Lathe	45	54	Maximum stability and convenient chips disposal, High torque output at low speed, Programmable tailstock for convenient operation, Fast tool change, high positioning accuracy	General Engineering (Electricals)
308	Panel Cutter machine (PLC controlled)	15	20	Energy Efficient operation due to the PLC Control System, High-tech error diagnosis by true photos & video clips for imidiate identification of source of the problems.	General Engineering (Electricals)
309	CNC machining centre with Inverter controlled	45	55	Possible to lock the elements to be processed, optimising machining operations for each cycle and reducting overall productions times, Quick coupling system guarantees fast, Simple replacement of vacuum modules with clamps.	General Engineering (Electricals)
310	Laser Cutting machine	10	30	High Cutting speed & minimal downtime, Low and easy maintenance, simple to operarate.	General Engineering (Electricals)
311	Cylindrical Grinding Machine (with Inverter control)	30	40	Automatic swivel by servo motor, Hydrodynamic lubrication system, Safety Wheel Guards design, Variable wheel spindle speed controlled by default program, ensure constant peripheral speed of grinding wheel	General Engineering (Electricals)
312	CNC Tool and Cutter Grinder	45	55	Digital servo drive system, Machine is based on the Intel core 2 duo procersser. Autometic Wheel changer, Autometic oil lubrication system	General Engineering (Electricals)
313	CNC Column Moving Horizontal Machining Centre	45	55	High-performance large- sized Horizontal Machining Center, Heavy-duty machining realized by box-type guideway, Minimized thermal deformation of ball- screw nut	General Engineering (Electricals)
314	Automatic end cutter	20	30	High cutting speed and counterblade conveyor to make quick and perfect trimmings, equipped with a suitable device for sharpening the blade	General Engineering (Electricals)
315	Intermix (with water cooled rotors)	10	15	Eliminate compressed air requirements reducing operating costs and providing energy savings, eliminates variations in ram pressure, providing uniform and consistent process conditions	General Engineering (Electricals)
316	Hydraulic Cone Crusher	10	15	Multi-split control system for hydraulic lubrication, More stable operation, High efficiency & production capacity	General Engineering (Electricals)
317	5 axis CNC Tool and Cutter Grinding Machine	45	55	Rigid and precision work spindle with through bore Adequate supply of coolant directed to the cutting zone User friendly operating software with ready-made menus for commonly manufactured standard and special tools	General Engineering (Electricals)
318	Flat Bed CNC Chucker	45	55	Automatic centralized lubrication, Built in coolant & lighting system, High Rapid rates	General Engineering (Electricals)
319	Vertical Sliding Head Machine	45	55	Energy efficient operation, Precise cutting, Automatic lubrication system, Circulating cooling system, Longer blade life, Electronic Saw blade protection, Convenient cleaning and maintenance	General Engineering (Electricals)
320	Turn Auto Loading and Unloading CNC Machine	30	35	Higher productivity, Variable frequency drive, High speed machining	General Engineering (Electricals)
321	Impregnating Plant with VFD controls	15	35	Energy efficient operation of machines, Extended equipment life, Reduced maintenance, Reduced peak demand, Safety against power fluctuations	General Engineering (Electricals)
322	Automatic Vacuum Press	25	35	Energy efficient operation due to PLC Control system, Large vacuum power , High production, Various absorbing functions.	General Engineering (Electricals)
323	Full Automatic Polishing Machine (with Frequency Converter)	18	23	High production efficiency, Good products quality and low processing cost	General Engineering (Electricals)
324	Pilger Machine	15	20	Efficient operation, Improved productivity, Pressurized mandrel lubricating system, Robust & reliable PLC circuit.	General Engineering (Electricals)
325	Hydraulic Puller (with electronically controlled and brake hydraulic dynamometer)	20	30	Less energy consuming operation, Negative self-acting hydraulic brake, Hydraulic dynamometer, Hydraulic cooling system, Built-in self-loading reel winder	General Engineering (Electricals)
326	Conveyor System	10	15	Reliable quality, High performance price ratio, Compact structure, Small cross section, Light weight, Good seal performance, High transport efficiency, Flexible technological arrangement, Easy to install, Safe operation	General Engineering (Electricals)
327	Polishing Machine	20	30	Energy efficient operation, Independent motor controlled electronically with speed variator.	General Engineering (Electricals)
328	Hydraulic Deep Draw Press with Die Cusion complete with Hydraulic power pack (With PLC control)	25	30	Easy to operate & maintain, High productivity	General Engineering (Electricals)
329	Seam Welding Machine (with Microprocessor based weld control)	15	30	Latest microprocessor controls, High production, Low maintanance, Improved efficiency	General Engineering (Electricals)
330	5 Axes Universal Milling Machine	20	25	High flexibility, Direct measuring systems, Powerful motor spindle, Maximum precision, Higher efficiency, Space economy	General Engineering (Electricals)
331	Multi-wire Cutting Machine with Automatic control using PC	50	60	High production level, low production cost, saving of material by 3, compact design and environment friendly	General Engineering (Electricals)
332	Fiber Laser Marking System	5	10	Long and Trouble free Operation, high quality and asthetic look	General Engineering (Electricals)
333	Gapframe Mechanical Press with PLC Control	25	30	Superior reliability and consistency, increased performance	General Engineering (Electricals)
334	Continuous Hardening and Tempering Line Furnace	10	20	Easy operation and provision for data logging	General Engineering (Electricals)
335	Tube Straightening & Cutting Machine equipped with PLC	10	20	Easy and quick mounting of the tubes	General Engineering (Electricals)
336	Serpentine Bending Machine equipped with PLC	25	30	Userfriendly, versatile	General Engineering (Electricals)
337	Wire Flattering Mill	20	25	Reduced energy consumption; variable speed drive; PLC based control system	General Engineering (Electricals)
338	Mechanical Press with PLC and VFD control	10	20	Automatic oil forced lubrication system, dynamic balancing system, reduced noise	General Engineering (Electricals)
339	Electric Overhead Travelling Crane with VFD	10	15	Noise Free, Overload tripping facility, Lightweight	General Engineering (Electricals)
340	TIG welding machine (using thyristorised control)	10	20	Forced Air Cooling fan, Stepless current control	General Engineering (Electricals)
341	PLC based Fully Automatic Sawing Machine	20	30	Helical Geared Motor, Cycle Sequencing through PLC, Automatic machine Off in case of Blade Breakage	General Engineering (Electricals)
342	PLC based Vertical Boring Mill	20	25	High precision ballscrews, All axis driven by servo motors, Smooth, vibration-free turning	General Engineering (Electricals)

343	CNC Surface Grinder Machine	20	30	Hydraullic Tailstock, Live spindle workhead with NC shift function	General Engineering (Electricals)
344	CNC/PLC based Sheet Metal Rolling and Forming Machine with VFD	10	30		General Engineering (Electricals)
345	Harmonic filter	3	8	The harmonic filter is essential in ensuring the power quality and help prevent and fault in electronic component	Cross-sectoral - Electrical
346	Louisiana State University (LSU) Port Dryer	25	40	This technology ensured uniformly dried product and can be used for different types of grains as well	Food Processing
347	Improved Oven with Heat Recovery Equipment (Puffed Rice)	15	45	Improve in quality, reduce breakage, reduce pollution	Food Processing
348	Oil Fired Oven; Biomass Fueled Multipurpose Drier; Energy Efficient Wood Fired Low Cost Bakery Oven (Bakery Products Manufacturing)	30	50	Less wood consumption, improve in working environment	Food Processing
349	Energy Efficient Boiler with Heat Recovery (Cashew Processing)	20	30	Reduce equipment size, reduce auxiliary energy consumption, reduce pollution	Food Processing
350	Energy Efficient Boiler with Heat Recovery (Parboiled Rice Mill)	20	30	Reduce equipment size, reduce auxiliary energy consumption, reduce pollution	Food Processing
351	Biomass Gasifier Based Furnace (Namkeen Making)	35	50	Utilize clean energy	Food Processing
352	Automatic Fruits and Bottles Washing Machine with Conveyor, Blower, Pump and Agitator, Fruits and Vegetable Cutting Machine, Stainless Steel Double Walled Steam Jacketed Kettles, Boiler, Pulper	15	30	Improve product quality, better working environment, improve productivity	Food Processing
353	Spice Grinding (Cryogenic Grinding, Automatic FFS Packaging)	20	30	Improve product quality, increase in production by 2/3 times, improve product shelf life	Food Processing
354	Replacing Semi- mechanisation to Mechanisation Bakery Process, Replacement of Coal / Wood Fired Oven to Oil Fired / Electric Oven, Biomass Fired Multipurpose Drier, Energy Efficient Low Cost Bakery Oven (Wood Fired) Installation of Quality	25	40	Improve productivity & quality, require less manpower	Food Processing
355	Cashew Processing (Boiler, Heat Exchanger with Complete Accessories, Packaging Machine, etc.)	15	30	Improve productivity & quality, require less manpower	Food Processing
356	Rice Milling with Rubber Roller Sum Sheller (Without Parboiling) and Modern Rice Milling with Parboiling (Paddy Cleaner, Destoner, Rubber Roller Cum Sheller, Paddy Separator, Boiler, Par- boiling System, Dryer, Colour Sorter, Cone Polisher, Quality Control)	10	25	Improve product quality	Food Processing
357	Fryer Machine with Conveyor Belt & Bucket Elevator (Namkeen)	20	25	Precise process control, easy to operate, improve product quality	Food Processing
358	Palates - Kukure Line Machine with Packing Unit	20	25	Improved productivity and quality	Food Processing
359	Packing Machine - Bag Maker & Weigher	10	15	Improve productivity & quality, high precision, improve product self life	Food Processing
360	Namkeen Mixing Machine	30	40	Uniform mixing, Easy to operate	Food Processing
361	Oil Fired Rotary Rack Oven	15	30	Uniform baking, improve quality through proper air distribution,	Food Processing
362	Prover	30	35	Separate system for heating & humidity, durable & reliable	Food Processing
363	Spiral Mixer	5	10	Improve quality through homogeneous mixture	Food Processing
364	Automatic Rinsing, Filling & Capping Machine for PET Bottles	10	15	Improve productivity & quantity, easy to operate & control	Food Processing
365	Automatic Rinsing, Filling & Capping Machine for Glass bottles	10	15	Improve productivity & quantity, easy to operate & control	Food Processing
366	Shrink Sleeve Inserting Machine	10	15	Improve productivity & quantity, easy to operate & control	Food Processing
367	Dough Sheeter	10	20	Variable speed machine, chromium plated rolling cylinder regulates to press and roll thin or thick dough perfectly, scraper can easily removed to clean	Food Processing
368	Rotary Rack Oven	30	40	Illuminating elements outside main heating chamber with off facility	Food Processing
369	Deck Oven	25	30	Special burner, improved compartment design	Food Processing
370	Planetary Mixer	30	40	Performs efficient mixing, interlocked safety guard, emergency stop, motor cooling system to ensure safe & smooth function	Food Processing
371	Cookie Drop	25	30	Adjustable speed & time of depositing roller, adjustable speed of nozzle rotation	Food Processing
372	Air Dryer – Refrigerated Air Compressor Type	30	40	Provides pressure dewpoint down to 4°C, display to read dewpoint / operating status / fault indication	Food Processing
373	Cashew Peeling Machine with Screw Compressor	25	35	Increase temperature automatically in short time span, continuously duty cycle, maintenance & clearing easily	Food Processing
374	Biomass Gasifier Based Furnace	35	50	Utilize clean energy, reduce CO2 emission	Food Processing
375	Carbon Molecuar Sieve for Nitrogen Generation	10	15	Improve quality, longer life, low maintenance	Food Processing
376	Heat Recovery System for Aircondenser	20	30	Improve working environment	Food Processing
377	Improved Oil Burners (Biscuit Plant)	5	10	Complete combustion, improve working environment, improve productivity	Food Processing
378	High Efficiency Fan at Wheat Godown	10	15	improve mechanical driving system life, lower noise, longer fan life	Food Processing
379	CNC based Dispensing Machine	30	35	Suitable for high capacity location	Food Processing
380	Mesh Kettle with Dimple Jacket	60	70	Large heating surface area, High thermal efficiency, Uniform heating, Easy controlling heating temperature	Food Processing
381	Double Stage Spary Drying Plant with Agglomeration System	10	15	Production of instant powder, Flexibility in controlling powder quality negligible - deposition of powder in chamber, Less downtime for maintenance	Food Processing
382	Automatic Paddy Husker	30	40	Closed-circuit aspirator, Increased rubber roll life, Pneumatic control system, Higher husking ratio, Quick and easy roll replacement system	Food Processing
383	Paddy Separator (Oscillating type)	40	50	Higher capacity, reduced brokens, 30 increase in rubber roll life, automatic operation	Food Processing
384	Vertical Rice whitener	40	50	Higher Milling Yield and Fewer Brokens, Minimum Residue Bran Inside Machine, Compact Design & Longer Life of Parts	Food Processing
385	Cone filling machines (with VFD controls)	20	35	Easy to operate and adjustable filling volume, Cip cleaning simple piston and cylinder design, Online Volume settings	Food Processing
386	Microprocessor controlled cold room for storing ice cream	15	30	Microprocessor controlled temperature ranges, 24 hour temperature recording/ monitoring, Automatic defrost control	Food Processing
387	Stripper Unit (with VFD controls)	15	25	Energy efficient operation with Higher productivity & accuracy	Food Processing
388	Two Tire Cooling Conveyor (with VFD controls)	10	15	Variable speed control, Reliable quality, High transport efficiency, Easy to operate	Food Processing
389	Magnetic / Moulding Rotary Stackers (with VFD Controls)	15	30	Low specific power consumption due to VFD, Eazy to operate, Higher production rate	Food Processing
390	Conveyor Packing Table for Post Baking (with VFD controls)	10	15	Energy efficient operation, Improved productivity, Higher accuracy	Food Processing
391	Tetra Pak Milk Pasteurisation (temperature control with PLC)	50	60	Safe production,No pressure dip during separator discharge, maintains the differential pressure all through the production,Hibernation function,Reduced product loss	Food Processing
392	Tetra Pak Milk Homoginiser (with serial cooling system)	25	30	Reduced maintenance costs and energy consumption improved working through safe design, reduced noise levels and easy access for service and daily maintenance.	Food Processing
393	Optical Full Colour Sorter	10	30	Improved Product Quality	Food Processing
394	Automatic Volumetric Liquid Filling Machine with VFD	15	30	Rigid vibration free construction, Reciprocating filling nozzle with self centering device to avoid foaming	Food Processing
395	Semi Automatic Screw Capping Machine	10	20	Easy operation and maintenance, no cross contamination, reduce process validation cost	Food Processing
396	Semi Automatic Ropp Cap Sealing Machine	15	20	Low noice and Accurate functioning, Highly durable, long lasting & cost effective in nature	Food Processing
397	Automatic Single Head Screw Capping Machine	15	30	Unique design for lower output screw capping, Low noise level, low power consumption	Food Processing
398	Automatic Single Head Roop Cap Sealing Machine with Ac drive	15	30	Ideal for continuous heavy duty operation, High Efficieny, low electricity consmuption	Food Processing
399	Automatic Multi Head Screw Capping Machine	15	30	Low noise level, low power consumption,Universal coupling for quick and easy setting of In-feed worm	Food Processing

