BEE's List of Energy Efficient Technologies for Financing (as on 19th September 2022)

Sl. No.	Name of Technology	About technology	Potential Savings(%)	Sector	Average Investment (Rs. Lakhs)	Annual Monetary Saving (Rs. Lakhs)	Estimated Payback Period (Months)	Equipment Capacity	Vetted By	Source
Electrical										
1	Automation and Control System	Automation and control system provides effective monitoring of process and utility for better resource utilization and loss reduction	5-15 %	Cross-sectoral - Electrical	20-25	25-30	8-10	Not Applicable	Geetesh Goyal	BEE-Sidhiee; EESL-MSME
1.1	Automation of Withering Troughs	The automation of withering trough will ensure achieve optimum temperature and ensure effective control thereafter for proper withering of tea leaves	10-15%	Cross-sectoral - Electrical	15-20	6-8	30-36	8 nos. of Enclosed Trough & 96 HP Motor	Geetesh Goyal	EESL-MSME
1.2	Combustion Control System for Boiler	Combustion control system in boiler provides effective monitoring of flue gas parameters, their temperature and pressure for complete combustion	15-20%	Cross-sectoral - Electrical	9-10	4-5	25-30	12 TPH	Ranjeet Sinha	BEE-Sidhiee; SAMEEEKSHA
1.3	Energy Management System	The EMS is effective in managing energy flow and consumption, reduce wastage and do necessary rectification in case of any fault	15-30%	Cross-sectoral - Electrical	7-10	3-4	24-36	For 300 smart energy meters	Sunil Sharma	Sameeeksha
2	Electrical Servo Drives	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	20-30%	Cross-sectoral - Electrical	10-15	10-20	10-12	200 KVA	Ranjeet Sinha	Detailed Energy Audits (DEA)
3	Energy Efficient Pumps - 5 Star Rating Pumps	EE pumps have optimum impeller design, thereby leading to optimum discharge flow and pressure and energy consumption	15-30%	Cross-sectoral - Electrical	0.7-4.5	0.25 - 5	20-25	10 - 20 HP	Sunil Sharma	Detailed Energy Audits (DEA)
4	Energy Efficient Screw Compressor	The screw compressors are the most efficient one to generate compressed air as well as less heat compared to normal air compressor	25-40%	Cross-sectoral - Electrical	2.5-6.5	1.5 - 7.5	20-25	15 - 150 HP	KK Sinha	Sameeeksha
5	Energy Efficient Turbo Blower	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	30-45%	Cross-sectoral - Electrical	30-40	20-25	18-24	20,000 and 50,000 rpm	KK Sinha	DEEP-EESL
6	Gasifier for Electrical Application	Gasifier gasifies coal or biomass to produce gas that can be used for power generation in gas genset or gas turbine	15-25%	Cross-sectoral - Electrical	20-25	9-12	20-24	50 KW	Sunil Sharma	Sameeeksha
7	Harmonic filter	The harmonic filter is essential in ensuring the power quality and help prevent and fault in electronic component	3-8%	Cross-sectoral - Electrical	8-10	5-7	15-18	3rd & 5th Harmonic Filter	Vivek Agrawal	Detailed Energy Audits (DEA)
8	IGBT based Induction furnace	An induction furnace is a clean, energy-efficient furnace which provides well-controlled melting process, compared to conventional means of metal melting	20-30%	Cross-sectoral - Electrical	20-25	15-20	15-18	750 KG	Vivek Agrawal	Detailed Energy Audits (DEA)
9	Light emitting diode (LED) Lighting	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	35-50%	Cross-sectoral - Electrical	13-15	30-35	3-5	connected load 625 kW	Ranjeet Sinha	BEE-Sidhiee
10	Micro Turbine	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	15-30%	Cross-sectoral - Electrical	40-45	25-40	14-20	20 - 60 KW	KK Sinha	DEEP-EESL
11	Motors (IE3 or IE4 or IE5)	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	25-40%	Cross-sectoral - Electrical	5-7	2-3	20-25	connected load 730 kW	KK Sinha	Detailed Energy Audits (DEA)
