

RePlastix Innovations

Transforming Plastic Waste into Sustainable Solutions

Abstract

This project presents the implementation of a customized Salesforce CRM solution for **RePlastix Innovations**, a pioneering organization in plastic waste management and recycling. The objective was to streamline recycling operations, improve inventory and order tracking, and maintain clean, secure data across all departments.

The solution involved designing a robust data model with key custom objects: **Plastic Waste**, **Recycled Product**, **Collection Center**, **Inventory**, and **Order**. Business processes were automated using **Record-Triggered Flows**, **Scheduled Flows**, **Email Alerts**, and **Apex** to handle low stock alerts, waste-to-product conversion tracking, and real-time task creation for operations teams.

To ensure data accuracy and security, validation rules were implemented along with a **role-based access control model** for Collection, Inventory, and Sales teams. Additionally, scheduled **batch jobs** using Apex update inventory levels and trigger alerts when stock falls below threshold.

This end-to-end CRM implementation enhances operational efficiency, supports sustainability goals, and lays the foundation for scalable growth through automation and data-driven decision-making using the Salesforce Platform.

Objective

The main objective of this project is to develop and implement a customized Salesforce CRM solution for **RePlastix Innovations** to streamline plastic waste

collection, recycling processes, and sustainable product distribution while maintaining data integrity and enhancing operational efficiency.

By building a centralized system to manage plastic waste entries, recycling centers, inventory, and order flows, the project aims to:

- **Automate key processes** such as stock monitoring, waste-to-product tracking, task creation, and notification alerts.
 - **Ensure accurate and consistent data** entry using validation rules and standardization mechanisms.
 - **Enable real-time visibility** of plastic waste levels, recycled stock, and recycling center activities.
 - **Improve internal team coordination** through a robust role-based access model ensuring secure and relevant data access.
 - **Deliver impactful sustainability outcomes** by enhancing automation, reporting, and decision-making capabilities through the Salesforce platform.
-

Technology Description

Salesforce:-

Salesforce is a cloud-based Customer Relationship Management (CRM) platform that enables businesses to automate operations, manage records, and improve service delivery. It provides both declarative (point-and-click) tools and programmatic capabilities (like Apex and Flows) for building customized business solutions.

Custom Objects:-

Custom Objects in Salesforce function like database tables and are tailored to specific business needs. For **RePlastix Innovations**, the following custom objects were created:

- **Re_Plastic_Innovations_Plastic_Waste__c** – Stores records of collected plastic waste
- **Re_Plastic_Innovations_Recycling_Center__c** – Manages details of recycling centers
- **Re_Plastic_Innovations_Recycled_Product__c** – Tracks recycled products and their stock

- **Re_Plastic_Innovations_Order__c** – Manages customer orders for recycled products
- **Re_Plastic_Innovations_Restock_Request__c** – Handles restocking requests for low-stock items

Tabs:-

Tabs are used to display object data in salesforce ui

Custom App:-

A Custom App in Salesforce is a collection of tabs grouped together for a specific purpose. For RePlastix Innovations, a custom app was created to manage plastic waste collection, recycling processes, inventory, and orders in a unified interface.

Profiles:-

Profiles define what users can see, do, and edit in Salesforce. They were used to control access to objects like Plastic Waste, Orders, and Recycled Products for different teams (e.g., Inventory, Collection, Management).

Roles:-

Roles control data visibility based on the organizational hierarchy. RePlastix used roles to ensure users could only view data relevant to their department while enabling reporting and data sharing where necessary.

Validation Rules:-

Validation Rules were implemented to ensure clean and consistent data entry. For example:

- Waste weight must be greater than zero
- Stock threshold cannot be negative

Email Alerts:-

Email Alerts were configured in Flows to notify users when:

- Stock levels fall below the defined threshold
- Restock requests are approved or completed

Flows:-

Flows were the primary automation tool used to:

- Trigger stock alerts when recycled product stock falls below threshold
- Automatically create restock request records
- Send email alerts to relevant teams

- Update status fields based on changes (e.g., "Collected" → "Recycled")

Apex:-

Apex is Salesforce's object-oriented programming language. It allows developers to write custom logic that executes on the Salesforce platform, enabling automation beyond what point-and-click tools like Flows can achieve.