400	Automatic Ropp Cap Sealing Machine	15	30	Longer working life, trouble- free operation and low maintenance cost	Food Processing
401	Automatic Measuring/ Dosing Cup Placement & Pressing Machine with AC drive	15	30	Less maintenance cost, reliable performance, easy operation	Food Processing
402	Automatic Filling- Plugging Capping Machine with PLC Control	10	25	Fully automatic filling, plugging & capping operations, Very compact and user friendly design	Food Processing
403	Double Chute Wrapping Machine	20	30	AC Frequency drive, Digital temperature controller	Food Processing
404	Automatic Horizontal Flow Wrap Biscuit Packing Machines	20	35	Servo/PLC control, high production, eazy to oparate, low maintenance cost, reduced energy consumption	Food Processing
405	Automatic Ampoule Filling & Sealing Machine	20	30		Food Processing
406	Shell and Tube Heat Exchanger based Whipped Cream Processing Plant (replacing jacket heating)	10	20	Lower steam consumption, faster cooling, better turn- down ratio	Food Processing
407	Fryum Snack Extruder Machine	10	20	Water Cooled Barrels and Main shaft. Continuous cooking food extruder with auto feeding and cutting attachment	Food Processing
408	Butter packing machines with PLC and VFD	10	20		Food Processing
409	CO_2 Screw Packaged Chilling Unit	10	20		Food Processing
410	Vertical Shaft Brick Kiln	40	50	uniform temperature, occupy less space, less drying time, less pollution	Bricks
411	Concrete Block Making Machine with PLC	15	20	Automatic mould change, Continuous level control for silos, Oil temperature control, Frequency controlled vibrators, PLC-control, Online support, Hydraulic systemm with proportional valve control	Bricks
412	Falling Film Evaporator (Re-refining of Lubricating Oil)	5	10	High heat transfer rate, lower liquid circulation rates (smaller pump), suitable at low temperature difference	Auto components
413	Wiped Film Evaporator (Re-refining of Lubricating Oil)	5	10	Evaporation at low temperature, short residence time, self cleaning or wiping of heat transfer surface, suitable for viscous liquid	Auto components
414	Fine Grinding (CBN Surface Grinding Machine)	10	30	Better surface finish, less material loss	Auto components
415	Gas Fired / Oil Crucible Melting Furnace	5	25	Superior fuel efficiency, precise temperature control, central axis tilting or lip axis hydraulic tilting type furnace are excellent for melting & pouring directly into molds	Auto components
416	CNC Wire Cut	30	50	Good surface finish, high performance in machining	Auto components
417	CNC Milling	30	50	Higher productivity, dimensional accuracy, require less manpower skill, consistency in quality	Auto components
418	CNC Lathe	30	50	Higher productivity, dimensional accuracy, require less manpower skill, consistency in quality	Auto components
419	Gas Based Generator set	5	10	environmental-friendly, economical, high efficient, low emission, low noise and etc., energy saving potential assessed based on energy cost	Auto components
420	Computerized Automatic Electroplating / Zinc Plants	5	10	Help to provide coating on various metals like zinc, nickel, silver, gold, etc., reduce labour cost, improve quality, reduce environment pollution	Auto components
421	Heavy Duty Horizontal Machining Center	30	50	Higher productivity, consistency in quality, excellent finish	Auto components
422	CNC Hydraulic Press Brake	30	50	Improve quality, accuracy & productivity	Auto components
423	Automatic Electrostatic Powder Coating Machine	10	15	Uniform & deep power penetration, higher transfer efficiency, quality finish	Auto components
424	CNC Milling Machine – Vertical Machining Centre	30	50	Higher productivity, consistency in quality, low maintenance	Auto components
425	PVD (Multi-arc Ion) Coating Machine	10	15	Low running cost, higher productivity, less pollution	Auto components
426	CNC 3 Axes Hobbing Machine	25	35	Dry cutting without using coolant, improve quality, improve productivity	Auto components
427	Sealed Quench Furnace (use of Thyristor Power Controller and PLC)	15	25	Prevent oxide formation as treatment is in protective atmosphere, automatic operation of treatment / transfer, quick change-over, require less space	Auto components
428	Paint Shop with Waste Heat Recovery System	15	25	Utilise waste heat, reduce pollution, reduce equipment size, reduction auxiliary energy consumption	Auto components
429	CNC Hydraulic Guillotine Shearing Press	25	30	Cutting angle automatically adjusted to sheet thickness, programmable by CYBELEC control unit, versatile machine	Auto components
430	CNC Turret Punch Press	25	30	Higher productivity, produce variety of components without re-tooling, suitable for regular & repetitive job	Auto components
431	Heavy Duty Injection Pump Test Bench (with Variable Frequency Drive)	15	25	Variable speed drive, expandable compound pulley system, dual belt fitting, auto align	Auto components
432	Continuous Gas Carburising Furnace with Endogas Generator	25	30	PLC automatic system with Hmi & computer controlled	Auto components
433	Electronic Spring Coiling Machines	10	15	High production output,Strict quality controls, state-of-the- art production systems, High availability and Precesion	Auto components
434	CNC Gear shaving machine	50	55	Continuous and efficient operations	Auto components
435	Medium Frequency End- bar Heater	5	15	In built Heat retain system,Digital counter for production,Variable speed, automatic belt driven scanner for forging	Auto components
436	Mechanical Pneumatic Clutch Operated Crank Type Billet Shearing Press (Stock Cutting)	5	15	Higher productivity, lower cutting loss, lesser wear & maintenance, reduce operating cost	Forging and Heat Treatment
437	Pneumatic Double Acting Hammer (Forge shop)	25	30	Higher productivity, less maintenance cost, high forging accuracy, higher blow frequency, easy & safe operation	Forging and Heat Treatment
438	Microprocessor Based Energy Controlled, Pneumatic Clutch Operated, Screw Friction Presses (Forge Shop)	20	30	High productivity, controlled blow pattern, less manpower skill requirement	Forging and Heat Treatment
439	Hydraulic Double Acting Hammer (Forge Shop)	50	55	Precision forging, high productivity, reduce maintenance	Forging and Heat Treatment
440	Multi Station Horizontal Formers (Forge Shop)	30	40	Precision forging to minimise post forging operation, less raw material wastage, high production rate, automation feasible	Forging and Heat Treatment
441	Hot Shearing Automatic Forging Presses (Forge Shop)	15	20	Lower operation cost, require less manpower, high productivity, better control systems	Forging and Heat Treatment
442	Reduce Rolling Machine (Forge Shop)	20	30	Higher productivity, require less manpower, operation at various cross sectional area & length	Forging and Heat Treatment
443	Gas Fired High Temperature Furnace with Automatic Temperature Controller & Recorder (Heat Treatment)	10	15	Reduce scale loss, facilitate automation, quality improvement	Forging and Heat Treatment
444	Medium Frequency Induction Heaters (Heat Treatment)	5	10	Rapid heating and quenching, less oxidation loss, improve quality, low operating cost,	Forging and Heat Treatment
445	Natural Gas Fired Power Generating Set (Utility)	30	60	Eco-friendly, low power generation cost, high fuel efficiency	Forging and Heat Treatment
446	CNC Turning Center (Tool Room)	20	25	Precision machining, improve quality, higher productivity	Forging and Heat Treatment
447	Electro Discharge Machine (Tool Room)	40	50	Precision machining, improve quality, higher productivity	Forging and Heat Treatment
448	CNC Wire Cut Machine (Tool Room)	15	30	Suitable to cut intricate shapes and tight radius contours, precision machining, better dimensional accuracy with high quality surface finish, improve quality	Forging and Heat Treatment
449	Fully Automatic CNC Injection Moulding Machine (Tool Room)	30	50	Better tolerance & accuracy, improve repeatability, produce smooth & finished products that require no further finishing	Forging and Heat Treatment
450	Cold Forging Bolt Former	40	55	Produce no material waste, high product strength, high productivity	Forging and Heat Treatment
451	Thread Rolling Machine	20	30	Increase in material hardness, smooth surface finish, chip not formed	Forging and Heat Treatment
452	Friction Drop Hammer	15	20	Suitable for precision forging, longer durability	Forging and Heat Treatment
453	Metal Gathering Machine	40	50	Simultaneous heating & forming, lower material wastage, no heat / fume / exhaust gases emitted, minimise scale loss	Forging and Heat Treatment
454	Knuckle-Joint press	15	20	High quality precision parts with optmum surface finish,longer tool life, increased productivity,lower unit cost	Forging and Heat Treatment
455	Hot Top Casting Machines (Continuous Casting)	10	15	Easy to operate and maintain, Energy efficient, Higher Productivity, Immidiate casting speed and length, manual controlling system in case of electricity is off, More durable and smooth working	Forging and Heat Treatment
456	Automatic Centrifugal Casting Machine	50	60	Low Power Consumption, In built safety logic, Computer Controlled Automatic Operation, better position accuracy	Forging and Heat Treatment
457	Hydraulic / Pneumatic Automatic Counter Moulding Machine	20	25	Fast production rate, high accuracy, less wastage	Leather
458	Automatic Seat Lasting Machine (Heal Seat Lasting)	10	15	Accurate & faster, require less space, require less manpower	Leather
459	Automatic Pounding Machine	40	50	Improves quality of the final products.	Leather
460	Automatic Buffing & Roughing Machine with Microprocessor Control Mechanism	20	30	Precision buffing operation, fast production rate	Leather

461	Automatic Combined Rougher and Cementer (Buffing and Adhesive Application)	30	40	Both operations by one machine, require less space, fast production rate, reduce adhesive wastage	Leather
462	Cement Dryer & Flash Activator Machine (Drying and Reactivation)	10	25	Increase production rate, better drying quality	Leather
463	Thermo Cementing Machine for Upper & Sole	10	25	Reduced wastage of adhesive, accurate operation	Leather
464	Mackey Sole Stitcher	30	40	Fast production rate, better accuracy & product finish	Leather
465	Fine Turning machine (for Last)	20	35	Increaes production rate	Leather
466	Roughing Machine for Plastic Blocks	10	15	Increaes production rate	Leather
467	Computerized Lasting Turning CAD/CAM CNC Controlled Machine Including Designing and Interface Software	20	30	New product development, acurate copy of sample last, programmable cement distribution	Leather
468	Hydralic Automatic Press Moulding Press	20	30	Optimum performance, easy to operate	Leather
469	Automatic Injection Soling Moulding Machine	30	50	High Performance, durability and quality	Leather
470	Single/Double width Fleshing Machine	10	20	Accurate product quality, high productivity	Leather
471	Single/Double width Uhairing Machine	10	20	Accurate product quality, high productivity	Leather
472	Through Feed Double width Machine (Shaving)	30	50	Higher precision product, improve leather grade	Leather
473	Through Feed Double width Machine (Setting)	10	20	High productivity, produce better leather quality	Leather
474	Double Width through Feed Splitting Machine (Splitting)	30	40	High precision, high productivity, produce better leather quality	Leather
475	Vacuum Dryer	15	25	Uniform & better drying, shorter drying time	Leather
476	Hydraulic Press with Automatic Time and Temperature Controller	20	40	Easy to operate & maintain, high productivity	Leather
477	Auto Spray with Dryer	15	20	Uniform spraying & drying, pattern control, fine atomization, high production rate	Leather
478	Variable Frequency Drive for Pumps for Hot & Cold Water Supply (Pre- tanning Section)	30	40	Extend equipment life, reduce maintenance, reduced peak demand, safety against power fluctuation	Leather
479	Steam Heating (Replace Electrical Heating)	10	20	Steam can be distributed throughout a heating system with little change in temperature,erminal units can be added or removed without making basic changes to the design	Leather
480	Variable Frequency Drive for Hydraulic Oil System in Vacuum Drier	30	40	Extend equipment life, reduce maintenance, reduced peak demand, safety against power fluctuation	Leather
481	Combined Through Feed Single/Double width Buffing Machine with Dusting Operation	10	15	Accurate buffing operation, easy to operate	Leather
482	Roto Press and Roto Print	30	40	Uniform pressing	Leather
483	Energy Efficient Chiller	25	30	Low specific power consumption	Leather
484	Edge Trimming Machine	10	15	Low specific power consumption, Machine suitable to trim and round the edges of shaped (curved) belts by horizontal blades, Various size of shaped blades, Trimming and rounding of belt edges, Speed variator	Leather
485	Flash Dryers or Rotary Vacuum Dryers (Product Drying)	28	50	Low cost instant drying with no pulverizing, low initial investment as compared to spray dryer, control batch drying process, control of material temperature	Pharmaceutical & Bulk Drugs
486	Use of Biomass Gasifier with Slurry Economizer (Incinerator)	50	60	Utilize agricultural & industrial waste, heat recovery system, eco- friendly, carbon credits can be earned	Pharmaceutical & Bulk Drugs
487	Nauta Mixers (Blenders)	15	20	Grains do not break, no manual charging / discharging, shorter mixing time, easy addition of liquid & cleaning	Pharmaceutical & Bulk Drugs
488	Blister Packing Machine (using Variable Frequency Drive)	30	35	Reduce edge cutting wastage, improve blister quality	Pharmaceutical & Bulk Drugs
489	Semi Automatic Capsule Filling Machine (with AC Frequency Drive)	20	30	PLC controlled, loader disengaged automatically, different speed to fill different type of powder / pellet, drug hopper design reduce time to dismantle / unload powder, auto-drug hopper feed-in mechanism reduce weight variation & improve productivity	Pharmaceutical & Bulk Drugs
490	Variable Frequency Drive for Fluidized Bed Boiler Blower	30	40	Extend equipment life, reduce maintenance, reduce peak demand, safety against power fluctuation	Pharmaceutical & Bulk Drugs
491	Regenerative Furnace & Refractory Recuperator	25	35	High flame temperature, lower emissions	Pharmaceutical & Bulk Drugs
492	Co2 Flue Gas Recovery Plant Based on Flue Gas System	25	30	Less corrosive effect on inner surface, carbon credits can be earned	Pharmaceutical & Bulk Drugs
493	Flaker with Silo and Screw Conveyer (Ice Flaker)	5	10	Automatic operation, no spillage, no water, no latent heat loss	Pharmaceutical & Bulk Drugs
494	CNC Precision Forming machine	45	55	High-Speed positioning, Sleek Design, High Accuracy, Precision welded frame construction for maximum strength and rigidity, adjustable bending speed, High resolution.	Pharmaceutical & Bulk Drugs
495	Programmable Dosing and misting Systems	30	35	Speed-controlled gear motor with speed display and adjustment through the display, Monitoring of the component pressure using the digital display	Pharmaceutical & Bulk Drugs
496	Submerged Mechanical Aerator/Agitator (Aquarator)	30	40	Easy maintenance, accommodates various processing methods, achieves homolytic aeration mixing, no settling sludge and no clogging	Pharmaceutical & Bulk Drugs
497	Blast Furnace Hot Stove Heat Recovery	10	15	Improve combustion heat efficiency	Mini Steel
498	Power Generation from Blast Furnace Exhaust Gases	15	20	Reduce auxiliary energy usage, reduce emissions	Mini Steel
499	Sinter Cooler Waste Heat Recovery	35	55	Reduce coke consumption, redcue emission, can avail cabon credit, applicable for circular type or linear type cooler	Mini Steel
500	Coke Dry Quenching	50	60	Improve on coke quality & strength, reduce water usage	Mini Steel
501	Waste Gas Recovery from Oxygen Converter	20	30	Lower carbon monoxide emissions	Mini Steel
502	High Efficiency Combustion Control System in Pre-Heating Furnace	5	15	Furnace calliberation is not required, less furnace maintainence	Mini Steel
503	Heat Recovery from Blast Furnace Hot Stove Waste Gases	40	50	Improve combustion heat efficiency, preheat combustion air / fuel gas for blast-furnace hot stove	Mini Steel
504	Coiler /Decoiler	25	40	Clear Cost advantage, User friendly	Mini Steel
505	HR Galvanizing Line (with PLC based control system and variable speed drives)	5	10	Inline skin pass mills	Mini Steel
506	High Efficiency Industrial Furnace in Aluminum Factory	20	30	Regenerative burner system, advanced software based operator & management automatic system, reduce system maintenance	Foundry
507	Electrical Resistance Heat Treatment Furnace	20	30	Made with imported heating element and refractory,Higher thermal insulations ceases heat los	Forging and Heat Treatment
508	Manganese Steel Heat Treatment Furnace with Recupertor	25	30	Less Heat Loss	Forging and Heat Treatment
509	Hi Chrome Grinding Media Oil Fired Heat Treatment Furnace with Recupertor	10	30	High Durability, Ultimate performance	Forging and Heat Treatment
510	Wire Drawing (with Variable Frequency Drive Control)	10	30	Better productivity,Easy operation and faster threading	Wire Drawing
511	Spooling Machines (with Variable Frequency Drive Control)	10	30	Enhanced Productivity and energy saving	General Engineering (Electricals)
512	Oxygen Plant (Manufacture of Oxygen and Nitrogen by Air Separation Method)	20	25	Capable of simultaneously producing oxygen and nitrogen, easy access for maintenance, better life	Pharmaceutical & Bulk Drugs
513	High Speed Metal cutting band saw with PLC and VFD control	20	30	Antifriction LMG, Electroinc Automatic Feed Regulation, auto cycle sequencing with electronic PLC	General Engineering (Electricals)
514	Dual Layer Aluminium Colour Coating and Baking Line	5	10		Foundry
515	Multi Layer Film Extruder	25	30	Lower cost and shelf appeal	Plastics & Polymers
516	Solvent Less Lamination Machine	16	20	Equipped with Oil heating units with auto temperature controllers, Shaft-less non- winder and reminder	Plastics & Polymers
517	Servo Motor Plastic Injection Machine	30	55	Better molding stability, lower cycle time	Plastics & Polymers
518	PET Moulding Machine	40	45	Fast production rate, uniform production quality, require less manpower	Plastics & Polymers

