

Project Design Phase
Proposed Solution Template

Date	27 June 2025
Team ID	LTVIP2025TMID36584
Project Name	cleantech: transforming waste management with transfer learning
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Manual waste sorting is slow, inaccurate, and unsustainable. There is a need for a fast, automated classification system to improve waste segregation.
2.	Idea / Solution description	A web-based AI platform using MobileNetV2 (transfer learning) that classifies uploaded images into biodegradable, recyclable, or trash in real-time.
3.	Novelty / Uniqueness	Leverages transfer learning for lightweight yet accurate predictions. Integrates seamlessly with smart bins and can be extended to mobile apps and voice input.
4.	Social Impact / Customer Satisfaction	Promotes responsible waste disposal, reduces human effort, and supports sustainable practices. Enhances citizen awareness and municipal efficiency.
5.	Business Model (Revenue Model)	Free for individuals and schools, licensing model for municipalities and recycling firms. Potential for B2B hardware-software integration with smart bins.
6.	Scalability of the Solution	Cloud deployment enables wide adoption. Easily extensible to other waste types, regional languages, and multiple platforms (web, mobile, IoT).