12	Screw Compressor with Permanent Magnet (PM) motor	Screw Compressor is driven by Permanent Motors and thus there is no rotor loss or transmission loss that results from rotor winding	15-20%	Cross-sectoral - Electrical	6-7	3.5-4	18-24	20 HP; 92.5 CFM	KK Sinha	DEEP-EESL
13	Tri-generation	Tri-generation technology provides thermal, cooling and electrical energy and it has higher efficiency compared to power generation and cogeneration plants	20-25%	Cross-sectoral - Electrical	2500-3000	700-1000	36-40	Capacity: 2.75 MW, 20 TPH	Sunil Sharma	Punjab Renewable Energy Systems Private Limited
14	Variable Frequency Drives (VFD)	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	30-40%	Cross-sectoral - Electrical	2.5-3	3.5-4	8-10	connected load 430 kW	Ranjeet Sinha	Detailed Energy Audits (DEA)
Thermal										
15	Cogeneration	Cogeneration technology provides thermal and electrical energy both and it has higher efficiency compared to power generation plant	30-50%	Cross-sectoral - Thermal	1000-1200	200-250	50-60	2 MW and 12 TPH extracted steam at 6.5 kg/cm2 and 245 C	Sunil Sharma	BEE Cluster Reports
16	Condensate recovery system in boiler/jet dying machine	For applications with zero contamination, the condensate recovery system can be effectively used to conserve and reuse water in boiler	10-15%	Cross-sectoral - Thermal	12-15	7-8	18-20	4 TPH	Vivek Agrawal	Sameeeksha
17	Energy Efficient Boilers	Energy Efficient Boilers offer effective combustion of fuel with maximum utilization of energy	10-15%	Cross-sectoral - Thermal	25-30	5-6	55-60	4 TPH	Sunil Sharma	Sameeeksha

18	Energy efficient Refrigeration Compressor	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	10-15%	Cross-sectoral - Thermal	3.5-5	2-3	18-24	60 HP	Vivek Agrawal	BEE Report
19	Heat Pump	A heat pump is a device that can heat a building/utility by transferring thermal energy from the outside using the refrigeration cycle	30-40%	Cross-sectoral - Thermal	30-35	20-25	15-18	339 KW	Ranjeet Sinha	BEE-Sidhiee
20	Hot Air Generator from Briquette	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	20-30%	Cross-sectoral - Thermal	50-55	35-40	18-20	10 Lac Kcal /Hr	Sunil Sharma	Sameeeksha
21	Hot Water Generator	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	20-25%	Cross-sectoral - Thermal	2.5-3.5	1.68 - 1.85	19-23	1000 - 80000 Kcal/hr	Geetesh Goyal	Sameeeksha
Thermal - Waste Heat Recovery (Low Temperature)										
22	Heat Exchanger	A heat exchanger is a system used to transfer heat between a source and a working fluid.	10-15%	Cross-sectoral - Thermal	4-4.5	8-8.5	6-12	7000 Kg/h	Ranjeet Sinha	BEE Report
23	Hot water generation from cement kiln	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	20-25%	Cement - Thermal	100-125	30-40	30-36	3000 TPD kiln 60 TR VAM system	Sunil Sharma	BEE Report
24	Low-Grade Waste Heat Recovery System (LGWHRS)	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.	10-15%	Cross-sectoral - Thermal	10-15	5-7	30-36	24-36 TPH	Sunil Sharma	DEEP-EESL
25	Thermo Compression	Utilization of waste flash steam in chiller and process usage	20-25%	Cross-sectoral - Thermal	150-200	70-80	24-30	3000TR	Sunil Sharma	Punjab Renewable Energy Systems Private Limited
Thermal - Waste Heat Recovery (Medium Temperature)										
26	Air Pre Heater & Drying Bed in furnace	Use of waste flue gas to pre-heat the material and save fuel	18-20%	Cross-sectoral - Thermal	5-5.5	5.5-6	12-14	1.5 TPH	Geetesh Goyal	Sameeeksha
27	Economiser in boiler/Thermic Fluid Heater	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	10-15%	Cross-sectoral - Thermal	3-3.5	4-4.25	6-8	4 TPH	Sunil Sharma	BEE Report
28	Gas-fired Reheating Furnace with WHR System	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	15-45%	Cross-sectoral - Thermal	19-21	16 - 28	9-14	2 - 12 TPH	Geetesh Goyal	Sameeeksha