519	Fully Automatic Micro Processor Controlled Plastic Injection Moulding Machines	40	50	Homogeneous force applied, improve productivity, reduce wastage	Plastics & Polymers
520	PLC Controlled Hydraulic Press	5	10	Productivity improvement, improve quality, easy to operate	Plastics & Polymers
521	Pultrosen Machine	10	20	Productivity improvement, improve quality, easy to operate	Plastics & Polymers
522	Infra Red Heaters/ Oven	30	40	Reduce cycle time	Plastics & Polymers
523	Microprocessor Controlled Fully Automatic Extrusion / Injection Blow Moulding Machine	10	20	High productivity, imporve quality	Plastics & Polymers
524	Plastic Injection Molding Machine with Variable Pump	20	30	Eliminate voltage dip, reduce starting shock on motor / coupling / gear, improve process control, reduce motor heating / stress	Plastics & Polymers
525	Fully Automatic– HM/ LDPE (using Variable Frequency Drive)	30	35	Low Power Consumption with high output,Compact Design- Space Saving Device	Plastics & Polymers
526	Corona Treater (using Advanced IGBT Technology)	10	20	Easy thread-up, quick installation, comfortable to operate and simple maintenance	Plastics & Polymers
527	Slitting Machine (Using AC Frequency Drive)	30	35	Shafted unwind stand,Choice of razor or shear cutter	Plastics & Polymers
528	Pneumo Hydraulic Edge Guide System	15	20	Designed for high response and accuracy, Suitable for unwind / rewind / intermediate guiding	Plastics & Polymers
529	Three Layer Brown Film Plant (using Variable Frequency Drive)	15	20	Increasing flexibility and shortening production schedule and cost effectiveness	Plastics & Polymers
530	Standy Zipper Pouch Making Machines (using AC Frequency Drives)	20	30	Servomotor for indexing and accuracy,P.I.D. base temperature controller	Plastics & Polymers
531	Rotary Cap Compression Moulding Machine	15	30	Higher Productivity,High Finish,No Colour Streaks,Low Production Cost	Plastics & Polymers
532	Laminated Tube Body Maker Machine	10	15	PLC controlled with easier operation	Plastics & Polymers
533	Screwing Cap Machine	10	15	PLC controlled making the machine work more accurately and steadily	Plastics & Polymers
534	Thermoforming Sheet Extrusion Machine (using Variable Frequency Drive)	10	15	Specially designed winding system, lowest manufacturing cost	Plastics & Polymers
535	Thermoforming Machine with Infra-red Heaters (using Variable Frequency Drive)	35	40	Fully automatic Servo controlled PLC system and heavy duty hydraulic system, low maintenance and trouble-free longer runs	Plastics & Polymers
536	Scrap Grinder	15	20	Superior design and proven reliability	Plastics & Polymers
537	Automatic Strap Bend Making Machine	25	30	Gears are hardened and precision ground for quiet running performance,SACMI barrel is nitrogen treated, precision ground, and stress relieved	Plastics & Polymers
538	Automatic High Speed Bag Making Machine	45	55	Greater flexibility and higher outputs	Plastics & Polymers
539	Flex Lamination Machine	10	15	Good production with smooth surface	Plastics & Polymers
540	Bottom Seal Bag Packing Machine (with Micro Processor Controlled)	20	25	Equipped with Servo Motor for indexing and Accuracy,ension free Web for Strong Sealing	Plastics & Polymers
541	Plastic Injection Machine (with Variable Pump)	15	35	Increased performance, while highly flexible use is guaranteed by the quick- change plasticizing unit, which can be replaced in a few minutes	Plastics & Polymers
542	Production line for manufacturing of laminated panels	15	25	Equipped with PLC control system which helps to set length and provide accurate automatic cutting	Plastics & Polymers
543	Slow Speed Granulator	25	35	Fast and easy operation, various blade sizes are available to help create re- grind that flows smoothly into production	Plastics & Polymers
544	Fully automatic strap band making machine	15	25	Automatic operation and labor saving,High production.	Plastics & Polymers
545	Automatic Splicer Machine with PLC controls	30	35	Increased productivity, greater quality control and reduced waste	Plastics & Polymers
546	PLC based tape stretching line	45	50	The stretching line is designed to meet the highest performance and quality requirement with maximum efficiency and flexibility while using minimum raw material and energy	Plastics & Polymers
547	High Frequency Plasting Welding Machine/ Embosing Machine	41	50	High efficiency, small land cover, simple operation, equipped with electrode and product protection device	Plastics & Polymers
548	Plate Extruder Line	20	25	Reduced energy consumption, good plasticization, high temperature precision, easy operation, high output	Plastics & Polymers
549	Rotating Twin Screw Extruder	15	20	Energy Efficient operation, Modern available speed range, Direct troque control based on digital drive controllers, Advanced computer aided design and manufacturing using CNC control system	Plastics & Polymers
550	High Speed Heater Mixer (with VFD and Screw Conveyor)	20	30	Efficient production without cross- contamination and free from moisture, Economic operation with lowest compounding cost, Lower scrap rate, Compact space saving system with the highest specific throughput, Least down time.	Plastics & Polymers
551	Water Pelletizing System	50	60	Less Energy Consumption, Low noise, Low scrap due to Automation & clean operation, Low tool cost, variable tool speed & Automatic tool readjustment, Fully automatic and closed loop system	Plastics & Polymers
552	Bitumen Membrane Forming	10	30	Energy efficient operation with Higher productivity & higher accuracy	Plastics & Polymers
553	Conical Twin Screw Extruder with Variable Frequency Drive	30	40	Reduced energy consumption, Screw temperature control system, Good product quality, Easy operation, High output	Plastics & Polymers
554	Auto Woven Bag Cutting & Sewing (with inverter control)	10	15	Upgradation to work on LENO fabrics,On-line Handle/Hole Punching System,Easy open type sewing attachment,On- Line bag inspection Arrangement	Plastics & Polymers
555	3D Blow Moulding Machine with PLC control system	50	55	It offers offer minimum flash production achieving significant, savings in material, energy, usage, cycle times and, in capital spending	Plastics & Polymers
556	Blown Film Plant with VFD	10	20	Equipped with VFD	Plastics & Polymers
557	Extrusion Lamination Plant with VFD	10	20		Plastics & Polymers
558	Pusher Type Reheating Furnace with Suspended Roof, Multi Fuel Capacity and Automated Temperature Controls	20	30	Reduce scale loss	Steel Re-rolling
559	AC and DC Drives for Control of Fuel and Air	10	30	Eliminate voltage dip, reduce starting shock on motor / coupling / gear, improve process control, reduce motor heating / stress	Steel Re-rolling
560	Semi Automatic High Speed Rolling Stands with DC Drives	20	30	Eliminate voltage dip, reduce starting shock on motor / coupling / gear, improve process control, reduce motor heating / stress	Steel Re-rolling
561	Oxygen sensor and monitoring system for reheating furnace	10	15	Significant reduction in scale loss	Steel Re-rolling
562	Shell in Shell type recuperator for reheating furnace with modified pulverized coal firing system	10	15	Uniform temperature profile, reduced flue gas temperature	Steel Re-rolling
563	Automatic Corrugated Making Plant	30	35	High productivity, better quality, lesser space & manpower requirement, high reliability	Packaging
564	Thermic Fluid Boiler or Steam Boiler using Agri Residue	50	60	Fuel flexibility, heats roll uniformly	Packaging
565	Web Based Coating Machine for Water Based Coating	20	30	Eco-friendly, recyclable, free from fire hazard	Packaging
566	Multi Colour Flexo Printer Slotter for Flexographic Printing	30	40	Faster drying, large size printing	Packaging
567	Automatic Corrugated Board Plant with Printing Die Cutter using Thermic Fluid for Heating	30	35	High productivity, better quality	Packaging
568	Fully Automatic PLC Hydraulically Operated Moulding Machine	15	20	Higher productivity, better quality, simple operation	Packaging
569	Automatic Board Plant	25	30	Less space & manpower requirement, higher productivity	Packaging
570	Folder Gluer Machine	15	20	Instant drying, simple to operate & maintain	Packaging
571	High speed Automatic Board Line & Converting Line	30	35	Less space & manpower requirement, higher productivity	Packaging
572	Folding machine	5	15	Modular design with maximum flexibility and productivity	Packaging
573	Sticker labeling machine	10	15	Accurate labeling, Minimum Glue consumption,Labour saving, Minimum maintenance	Packaging
574	Assembling Machine	10	15	Capable of processing Multicomponent closures (up to 5 pcs.) with output rates between 7.000 and 60.000 pph.	Packaging
575	Lining/Wadding Machine	10	15	The machine is equipped with PLC system and an AC Converter (Inverter) that makes the machine adapt its speed automatically with the caps feeder's production.	Packaging

576	Automatic water slotter with variable frequency drives	10	15	Wear-free, frequency controlled motors with long operation life, Pneumatic clamping system for safe material clamping, No adjustment needed for similar profile types	Packaging
577	Aluminum Foil Sealing and screwing cap machine	10	15	The machine adopts PLC system to make it perform more accurately and stably	Packaging
578	Automatic 5 Ply plant	25	30	High speed operations, Reliable performance,Smooth operations, long functional life	Packaging
579	Three Layer Blown Film Plant	25	30	Equipped with advanced CAD Design dies to ensure uniform flow distribution, excellent melt characteristics and film quality	Packaging
580	Packing and Bundling Machine (inverter based & PLC controlled)	30	40	Reduction in Energy consumption, Easy operation and maintenance, Quick & easy roll changes, Heat Sealing	Packaging
581	Computer Controlled Curved Bag making Machine	45	55	Energy efficient operation with PLC wide screen LCD display, AC Servo fixed length control systems, Frequency converter for the main speed and with PWM control mode adopted, Automatic counting, Makeup counting, Pre-set topping, Idle cutting, Material returning	Packaging
582	Computerized High Speed PVC Sleeve Seaming Machine	15	20	High performance of control system and mechanical structure, Stable operation of the machine, High work efficency, Ideal equipment for middle sealing and sticking of mark.	Packaging
583	Fully Automatic High Speed PVC Label Cutting Machine	15	20	Energy Efficient process with PLC system, Three phase AC servo fixed length control system, Main speed is controlled by inverter in the way of PWM, Concave and protruding cold cutting knife, Photocell fixed length tracing device, Air expansion shaft at unwindiong , Magnetic powder strenght control.	Packaging
584	Cutting machine with variable frequency drive for aerosol can packaging line	20	30	High productivity, less skill equirement,Consistency in quality	Packaging
585	UV LED Printer	50	60	They produced incredibly crisp text and vibrant, full- color images with outstanding solvent and abrasion durability on a variety of substrates, user friendly	Packaging
586	Roller Coating Machine with VFD	20	35	Increased Productivity, Compact Machine, Smooth Operation	Packaging
587	Semi-automatic Auger Filler machine with PLC control and servo drive	25	40	Easy Maintenance with air vent and baloon and visible window glass	Packaging
588	High Speed Pneumatic Operated Bagging Machine with AC drive and PLC control	20	30	Flexible, Less Maintenance equipped with self diagnosis system	Packaging
589	Rotary Piston Filing & Sealing Machine	20	30	Compact, versatile machine, easy operation	Packaging
590	Automatic High Speed gum labeling machine with AC drive	20	30	Adjustable conveyor height, Minimum changeover time required, No container- No label, an electrical sensing device avoids wastage of labels, it also helps in keeping the unit neat and clean	Packaging
591	Auto self adhesive labeling machine with PLC Control	10	30	Product data storage facility, No change parts requirements, Very less down time for change over,Suitable for Glass, Plastic, Pet, Tin, Corrugated containers.	Packaging
592	Fully Automatic Tube Filling & Sealing Machine with VFD	20	30	Reliable and durable with high performance and low maintenance	Packaging
593	Automatic Stretch wrapping Machine	10	20	Durable standards, easy installation, tough construction and low maintenance	Packaging
594	Combined Rotary Creaser Slotter Machine	30	50	Reduced energy consumption, higher production, faster operation	Packaging
595	Automatic Cutting and sealing Machine	30	50	Good quality sealing, increased productivity, low energy consumption	Packaging
596	Full Servo Sanitary Napkin Machine	20	30	PLC controlled and servo driven	Packaging
597	Direct Drive PLC based Continuos Carton Making Machine with Automatic Feeding and Packing features	10	15	High output, continuous motion, PLC based automatic horizontal Cartoning Machine	Packaging
598	PVDC Coating Machine with Lamination Attachment	10	15	Pneumatic pressure roll system, Lay on roller	Packaging
599	High Speed Automatic Flat Bed Die Cutting Machine	10	15	Centerline tool alignment system, Double cam gripper bar	Packaging
600	Fully Automatic Foam Moulding Machine	20	30		Packaging
601	Vertical Form, Fill and Seal Machine with Multi Head Weigher	10	15	Single line set-up, minimisation of waste	Packaging
602	Foam Plant & Laminator Machine	10	15		Packaging
603	Double Chamber Vaccum Packaging Machine	15	20		Packaging
604	Automatic Flute Laminating Machine with Variable Frequency Drive	15	25	VFD for efficient operation, PLC/Micro-processor controls, Automatic feedking for bottom sheet	Packaging
605	Roto-cure Machine	20	30	Continous production, wastage minimum, high productivity	Rubber
606	Cold Feed Extruder	40	50	Rubber compound warming operation prior to extrusion is avoided, required less space	Rubber
607	Multi Channel Extruder	15	20	Rubber band manufactured from dry rubber	Rubber
608	Thermic Fluid Heaters	10	15	Uniform heating, automatic control setting, operational flexibility	Rubber
609	Fully Automatic Vacuum Hydraulic Machine (with PLC control)	30	40	Enhanced Productivity and efficiency	Rubber
610	Rubber Injection Moulding Machine with Electronically Controlled Hydraulic Pump	25	30	Accurate process control and high productivity	Rubber
611	PLC – Rubber (Plastic) Dispersion Mixer	25	30	Excellent cooling efficiency,Easy maintenance	Rubber
612	Rubber Mixing Mill with stock blender	20	30	Provides safer working conditions, low material temperature and high mixing rate of the compound	Rubber
613	Rubber Mixer	20	30	Equipped With Peripheralled Drilled Rolls,Heavy Duty Type With Higher Safety Factors	Rubber
614	Rubber Oil Seal Vulcanization Molding Machine with PLC control	20	30	Shorten curing time, increases production efficiency,High speed vacuum system	Rubber
615	Fully Automatic Activated Carbon Manufacturing Line	15	20	Grinding of Tyres as feedstock, Use of PLC driven systems	Rubber
616	Laser Technology Duplicating Machines, Pantographs, etc. for sculpting and duplicating artwork and monuments	5	10	Capability to mass- produce intricate product patterns, high precision	Stone Cutting
617	CNC Diamond Faceting Machine for Bangles & Rings (with Laser Sensor)	45	55	Equipped with CNC controller, variable AC drives and AC servo motors to ensure life long maintenance free working, CNC controller is compatible with leading CAD/CAM softwares	Stone Cutting
618	Fancy round chain cutting machine (With PLC and variable speed drive)	20	30	Equipped with AC motors and AC drives to ensure maintenance free working, Coupled with variable AC drives for speed variations	Stone Cutting
619	CNC controlled Ice Diamond cutting machine for chains Ice	45	55	Equipped with energy efficient AC motors, Speed control using variable AC drives, High precision	Stone Cutting
620	Jewelry Laser Spot Welding Machine	15	20	Smart size, easy operation, welding spot is firm and nice. Equipped with microscope for monitoring makes sure the welding spot is more accurate. Specialized appearance improved comfortableness for the operating personnel	Stone Cutting
621	Ultrasonic cleaning machine	10	15	High intensity cleaning action with optimum effeciency, Economical, safe and compact procedure, efficient cleaning of metal, plastic, ceramic, alloys etc	Stone Cutting
622	Vacuum Metallising machine	30	40	Compact structure, low energy consumption, small volume and easy operation	Stone Cutting
623	Auto Infrared- Bridge Cutting Machine	15	20	High efficiency, Fully automatic crossbeam displacement, Simple and convenient operation, High degree precision, Stable performance, Good adaptability and High reliability	Stone Cutting
624	Automatic Cutting Machine	30	40	Easy Operation and low maintenance	Stone Cutting
625	Gangsaw Machine	15	25	Easy to use, glitchfree operation	Stone Cutting
626	Automatic Coil Winding Machine	10	15	Material saving, improve insulation, choice of coil packaging methods	Manufacturing of Electrical Equipments
627	Vacuum Impregnation plant	10	15	Reduce rejection, high productivity, longer equipment life	Manufacturing of Electrical Equipments
628	Semi Automatic Press	8	15	Variable displacement with high performance, high productivity	Manufacturing of Electrical Equipments

