



Terms of Reference/Request for Proposal

Date: 14.06.2024

Proposals are invited by Technology Informatics Design Endeavour (TIDE) for “Preparation of DPR for management of solid waste from commercial establishments in Alappuzha municipality”

Introduction

Technology Informatics Design Endeavour (TIDE) is a development organization based in Bengaluru that leverages technology for conserving the environment, creating livelihoods, and addressing societal issues. TIDE's work encompasses energy access and biomass-based cooking solutions, environment conservation through energy waste and water interventions, and Technology based innovative livelihoods, particularly with a focus on rural women. TIDE is currently implementing a project titled 'Integrated Water Management in partnership with BORDA, in other towns of Karnataka. For more information about TIDE, please visit <https://tide-india.org>.

Title	“Preparation of DPR for management of solid waste from commercial establishments in Alappuzha municipality.”
Location	Alapuzha city, Kerala
Nature of Assignment	The project is aiming to prepare an action plan for streamlining collection, transportation and processing of solid waste from commercial establishment in Alapuzha Municipality.
Contract period	The contract period will be for the duration of 90 days

Background of Project

Alleppey town, in Kerala, has made commendable strides in waste management practices over the past decade. Despite this progress, the town faces emerging challenges, especially in efficiently handling commercial waste. With around 5000 commercial establishments, including hotels, restaurants, homestays, and market entities, Alleppey encounters a unique situation. Existing regulatory frameworks don't officially classify these establishments as Bulk Waste Generators (BWGs), yet they generate a substantial amount of waste, leading to significant ambiguity in addressing the issue.

The complexity surrounding waste categorisation presents severe challenges for effective waste management in the region. Kerala's urbanisation stands out with its unique blend of urban and rural elements, resulting in a distinctive horizontal urban sprawl different from larger cities' conventional

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landscapes. This urbanisation pattern has given rise to numerous small and medium-sized waste generators that don't neatly fit into designated categories, posing a significant challenge. These entities often struggle to employ technologies and services designed for their larger or smaller counterparts, creating complexities in addressing their waste management needs.

While the state has made remarkable progress in household waste management, existing policies are less effective for small and medium-scale commercial establishments. The difficulty in accurately assessing waste sources and volumes in these settings, along with a shortage of suitable technologies and service providers for commercial waste, underscores the need for a customised approach to waste management in Kerala.

The management of commercial waste in the state is not overlooked, but existing private systems face sustainability challenges. They often fail to segregate waste by type, leading to the commingling of materials and inappropriate waste dumping. Additionally, the lack of a monitoring system for tracking waste collection and disposal from commercial establishments poses a risk of unscientific disposal. This necessitates the need for a proper management plan for solid waste generated from commercial establishments. The Alapuzha Municipality has approached TIDE to prepare an action plan for streamlining collection, transportation and processing of solid waste from commercial establishment in Alapuzha Municipality.

Terms of Reference:

The bidder shall be responsible for the activities and roles mentioned herein and shall also support TIDE wherever reasonable and possible, to ensure the assignment's objectives are met. The details of the assignment are given below

Scope of assignment:

The project's objective is to develop an Action Plan for managing solid waste generated by commercial establishments in Alappuzha municipality. The scope of the project will be as follows:

1. Secondary data collection of commercial waste management (Establishments survey & generation rates)

This step involves obtaining records from the health inspector offices in the municipality, specifically the licence registers. These registers contain information about commercial establishments and their respective activities. Commercial establishments vary widely in their activities, and the waste streams produced from these establishments are related to the type of activity. The categorization of these establishments based on their activity will help facilitate better sampling. Through an exploratory

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survey, self-reported data on the types and quantities of waste generated by different types of establishments can be collected using which their generation rates can be calculated.

2. Assessing the existing commercial waste management scenario (collection, treatment & disposal)

To assess the current commercial waste management scenario, a survey targeting commercial establishments will be conducted. The survey will gather information on waste collection methods, types of waste, collection frequency, and service providers. It will also examine waste treatment processes and facilities along with their disposal methods.

3. Undertaking consultations with ULB

Undertaking consultations with the Urban Local Body (ULB) to gather insights and perspectives on commercial waste management. This process allows for a collaborative approach, where stakeholders from the ULB can provide valuable input regarding existing policies, challenges, and potential solutions related to waste collection, treatment, and disposal within commercial establishments.

4. Survey for commercial waste quantification and preparation of report

Here, the quantification of waste will be carried out. Using digital weighing scales, the surveyors can conduct waste audits to measure and record waste quantities.

5. Preparation of waste value chain diagram (Sankey diagram)

To visualise the flow of waste from commercial establishments within the municipality, a Sankey diagram will be developed based on the quantified data. This diagram will illustrate major sources, pathways, and destinations of waste from these establishments, aiding informed decision-making in waste management.

