

COMMON MONITORABLE PARAMETERS – NAGOUR HANDTOOLS CLUSTER
GEF-UNIDO-BEE PROJECT "PROMOTING ENERGY EFFICIENCY & RENEWABLE ENERGY IN SELECTED MSME CLUSTERS IN INDIA"

PROJECT BACKGROUND

The aim of this project is to develop and promote an environment for introducing energy efficiencies and enhanced use of renewable energy technologies in process applications. The project is being executed in 12 selected MSME clusters in five varied sectors identified as the most energy consuming sectors. These include brass, ceramic, dairy, foundry and hand tool sectors. This will result in improving the productivity and competitiveness of the units, as well as, to reduce their overall carbon and improve the local environment.

PROJECT COMPONENTS

The project will work at the cluster level, as well as, support policy-making to achieve its aim. The project has the following components:

- Increasing the level of end-use demand and implementation of energy efficiency and renewable energy technologies and practices by MSMEs
- Increasing the capacity of suppliers of energy efficiency and renewable energy products, service providers and finance providers
- Scaling up the project to a national level
- Strengthening policy, institutional and decision making frameworks

For further information please contact:

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S. No.	EQUIPMENT	PARAMETER	INSTRUMENT	FREQUENCY OF MEASUREMENT	UNIT	REF. RANGE	VALUE	REMARKS BY SUPERVISOR
1		Oxygen Level in Flue Gas (An increase in oxygen percentage in flue gas indicates reduced combustion efficiency and increased fuel combustion)	Oxygen Analyzer	Hourly	%	Furnace Oil : 4 - 5% Natural Gas: 2 - 3%		
		Flue Gas Temperature (It signifies the amount of sensible heat carried away outside the furnace. Monitor the flue gas temperature on chimney, before any waste heat recovery device)	Thermocouple	Hourly	°C	≤ 180 - 220 °C		
		Side Wall Temperature (Helps get insights about refractory lining of the furnace and also heat loss from furnace surface)	Thermocouple	Daily	°C	≤ 10°C higher than ambient temperature		
		Soaking Zone Temperature (It affects the product quality as well as energy consumption in the furnace. Excess temperature causes energy wastage)	Thermocouple	Hourly	°C	1050-1150°C		
		Furnace Oil Temperature (It affects the combustion efficiency of the fuel)	Thermocouple	Hourly	°C	30 - 45°C		
		Hot Material Temperature (Heating beyond a certain limit results in higher oxidation of material and higher scale losses; while heating below a certain limit results in quality issues)	Infrared Thermometer	Hourly	°C	1050-1150°C		
2		Voltage (Either the extreme high or the extreme low voltages will damage the motor and hence shorten the life of the motor)	Power Analyzer	Weekly	V	±5% of rated voltage		
		Current (Over-current can eventually lead to permanent damage to the motor or electrical device)	Power Analyzer	Weekly	A	±5% of rated current		
		Power Factor (Low PF can contribute to low efficiency, higher losses, and unnecessary electric utility charges)	Power Analyzer	Weekly	PF	Close to unity		
3		Pressure (Regularly check suction and discharge heads and also ensure proper maintenance of pump)	Pressure Gauge	Weekly	kg/cm ²			
		Water Flow Rate (A good performing pump should deliver required amount of flow)	Flow Meter	Weekly	m ³ /hr	As per manufacturer's recommendation (refer to name plate details)		
		Power Consumption (It gives insight about the motor loading and pump efficiency)	Power Analyzer	Weekly	kW			