629	Automatic CNC Core Cutting Machine	45	50	Reduce rejection, high productivity, longer equipment life	Manufacturing of Electrical Equipments
630	Hi Speed Precision Power Press with Computerized Control	15	20	High indexing accuracy, less noise & vibration, high productivity, require low maintainence	Manufacturing of Electrical Equipments
631	Vacuum Impregnated Plant	10	15	Reduce rejection, high productivity, longer equipment life	Manufacturing of Electrical Equipments
632	Automatic/CNC Coil Winding Machine	10	15	Material saving, improve insulation, choice of coil packaging methods	Manufacturing of Electrical Equipments
633	Temperature Control Drying Oven	5	10	Prodcue better quality, long equipment life, low heat loss	Manufacturing of Electrical Equipments
634	Amorphous Metal Core Transformers	40	50	Improve efficiency at no & low load condition	Manufacturing of Electrical Equipments
635	CNC Core Cutting Machine	40	50	High precision & dimentional control of product	Manufacturing of Electrical Equipments
636	Natural Gas Based Oven	10	15	Reduction in no load losses, decrerased rejection rate	Manufacturing of Electrical Equipments
637	Microprocessor Based Electric Furnace	5	10	High reliability, better quality production, measurement & controls / alarm	Manufacturing of Electrical Equipments
638	Plasma Cutting Inverter	50	55	Light weight, more powerful, longer life, higher reliability, quality cutting	Manufacturing of Electrical Equipments
639	Catalytic Enamelling Machine	20	30	Improve product quality, require less manpower	Manufacturing of Electrical Equipments
640	Extruder with Temperature Control, Pre- heating, Speed Control	30	40	Improve coating for better insulation	Manufacturing of Electrical Equipments
641	Multi Color Offset Machine	40	50	High productivity, four color printing in single operation, higher flexibility in operation, require less space	Printing
642	Programme Cutting Machine Computerized Control	40	50	Longer equipment life, ease of operation	Printing
643	Fully Automatic Folding Machine with Computer Control	40	50	High productivity, less wastage, low vibration	Printing
644	Auto Control Punching Machine with Computerized Control	10	20	Better accuracy, smooth operation	Printing
645	Lamination Machine with Computerized Control	30	40	Accurate operation, short chageover time, improve quality, versatile application	Printing
646	Thermal Lamination Machine Computerized Control	30	40	Accurate operation, short chageover time, improve quality, versatile application	Printing
647	Multi Colour Rotogravure Printing Machine	30	40	Enhance printing quality & speed, less rejection, high productivity	Printing
648	Flexographic Printing Press with Inverter Speed Control	30	40	Motor speed control by inverter	Printing
649	Adhensive Label (logo) Die-cutting	30	40	Better accuracy, less wastage, flexible operation	Printing
650	Digital Colour Press	15	20	On demand color printing, high quality	Printing
651	Fully Automatic Flat Bed Screen Printing Machine with 12 Colors	40	50	Improve production rate, smooth operation, high precision colour registration	Printing
652	8 Colour Paper Printing Machine with Auto Registration System	40	50	Minimise wastage, better printing quality, easy operation	Printing
653	Programmable High Speed Cutter	20	30	Easy operation and high longivity	Printing
654	Stahlfolder (Folding Machine)	20	25	Maximum flexibility and productivity	Printing
655	CPT UV Shatter Machine	15	20	Its modular platform design enables the UV- Setter to grow with your changing needs, and can be reconfigured and adapted to new operational requirements at any time, easy to operate	Printing
656	Violet Photopolymer CTP	30	40	High resolution; High sensitivity; Strong developer compatibility; Long run length; Stable quality;	Printing
657	Auto Color Registering Controller	20	25	Suitable for Multicolor Gravure Printing Press for Length & Side lays Control. Precise and faster correction	Printing
658	Micro Processor Controlled Doctoring Machine	20	30	Two servomotor drive system providing the most accurate winding contro	Printing
659	Slitting Machine	40	50	Two servomotor drive system providing the most accurate winding contro	Printing
660	Flex Printer	30	35	Highest printing speed of the same level printer	Printing
661	Coding Machine	15	20	Ease of use with advanced vision technology	Printing
662	Ultra Violet Acqua Card Board Varnish Coating Machine	20	25	The machine is fitted with roller bearings, which ensure smooth and light running of machine	Printing
663	Ultra Violet Curing Machine along with Infrared Dying	15	20	High efficiency and precision functioning	Printing
664	Web Offset Printing Machine	15	20	Automatic adjustment for registration of 4 colours on each side of web, Variable speed motorised dampening, fitted with disconnection clutch	Printing
665	Digital Inkjet Printer	30	40	Simple Design. Lower cost and high quality prints	Printing
666	CNC controlled Copam cutting plotter and Photocopier	35	40	Stable and high quality	Printing
667	Laser Marking Machine	15	20	Fast and Accurate Solution	Printing
668	Image press	15	25	High Productivity, high speed and high image quality	Printing
669	Canon imageRUNNER ADVANCE	15	25	Productive printing, Intuitive user Interface, Multifunctional device	Printing
670	Canon Oce VP6000 ULTRA LINE	15	25	High Productivity	Printing
671	UV Setter CTP	15	20	Keyless inking, single fluid system, Less paper waste, Simple press operation with less manning, Less paper waste, Prints on super- calendered and coated stock without expensive dryers, Reduced set-off and show- through- prints on thinner newsprint, Excellent ink consistency.	Printing
672	Edge Inking Machine	10	20	Energy efficient operation with easy change of jigs, Easy system of cleaning and replacement of colour, Adjustable spraying pressure and quantity of colour, Variation of drying time and spraying, Vacuum system of airborne particles of colour, Jigs according to the different types of pieces to work.	Printing
673	Three Color Dimensional Wood Texture Printing Machine with Microprocessor control	10	25	Equipped with AC Variable Frequency Drive, All operations run with microprocessor control which ensures automatic operations of machine.	Printing
674	Inking Machine	30	40	Low specific power consumption, Wedge inking device by belt, Possibility to die straight, Variable speed, Working adjustment by control panel, Emergency switch, Easy removeable of colouring device for cleaning.	Printing
675	LP or NG based Gas Dryer	25	30	Highest Production Capacity, Temperature Consistency and High Efficiency	Printing
676	Three/ Multi Clamp Perfect Binder	10	15	Automatic Glue Temperature Control, Inhouse Perfect binding saves time money, having total control over quality and delivery	Printing
677	Thermal CTP (Computer-To- Plate)	30	40	Increased Productivity, Improved Servicebility, stability, easy maintenance and excellent imaging	Printing
678	UV Dryer	30	40	Highest Porduction Capacity, maximize dryer capacity and minimize per-unit cost	Printing
679	High Speed offline Three Knife Trimmer with PLC Control	20	30	Versatile, Userfriendly, Superior Trim Quality, Ripple free cut	Printing
680	High Speed Large Format Printer	10	20	High speed dye sublimation printer, larger capacity ink tanks, equipped with after- heaters	Printing
681	Infrared Irradiation	5	8	Heats directly the object by radiation thus no energy loss in heating air medium	Cross-sectoral - Electrical
682	Sludge Combustion Boiler	2	5	Easy and flexible operation, complete inertization of the residues	Textiles

683	High Efficiency Automatic Door	2	3	Protection from noise, dust & dirt, reduce air conditioning and heating load	Commercial Buildings
684	High Efficiency Automatic Revolving Door	2	3	Protection from noise, dust & dirt, reduce air conditioning and heating load	Commercial Buildings
685	Woody Textile Insulator	5	8	Highly absorbent, reinforce plastics, excellent acoustic insulation, non- flammable, easy to use, flexible and crack- resistant, ideal for cyclone & earthquake prone areas	Commercial Buildings
686	Other Building Material Contributing to Increased Heat Insulation Performance of Building & Building Equipment	5	8	Reduce heat ingress, make HVAC more effective, resistant to moisture, resistant to air infiltration	Commercial Buildings
687	Insulation for Furnace	3	9	Reduce heat loss, improve safety, better temperature control, prevent damage to equipment from exposure to fire or corrosive atmosphere	Glass
688	Alumina Brick Insulation for Electric Arc Furnace	3	5	Reduce heat loss, improve safety, better temperature control, prevents damage to equipment from exposure to fire or corrosive atmosphere	Ceramics
689	Improved Insulation for Ring Chamber	3	5	Minimizes condensation,Protects air ring chamber	Ceramics
690	Conversion to Fluidized Bed Combustion Boiler from Stoker Boiler	5	8	Less corrosion and erosion, easier ash removal, low excess air, fast response to load fluctuations, use of low grade fuel	Pulp and Paper
691	Synthic Flat Belt Drives (Replace V-belts)	4	8	Extraordinary tensile and high frictional co- efficient, light weight and narrower width reduce shaft load	Textiles
692	Fludised Bed Combustion Boiler (replacing Stoker Boiler)	2	4	Efficiency improvement by 70-79	Textiles
693	Water-tube Boilers (by Replacing Conventional Smoke-tube Boiler)	2	5	Higher steam output, higher pressures & higher temperature	Textiles
694	Energy Efficient Motor	3	7	Longer life, lesser maintenance, less vibration and high reliability	Textiles
695	Ceramic Fiber Insulation for Batch Furnaces	2	4	Reduce surface temperature, minimised convention & radiation losses, improve safety	General Engineering (Thermal)
696	Conveyorised Powder Coating Curing Oven	2	5	Precise temperature control, longer functionality	Auto components
697	Coal Moisture Control System	6	9	Improve coal quality	Mini steel
698	Provision of IR Sensors for Material Movement	3	7	Quality improvement, waste minimization	Steel re-rolling
699	Dry Type Starter for Slip Ring Motor	4	5	Simple, easy to understand technology,high reliability, low maintenance	Steel re-rolling
700	Liquid and Gaseous Fuel Ratio Controllers (Ratiotrols)	5	10	Reduce scale loss	Steel re-rolling
701	Heating and Pumping Units	5	10	Improve combustion efficiency	Steel re-rolling
702	High Efficiency Burners with Multifuel Capacity	5	10	Multi fuel handling capacity	Steel re-rolling
703	Automation and Control System	5	15	Automation and control system provides effective monitoring of process and utility for better resource utilization and loss reduction	Cross-sectoral - Electrical
704	Automation of Withering Troughs	10	15	The automation of withering trough will ensure achieve optimum temperature and ensure effective control thereafter for proper withering of tea leaves	Cross-sectoral - Electrical
705	Combustion Control System for Boiler	15	20	Combustion control system in boiler provides effective monitoring of flue gas parameters, their temperature and pressure for complete combustion	Cross-sectoral - Electrical
706	Energy Management System	15	30	The EMS is effective in managing energy flow and consumption, reduce wastage and do necessary rectification in case of any fault	Cross-sectoral - Electrical
707	AI&ML based IoT platform for Energy and Asset management	15	20	AI&ML based IoT platform is a full-featured, cloud-based asset and energy management solution for reducing risk and down- time, optimizing cost, time, and energy across buildings & cities. The AIpowered platform is designed to increase the efficiency, sustainability, and reliability of building spaces and convert aging buildings into smart buildings, as well as help design new smart and sustainable buildings and cities.	Cross-sectoral (Electrical)
708	Electric annealing furnace	20	30	Electric annealing furnaces operate with remarkable efficiency (8590%), benefiting from the use of electricity to achieve precise temperature control during the annealing process. This technology promises significant enhancements in product quality, resulting in reduced rejections in downstream processes.	Cross-sectoral
709	Electric Extrusion Melting	20	30	An electric induction melting furnace has an efficiency between 60 - 75% and offers additional advantages, such as reduced oxidation due to the non-direct contact between the heat source and aluminum. Furthermore, it minimizes pollution and ensures greater purity and uniformity of the end product.	Cross-sectoral
710	Electric Melting Furnace	20	30	Electric melting furnaces are small capacity units used for melting or holding applications. They feature a circular furnace with electric elements that heat a ceramic crucible holding the metal. With higher efficiency (60-75%), they reduce oxidation losses and pollution while offering precise control over melting time and temperature.	Cross-sectoral
711	Electrical Servo Drives	20	30	The servo drive is quite efficient in smooth start and stoppage of machine having frequent load fluctuation, and helps reduce energy wastage as well as wear and tear of machine	Cross-sectoral - Electrical
712	Energy Efficient Pumps - 5 Star Rating Pumps	15	30	EE pumps have optimum impeller design, thereby leading to optimum discharge flow and pressure and energy consumption	Cross-sectoral - Electrical
713	Energy Efficient Screw Compressor	25	40	The screw compressors are the most efficient one to generate compressed air as well as less heat compared to normal air compressor	Cross-sectoral - Electrical
714	Energy Efficient Turbo Blower	30	45	Turbo blower is made of anodized aluminium impellers and air foil bearings. As a result it has low weight and high corrosion resistance bearings to provide excellent control over varying rpm	Cross-sectoral - Electrical
715	Gasifier for Electrical Application	15	25	Gasifier gasifies coal or biomass to produce gas that can be used for power generation in gas genset or gas turbine	Cross-sectoral - Electrical
716	Hanger Shot blast Machine	30	40	Shot blasting systems offer you nearly unlimited options from deflashing, descaling, sanding and rust removal to roughening, matting, smoothing, edge rounding and shot peening.	Cross-sectoral - Electrical
717	IGBT based Induction furnace	20	30	An induction furnace is a clean, energy-efficient furnace which provides well-controlled melting process, compared to conventional means of metal melting	Cross-sectoral - Electrical
718	IGBT based temperature control	10	15	Installing Insulated Gate Bipolar Transistor (IGBT) based temperature controller for furnace ensures precise controlling of temperature.	Cross-sectoral - Electrical
719	Infrared (IR) Heaters	10	20	Use of IR Heaters results in uniform heating and reduces the baking time. Infrared heaters are extremely quiet and energy-efficient heating devices that produce a very gentle heat.	Cross-sectoral - Electrical
720	Light emitting diode (LED) Lighting	35	50	Light emitting diode (LED) is a semiconductor light source that emits light when current flows through it. These are energy-efficient lights with long life, durable, and offer better light quality than other types of lighting	Cross-sectoral - Electrical
721	Light Pipe	15	20	Light Pipes are primarily used for illuminating deep interior spaces where there is poor daylighting provisions from doors /windows	Cross-Sectoral - Electrical
722	Micro Turbine	15	30	Micro-turbines are tiny gas turbines that can generate both electricity and heat, and may vary in electrical output from around 25 kW to 250 kW	Cross-sectoral - Electrical
723	Motors (IE3 or IE4 or IE5)	25	40	EE motors are constructed with improved manufacturing techniques and superior materials, longer insulation and bearing lives, lower waste heat output, and less vibration, all of which increase efficiency and reliability	Cross-sectoral - Electrical
724	Screw Compressor with Permanent Magnet (PM) motor	15	20	Screw Compressor is driven by Permanent Motors and thus there is no rotor loss or transmission loss that results from rotor winding	Cross-sectoral - Electrical
725	Static Reactive Power Generator with Harmonics Filter	4	5	In an electric power system, a load with a low power factor & Higher Harmonics draws more current and this results in higher current withdrawal and energy losses. The Static Reactive Power Generator, an IGBT based INVERTER, helps to compensate reactive power as well as selective harmonics (5th, 7th, 11th & 13th Order Only) created by the load and unbalance in the system. This helps to minimize losses	Cross-sectoral - Electrical
726	Temperature controller for cooling tower fan	10	25	This intervention increase the efficiency of electrical energy utilization in the cooling tower by automatic control of cooling tower fans, based on a feedback from the water temperature from the cooling circuit	Cross-sectoral - Electrical
727	Tri-generation	20	25	Tri-generation technology provides thermal, cooling and electrical energy and it has higher efficiency compared to power generation and cogeneration plants	Cross-sectoral - Electrical
728	Variable Frequency Drives (VFD)	30	40	To control speed of various appliances like motors, pumps, compressor motors, ID fan, FD fan, hydraulic press, jet drying machine, Thermic Fluid Pump, Grinding Machine etc	Cross-sectoral - Electrical
729	Variable Refrigerant flow (VRF) in HVAC	15	20	Variable Refrigerant Flow (VRF) Systems are an excellent choice for buildings that require both heating and cooling to coexist simultaneously. VRF systems have the ability to regulate the flow of refrigerant to various indoor units so that one location can stay cool while the other remains warm.	Cross-sectoral - Electrical