6. Gap identification in the waste value chain, Analysis and Report

By scrutinising the waste value chain, gaps in the waste value chain can be identified which involves pinpointing areas where inefficiencies or shortcomings exist in the management process. This includes areas where resources are underutilised, processes are inefficient, or opportunities for improvement are overlooked.



7. Technology recommendations

Given the diverse options available for waste management technologies, a comprehensive exploration and evaluation process will be undertaken. This process involves identifying various technologies, assessing their feasibility, effectiveness, and suitability for specific waste management challenges, and exploring potential benefits and limitations. Additionally, factors such as cost, scalability, environmental impact, and compatibility with existing infrastructure will be examined. By conducting this thorough evaluation, informed decisions can be made regarding which technologies to adopt in order to enhance waste management practices. Based on this, technology recommendations involving the selection and planning of appropriate technologies based on local conditions, size, economies of scale, and other relevant factors will be carried out. This process entails carefully considering the unique characteristics of the local environment, such as geographical conditions, waste composition, and regulatory requirements.

Deliverables:

An Action Plan for the management of solid waste generated by commercial establishments in Alappuzha municipality shall be delivered.

Duration of the assignment:

The project shall be executed within 90 days of the contract's award. The contractor should adhere to the work plan as shown below. **(Subject to revision based on mutual consent or as per ground condition)**

Eligibility criteria:

The firm should meet the following minimum eligibility criteria:

<ul style="list-style-type: none">• The company/firm/contractor should be registered with a legally binding registration document
<ul style="list-style-type: none">• The company/firm/contractor should have executed a minimum of 3 projects similar to this project
<ul style="list-style-type: none">• The company/firm/contractor shouldn't have been blacklisted by central/state government agencies
Note: The Consultants need to submit supporting documentary evidence for the criteria.

Evaluation Criteria:

Sl No	Indicator	Description	Document Evidence	Weightage
1	Experience	The contractor must have executed a minimum of 3 projects relevant to the Implementation of composting unit.	Work order/ Work completion certificate/Self-certification providing details of the project (Details of the project should include Name of project and description, Start and completion date of the project, Location and total project cost, Photographs)	50%
2	Bid Price	The price quoted by the agency	Lumpsum costs	50%

Note: All the eligible firms will be graded on the above criteria. The one with the highest grade/score will be awarded the contract.

Work Plan:

The project duration is from the **4th week of June 2024 to the 4th week of September 2024**. Work shall be completed by the 5th week of September 2024.

Sl. No.	Work	Timeline											
		M 1 Jun	M 2 Jul	M 3 Aug	M 4 Sep	M 5 Oct	M 6 Nov	M 7 Dec	M 8 Jan	M 9 Feb	M 10 Mar	M 11 Apr	M 12 May
	Phase 1												
1	Secondary data collection - (Registered establishment data) Digitisation of data												
2	Categorisation of establishments - Based on activity and expected type of waste production												
3	Ground truthing to confirm the categorisation is correct												
4	Stratified random sampling based on ward, type of activity and size of waste production												
5	Exploratory survey to understand the different types of waste												

	produced and its quantity (Self-reported)																			
6	Second-level stratification based on quantity for each type of waste and re-sampling																			
8	Survey for waste quantification (as per CPHEEO) and management methods (3 Seasons)																			
9	Case studies of existing waste management methods																			
10	Preparation of waste value chain diagram (Sankey diagram)																			
11	Gap identification in the waste value chain, Analysis and Report																			
	Phase 2																			
1	Technology exploration and evaluation																			
2	Sizing, Setback and available infrastructure assessments for establishments																			
3	Technology planning Appropriate technology selection and planning based on local conditions, size, economies of scale, etc.																			
4	Technology management plan report																			
5	Private agencies and governance institutions integrate to develop an implementation strategy. (Future goal)																			

Schedule of Payment:

Sl. No.	Stage	Percentage of Payment
1	Phase 1	50%
2	Phase 2	50%

**Submission of Proposal:**

The proposal must be submitted over email with email id: ashwin.kumar@tide-india.org, & iwm.accountant@tide-india.org with the following documents attached,

- Supporting documents for eligibility and evaluation criteria
- Self-certification of not being blacklisted by central/state government agencies
- Properly filled Annexure I to V

Confidentiality and Intellectual and Other Propriety Rights

All reports, notes, statistics and other documents and data compiled and collected, or software developed by the Consultant under this Agreement shall be confidential and the property of TIDE. The Parties herein agree to keep the terms of this TOR all or any information which any or all of the parties herein shall become acquainted with shall not be disclosed, either directly or indirectly to third parties or be used in any way, or in any manner that would be detrimental to the business of the partners.

Sd/-
Director-TIDE