

Project Design Phase

Problem – Solution Fit Template

Date	03 November 2025
Team ID	NM2025TMID01374
Project Name	To Supply Leftover Food to Poor
Maximum Marks	2 Marks

Problem Statement:

A large amount of leftover food from households, restaurants, and institutions is discarded daily and ends up in landfills. This decomposing waste releases methane — a potent greenhouse gas — and contributes to pollution and resource wastage. Simultaneously, communities face rising energy demands and a shortage of clean, renewable power sources.

Target Users / Stakeholders:

- Urban households and restaurants
- Municipal waste management authorities
- Educational institutions and canteens
- Local communities seeking renewable energy options
- Environmental organizations and green startups

Existing Alternatives:

- Traditional waste collection and landfill disposal (polluting, unsustainable)
- Composting (good but doesn't produce energy)
- Biogas systems (limited adoption, lack of awareness or infrastructure)

Proposed Solution:

Develop a **Food-to-Power System (F2P)** that collects leftover food and organic waste, converts it through **anaerobic digestion**, and produces **biogas** for cooking or **electricity** for local use. The by-product — a nutrient-rich slurry — can be used as **organic fertilizer**.

Value Proposition:

- Converts waste into clean, renewable energy
- Reduces landfill load and methane emissions
- Provides low-cost energy for communities

Key Metrics / Success Indicators:

- Amount of food waste processed (tons/month)
- Energy generated (kWh or cubic meters of biogas)
- Reduction in greenhouse gas emissions
- Number of households/institutions served
- User adoption rate and cost savings

Unique Advantage:

- Integrates **food waste management** and **energy production** in a single system
- Modular and scalable — from small community units to large municipal plants
- Promotes circular economy and environmental awareness

REDUCING FOOD WASTE

How to Reduce Your Food Waste at Home?