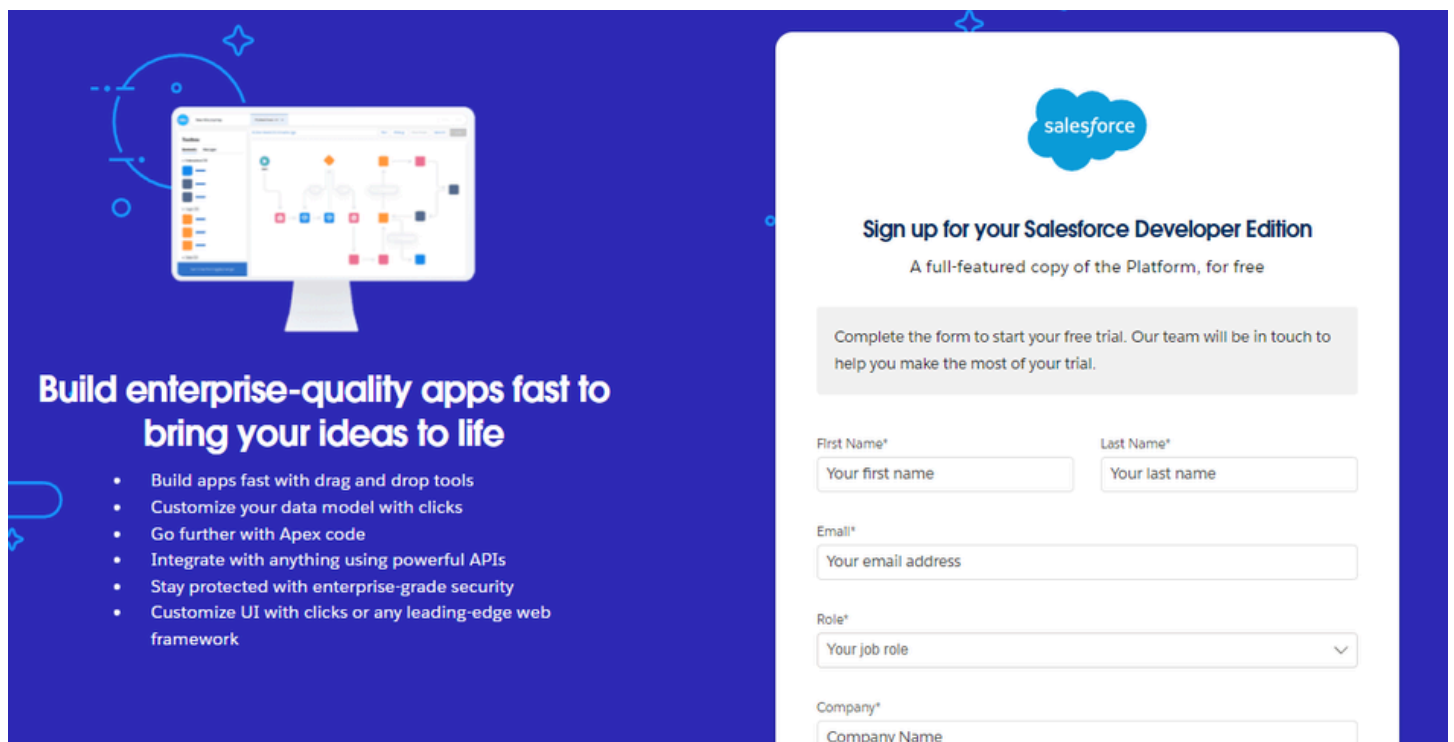
In the RePlastix Innovations project, Apex was used to:

- Automatically deduct stock when an order is placed
- Update restock request statuses when inventory is replenished

Detailed Execution Of Project Phases

1. Developer Org Setup

- A Salesforce Developer Org was created using <https://developer.salesforce.com/signup>
- The account was verified, password was set, and access was granted to begin the Salesforce customization