29	Waste Heat Recovery Boiler	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	10-15%	Cross-sectoral - Thermal	3.5-4	3-3.5	12-15	4 TPH	Sunil Sharma	Sameeeksha
30	Waste Heat Recovery System for Coke Drying Quenching (CDQ)	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	20-25%	Cement - Thermal	300-350	200-250	18-24	7 TPH Coke Drying from 15% - 2% W/W	Sunil Sharma	Vedanta Fecor
31	Waste Heat Recovery for power generation	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	10-15%	Cross-sectoral - Thermal	900-1100	230	54-60	1 MW	Ranjeet Sinha	Sameeeksha
Thermal - Waste Heat Recovery (High Temperature)										
32	Recuperators	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	20-25%	Cross-sectoral - Thermal	4.5-5	3.5-4	12-14	3 MT	KK Sinha	Sameeeksha
33	Recuperative burner for heat recovery for high medium temperature furnaces	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	25-30%	Cross-sectoral - Thermal	200-225	200-225	12-15	15TPH rolling mill	Sunil Sharma	Detailed Energy Audits (DEA)
34	Regenerative burners for high temperature furnaces	In regenerative temperature can go to 1000 degC, resulting huge energy savings and improved furnace productivity. Applicable only for gas fired furnaces	15-20%	Cross-sectoral - Thermal	20-30	20-30	12-15	One unit burner for 110 TPH furnace	Sunil Sharma	http://www.iipinetwork.org/wp-content/letd/content/regenerative-burners-reheating-furnaces.html
Sectoral										
35	Alternative Fuels & Raw Material (AFR) Utilization	Utilize Alternative Fuels such as PTA Sludge, Syngenta Waste, Pines leaves etc, Municipal Solid Waste for thermal energy generation	Thermal Substitution rate of 5-10%	Cement	8000-10000	1600-2000	60-72	3.1 MTPA	Sunil Sharma	Ambuja Cement Bhatapara (CG)
36	BEE 5 Star Rated AC	Replacement of Conventional Split/Window AC with 5-star AC having higher COP or EER /ISEER	20-45%	Building	0.40-0.50	0.18-0.20	24-30	connected load 57 kW	Geetesh Goyal	Sameeeksha
37	Bleached Chemi Thermo Mechanical Pulp (BCTMP)	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.	15-20%	Pulp & Paper	40000-45000	10000-12000	48-50	1 Lac TPA BCTMP	Geetesh Goyal	BEE Report
38	CNC Machine (Special Purpose Machine)	CNC machine helps enhance productivity and lower Specific Energy consumption as one machine take care of all cutting, boring, drilling, milling, grinding operations, etc.	30-35%	Machine Tool	35-40	25-30	17-20	400 KN	KK Sinha	Sameeeksha
38.1	CNC Grinding Machine	As above	23%	Machine Tool	45.61	33.73	16	NA	Ranjeet	SAMEEKSHA
38.2	CNC Milling M/C	As above	30%	Machine Tool	73.41	28.86	31	NA	Ranjeet	SAMEEKSHA
38.3	CNC Turret Punch Machine	As above	41%	Machine Tool	88.66	51.27	21	20 TON	Ranjeet	SAMEEKSHA

38.4	CNC Bending Machine	As above	32%	Machine Tool	36.35	26.07	17	400 KN	Ranjeet	SAMEEKSHA
38.5	CNC Wire Cut Machine	As above	35%	Machine Tool	61.00	26.07	28	NA	Ranjeet	SAMEEKSHA
38.6	CNC Gear Hobbing Machine	As above	25%	Machine Tool	225.00	72.27	38	NA	Ranjeet	SAMEEKSHA
38.7	CNC Horizontal M/c Centre	As above	30%	Machine Tool	151.00	67.73	27	NA	Ranjeet	SAMEEKSHA
38.8	CNC Lathe Machine	As above	30%	Machine Tool	40.80	14.88	33	NA	Ranjeet	SAMEEKSHA
38.9	CNC Turn –Mill Centre	As above	25%	Machine Tool	50.48	17.62	35	NA	Ranjeet	SAMEEKSHA
39	Divided blast cupola	For replacement of conventional cold blast cupola for better melting of metals, generated less pollution and saves coal as well	20-25%	Foundry	6-8	3-4.5	20-24	2 MT/Batch	Ranjeet Sinha	Sameeeksha
40	Electrical Annealing Bogie Furnaces	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	25-30%	Brass & Aluminium	8-10	4-5	22-24	60 kW	Ranjeet Sinha	Sameeeksha
41	Energy Efficient Brushless Direct Current (BLDC) Fan	BLDC fans consumes lower energy compared to conventional fans, having high reliability and life expectations as well	35-50%	Building	4-6	1-2	24-36	connected load 243 kW	Ranjeet Sinha	Sameeeksha