730	Back Pressure Turbine	15	30	The back pressure turbine is used for supplying process steam to the facilities in private-use power producers. This type of steam turbine supplies not only electricity but also the process steam to the facilities.	Cross-sectoral - Thermal
731	Cogeneration	30	50	Cogeneration technology provides thermal and electrical energy both and it has higher efficiency compared to power generation plant	Cross-sectoral - Thermal
732	Condensate recovery system in boiler/jet dying machine	10	15	For applications with zero contamination, the condensate recovery system can be effectively used to conserve and reuse water in boiler	Cross-sectoral - Thermal
733	DeSuperheater for Chiller Compressors	10	15	A desuperheater recovers the heat from the super-heated refrigerant gas at the compressor outlet	Cross-sectoral - Thermal
734	Electric Dry Vacuum Pumps	40	50	Electric dry vacuum pumps do not require any fluid to generate vacuum compared to steam ejectors, thereby eliminating the contamination of process vapours and providing better solvent recovery	Cross-sectoral - Thermal
735	Energy Efficient Boilers	10	15	Energy Efficient Boilers offer effective combustion of fuel with maximum utilization of energy	Cross-sectoral - Thermal
736	Energy efficient Refrigeration Compressor	10	15	The refrigeration compressor of latest technology, having good automation and higher Coefficient of Performance (COP) must be used to save electrical energy during refrigeration cycle	Cross-sectoral - Thermal
737	Gas fired Annealing furnace	20	30	The gas-fired annealing furnace is essential to ensure high level of operational efficiency of the furnace w.r.t the electrical-fired furnace, due to high GCV of Gas w.r.t electricity	Cross-sectoral - Thermal
738	Ground & Water source Heat Pumps (GSHP)	35	40	GSHPs use water-to-water or water-to-air approaches to treat this stable thermal environment as a heat source in the heating season and a heat sink in the cooling season	Cross-sectoral - Thermal
739	Heat Pump	30	40	A heat pump is a device that can heat a building/utility by transferring thermal energy from the outside using the refrigeration cycle	Cross-sectoral - Thermal
740	Hot Air Generator from Briquette	20	30	Briquette is locally available and commercially cheap alternative fuel compared to coal /wood, prepared by using agro waste, and can be used for low temperature application	Cross-sectoral - Thermal
741	Hot Water Generator	20	25	The hot water generator is of natural draft system and doesn't have FD and ID fans. They are the efficient and cost-effective way to generate hot water instantly	Cross-sectoral - Thermal
742	Mechanical Vapor Recompression (MVR) Evaporator	20	25	The term "evaporator" refers to process equipment used to extract liquid by vaporization. Unlike the alternative thermal vapor compression, mechanical vapor compression does not require an extra steam supply. Because there is no fluid mixing, all of the available vapor may be compressed for energy recovery. It consumes 45-50% less energy than muti effect evaporators	Cross-sectoral (Thermal)
743	PUF insulation	20	30	Polyurethane Foam (PUF) is the most effective thermal insulation material and having high strength to weight ratio at low temperature, are durable for years, with high mechanical strength	Cross-sectoral - Thermal
744	Steam operated pumping traps	3	5	Steam operated pumping traps are operated on steam and is used for condensate evacuation under all operating conditions, thereby enabling high system uptime and enhanced productivity.	Cross-Sectoral - Thermal
745	Turbulators (for gas fired boilers)	2	3	In a firetube boiler (Two- and Three-Pass), hot combustion gases pass through long, small-diameter tubes, where heat is transferred to water through the tube walls. Firetube boilers are categorized by their number of "passes," or the number of times that the hot combustion gases travel across the boiler heat-exchange surfaces. Turbulators can be a cost-effective way to reduce the stack temperature and increase the fuel-to-steam efficiency of single-pass horizontal return tubular (HRT) brick-set boilers and older two- and three-pass oil- and natural-gas-fueled firetube boilers.	Cross-sectoral (Thermal)
746	Heat Exchanger	10	15	A heat exchanger is a system used to transfer heat between a source and a working fluid.	Cross-sectoral - Thermal
747	Hot water generation from cement kiln	20	25	The waste heat, which otherwise would escape in atmosphere may be recovered using appropriate heat exchanger to pre-heat water for use in utility or process	Cement - Thermal
748	Low-Grade Waste Heat Recovery System (LGWHRS)	10	15	Waste heat even below 100 C is recovered by LGWHRS and can be used in the low temperature applications. These heat exchangers are specially designed for low-grade waste heat recovery.	Cross-sectoral - Thermal
749	Thermo Compression	20	25	Utilization of waste flash steam in chiller and process usage	Cross-sectoral - Thermal
750	Air Pre Heater & Drying Bed in furnace	18	20	Use of waste flue gas to pre-heat the material and save fuel	Cross-sectoral - Thermal
751	Economiser in boiler/Thermic Fluid Heater	10	15	The use is Economizer is highly recommended to save fuel in thermal application by use of high heat content in flue gas to pre-heat water, which can then be used in utility or process application	Cross-sectoral - Thermal
752	Gas-fired Reheating Furnace with WHR System	15	45	A fully automated system ensures better control on temperature of metals in rolling mills, with efficient combustion owing to the use of gas as fuel. In addition, the WHR system will save substantial energy by preheating the metal to the extent possible before reheating	Cross-sectoral - Thermal
753	Waste Heat Recovery Boiler	10	15	WHR Boiler is a system which recovers various kinds of waste heat generated from the production process of steel, chemical, cement etc and convert such recovered heat into useful and effective thermal energy	Cross-sectoral - Thermal
754	Waste Heat Recovery System for Coke Drying Quenching (CDQ)	20	25	Smelting furnace generates flue gas at high temperature. This flue gas temperature is utilized to heat the atmospheric air that is utilized for coke drying	Cement - Thermal
755	Waste Heat Recovery for power generation	10	15	The WHR process is a fuel conservation measure where the heat from waste stream of gases is recovered to generate steam which in turn is used to drive turbine and generate power, instead of using conventional process of burning fuel	Cross-sectoral - Thermal
756	Recuperators	20	25	A recuperator is used to recover the waste heat, usually from the exhaust flue gas generated from furnace and use it to preheat the combustion air, thereby ensuring fuel saving and process efficiency	Cross-sectoral - Thermal
757	Recuperative burner for heat recovery for high medium temperature furnaces	25	30	A recuperative burner is the one where recuperator is the integral part of the burner, and the waste heat is recovered to pre-heat the combustion air, thereby ensuring substantial energy saving	Cross-sectoral - Thermal
758	Regenerative burners for high temperature furnaces	15	20	In regenerative temperature can go to 1000 degC, resulting huge energy savings and improved furnace productivity. Applicable only for gas fired furnaces	Cross-sectoral - Thermal
759	Adiabatic Pre-reformer	4-	10	Adiabatic pre-reforming is a well-established process in modern syngas production and implies both economic and operational benefits. The adiabatic prereformer converts hydrocarbon feedstocks by steam reforming reactions in the low temperature range, 350–550°C	Fertilizer
760	Aeroseal duct sealing technology	10	20	Air Ducts are normally insulated and on many occasions are placed above false ceilings or service floors where access is extremely difficult. Even after diagnosing the leakage points in the ducts, sealing of these leakage points from outside would mean breaking / removal of false ceilings & insulation, all of which are expensive, time consuming and practically impossible in a running facility. The latest duct sealing uses the aeroseal technology which seals ducts from the Inside	Building
761	Air-Dyeing Technology	86		Air dyeing technology uses air instead of water to apply colours into textile materials. This method will help to save water up to 95% and energy up to 86%. This method can be only applying on synthetic fibre materials.	Textile
762	Alternative Fuels & Raw Material (AFR) Utilization	5	10	Utilize Alternative Fuels such as PTA Sludge, Syngenta Waste, Pines leaves etc, Municipal Solid Waste for thermal energy generation	Cement
763	Auto loom	20	25	Retrofitting of power looms with rapier/auto looms will reduces the power consumption & production cost and also increases the rate of production	Textile
764	BEE 5 Star Rated AC	20	45	Replacement of Conventional Split/Window AC with 5-star AC having higher COP or EER /ISEER	Building
765	Black Liquor Gasification	15	20	Black Liquor Gasification is an emerging commercial technology that removes the biomass material from black liquor by gasifying them in a high temperature chamber. Black Liquor Gasification with gas turbine electric generation can produce enough electricity to make the pulping industry a net exporter of electric power	Pulp & Paper
766	Bleached Chemi Thermo Mechanical Pulp (BCTMP)	15	20	It is an advanced technology for the production of high-quality chemi-mechanical pulps from hardwoods and annual plants, which is very reliable and achieves highest pulp quality at minimum operating cost and lowest environmental impact.	Pulp & Paper
767	Boiler Conversion: Atmospheric Fluidised bed to Spouted bed	25	30	A spouted bed combustor is a heterogeneous system where combustion takes place in the presence of circulating particles. This results into enhanced HP steam generation to rated capacity, due to increased bed coil depth and additional heating surface, efficient coal combustion & stoppage of PA fan and reduced DM water intake as well, followed by enhanced power generation.	Pulp & Paper

768	Carbon Fiber Fan	15	15	Carbon Fiber Fan impellers provide next-level speed, strength, and corrosion resistance for those who routinely need to move air in challenging environments without compromising strength	Textile
769	Cascaded Condensate Recovery System	5	7	Installing cascaded condensate recovery system increases condensate recovery up to 90%	Pulp & Paper
770	CNC Machine (Special Purpose Machine)	30	35	CNC machine helps enhance productivity and lower Specific Energy consumption as one machine take care of all cutting, boring, drilling, milling, grinding operations, etc.	Machine Tool
771	CNC Bending Machine	32		As above	Machine Tool
772	CNC Gear Hobbing Machine	25		As above	Machine Tool
773	CNC Grinding Machine	23		As above	Machine Tool
774	CNC Horizontal M/c Centre	30		As above	Machine Tool
775	CNC Lathe Machine	30		As above	Machine Tool
776	CNC Milling M/C	30		As above	Machine Tool
777	CNC Turn –Mill Centre	25		As above	Machine Tool
778	CNC Turret Punch Machine	41		As above	Machine Tool
779	CNC Wire Cut Machine	35		As above	Machine Tool
780	Compressed Bio-Gas (CBG)	25	30	Compressed Bio Gas or CBG is a purified biogas (methane content more than 90%) with zero trace of carbon dioxide and hydrogen sulphide gases and compressed to maximum 250 bar and filled up in cascades (group of high pressure cylindrical vessels).	Oil & Gas Sector
781	Copper inserted collector installation in Potline	50	60	A high performance Cathode assembly for pots, using copper insert collector bar design and modified refractory lining, which will enable reduction in Specific Power consumption (SPC) and having provision for current creep in future therby increase in throughput.	Aluminium smelting
782	Direct Rolling in mini steel plants	10	15	The Direct Rolling Technology refers to converting the billet in to a rolled product without any intermediate reheating arrangement, thereby avoiding wastage of sensible heat of steel. Here, the hot billets produced from continuous casting machine is not taken into the storing yard where they will cool down to ambient temperature thereby loosing energy, but are diverted in hot condition directly to the rolling section.	Iron & Steel
783	Divided blast cupola	20	25	For replacement of conventional cold blast cupola for better melting of metals, generated less pollution and saves coal as well	Foundry
784	Drum pulpers	20	30	Drum Pulper integrates efficient pulping of stock upto 15-18% consistencies and separates gently and effectively fibers and contaminants, resulting in energy saving during these operations when performed separately in the mill. The drum pulper is suitable for writing & printing, newsprint and kraft paper production from recycled fiber.	Pulp & Paper
785	Electrical Annealing Bogie Furnaces	25	30	The energy cost in electrical annealing furnaces is low comparatively with wood fired furnaces due to more efficiency of electrical heating, less manpower cost and low energy cost. Further, this also ensures maintain uniform temperature throughout the furnace	Brass & Aluminium
786	Energy Efficient Brushless Direct Current (BLDC) Fan	35	50	BLDC fans consumes lower energy compared to conventional fans, having high reliability and life expectations as well	Building
787	Energy efficient gas fired pot furnace	30	35	It has several pots or crucibles in which different small batches of glass can be melted	Glass
788	Energy efficient impeller	1		Energy efficient Impeller 84% efficiency. The can improve the performance of Fans installed in industries	Cement
789	Energy Efficient Modulating Burner	10	15	These burners are provided with variable air/fuel ratio leading to better heat generation and drying of leaves, thereby producing good quality tea	Tea Processing
790	Energy Efficient Tank furnace	15	20	Tank Furnaces are primarily used in glass industry where continuous flow of glass is needed to feed automatic glass forming machines.	Glass
791	Energy Efficient technology for ECBC/Eco-niwas Samhita	15	25	The efficient building envelope helps prevent heat loss /gain between inside space of building and outside atmosphere, thereby ensuring more comfort, maintain appropriate building temperate and also reduce heating /cooling load, thereby saving electrical energy to a great extent.	Building
792	Energy Efficient Tray Dryer	15	20	The Tray drying is a batch process used to dry materials that are liquid or wet cake, and works well for material that requires more gentle processing or cannot be atomized in an air stream due to viscosity.	Chemical
793	Exhaust humidity measurement & control system	5-	15	To control outlet moisture of Fabric on stenter and control blower motor speed and power consumption as well	Textile
794	Fabricated Water Ring Vacuum Pumps	30	40	Fabricated water ring vacuum pumps have precise design, reduced dead weight and reduced wear and tear compared to conventional cast iron water ring vacuum pumps	Pulp & Paper
795	Falling Film Chillers	20	22	Falling Film Chillers are suitable for continuous chilling of liquids close to their freezing point. They are installed before Ice Bank Tank (IBT) to pre-chill the incoming process return water at higher temperature	Dairy
796	Fiberglass Reinforced Plastic (FRP) Fan in Withering Units	10	15	The Fiberglass Reinforced Plastic (FRP) is light in weight compared to metallic blade and can resist any weather situation and withstand corrosion, waterborne bacteria, and organisms.	Tea Processing
797	Flare gas recovery system (FRGS)	80		A flare system is required for safety & operational reasons. As such every petroleum crude oil refinery is provided with a flaring system to continuously burn the vent gases before they are safely discharged to atmosphere. A small quantity of hydrocarbon gas is kept as purge gas in the flare system which gets burnt continuously in the flare. Also on occasions during abnormal conditions in the operation, ventgases are sent to flare. Recovery of flare gases hence is direct fuel recovery.	Petroleum Refinery
798	Fluidised Bed dryer system	10	15	The Fluidised dryer system will ensure better quality tea by ensuring effective drying of tea leaves	Tea Processing
799	Forging Furnace	15	20	The energy efficient forging furnace provides effective heat for the heating and reheating of large steel ingots, blooms and cast parts, with better temperature control and reduced skin losses from outer surface of chamber	Forging
800	Gas Engine based cogeneration technology	30	40	A Cogeneration is a system having gas engine produces heat and electricity simultaneously in a single plant, powered by gaseous fuel having better combustion and less ash generation, thereby guaranteeing a better energy yield	Ceramics
801	Gas fired hot air generator system	20	25	For replacement of conventional wood fired hot air generator system with better combustion control and less emission	Chemical
802	Gas fired stenters	30	40	The thermic fluid heaters are used to provide the heating	Textile
803	Gasifier For Kilns	30	35	The Gasifier is a cheaper energy source having better yield compared to conventional fuel for combustion in kilns	Limestone
804	Gasifier for Melting And Reheating Process	20	25	Rice husk works as renewable source of energy. Hence use of rice husk reduced cost of production and waste utilization as well	Brass & Aluminium
805	Hi-Consistency Pulper	10	15	Hi-consistency pulper requires lesser amount of water compared to low consistency pulper.	Pulp & Paper
806	High Efficiency Refiner	7	20	Refiners are used for mechanical pulping (TMP refiners) and the postrefining of GWP (Ground wood Pulp) mills. Energy efficient refiners can reduce no-load power caused by motor, pumping, and friction losses.	Pulp & Paper
807	High Pressure Moulding Line in Moulding Area	50	60	High pressure moulding line has advantages such as continuous mould preparation, fast pattern changing time, fully automatic machine and it does not require mould transportation, storage and maintenance which can reduce manpower	Foundry
808	High pressure roller press for pre-grinding for a ball mill	10	15	In high-pressure roller press comminution, the feed material is exposed to very high pressure for a short time. The high pressure causes the formation of microcracks in the feed particles and generates a substantial amount of fine material. If the pressed material is fed directly to a ball mill, the power consumption required to produce finished cement will be much lower than that of a mill fed with unpressed material. This makes it possible to increase the throughput of a given size ball mill and to reduce the specific power consumption of the whole mill system.	Cement
809	High Speed Blunger	35	40	Blunger is a machine which can rapidly blunge raw material without changing non plastic raw material structure using stator rotor mechanism	Sanitaryware & Potteryware
810	High-speed carding machine	30	40	The high speed carding machine is large and each machine consumes considerable amounts of electricity. On the other hand, since productivity is high, 1/3 the number of new machines and half the total power can produce the same production capacity as ordinary carding machines	Textile
811	High-speed Ring spinning frame	10	20	This machine has an increased operating speed by 10 – 20% with similar power consumption as compared to conventional equipment. It results in higher production for same amount of energy consumption	Textile
812	Hydraulic Hammer	30	40	Hydraulic hammers are 30-40% energy efficient than pneumatic hammers. Operation of the hydraulic hammers are very smooth and noise free as compared with pneumatic hammers.	Forging