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First Name*
Your first name

Last Name*
Your last name

Email*
Your email address

Role*
Your job role

Company*
Company Name

2. Custom Object Creation

Five custom objects were created to support RePlastix Innovations' recycling workflow:

- Re_Plastic_Innovations_Plastic_Waste__c – Tracks plastic waste data
- Re_Plastic_Innovations_Recycling_Center__c – Manages recycling center details
- Re_Plastic_Innovations_Recycled_Product__c – Stores recycled product inventory
- Re_Plastic_Innovations_Order__c – Handles customer order details
- Re_Plastic_Innovations_Restock_Request__c – Logs restock requests for low inventory

Steps Followed:

- Navigated to **Setup → Object Manager → Create → Custom Object**
- Provided object labels, names, and enabled search/report features

The screenshot shows the Salesforce Object Manager interface for a custom object named 'Re Plastic Innovations Plastic Waste'. The breadcrumb trail at the top indicates the path: SETUP > OBJECT MANAGER. The left sidebar contains a navigation menu with options: Details (selected), Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types, Related Lookup Filters, and Search Layouts. The main content area is titled 'Details' and includes a description 'Unique ID for waste records'. It contains several configuration fields: API Name (Re_Plastic_Innovations_Plastic_Waste__c), Custom (checked), Singular Label (Re Plastic Innovations Plastic Waste), Plural Label (Re Plastic Innovations Plastic Wastes), Enable Reports (checked), Track Activities, Track Field History, Deployment Status (Deployed), and Help Settings (Standard salesforce.com Help Window). 'Edit' and 'Delete' buttons are located in the top right corner.

3. Creating the Lightning App

- A custom Lightning App named **RePlastix Innovations** was created
- Included tabs: Plastic Waste, Recycling Center, Recycled Product, Orders, Restock Requests, Reports
- Assigned to the **System Administrator** profile for access management and testing

4. Validation Rules

To ensure data integrity and prevent invalid inputs, the following validation rules were applied:


- **Plastic_Waste__c:** Waste weight must be greater than 0
- **Stock_Low_On_Product:** Stock Level must be greater than threshold level
- **Check_Quantity_Not_Zero:** Quantity ordered must be at least 1
- **Future_Date_Collection:** Collection date must be greater than today's date

* = Required Information


Information

Re Plastic Innovations Order Name

Owner

 abdul adam akmal mohammed

Customer

 GenePoint

Recycled Product

test task record


Quantity

0

Quantity must be greater than zero.


Delivery Date

7/25/2025

 We hit a snag.

Review the following fields

- [Quantity](#)



Cancel

Save & New


Save

5. User Role & Profile Setup

- A new profile was created by cloning the **Standard User** profile, granting access to all custom objects
- Roles were created based on the organizational hierarchy:
 - **Recycling Manager** – Access to waste and recycling modules
 - **Sales Representative** – Access to orders and product modules
 - **Warehouse Supervisor** – Access to inventory and restock operations

6. User Creation

- Three users were created to simulate real organizational structure:
 - **John Production Engineer** – Recycling Manager (Platform 1 Profile)
 - **Quality Inspector Mike** – Sales Representative (Platform 2 Profile)
 - **Plant Manager Albert** – Warehouse Supervisor (Platform 3 Profile)
- Each user was assigned a **Salesforce Platform License**, respective **Role**, and **Profile**.



SETUP

Users

User Edit

John Production Engineer Sandbox 1

Help for this Page ?