42	Energy efficient cyclone	Energy efficient cyclone has 97.5% efficiency and it can be installed at the last stage in Pre-heater	1.03 KWH & 7000 KCal/MT of Clinker	Cement	600-650	200-220	36-40	105 TPH	Sunil Sharma	BEE Report
43	Energy efficient gas fired pot furnace	It has several pots or crucibles in which different small batches of glass can be melted	30-35%	Glass	10-15	10-15	10-12	10-12 pots, each of 500-550 Kg capacity	Sunil Sharma	Sameeeksha
44	Energy efficient impeller	Energy efficient Impeller 84% efficiency. The can improve the performance of Fans installed in industries	1.08 KWH/MT Clinker	Cement	100-120	42-45	24-30	250 Ton of Clinker	KK Sinha	Sagar Cements Limited
45	Energy Efficient Modulating Burner	These burners are provided with variable air/fuel ratio leading to better heat generation and drying of leaves, thereby producing good quality tea	10-15 %	Tea Processing	5-7	8-10	9-12	Dryer 1 @450 kg/h; Dryer 2@250kg/h.	Geetesh Goyal	Sameeeksha
46	Energy Efficient Tank furnace	Tank Furnaces are primarily used in glass industry where continuous flow of glass is needed to feed automatic glass forming machines.	15-20%	Glass	400-450	200-300	24-30	25-40 TPD	Sunil Sharma	BEE Report
47	Energy Efficient technology for ECBC/Eco-niwas Samhita	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.	15-25%	Building	220-240	230-250	10-12	connected load 15000 kW	Ranjeet Sinha	Sameeeksha
48	Energy Efficient Tray Dryer	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.	15-20%	Chemical	10-12	6-8	15-20	400 Trays	Sunil Sharma	EESL-MSME
49	Exhaust humidity measurement & control system	To control outlet moisture of Fabric on stenter and control blower motor speed and power consumption as well	5-15%	Textile	2-2.5	1-1.25	24-30	1 unit	KK Sinha	Sameeeksha
50	Fiberglass Reinforced Plastic (FRP) Fan in Withering Units	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.	10 - 15 %	Tea Processing	8-10	12-15	6-8	31 troughs, 39 nos. fans	Geetesh Goyal	Sameeeksha
51	Fluidised Bed dryer system	The Fluidised dryer system will ensure better quality tea by ensuring effective drying of tea leaves	10-15%	Tea Processing	15-20	7-10	24-30	500-700 Kg/hr	Sunil Sharma	EESL-MSME
52	Forging Furnace	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	15-20%	Forging	20-25	20-25	10-12	250 KW	Geetesh Goyal	Sameeeksha
53	Gas Engine based co-generation technology	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	30-40%	Ceramics	800-1000	320-350	30-35	2.72 MW	Sunil Sharma	Sameeeksha
54	Gas fired hot air generator system	For replacement of conventional wood fired hot air generator system with better combustion control and less emission	20-25%	Chemical	4-5	3.5-5	10-12	120000 Kcal/hr	KK Sinha	Sameeeksha
55	Gasifier For Kilns	The Gasifier is a cheaper energy source having better yield compared to conventional fuel for combustion in kilns	30-35%	Limestone	55-65	24-30	28-32	30 TPD	Geetesh Goyal	Sameeeksha
56	Gasifier for Melting And Reheating Process	Rice husk works as renewable source of energy. Hence use of rice husk reduced cost of production and waste utilization as well	20-25%	Brass & Aluminium	40-45	25-30	18-24	500 KG	Ranjeet Sinha	Sameeeksha
57	Induction Billet Heater	For replacement of Oil Fired Furnaces with having better control on temperature and energy saving as well	20-25%	Forging	38-42	37-42	10-12	3-4 ton capacity oil-fired furnace	Ranjeet Sinha	BEE Report
58	Liquid Ring Compressor	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	10-15%	Refineries	500-600	800-900	6-8	8.5 MT per day fuel oil equivalent	Ranjeet Sinha	BEE Report
59	Louisiana State University (LSU) Port Dryer	This technology ensured uniformly dried product and can be used for different types of grains as well	25-40%	Food Processing	30-35	16-20	22-25	24 MT	Ranjeet Sinha	EESL-MSME