813	Hydrogen fired Vapour absorption machine	10	15	In Chlor-alkali plants, certail percentage of hydrogen released during elctrolysis remains unutilized and vented into the atmosphere. The vented hydrogen can be efficitively used in Hydrogen fired VAM to generate chilled water	Chlor-alkali
814	Ice Bank Tank (IBT)	25	30	This process of direct cooling ensures no cooling loss or addition of external heat and ensures low energy consumption at compressor due to higher suction pressure	Dairy
815	IGBT based welding machine	10	15	Welding is a critical operation in the Indian Railways in locomotive manufacturing units, coach manufacturing facilities and workshops. During welding operation, an electric arc is formed between the consumable wire electrode and the work piece where the heat generated causing the work piece to melt and join together. In thyristor based welding machine, significant part of the power consumption goes into heating the transformer and the surrounding air, resulting in significant losses. This is avoieded to a significant level in case of inverter based machines.	Railway/others
816	Induction Billet Heater	20	25	For replacement of Oil Fired Furnaces with having better control on temperature and energy saving as well	Forging
817	Installation of Pulverized Coal Injection in Blast Furnace	30	40	Pulverized coal injection (PCI) is a process which involves injecting large volumes of fine coal particles into the raceway of the blast furnace (BF). Pulverized coal is an important auxiliary fuel used in the BF ironmaking.	Iron & Steel
818	Installation of Top Recovery Turbine in Blast Furnace	10	15	TRT is basically an energy saving measure at the BF which utilizes the waste pressure energy of the BF top gas to generate electric power.	Iron & Steel
819	Latest Generation High Efficiency Clinker Cooler	15	20	It offers significant potential for electrical and thermal energy saving; The total heat loss of latest generation clinker is less than 100 Kcal /Kg Clinker compared to conventional cooler where heat loss is more that 120-150 kCal /Kg Clinker	Cement
820	Light weight bobbins	7	20	In ring frames, yarn is collected on bobbins. The heavier the bobbins are, the more energy is required for the rotation of bobbins and hence spindles. The light weight spindles are 7-20% lighter results in similar amount of energy saving	Textile
821	Light weight carbon reinforced spinning pot	18	20	Conventionally, steel reinforced spinning pots are used in synthetic fiber production plants. Steel reinforced spinning pots can be replaced with carbon reinforced spinning pots (in man-made fiber production). They are lighter by approx 20% which results in energy savings	Textile
822	Liquid Ring Compressor	10	15	This Liquid Ring Compressor will function as flare gas recovery system (FGRS) to recover the flare gas and sending it to Delayed Cooker Unit (DCU) wet gas compressor suction, which will further be directed to Fuel gas header to use it as fuel gas in refinery fired heaters. This has also avoided the requirement of dedicated FGRS.	Refineries
823	Lost foam casting technology	15	20	Lost Foam Casting is a type of evaporative pattern casting foundry technology, also called LFC, where expanded polystyrene (EPS)/ STMMA-FD is used as pattern. This technology takes advantage of the low boiling point of polymer foams to simplify the investment casting process by removing the need to melt the wax out of the mold.	Foundry
824	Louisiana State University (LSU) Port Dryer	25	40	This technology ensured uniformly dried product and can be used for different types of grains as well	Food Processing
825	Low Consistency Refining (LCR)	20	30	The refining of pulp prior to papermaking process is one of the most energy intensive and involves the alteration of cell structure of pulp fibers by imparting mechanical action. Low consistency refining can optimize the current refining process to enhance the productivity and save significant amount of energy and chemicals.	Pulp & Paper
826	Low Thermal Mass cars in Tunnel Kiln	10	13	The reduction in weight of kiln cars in Tunnel kilns provides significant amount of energy saving and improved material to car weight ratio	Glass & Ceramic
827	Magnetic compensation loop (MCL)	10	15	1.Magnetohydrodynamic (MHD) instability or waves at the metalbath interface in the aluminium reduction cell is the major hurdle for increasing energy efficiency and productivity. 2.To stabilize the interface at a smaller anode-cathode distance and higher anode current density, a magnetic compensation loop has been designed without altering the existing busbar system. 3.The effect of magnetic field compensation loops inside, outside, and on both sides of the potline circuit has been evaluated.	Aluminium Smelting
828	Medium frequency Induction Furnace	10	15	The medium frequency induction heating furnace adopts the basic principle of induction heating. It is a high-tech product replacing the traditional oxygen, oven and salt slag furnace. It can save energy, save time, fast and improve the quality of the product	Iron & Steel
829	Membrane Filter Press	30	40	For replacement of conventional Filter Press with better drying of sludge	Chemical
830	Modern Brownstock Washers (BSWs)	10	20	Efficient removal of fiber and dissolved matters from the unbleached pulp in modern BSWs primarily results in higher solids black liquor, which reduces the evaporation energy significantly. Additionally, better washing leads to less soda loss with pulp, affecting the bleach chemical consumption significantly.	Pulp & Paper
831	Modern multichannel burners	5	10	Some cement kiln systems are equipped with direct-fired solid fuel systems that use a mono-channel burner pipe to the kiln. It not only decreases the specific fuel consumption but also nitrogen oxide emissions may be reduced due to the decreased oxygen availability in the core flame. Furthermore, these modern burners allow the use of significant amounts of secondary fuels.	Cement
832	Natural Gas fired Boiler	20	30	Replacement of conventional Coal /Wood fired boiler with NG fired Boiler	Foundry
833	Nutsche Filtration and Drying Process	10	20	ANFD is used for active pharmaceutical ingredient (API) filtration. It is a combination of slurry filtration, product washing, and vacuum drying processes into a single unit.	Pharmaceutical
834	Oxyfuel Burner	30	40	To increase the oxygen content, the induction furnaces are used with oxyfuel burners along with standard burners which also reduces the content of nitrogen from the air. This improves the efficiency of combustion process	Pulp & Paper
835	Palletisation plant - Sponge Iron	10	15	The palletisation ensures agglomeration of fine iron ores which is easy to handle in blast furnace or EAF	Sponge Iron
836	Particle size Distribution (PSD) analyser	10	15	Traditionally, quality control in the cement manufacturing plant has been practised by collecting samples from different processing points at regular intervals and analyzing them in a central laboratory, either manually, or in some cases automatically. As an alternate, PSD analysis gives a complete grain size distribution of the finished cement. PSD anayzer gives a real time continous measurement, it is possible to dynamically control the speed of the seperators at the finish grinding mill and therefore optimize the fineness, maintain quality requirements and saving on the cost of energy required for grinding.	Cement
837	Plasma melting furnace	30	40	A plasma melting furnace is used to liquefy a substance using a lowtemperature plasma stream, usually produced by an electric arc heater known as a plasmatron.	Iron & Steel
838	PLC based dyeing machine	20	25	Conventional jiggers do not have a variable liquor ratio, which is why the quantities of water, pigments and chemicals cannot be adjusted properly to the varying quantities of fabric being processed. These jiggers make use of a heat exchanger, allowing the heat to be removed and applied elsewhere in the plant. Because of additional features such as a vacuum system and sprinklers, the number of passages in washing cycles can be reduced significantly. It can give	Textile
839	Pocket Ventilation System	5	15	Pocket Ventilators improve the drying rate, moisture profile and production for paper machines. The ventilators prevent sweating, corrosion and fibre build up.	Pulp & Paper
840	Pulser dyeing technique	20	30	Pulser dyeing is a major breakthrough in the yarn dyeing process, where in liquor requirement per kg of yarn is reduced to 4:1 as against conventional 10:1 requirement, and pumping requirement to maintain flow an pressure of water is reduced to 1/3rd, thereby substantially reducing energy, water, chemical requirement	Textile
841	Radiant Cooling	30	50	Radiant cooling is a hydronic system that circulates chilled water through PEX pipes embedded in the floor or ceiling, or through copper pipes embedded in ceiling panels. Water passing through these pipes first cools the floor/ceiling surface, which then cools the enclosed space through radiation.	Building
842	Radio frequency heating	20	30	Radio Frequency (RF) heating and drying systems utilize electromagnetic energy to rapidly heat and dry many types of bulk materials, as well as finished products with excellent speed and efficiency.	Food Processing
843	Rapier or Auto Loom	15	20	For replacement of conventional Power Loom thereby ensuring enhanced productivity and production, reduced energy and manpower cost	Textile
844	Recovery of BOF gas and sensible heat in Basic Oxygen Furnace	3	5	The gas produced in the BOF has a temperature of approximately 1200°C and a flow rate of approximately 50-100 Nm3/t-steel. The gas contains approximately 70-80% CO when leaving the BOF and has a heating value of approximately 8.8 MJ/Nm3 (NEDO, 2008) or 0.84GJ/t-steel	Iron & Steel

845	Rotoberatory Furnace	20	25	Implementation of proposed energy efficient rotoberatory furnace equipped with waste heat recovery system and automatic control system having efficiency more that existing furnace would save energy.	Brass
846	Screw Washer	10	15	For replacement of twin drum washing system with high efficient screw washer to save energy	Paper
847	SITRA Excel fans	15	20	South India Textile Research Association (SITRA) developed “SITRA Excel Fans" specially for ring spinning. The fan offer significant reduction in weight, is is dynamically balanced using digital balancing machine and has superior finish with special powder coating technique to provide saving of 20 per cent pneumafil power in ring spinning and 30 per cent in carding	Textile
848	Shoe Press	20	30	Shoe press technology is a papermaking procedure that uses a large concave shoe instead of one of the conventional rotating cylinders; this extends dwell time, thus improving mechanical de-watering compared to that of conventional roll presses	Pulp & Paper
849	Synthetic sandwich tapes	5	15	Used in Ring Frame machine, synthetic sandwich tapes offers good dimensional stability, reduced breakage, and results in less weak-twist yarn, and reduced fiber sticking, thus saving energy substantially	Textile
850	Thermal Energy Storage for Bulk Milk Coolers (BMC)	15	20	This system uses vapour compression cycle to form ice which is later used to provide cooling without the need of grid availability during cooling process, thereby eliminating the exposure of milk to higher temperature for a longer duration during their collections and also preserve freshness and aroma	Dairy
851	Thyristor based Rectiformers	4	6	The DC power required for electrolysis process is supplied by rectiformers in chlor-alkali plants. The rectifier consists of step down transformer and rectifier unit. The thyristor rectifiers are controlled electronically and are having higher reliablity and efficiency.	Chlor-alkali
852	Tube ice plant	10	15	Tube ice machine performs continuous Freezing and Harvesting function, thereby ensuring steady supply of high quality ice at a rate determined by the user	Ice Making
853	Ultra-High Power Electric Arc Furnace	10	15	Ultra High Power (UHPs) have become one of main tools for the steel making process since they have high productivity, low cost and high quality of products	Iron & Steel
854	Ultrasonic technology	20	30	Ultra-violet (UV) heating employs ultraviolet radiation to generate heat directly in materials, offering efficient and targeted heating for various applications such as curing, drying, and sterilization.	Textile
855	Vacuum blower	20	25	Vacuum pumps are used to maintain vacuum at various sections of Paper Machine to remove water by the flow of air. Vacuum pumps consume significant amount of power for their operation in a paper machine. Latest trend is to replace vacuum pumps with vacuum blowers. The efficiency of vacuum pumps is around 40% where as that of vacuum blowers is around 60%. The replacement with vacuum blowers will reduce the energy consumption by about 40%.	Pulp & Paper
856	VAM Chillers	30	40	The working principle of VAMs is based on absorption where a concentrated salt and water solution is used to absorb water vapour and then pressurized by a low-pressure pump to generate chilled water	Building
857	Veneering for Industrial furnaces	20	25	Reduction in surfaces heat losses from furnaces and also store the residual heat during non-firing time	Foundry
858	Vertical Agitator System for Reaction Vessel	20	25	The vertical agitation system is more versatile compared to horizontal agitation system, allowing mixing various feed material in one go, is easy to maintain and operate	Chemical
859	Vertical shaft brick kilns	15	20	It is a continuous, updraft, moving ware kiln in which the fire remains stationary while there is counter current heat exchange between air (moving upward) and bricks (moving downward)	Bricks
860	Vortex rectifier in mill	10	15	The installation of vortex rectifier for the classifier has resulted in restoring a linear flow in the ductwork & maintaining homogeneous velocity distribution thus resulting in a lower pressure drop and reduced specific energy consumption	Cement
861	Waste heat recovery in centrifugal compressor	10	20	The waste heat is recoverd from each stage of compressor owing to losses in the form radiation loss and/or condensation heat and using them in pre-heating of boiler feedwater or process application	Textile
862	Waterless Dyeing Technology	60	65	Waterless Dyeing Technology uses supercritical CO2 gas rather than water to infuse fabric with color. Special temperature- controlled pressure chambers force the carbon dioxide to act as a fluid similar to water (the supercritical fluid CO2) which causes the polymer fiber to swell allowing the dispersed dye to easily diffuse within the polymer, penetrating the fibers, and carrying the dyes into the fabric and dyeing it.	Textile (Polyester Dyeing)
863	Zero gap CO2 electrolyzer	10	15	Anode and Membrane replacement along with Zero gap conversion of Electrolyser helps in reducing ohmic losses in the electrolyte. Zerogap electrolyzers are similar to fuel cells in design because the heart of the electrolyzer consists of two electrodes pressed against a membrane. These electrolyzers are called “zero-gap” because there is no gap between the cathodes, anodes, and the electrolyte.	Chlor-alkali
864	Zig-Zag Firing	20	25	The zig-zag type firing ensure better turbulence and contact time between flame and bricks, thereby better productivity and reduced SEC	Bricks
865	Aluminium pipe for distribution of compressed air system	10	20	Aluminium pipe doesn't rust, unlike mild steel pipes, due to moisture present in compressed air and this avoid leakages and saves 10-20% of losses	Cement, Iron &
866	Fuel efficient industrial furnace burners specially for rotary kiln	5	7	Improved overall combustion efficiency of burners in rotary kilns in Alumina, chemical, lime, sponge iron plants using gas and liquid fuel	Cement, Iron & Steel
867	Plasma Technology in steel melting shop	15		The use of Plasma Technology ensures superhot electrically heated gases that are extremely efficient in melting metals	Iron & Steel
868	XPLATE on FD Fan to improve boiler combustion efficiency	3	5	XPLATE technology breaks the clusters of gaseous fluid flows inside the boiler and releases trapped molecules of Oxygen (O2) & Nitrogen (N2) in the clusters. This provides more reacting oxygen inside the boiler that enables more complete combustion	Multiple sectors
869	Oxygen Depolarized Cathodes (ODCs)	25	35	Replacement of the hydrogen evolving cathodes in the classical membrane cells by ODCs allows for reduction of the cell voltage and correspondingly the energy consumption of up to 25-35%	Chlor-Alkali Industry
870	Hisarna Ironmaking Technology	15		Hisarna is a new type of furnace in which iron ore is directly injected and liquefied in a high temperature cyclone so that it drips to the bottom of the reactor where powder coal is injected. The two react into liquid iron.	Iron & Steel
871	Extended Delignification System for Cooking of Wood	50	60	The extended delignification system recycles majority of the heat generated in the pulping process and stores the recycled heat in the form of black liquor and white liquor	Pulp & Paper
872	Vertical Roller Mill (VRM)	6-10 KWH per MT raw material		Vertical roller mill is a type of grinder used to grind materials into extremely fine powder for use in mineral dressing processes, paints, pyrotechnics, cements and ceramics. It is an energy efficient alternative for a ball mill. Typical Sector: Cement, Ceramics, limestone, etc.	Cross-sectoral - Electrical
873	Turbulators (for gas fired boilers)	Improves boiler efficiency by 2-3%		In a firetube boiler (Two- and Three-Pass), hot combustion gases pass through long, small-diameter tubes, where heat is transferred to water through the tube walls. Firetube boilers are categorized by their number of “passes,” or the number of times that the hot combustion gases travel across the boiler heat-exchange surfaces. Turbulators can be a cost-effective way to reduce the stack temperature and increase the fuel-to-steam efficiency of single-pass horizontal return tubular (HRT) brick-set boilers and older two- and three-pass oil- and natural-gas-fueled firetube boilers.	Cross-sectoral (Thermal)
874	Alternative Fuels & Raw Material (AFR) Utilization	Thermal Substitution rate of 5-10%		Utilize Alternative Fuels such as PTA Sludge, Syngenta Waste, Pines leaves etc, Municipal Solid Waste for thermal energy generation	Cement
875	Cement Calcining Process - Suspension Preheater	14.3 kg of standard coal per ton of clinker		The Suspension Preheater process improves calcining efficiency by drying and preheating the feedstock using the kiln exhaust gas (waste heat).	Cement

876	Energy efficient cyclone	1.03 KWH & 7000 KCal/MT of Clinker		Energy efficient cyclone has 97.5% efficiency and it can be installed at the last stage in Pre-heater	Cement
877	Energy efficient impeller	1.08 KWH/MT Clinker		Energy efficient Impeller 84% efficiency. The can improve the performance of Fans installed in industries	Cement
878	Flare gas recovery system (FRGS)	Upto 80% recovery of flare gas		A flare system is required for safety & operational reasons. As such every petroleum crude oil refinery is provided with a flaring system to continuously burn the vent gases before they are safely discharged to atmosphere. A small quantity of hydrocarbon gas is kept as purge gas in the flare system which gets burnt continuously in the flare. Also on occasions during abnormal conditions in the operation, ventgases are sent to flare. Recovery of flare gases hence is direct fuel recovery.	Petroleum Refinery
879	Hot Charging of Billets	100% - Complete elimination of reheating		Hot charging of billets can serve as an energy efficient alternative for this process in which the steel is melted at slightly higher temperature of 1650°C and then the molten steel is fed into CCM where the temperature of the billet (1150°C) at the output is controlled by PLC, which is directly sent to the rolling bay, thereby eliminating the need of re-heating.	Iron & Steel
880	Methane Capture technology	2025 TOE per annum		It is generated by anaerobic treatment of effluent discharged instead of using aerobic treatment. FO or equivalent fuel will be saved due to usage of captured methane. Also due to downgrading of aerobic treatment electricity will be saved.	Dairy
881	Photocells for Speed Frames	0.05 kWh/kg		In conventional machines, whenever any breakage of roving occurs at the suction, it keeps drawing the rove till the break is detected. This leads to roving losses in addition to the energy consumption for the pneumafil blower. On installation, photocell detects breakage immidiately and the machine is stopped, which eliminates the requirement of the Pneumafil blower and also roving losses	Textile
882	Replacement of steam turbine drive with high speed motor drive	15000 Ton of NG per year		Replacement of steam turbine drive with high speed motor drive will result in saving of steam and extra power generation	Refineries
883	Electric Vehicles and Charging Infrastructure	1 Liter Diesel per 15 km		Electric vehicles are power by battery and electric motor	Transportation
884	Nano composite surface treatment for condenser in power plant	13000 tons of coal/Yr		It protects from fouling, scaling, and deposition resulting improvements in power generation efficiency	Power Plant
885	Torrefaction Technology	Not applicable		Torrefaction is thermochemical conversion method to produce coal fuel (bio char) from biomass. It is carbon rich material can be easily burnt in industrial furnaces, boilers driers, etc.	Power Plant
Sl. No.	**Name of Technology**	**CO_2 Capture Percentage (%)**		**About the Technology**	**Sector**
886	Amine-based PostCombustion Capture (PCC) Technology	90		Amine-based carbon capture is a regenerative process using an amine solvent to remove CO2 from flue gas. Reversing the reaction releases pure CO2 for capture and frees up the solvent for re-use. This technology is primarily used for Carbon Capture & Storage	Refineries
887	Gasification Based Production	90		CCUS unit will undertake purification and compression of high conc. CO2 stream for further disposition. Source of CO2 stream is Outlet of the acid gas removal unit	Refineries
888	NG Based Steam Methane Reforming (SMR) for H2 production	60	65	Cryogenic separation has been considered for CO2 capture from tail gas as it ensures high purity CO2 (99.9%) with additional H2 recovery. Source of CO2 stream is tail gas	Refineries
889	Pressure Swing Adsorption (PSA) Technology	90		Pressure Swing Adsorption (PSA) Technology has been applied to separate gas mixtures, such as carbon dioxide capture in ammonia production and in hydrogen purification. PSA is highly costeffectiveness, simple to operate, high performance at ambient temperatures, high regeneration rate, and low energy intensity.	Cement
890	Water Gas Shift Reactor	50		Water gas shift has been considered to ensure maximum CO2 capture from a single point and potential H2 recovery from the BF gas. Source of CO2 stream is BF gas	Iron & Steel

