**Project Design Phase**

**Proposed Solution Template**

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| Date | 29 June 2025 |
| Team ID | LTVIP2025TMID44727 |
| Project Name | CleanTech: Transforming Waste Management with Transfer Learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

| **S.No.** | **Parameter** | **Description** |
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| 1 | Problem Statement | Inefficient and inaccurate waste classification leads to poor waste management and environmental pollution. |
| 2 | Idea / Solution Description | Use transfer learning on pre-trained deep learning models to classify waste images into biodegradable, recyclable, and trash categories accurately and efficiently. |
| 3 | Novelty / Uniqueness | Applying transfer learning reduces training time and data requirements while achieving high accuracy in waste classification compared to traditional methods. |
| 4 | Social Impact / Customer Satisfaction | Improves waste segregation, promoting recycling and reducing landfill waste, thereby contributing to environmental sustainability and enhanced customer satisfaction. |
| 5 | Business Model (Revenue Model) | Subscription-based SaaS model for municipalities and waste management companies, plus licensing the technology for commercial use. |
| 6 | Scalability of the Solution | The model can be easily adapted to new waste categories and scaled to process large volumes of images across different regions and platforms. |