60	Membrane Filter Press	For replacement of conventional Filter Press with better drying of sludge	30-40%	Chemical	40-45	15-20	30-35	60 Plates	Ranjeet Sinha	Sameeeksha
61	Nutsche Filtration and Drying Process	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.	10-20%	Pharmaceutical	25-30	20-25	15-18	3 KL	Sunil Sharma	EESL-MSME
62	Palletisation plant - Sponge Iron	The palletisation ensures agglomeration of fine iron ores which is easy to handle in blast furnace or EAF	10-15%	Sponge Iron	4000-5000	800-1000	48-60	0.3 MTPA	KK Sinha	BEE Report

63	Rapier or Auto Loom	For replacement of conventional Power Loom thereby ensuring enhanced productivity and production, reduced energy and manpower cost	15-20%	Textile	50-52	25-30	24-30	220 rpm	Sunil Sharma	EESL - MSME; Sameeeksha
64	Replacement of steam turbine drive with high speed motor drive	Replacement of steam turbine drive with high speed motor drive will result in saving of steam and extra power generation	15000 Ton of NG per year	Refineries	22500-25000	7500-8000	48-50	7.5 MW High Speed Motor	Sunil Sharma	IOCL Plant
65	Screw washer	For replacement of twin drum washing system with high efficient screw washer to save energy	10-15%	Paper	45-50	18-20	24-30	20000-22000 TPA	Geetesh Goyal	BEE Report
66	Tube ice plant	Tube ice machine performs continuous Freezing and Harvesting function, thereby ensuring steady supply of high quality ice at a rate determined by the user	10-15%	Ice Making	17-20	8-10	30-35	20 TPD Plant	KK Sinha	BEE Report
67	Veneering for Industrial furnaces	Reduction in surfaces heat losses from furnaces and also store the residual heat during non-firing time	20-25%	Foundry	6-7	6-7	11-12	Hearth area - 40 sq ft	KK Sinha	Sameeeksha
68	Vertical Agitator System for Reaction Vessel	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	20-25%	Chemical	2-2.5	1-1.5	20-24	20 KL	Sunil Sharma	Sameeeksha; EESL-MSME
69	Vertical shaft brick kilns	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)	15-20%	Bricks	10-15	5-7	24-30	40-50 Lacs bricks per year	Sunil Sharma	Sameeeksha; EESL-MSME
70	Zig-Zag Firing	The zig-zag type firing ensure better turbulence and contact time between flame and bricks, thereby better productivity and reduced SEC	20-25%	Bricks	30-50	15-20	24-36	20,000-60,000 bricks per day	KK Sinha	BEE Report
Innovative decarbonisation technologies										
71	Aluminium pipe for distribution of compressed air system	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	10-20%	Cement, Iron & Steel, Textile, Other sectors	300-350	120-150	24-36	6000 MT per day of Clinker	AK Asthana	Sagar Cements Limited
72	Electric Vehicles and Charging Infrastructure	Electric vehicles are power by battery and electric motor	1 Litter Diesel per 15 km	Transportation	12-15	3-4	48-60	Diesel sedan car	AK Asthana	Blu smart
73	Fuel efficient industrial furnace burners specially for rotary kiln	Improved overall combustion efficiency of burners in rotary kilns in Alumina, chemical, lime, sponge iron plants using gas and liquid fuel	5-7%	Cement, Iron & Steel	30-35	15-20	20-24	Not Applicable	AK Asthana	Report
74	Nano composite surface treatment for condenser in power plant	It protects from fouling, scaling, and deposition resulting improvements in power generation efficiency	13000 tons of coal/Yr	Power Plant	250-300	250-300	12-15	135 MW	AK Asthana	Report
75	Torrefaction Technology	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.	Not applicable	Power Plant	15-20	15-20	12-15		AK Asthana	Report
76	XPLATE on FD Fan to improve boiler combustion efficiency	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	3-5%	Multiple sectors	50-60	20-25	36-40	55 TPH	KK Sinha	Bombay dyeing