Annexure II: LI+A1:F365ST OF MSME CLUSTERS

(H-High, M-Medium,L-Low)

S. No.	State	District	Location	Product	Potential for Tech Upgradation
1	Andhra Pradesh	Anantpur	Rayadurg	Readymade Garments	M
2	Andhra Pradesh	Anantpur	Chitradurg	Jeans Garments	M
3	Andhra Pradesh	Chittoor	Nagari	Powerloom	M
4	Andhra Pradesh	Chittoor	Ventimalta, Srikalahasti, Chundur	Brass Utensils	M
5	Andhra Pradesh	East Godavari	East Godavari	Rice Mills	M
6	Andhra Pradesh	East Godavari	Rajahmundry	Graphite Crucibles	M
7	Andhra Pradesh	East Godavari	East Godavari	Coir & Coir Products	M
8	Andhra Pradesh	East Godavari	Rajahmundry	Aluminium Utensils	M
9	Andhra Pradesh	East Godavari	East Godavari	Refractory Products	M
10	Andhra Pradesh	West Godavari	West Godavari	Refractory Products	M
11	Andhra Pradesh	Guntur	Guntur	Powerloom	M
12	Andhra Pradesh	Guntur	Guntur	Lime Calcination	M
13	Andhra Pradesh	Guntur	Macherla	Wooden Furniture	M
14	Andhra Pradesh	Krishna	Machilipatnam	Gold Plating & Imitation Jewellery	M
15	Andhra Pradesh	Krishna	Vijayawada	Rice Mills	H
16	Andhra Pradesh	Krishna	Chundur, Kavadiguda, Charminar,Vijayawada	Steel Furniture	H
17	Andhra Pradesh	Kurnool	Adoni	Oil Mills	M
18	Andhra Pradesh	Kurnool	Kurnool	Artificial Diamonds	M
19	Andhra Pradesh	Cuddapah	Cuddapah	Polished Slabs	M
20	Andhra Pradesh	Kurnool	Kurnool(Banaganapalle, Bethamcheria,Kolimigundla)	Polished Slabs	M
21	Andhra Pradesh	Prakasam	Markapuram	Stone Slate	M
22	Andhra Pradesh	Srikakulam	Palasa	Cashew Processing	M
23	Andhra Pradesh	Visakhapatnam	Visakhapatnam	Marine Foods	H

24	Andhra Pradesh	East Godavari	Kakinada	Marine Foods	H
25	Andhra Pradesh	West Godavari	West Godavari	Rice Mills	H
26	Arunachal Pradesh	All	All	Handlooms, handicrafts, others	M
27	Assam	Guwahati, Jorhat, All	Guwahati, Jorhat, All	Tea, Handlooms, handicrafts, others	M
28	Bihar	Begusarai	Barauni	Engineering & Fabrication	H
29	Bihar	Muzzafarpur	Muzzafarpur	Food Products	H
30	Bihar	Patna	Patna	Brass and German Silver Utensils	M
31	Chhattisgarh	Durg	Durg	Steel Re-rolling	M
32	Chhattisgarh	Rajnandgaon	Rajnandgaon	Steel Re-rolling	M
33	Chhattisgarh	Raipur	Raipur	Steel Re-rolling	M
34	Chhattisgarh	Durg	Durg	Castings & Metal Fabrication	H
35	Chhattisgarh	Raipur	Raipur	Castings & Metal Fabrication	H
36	Delhi	North West Delhi	Wazirpur, Badli	Stainless Steel Utensils & Cutlery	M
37	Delhi	South & West Delhi	Okhla, Mayapuri	Chemicals	H
38	Delhi	West & South	Naraina & Okhla	Electrical Engineering Equipment	M
39	Delhi	West & South	Naraina & Okhla	Electronic Goods	M
40	Delhi	North Delhi	Lawrence Road	Food Products	H
41	Delhi	South Delhi	Okhla, Wazirpur Flatted Factories Complex	Leather Products	H
42	Delhi	South, West Delhi	Okhla,Mayapuri, Anand Parbat	Mechanical Engineering Equipment	M
43	Delhi	West,South, East Delhi	Naraina,Okhla, Patparganj	Packaging Material	H
44	Delhi	West & South	Naraina & Okhla	Paper Products	M
45	Delhi	West & South	Naraina Udyog Nagar & Okhla	Plastic Products	M
46	Delhi	West, South, North West	Naraina,Okhla,Shivaji Marg,Najafgarh Road	Rubber Products	M
47	Delhi	North East Delhi	Shahadara & Vishwasnagar	Wire Drawing	M
48	Delhi	West & North West	Mayapuri & Wazirpur	Metal Fabrication	M
49	Delhi	West & North East	Kirtinagar & Tilak Nagar	Furniture	M
50	Delhi	North West Delhi	Wazirpur	Electro Plating	M
51	Delhi	South,West,North West & North West	Okhla, Mayapuri,Naraina, Wazirpur Badli & G.T. Karnal Road	Auto Components	H

52	Delhi	North East Delhi, East Delhi & South	Shahdara,Gandhinagar, Okhla & Maidangari	Hosiery	M
53	Delhi	South & North East	Okhla & Shahdara	Readymade Garments	M
54	Delhi	South Delhi	Okhla	Sanitary Fittings	M
55	Gujarat	Ahmedabad	Ahmedabad	Pharmaceuticals	M
56	Gujarat	Ahmedabad	Ahmedabad	Dyes & Intermediates	H
57	Gujarat	Ahmedabad	Ahmedabad	Moulded Plastic Products	M
58	Gujarat	Ahmedabad	Ahmedabad	Readymade Garments	M
59	Gujarat	Ahmedabad	Ahmedabad	Textile Machinery Parts	H
60	Gujarat	Ahmedabad	Ahmedabad	Diamond Processing	H
61	Gujarat	Ahmedabad	Dhanduka	Diamond Processing	H
62	Gujarat	Ahmedabad	Ahmedabad	Machine Tools	M
63	Gujarat	Ahmedabad	Ahmedabad	Castings & Forging	H
64	Gujarat	Ahmedabad	Ahmedabad	Steel Utensils	M
65	Gujarat	Ahmedabad	Ahmedabad	Wood Product & Furniture	M
66	Gujarat	Ahmedabad	Ahmedabad	Paper Products	M
67	Gujarat	Ahmedabad	Ahmedabad	Leather Footware	H
68	Gujarat	Ahmedabad	Ahmedabad	Chemicals, Washing Powder & Soap	H
69	Gujarat	Ahmedabad	Ahmedabad	Marble Slabs	M
70	Gujarat	Ahmedabad	Ahmedabad	Power Driven Pumps	H
71	Gujarat	Ahmedabad	Ahmedabad	Electronic Goods	H
72	Gujarat	Ahmedabad	Ahmedabad	Auto Parts	H
73	Gujarat	Amreli	Savarkundla	Weights & Measures	M
74	Gujarat	Amrelli	Amrelli	Oil Mills Machinery	M
75	Gujarat	Juna Garh	Juna Garh	Oil Mills Machinery	M
76	Gujarat	Rajkot	Rajkot	Oil Mills Machinery	M
77	Gujarat	Bhavnagar	Alang	Ship Breaking	M
78	Gujarat	Bhavnagar	Bhavnagar	Steel Re-rolling	M
79	Gujarat	Bhavnagar	Bhavnagar	Machine Tools	M
80	Gujarat	Bhavnagar	Bhavnagar	Plastic Processing	M
81	Gujarat	Bhavnagar	Bhavnagar	Diamond Processing	H
82	Gujarat	Gandhinagar	Kalol	Powerloom	M
83	Gujarat	Jamnagar	Jamnagar	Brass Parts	M
84	Gujarat	Jamnagar	Jamnagar	Wood Product & Furniture	M
85	Gujarat	Mahesana	Vijapur	Cotton Cloth Weaving	M

86	Gujarat	Rajkot	Dhoraji, Gondal, Rajkot	Oil Mills	M
87	Gujarat	Rajkot	Jetpur	Textile Printing	M
88	Gujarat	Rajkot	Morvi & Wankaner	Flooring Tiles(Clay)	M
89	Gujarat	Rajkot	Morvi	Wall Clocks	M
90	Gujarat	Rajkot	Rajkot	Diesel Engines	H
91	Gujarat	Rajkot	Rajkot	Electric Motors	H
92	Gujarat	Rajkot	Rajkot	Castings & Forging	H
93	Gujarat	Rajkot	Rajkot	Machine Tools, Foundry and all other sub-sectors	M
94	Gujarat	Rajkot	Rajkot	Diamond Processing	H
95	Gujarat	Surat	Surat, Choryasi	Diamond Processing	H
96	Gujarat	Surat	Surat	Powerloom	M
97	Gujarat	Surat	Surat	Wood Product & Furniture	M
98	Gujarat	Surat	Surat	Textile Machinery	H
99	Gujarat	Surendranagar	Surendranagar & Thangadh	Ceramics	M
100	Gujarat	Surendranagar	Chotila	Sanitary Fittings	M
101	Gujarat	Vadodara	Vadodara	Pharmaceuticals- Bulk Drugs	H
102	Gujarat	Vadodara	Vadodara	Plastic Processing	M
103	Gujarat	Vadodara	Vadodara	Wood Product & Furniture	M
104	Gujarat	Valsad	Pardi	Dyes & Intermediates	H
105	Gujarat	Valsad	Vapi	Chemicals	M
106	Gujarat	Bharuch	Ankleshwar	Chemicals	M
107	Gujarat	Valsad	Vapi	Pharmaceuticals- Bulk Drugs	H
108	Gujarat	Bharuch	Ankleshwar	Pharmaceuticals- Bulk Drugs	H
109	Goa	South Goa	Margao	Pharmaceutical	H
110	Haryana	Ambala	Ambala	Mixies & Grinders	M
111	Haryana	Ambala	Ambala	Scientific Instruments	H
112	Haryana	Bhiwani	Bhiwani	Powerloom	L
113	Haryana	Bhiwani	Bhiwani	Stone Crushing	M
114	Haryana	Faridabad	Faridabad	Auto Components	H
115	Haryana	Faridabad	Faridabad	Engineering Cluster	H
116	Haryana	Faridabad	Faridabad	Stone Crushing	L
117	Haryana	Gurgaon	Gurgaon	Auto Components	H
118	Haryana	Gurgaon	Gurgaon	Electronic Goods	H

119	Haryana	Gurgaon	Gurgaon	Electrical Engineering Equipment	M
120	Haryana	Gurgaon	Gurgaon	Readymade Garments	H
121	Haryana	Gurgaon	Gurgaon	Mechanical Engineering Equipment	M
122	Haryana	Kaithal	Kaithal	Rice Mills	H
123	Haryana	Karnal	Karnal	Agricultural Implements	M
124	Haryana	Karnal	Karnal	Rice Mills	H
125	Haryana	Kurukshetra	Kurukshetra	Rice Mills	H
126	Haryana	Panipat	Panipat	Rice Mills	H
127	Haryana	Panchkula	Pinjore	Engineering Equipment	M
128	Haryana	Panchkula	Panchkula	Stone Crushing	M
129	Haryana	Panipat	Panipat	Powerloom	H
130	Haryana	Panipat	Panipat	Shoddy Yarn	H
131	Haryana	Panipat	Samalkha	Foundry	M
132	Haryana	Panipat	Panipat	Cotton Spinning	H
133	Haryana	Rohtak	Rohtak	Nuts/ Bolts	M
134	Haryana	Yamuna Nagar	Yamuna Nagar	Plywood/Board/Blackboard	H
135	Haryana	Yamunanagar	Jagadhri	Utensils, Stainless steel	M
136	Himachal Pradesh	Kullu	Kullu	Food Processing	M
137	Himachal Pradesh	Sirmaur	Sirmaur	Food Processing	M
138	Himachal Pradesh	Kangra	Damtal	Stone Crushing	M
139	Himachal Pradesh	Solan	Parwanoo, Solan	Engineering Equipment, Pharma	M
140	Jammu & Kashmir	Anantnag	Anantnag	Cricket Bat	M
141	Jammu & Kashmir	Jammu	Jammu	Steel Re-rolling	M
142	Jammu & Kashmir	Jammu	Jammu	Oil Mills	M
143	Jammu & Kashmir	Kathua	Kathua	Oil Mills	M
144	Jammu & Kashmir	Jammu	Jammu	Rice Mills	M
145	Jammu & Kashmir	Kathua	Kathua	Rice Mills	M
146	Jammu & Kashmir	Srinagar	Srinagar	Timber Joinery/ Furniture	M
147	Jharkhand	Sarikela-Kharsawan	Adityapur	Auto Components	M
148	Jharkhand	East Singhbhum	Jamshedpur	Engineering & Fabrication	H
149	Jharkhand	Bokaro	Bokaro	Engineering & Fabrication	H

150	Jharkhand	Dhanbad	Dhanbad, Chirkunda	Refractory, Coke Oven and others	H
151	Karnataka	Bangalore	Bangalore	Machine Tools	H
152	Karnataka	Bangalore	Bangalore	Powerloom	M
153	Karnataka	Bangalore	Bangalore	Electronic Goods	H
154	Karnataka	Bangalore	Bangalore	Readymade Garments	M
155	Karnataka	Bangalore	Bangalore	Light Engineering	M
156	Karnataka	Bangalore	Bangalore	Leather Products	H
157	Karnataka	Belgaum	Belgaum	Foundry	M
158	Karnataka	Belgaum	Belgaum	Powerloom	M
159	Karnataka	Bellary	Bellary	Jeans Garments	M
160	Karnataka	Bijapur	Bijapur	Oil Mills	M
161	Karnataka	Dharwad	Hubli, Dharwad	Agriculture Implements and Tractor Trailer	H
162	Karnataka	Gadag	Gadag Betgeri	Powerloom	M
163	Karnataka	Gulburga	Gulburga Gadagh belt	Dal Mills	M
164	Karnataka	Hassan	Arasikara	Coir & Coir Products	M
165	Karnataka	Mysore	Mysore	Food Products	M
166	Karnataka	Mysore	Mysore	Silk	M
167	Karnataka	Raichur	Raichur	Leather Products	M
168	Karnataka	Shimoga	Shimoga	Rice Mills	M
169	Karnataka	Shimoga	Shimoga	Foundry	H
170	Karnataka	Dakshina Kannada	Mangalore	Food Products	M
171	Kerala	Alappuzha	Alappuzha	Coir & Coir Products	L
172	Kerala	Ernakulam	Ernakulam	Rubber Products	H
173	Kerala	Ernakulam	Ernakulam	Powerloom	M
174	Kerala	Ernakulam	Kochi	Sea Food Processing	H
175	Kerala	Kannur	Kannur	Powerloom	M
176	Kerala	Kollam	Kollam	Coir & Coir Products	H
177	Kerala	Kottayam	Kottayam	Rubber Products	H
178	Kerala	Mallappuram	Mallappuram	Powerloom	M
179	Kerala	Palakkad	Palakkad	Powerloom	M
180	Kerala	Palakkad	Faizlure	Powerloom	M
181	Maharashtra	Ahmednagar	Ahmednagar	Auto Components	H
182	Maharashtra	Akola	Akola	Oil Mills (Cotton seed)	M
183	Maharashtra	Akola	Akola	Dal Mills	M

184	Maharashtra	Aurangabad	Aurangabad	Auto Components	M
185	Maharashtra	Aurangabad	Aurangabad	Pharmaceuticals- Bulk Drugs	L
186	Maharashtra	Bhandara	Bhandara	Rice Mills	M
187	Maharashtra	Chandrapur	Chandrapur	Roofing Tiles	H
188	Maharashtra	Chandrapur	Chandrapur	Rice Mills	M
189	Maharashtra	Dhule	Dhule	Chilly Powder	L
190	Maharashtra	Gadchiroli	Gadchiroli	Castings & Forging	M
191	Maharashtra	Gadchiroli	Gadchiroli	Rice Mills	M
192	Maharashtra	Gondia	Gondiya	Rice Mills	M
193	Maharashtra	Jalgaon	Jalgaon	Dal Mills	M
194	Maharashtra	Jalgaon	Jalgaon	Agriculture Implements	H
195	Maharashtra	Jalna	Jalna	Engineering Equipment	M
196	Maharashtra	Kolhapur	Kolhapur	Diesel Engines	M
197	Maharashtra	Kolhapur	Kolhapur	Foundry	M
198	Maharashtra	Kolhapur	Ichalkaranji	Powerloom	M
199	Maharashtra	Mumbai	Mumbai	Electronic Goods	H
200	Maharashtra	Mumbai	Mumbai	Pharmaceutical - Basic Drugs	M
201	Maharashtra	Mumbai	Mumbai	Toys (Plastic)	M
202	Maharashtra	Mumbai	Mumbai	Readymade Garments	M
203	Maharashtra	Mumbai	Mumbai	Hosiery	M
204	Maharashtra	Mumbai	Mumbai	Machine Tools	M
205	Maharashtra	Mumbai	Mumbai	Engineering Equipment	M
206	Maharashtra	Mumbai	Mumbai	Chemicals	H
207	Maharashtra	Mumbai	Mumbai	Packaging Material	H
208	Maharashtra	Mumbai	Mumbai	Handtools	M
209	Maharashtra	Mumbai	Mumbai	Plastic Products	M
210	Maharashtra	Nagpur	Nagpur	Powerloom	M
211	Maharashtra	Nagpur	Nagpur	Engineering & Fabrication	H
212	Maharashtra	Nagpur	Nagpur	Steel Furniture	H
213	Maharashtra	Nagpur	Nagpur(Butibori)	Readymade Garments	M
214	Maharashtra	Nagpur	Nagpur	Handtools	M
215	Maharashtra	Nagpur	Nagpur	Food Processing	M
216	Maharashtra	Nanded	Nanded	Dal Mills	M
217	Maharashtra	Nashik	Malegaon	Powerloom	H
218	Maharashtra	Nashik	Nashik	Steel Furniture	H

