Terms of Reference (ToR) for

Appointing a Senior Consultant under FNF'2023 Initiative

Tender No. FMC/FNF/23-24/006

The Tender is available at https://fmc.org.in/tender/ Please apply by 15th September 2023 (till 5.30 PM). Please note that the financial quote (password protected) and technical quote must be electronically submitted at accounts@msmefoundation.org & ruhi@msmefoundation.org in mail with self-at- tested clearly mentioning "For Appointing a Senior Consultant under FNF'2023 Initiatives"- (Create Entrepreneurship Meter & Cleanliness Index) FMC shall open the financial quote, once the technical evaluation stage is completed. The Technical Bid will provide (i) Credentials of the bidder (CV, Brochures, website link, projects completed).

Date of Publication: 05.09.2023

Last Date of Application: 15.09.2023

Award of Contract: The proposal soft

copies are to be mailed:

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Project Background

Foundation for MSME Clusters is implementing "**Empowering Startups/MSMEs through Virtual Exhibition Platform and connecting with MSME BMOs: 2023 Initiative** in collaboration with **Friedrich Naumann Foundation for Freedom** which aims to promote and support Startups to make them investment ready and are able to raise funds from the financial institutions such as Angel Investors, Banks and Incubation Centres.

Designation- Senior Consultant

Project: "Empowering Startups/MSMEs through Virtual Exhibition Platform and connecting with MSME BMOs: 2023 Initiative"

Duration: 20th September to 30th of October 2023

Terms of Reference

Background: Given the high emission profile as well as high usage of ground water and unplanned production organization of the textile sector, Foundation for MSME Clusters, as a part of the FnF-FMC ongoing initiative for the year 2023, is conducting a study to understand the degree of sustainability of textile units in India (Scope 1), to develop a cleanliness index and entrepreneurship meter, for pilot implementation in MSME textile units.

Location: Kolkata, West Bengal and Jaipur, Rajasthan in India

Scope of Work: Conduct 3 audits - production chain (scope for productivity enhancement without any additional energy/water consumption), water (reduction possibilities) and energy audit (energy reduction possibilities) in **4 units** across Kolkata and nearby places and **3 units** in Jaipur and nearby places, with the objective to ascertain quantitative factors for developing the sustainability meter.

The scope of the **production chain and water audit** in MSME units is to assess the efficiency, quality, and sustainability of the textile production processes.

- **Raw Material Analysis:** Examine the quality and sourcing of raw materials used in the production process, such as fibres, yarns, dyes, chemicals, and auxiliaries. Evaluate their compliance with quality standards and environmental regulations.
- **Process Evaluation:** Analyse the entire production process, from pre-processing (cleaning, blending, and carding) to spinning, weaving, knitting, dyeing, printing, finishing, and packaging. Assess the efficiency, quality control measures, and waste generation at each stage.
- **Machinery and Equipment Inspection:** Evaluate the condition, performance, and efficiency of textile machinery and equipment, including looms, knitting machines, dyeing machines, printing machines, and finishing equipment. Identify any outdated or inefficient equipment that may impact quality or productivity.
- **Water Usage and Conservation:** Examine water consumption in different processes and recommend water-saving measures. Assess the effectiveness of water treatment and recycling systems.
- **Waste Generation and Management:** Analyse waste generation at various production stages, such as waste fibres, dye sludge, and chemical waste. Propose strategies for waste reduction, recycling, and proper disposal.
- **Worker Health and Safety:** Review occupational health and safety practices to ensure that workers are operating in a safe and healthy environment. Identify potential hazards and recommend measures for improvement.
- **Recommendations and Action Plan:** Provide a detailed report with findings, recommendations, and an action plan for addressing the identified issues and improving overall efficiency, quality, and sustainability.

The scope of the **energy audit** in MSME textile units is comprehensive assessment of the energy consumption, efficiency, and management practices within the facility.

- **Energy Consumption Analysis:** Evaluate the energy consumption patterns of various processes, machinery, equipment, and utilities within the textile unit. This includes electricity, thermal energy (such as steam and hot water), and fuel consumption.
- **Process Analysis:** Examine the production processes, from raw material handling to finished product manufacturing. Identify energy-intensive steps and assess their efficiency. This could involve studying weaving, dyeing, printing, finishing, and packaging processes.
- **Equipment and Machinery Assessment:** Inspect all machinery, equipment, and systems that consume energy. Evaluate their age, condition, and operational efficiency. Identify any outdated or inefficient equipment that might be contributing to higher energy consumption.
- **Utility Systems Review:** Analyse the performance of utility systems such as boilers, chillers, air compressors, lighting systems, HVAC (heating, ventilation, and air conditioning), and water pumping systems. Identify potential energy losses or inefficiencies.
- **Data Collection:** Gather detailed energy consumption data, operating hours, production levels, and historical energy bills. This data will serve as a basis for analysis and comparison.
- **Energy Efficiency Opportunities:** Identify and prioritize energy-saving opportunities based on the data collected and analysed. These might include optimizing equipment operations, implementing better maintenance practices, adopting energy-efficient technologies, and exploring renewable energy options like solar panels.

- **Financial Analysis:** Calculate potential energy savings, return on investment (ROI), and payback periods for each identified energy efficiency measure. This helps the MSME unit make informed decisions about which measures to implement first.
- **Behavioural Practices:** Assess the role of employee behaviour and operational practices in energy consumption. Suggest training or awareness programs to promote energy-efficient behaviour.
- **Recommendations and Action Plan:** Provide a detailed report with findings, recommendations, and an action plan for implementing energy-saving measures. This plan should outline the steps to be taken, associated costs, potential savings, and timelines

Output

Based on the above, the sustainability measure will suggest the following for each step of value addition in the unit:

1. Detail the production chain in the unit.
2. Create the following table for each node of the production chain with respect to (a) Energy, (b) Water, (c) productivity and (d) Waste.

1	Name of Step of Value Addition	
1.1	Output	
1.2	**Current Method**	
1.3	Current consumption of energy/water or productivity per time unit	
1.4	**Alternative Method 1 (least or zero cost)**	
1.4.1	Investment required (Rs)	
1.4.2	Output	
1.4.3	Expected Consumption of energy/water or productivity per time unit	
1.4.4	Savings of energy/water/others	
1.4.5	Value of Savings	
1.4.6	Payback Period in months	
1.5	**Alternative Method 2 (Relatively Higher cost)**	
1.5.1	Investment required (Rs)	
1.5.2	Output	
1.5.3	Expected Consumption of energy/water or productivity per time unit	
1.5.4	Savings of energy/water/others	
1.5.5	Value of Savings	
1.5.6	Payback Period in months	
1.6	**Alternative Method 3 (Cost higher than Method 2)**	
1.6.1	Investment required (Rs)	
1.6.2	Output	
1.6.3	Expected Consumption of energy/water or productivity per time unit	
1.6.4	Savings of energy/water/others	
1.6.5	Value of Savings	
1.6.6	Payback Period in months	

3. Participate in presentation/discussion session with pertinent stakeholders.

Timeline

- Detailed report with findings, recommendations, and action plan needs to be submitted within **40 days** from receiving contract.

Payment Tranches

- **20%** of contract value as advance upon receiving contract and submission of plan and process.
- **50%** of contract value upon submitting detailed report with findings, recommendations, and action plan
- **30%** of contract value on acceptance of Report