

# TerraLoop

## Software Requirement Specification (SRS)

### Revision Record

| Version | Date        | Author         | Comment                          |
|---------|-------------|----------------|----------------------------------|
| 1.0     | 27 Mar 2024 | Ritvik Agrawal | Initial Draft for MVP v1.0       |
| 1.1     | 28 Mar 2024 | Ritvik Agrawal | First set of changes to MVP v1.0 |

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# INTRODUCTION

## PURPOSE

TerraLoop is an upcoming company in the Indian market to promote sustainability in the industrial sector by establishing a connection between Producers/Manufacturers and Waste Recyclers, in addition to providing a suite of sustainability services. TerraLoop's mission is to address diverse environmental challenges, providing industries with the tools they need to make a real impact. This document will serve as a reference point for the development of the first iteration of the MVP, henceforth referred to as MVP v1.0.

## PRODUCT SCOPE

This product aims to serve as a marketplace for the selling and purchase of EPR credits. Using this platform, Producers will be able to purchase EPR credits for different waste types from the Recyclers registered on the platform.

## REFERENCE

This document has been prepared on the basis of discussions held between the stakeholders (partners of TerraLoop) and iSkylar Technologies. Additional resources for ideas can be found at:

- <https://watershed.com/> - Design and offering reference
- <https://climes.io/> - Landing page UI reference
- <https://www.ecoex.market/> - Marketplace reference
- <https://www.karosambhav.com/> - check them out only for more context reference in the EPR space

# OVERALL DESCRIPTION

## USER NEEDS

There will be three intended user types in the system:

- **System Admin** – Intended owner of the system, the system admin will be able to effectively manage the functioning of TerraLoop with access to user management, transaction history, CMS, customer support and a host of other features.
- **Producers** – Producers will be industries or manufacturers that are generating waste and want to connect with recyclers for waste management and recycling. Producers can purchase EPR credits and certificates from recyclers. “Producers” it could be (brand owners, producers/manufacturers, importer) using the platform so we need to ask that through a dropdown/radio button/checkbox
- **Recyclers** – Recyclers are waste management and recycling agencies that will want to connect with producers to collect and recycle their industrial waste. Recyclers can also provide EPR credits and certificates to producers. Similarly “recyclers” it could be (Recycler, Refurbisher, Dismantler, Waste oil recyclers, PRO Owner) using the platform so we need to ask that through a dropdown/radio button/checkbox.

## DEPENDENCIES

These following factors are not design constraints, but any change on them might require a revision of this document.

- **Technical Assumption** – The platform should work seamlessly across all web and mobile internet browsers.
- **Operational Assumption** – Users should have basic computer literacy and familiarity in navigating an online marketplace solution, thereby reducing the need for extensive user training.
- **Business Assumption** – A stable and low-latency internet connection should be available to users to access the platform's features and perform online transactions.
- **Operational Constraint** – The platform must support multiple user types with different functionalities, requiring proper user authentication and authorization mechanisms.

## SYSTEM FEATURES & REQUIREMENTS

### FUNCTIONAL REQUIREMENTS

The functional requirements for the development of the first iteration of the MVP will include 2 users as described below.

#### PRODUCER

1. Producer must be able to Sign Up using corporate/work email
2. Producer must be able to Login using the registered email and password
3. Producer must be able to setup their profile
4. Producer must be able to view recycler offers (and filter based on the category they are seeking for. Producers look for specific types of EPR credits, so filter for searching credits based on types of waste, price range, recycler ratings)
5. Producer must be able to purchase credits from recyclers
6. Producer must be able to view credit purchase and transaction history
7. Producer should be able to calculate the amount of EPR credits they need based on their waste generation data.
8. Part of the Producer registration dashboard will have document upload and management (a place where producers can upload relevant documents for compliance verification, such as waste disposal records, other government registration papers)

#### RECYCLER

1. Recycler must be able to Sign Up using corporate/work email
2. Recycler must be able to Login using the registered email and password
3. Recycler must be able to setup their profile
4. Recycler must be able to post credit offers – Each offer will show some sort of Profile Badge or Certification that the Recycler has received. **Need to discuss this implementation.**
5. Recycler must be able to view credit selling and transaction history
6. Recycler must be able to receive a notification for each credit purchase made through them by producers
7. Part of the Recycler registration dashboard will have document upload and management (a place where recyclers can upload relevant documents for compliance verification)

## SYSTEM ADMIN

A dashboard like interface for profile and transaction management as most of the connection after purchase will be handled manually for now. It will help in tracking of the credits and processes.

## MARKETPLACE LANDING PAGE

As the user clicks on “Get Started with EPR” I want to have a page showing the prowess of the platform and the existing offers. Kind of a sneak peak of the exchange platform here.

## TECHNOLOGY REQUIREMENTS

The following technology stack will be used to implement the system:

- UI/UX Design - Figma
- Front-End – Next.js
- Back-End – Node.js
- Database – MongoDB

## NON FUNCTIONAL REQUIREMENTS

### PERFORMANCE

- The platform should react to user interaction in under 2 seconds.
- The platform should load be ready to use in under 3 seconds.
- The database should be optimized to ensure fast query execution.

### SAFETY

- The system should ensure secure transactions and protect user data through encryption and other security measures.

### SECURITY

- The REST API's keys should be stored securely.

### USER INTERFACE

- The user interface must allow for seamless navigation for users.
- The user interface should be mobile responsive.
- The user interface should be optimized for all web and mobile browsers.

### QUALITY ATTRIBUTES

- **Availability** – The app should have a goal of 99.9% availability for users.
- **Correctness** – The app should accurately display product information and ensure secure transactions.
- **Maintainability** – The app should be continuously integrated so that features, updates, and bug fixes can be deployed rapidly without downtime.
- **Usability** – The interface should be intuitive and easy to navigate, allowing users to view offers and make purchases without confusion.