219	Maharashtra	Pune	Pune	Auto Components	M
220	Maharashtra	Pune	Pune	Electronic Goods	H
221	Maharashtra	Pune	Pune	Food Products	H
222	Maharashtra	Pune	Pune	Readymade Garments	M
223	Maharashtra	Pune	Pune	Pharmaceuticals- Bulk Drugs	M
224	Maharashtra	Pune	Pune	Fibre Glass	M
225	Maharashtra	Ratnagiri	Ratnagiri	Canned & Processed Fish	H
226	Maharashtra	Sangli	Sangli	M S Rods	M
227	Maharashtra	Sangli	Madhavanagar	Powerloom	M
228	Maharashtra	Satara	Satara	Leather Tanning	M
229	Maharashtra	Sholapur	Sholapur	Powerloom	M
230	Maharashtra	Sindhudurg	Sindhudurg	Cashew Processing	M
231	Maharashtra	Sindhudurg	Sindhudurg	Copper Coated Wires	M
232	Maharashtra	Thane	Bhiwandi	Powerloom	M
233	Maharashtra	Thane	Kalyan	Confectionery	H
234	Maharashtra	Thane	Vashind	Chemicals	M
235	Maharashtra	Thane	Tarapur, Thane-Belapur	Pharmaceuticals- Bulk Drugs	M
236	Maharashtra	Thane	Thane	Sea Food	H
237	Maharashtra	Wardha	Wardha	Solvent Oil	M
238	Maharashtra	Yavatmal	Yavatmal	Dal Mills	M
239	Madhya Pradesh	Bhopal	Bhopal	Engineering Equipment	M
240	Madhya Pradesh	Dewas	Dewas	Electrical Goods	M
241	Madhya Pradesh	East Nimar	Burhanpur	Powerloom	M
242	Madhya Pradesh	Indore	Indore	Pharmaceuticals-Bulk Drugs	M
243	Madhya Pradesh	Indore	Indore	Readymade Garments	M
244	Madhya Pradesh	Indore	Indore	Foundry, Dal mills, Food Processing, chemicals	H
245	Madhya Pradesh	Indore	Pithampur	Auto Components	M
246	Madhya Pradesh	Jabalpur	Jabalpur	Readymade Garments	M
247	Madhya Pradesh	Jabalpur	Jabalpur	Powerloom	M
248	Madhya Pradesh	Ujjain	Ujjain	Powerloom	M
249	Manipur	Imphal, All	Imphal, Ukhrul, All	Food processing, Jewellery, Garments, others	M

250	Meghalaya	Shillong, All	Shillong, All	Metalware, Leather, Traditional embroidery, others	M
251	Nagaland	Dimapur, All	Dimapur, All	Food processing, Metalware, others	M
252	Orissa	Balangir	Balangir	Rice Mills	H
253	Orissa	Balasore, Bargarh	Balasore, Bargarh	Rice Mills	H
254	Orissa	Balasore	Balasore	Powerloom, Plastics	M
255	Orissa	Bhuvaneshwar	Balakati	Brass	H
256	Orissa	Cuttack	Cuttack	Rice Mills	H
257	Orissa	Cuttack	Cuttack	Chemicals & Pharmaceuticals	M
258	Orissa	Cuttack	Cuttack(Jagatpur)	Engineering & Fabrication	H
259	Orissa	Cuttack	Cuttack	Spices	M
260	Orissa	Dhenkanal	Dhenkanal	Powerloom	M
261	Orissa	Ganjam	Ganjam	Powerloom	M
262	Orissa	Ganjam	Ganjam	Rice Mills	H
263	Orissa	Koraput	Koraput	Rice Mills	H
264	Orissa	Puri	Puri	Rice Mills	H
265	Orissa	Sambhalpur	Sambhalpur	Rice Mills	H
266	Orissa	Sundergarh	Sundergarh	Sponge Iron	H
267	Punjab	Amritsar	Amritsar	Rice Mills	H
268	Punjab	Amritsar	Amritsar	Shoddy Yarn	L
269	Punjab	Amritsar	Amritsar	Powerloom	M
270	Punjab	Fatehgarh Sahib	Mandi Govindgarh	Steel Re-rolling	H
271	Punjab	Gurdaspur	Batala	Machine Tools	M
272	Punjab	Gurdaspur	Batala,Gurdaspur	Rice Mills	M
273	Punjab	Gurdaspur	Batala	Castings & Forging	H
274	Punjab	Jalandhar	Jalandhar	Sports Goods	H
275	Punjab	Jalandhar	Jalandhar	Forging, Agricultural Implements	H
276	Punjab	Jalandhar	Jalandhar	Handtools	H
277	Punjab	Jalandhar	Jalandhar	Rubber Goods	M
278	Punjab	Jalandhar	Kartarpur	Wooden Furniture	M
279	Punjab	Jalandhar	Jalandhar	Leather Tanning	H
280	Punjab	Jalandhar	Jalandhar	Leather Footwear	H
281	Punjab	Jalandhar	Jalandhar	Surgical Instruments	H
282	Punjab	Kapurthala	Kapurthala	Rice Mills	M

283	Punjab	Kapurthala	Phagwara	Diesel Engines	H
284	Punjab	Ludhiana	Ludhiana	Auto Components	H
285	Punjab	Ludhiana	Ludhiana	Bicycle Parts	H
286	Punjab	Ludhiana	Ludhiana	Hosiery	H
287	Punjab	Ludhiana	Ludhiana	Sewing M/C Components	H
288	Punjab	Ludhiana	Ludhiana	Industrial Fastners	M
289	Punjab	Ludhiana	Ludhiana	Handtools	H
290	Punjab	Ludhiana	Ludhiana	Machine Tools	H
291	Punjab	Ludhiana	Ludhiana	Forging	H
292	Punjab	Ludhiana	Ludhiana	Electroplating	H
293	Punjab	Moga	Moga	Wheat Threshers	M
294	Punjab	Patiala	Patiala	Agricultural Implements	M
295	Punjab	Patiala	Patiala	Cutting Tools	M
296	Punjab	Sangrur	Sangrur	Rice Mills	M
297	Rajasthan	Alwar	Alwar	Oil Mills	M
298	Rajasthan	S. Madhopur	S. Madhopur	Oil Mills,	M
299	Rajasthan	Bharatpur	Bharatpur	Oil Mills	M
300	Rajasthan	Ajmer	Kishangarh	Marbe Slabs	M
301	Rajasthan	Ajmer	Kishangarh	Powerloom	M
302	Rajasthan	Alwar	Alwar	Chemicals	H
303	Rajasthan	Bikaner	Bikaner	Papad Mangodi, Namkin	L
304	Rajasthan	Bikaner	Bikaner	Plaster of Paris	M
305	Rajasthan	Dausa	Mahuwa	Sand Stone	M
306	Rajasthan	Gaganagar	Ganganagar	Food Processing	H
307	Rajasthan	Jaipur	Jaipur	Gems & Jewellery	M
308	Rajasthan	Jaipur	Jaipur	Ball Bearing	M
309	Rajasthan	Jaipur	Jaipur	Electrical Engineering Equipment	M
310	Rajasthan	Jaipur	Jaipur	Food Products	H
311	Rajasthan	Jaipur	Jaipur	Garments	M
312	Rajasthan	Jaipur	Jaipur	Limestone	M
313	Rajasthan	Jaipur	Jaipur	Mechanical Engineering Equipment	M
314	Rajasthan	Jhalawar	Jhalawar	Marble Slabs	M
315	Rajasthan	Jodhpur	Jodhpur	Limestone	M
316	Rajasthan	Nagaur	Nagaur	Handtools	M
317	Rajasthan	Pali	Pali	Textiles	M

318	Rajasthan	Sikar	Shikhawati	Wooden Furniture	M
319	Rajasthan	Sirohi	Sirohi	Marble Slabs	M
320	Rajasthan	Udaipur	Udaipur	Marble Slabs	M
321	Sikkim	Gangtok, All	Gangtok, All	Metalware, woodwork and others	M
322	Tamil Nadu	Chennai	Chennai	Auto components	M
323	Tamil Nadu	Chennai	Chennai	Leather Products	M
324	Tamil Nadu	Chennai	Chennai	Electroplating	M
325	Tamil Nadu	Coimbatore	Coimbatore	Diesel Engines	M
326	Tamil Nadu	Coimbatore	Coimbatore	Agricultural Implements	M
327	Tamil Nadu	Coimbatore	Tirupur	Hosiery	M
328	Tamil Nadu	Coimbatore	Coimbatore	Machine Tools	M
329	Tamil Nadu	Coimbatore	Coimbatore	Castings & Forging	M
330	Tamil Nadu	Coimbatore	Coimbatore,Palladam,Kannam Palayam	Powerloom	M
331	Tamil Nadu	Coimbatore	Coimbatore	Wet Grinding Machines	M
332	Tamil Nadu	Cuddalore	Virudhachalam	ceramics and refractory	H
333	Tamil Nadu	Erode	Surampatti	Powerloom	M
334	Tamil Nadu	Karur	Karur	Powerloom	M
335	Tamil Nadu	Madurai	Madurai	Readymade Garments	M
336	Tamil Nadu	Madurai	Madurai	Rice Mills	M
337	Tamil Nadu	Madurai	Madurai	Dal Mills	M
338	Tamil Nadu	Namakkal	Thiruchengode	Rigs	M
339	Tamil Nadu	Salem	Salem	Readymade Garments	M
340	Tamil Nadu	Salem	Salem	Starch & Sago	M
341	Tamil Nadu	Thanjavur	Thanjavur	Rice Mills	M
342	Tamil Nadu	Tirupur	Tirupur	Textiles	M
343	Tamil Nadu	Tiruchirappalli	Tiruchirappalli	Engineering Equipment	M
344	Tamil Nadu	Tiruchirappalli	Tiruchirapalli (Rural)	Artificial Diamonds	M
345	Tamil Nadu	Tuticorin	Kovilpathi	Safety Matches	M
346	Tamil Nadu	Vellore	Ambur,Vaniyambadi, Pallar Valley	Leather Tanning	M
347	Tamil Nadu	Virdhunagar	Rajapalayam	Cotton Mills(Gauge Cloth)	M
348	Tamil Nadu	Virudhunagar	Virudhunagar	Tin Container	M
349	Tamil Nadu	Virudhunagar	Sivakasi	Printing	M
350	Tamil Nadu	Virudhunagar	Sivakasi	Safety Matches & Fire Works	M
351	Tamil Nadu	Virudhunagar	Srivilliputhur	Toilet Soap	M

352	Telangana	Hyderabad	Hyderabad	Ceilling Fan	H
353	Telangana	Hyderabad	Hyderabad	Electronic Goods	M
354	Telangana	Hyderabad	Hyderabad	Pharmaceuticals- Bulk Drugs	M
355	Telangana	Hyderabad	Musheerabad	Leather Tanning	H
356	Telangana	Hyderabad	Hyderabad	Hand Pumpsets	H
357	Telangana	Hyderabad	Hyderabad	Foundry	M
358	Telangana	Karimnagar	Sirsilla	Powerloom	M
359	Telangana	Ranga Reddy	Balanagar, Jeedimetla & Kukatpally	Machine Tools	M
360	Telangana	Warangal	Warangal	Powerloom, Rice Mills	H
361	Telangana	Warangal	Warangal	Brassware	H
362	Tripura	Agartala, All	Agartala, All	Rice mills, bricks, others	M
363	Uttar Pradesh	Agra	Agra	Foundry	M
364	Uttar Pradesh	Agra	Agra	Leather Footwear	M
365	Uttar Pradesh	Agra	Agra	Mechanical Engineering Equipment	M
366	Uttar Pradesh	Aligarh	Aligarh	Brass & Gunmetal Statues	M
367	Uttar Pradesh	Aligarh	Aligarh	Locks	M
368	Uttar Pradesh	Aligarh	Aligarh	Building Hardware	L
369	Uttar Pradesh	Allahabad	Mau	Powerloom	H
370	Uttar Pradesh	Allahabad	Mau Aima	Leather Products	M
371	Uttar Pradesh	Banda	Banda	Powerloom	M
372	Uttar Pradesh	Bulandshahr	Khurja	Ceramics	M
373	Uttar Pradesh	Firozabad	Firozabad	Glass Products	L
374	Uttar Pradesh	Gautam Buddha Nagar	Noida	Electronic Goods	M
375	Uttar Pradesh	Gautam Buddha Nagar	Noida	Toys	H
376	Uttar Pradesh	Gautam Buddha Nagar	Noida	Chemicals	H
377	Uttar Pradesh	Gautam Buddha Nagar	Noida	Electrical Engineering Equipment	M
378	Uttar Pradesh	Gautam Buddha Nagar	Noida	Garments	M
379	Uttar Pradesh	Gautam Buddha Nagar	Noida	Mechanical Engineering Equipment	M
380	Uttar Pradesh	Gautam Buddha Nagar	Noida	Packaging Material	H

381	Uttar Pradesh	Gautam Buddha Nagar	Noida	Plastic Products	M
382	Uttar Pradesh	Ghaziabad	Ghaziabad	Chemicals	M
383	Uttar Pradesh	Ghaziabad	Ghaziabad	Mechanical Engineering Equipment	M
384	Uttar Pradesh	Ghaziabad	Ghaziabad	Packaging Material	H
385	Uttar Pradesh	Gorakhpur	Gorakhpur	Powerloom	M
386	Uttar Pradesh	Hathras	Hathras	Sheetwork (Globe, Lamp)	M
387	Uttar Pradesh	Jhansi	Jhansi	Powerloom	H
388	Uttar Pradesh	Kannauj	Kannauj	Perfumery & Essential Oils	L
389	Uttar Pradesh	Kanpur	Kanpur	Saddlery	M
390	Uttar Pradesh	Kanpur	Kanpur	Cotton Hosiery	M
391	Uttar Pradesh	Kanpur	Kanpur	Leather Products	M
392	Uttar Pradesh	Meerut	Meerut	Sports Goods	M
393	Uttar Pradesh	Meerut	Meerut	Scissors	M
394	Uttar Pradesh	Moradabad	Moradabad	Brassware	M
395	Uttar Pradesh	Muzaffarnagar	Muzaffarnagar	Rice Mills, Paper	M
396	Uttar Pradesh	Saharanpur	Saharanpur	Rice Mills, Foundry	M
397	Uttar Pradesh	Saharanpur	Saharanpur	Woodwork	H
398	Uttar Pradesh	Varanasi	Varanasi	Sheetwork (Globe, Lamp)	M
399	Uttar Pradesh	Varanasi	Varanasi	Powerloom	M
400	Uttar Pradesh	Varanasi	Varanasi	Agricultural Implements	H
401	Uttar Pradesh	Varanasi	Varanasi	Electric Fan	M
402	Uttaranchal	Dehradun	Dehradun	Pharma, Miniature Vacuum Bulb	M
403	Uttaranchal	Haridwar	Roorkee	Survey Instruments	M
404	Uttaranchal	Udham Singh Nagar	Rudrapur	Rice Mills	M
405	West Bengal	Bankura	Barjora	Fishing Hooks(Information awaited)	M
406	West Bengal	HMC & Bally Municipal area	Howrah	Foundry	M

407	West Bengal	Howrah	Bargachia,Mansinghapur, Hantal, Sahadatpur & Jagatballavpur	Locks	M
408	West Bengal	Howrah	HMC & Bally Municipal area Sevok Rd	Steel Re-rolling	M
409	West Bengal	Howrah	Domjur	Artificial & Real Jewellery	M
410	West Bengal	Cooch Bihar	Cooch Bihar-I, Tufanganj, Mathabangha, Mekhliganj	Sitalpati/ Furniture	M
411	West Bengal	Kolkata	Wellington, Khanpur	Electric Fans	M
412	West Bengal	Kolkata	Sovabazar, Cossipur	Hosiery	M
413	West Bengal	Kolkata	Metiaburuj	Readymade Garments	M
414	West Bengal	Kolkata	Tiljala, Topsia,Phoolbagan	Leather Goods	M
415	West Bengal	Kolkata	Daspara(Ultadanga), Ahiritola	Dal Mills	H
416	West Bengal	Kolkata	Taltala, Lenin, Sarani	Mechanical Engineering Equipment	M
417	West Bengal	Kolkata	Bowbazar, Kalighat	Wood Products	M
418	West Bengal	Nadia	Matiary,Dharmada,Nabadwip	Bell/Metal Utensils	M
419	West Bengal	Nadia	Ranaghat	Powerloom	M
420	West Bengal	Purulia	Jhalda Proper, Purulia,Begunkodar & Tanasi	Handtools	H
421	West Bengal	South 24 Parganas	Kalyanpur,Purandarpur, Dhopagachi	Surgical Instruments	M