User Edit

Save

Save & New

Cancel

General Information

Required Information

First Name

John Production Engineer

Last Name

Sandbox 1

Alias

jsand

Email

adamakmal_mohammedab

Username

johnproductionengineer@si

Nickname

User175327365482019187

Title

Company

Department

Division

Role

Recycling Manager

User License

Salesforce Platform

Profile

Platform 1

Active

☒

Marketing User

☐

Offline User

☐

Knowledge User

☐

Flow User

☐

Service Cloud User

☐

Site.com Contributor User

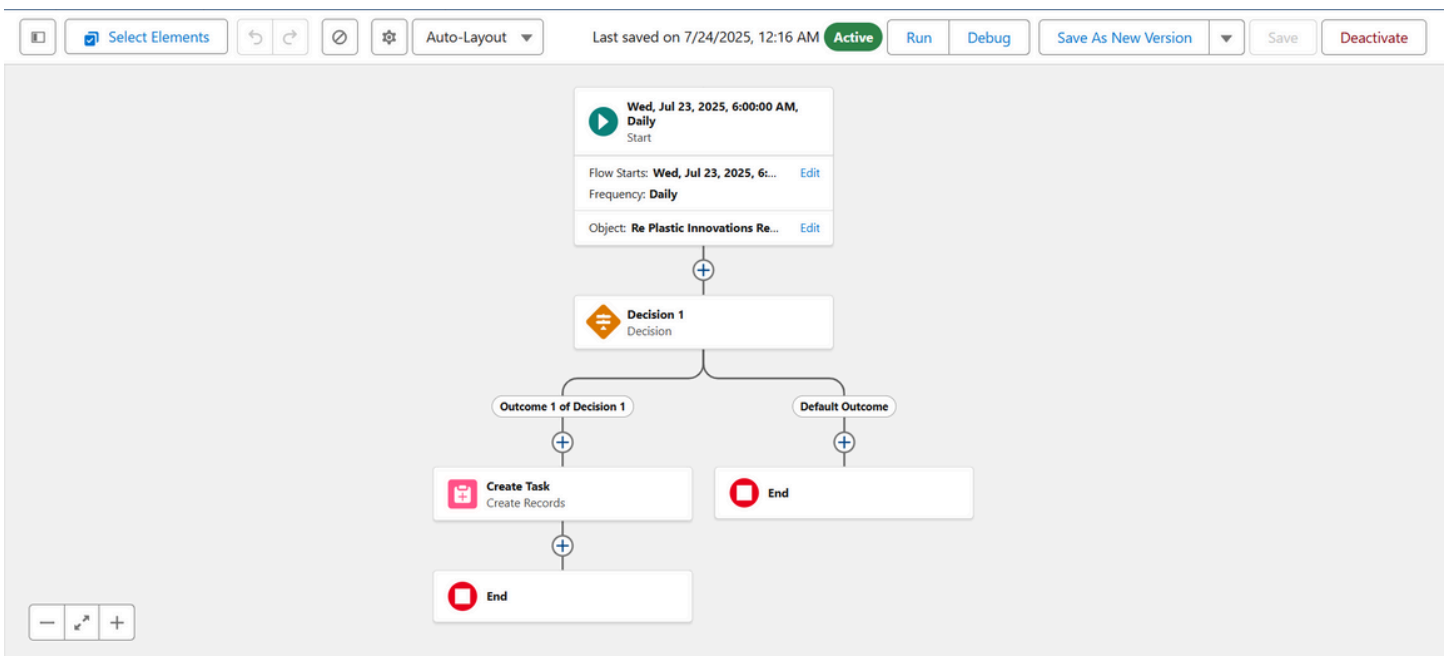
☐

Site.com Publisher User

☐

7. Scheduled Flow: Stock Monitoring

- A **Scheduled Flow** was created to run daily
- It checks if any Recycled_Product__c stock falls below the Threshold__c
- If true, it:
 - Automatically creates a new Restock_Request__c record
 - Sends an email alert to the inventory team



8. Apex Triggers

Custom Apex triggers were written to automate backend logic:

- **Order Trigger:** Deducts product quantity from inventory upon order creation
- **Stock Trigger:** Monitors and updates stock status when recycling is completed

- **Restock Trigger:** Updates request status once restock is fulfilled
-

Project Explanation With Real Life Examples

Let's walk through a realistic scenario to understand how the RePlastix Innovations system operates using Salesforce:

1. Waste Collection Entry

- A field agent collects **30 kg of HDPE plastic waste** from a municipal location.
- In Salesforce:
 - A record is created in the Re_Plastic_Innovations_Plastic_Waste__c object.
 - Fields include: Weight__c = 30, Type__c = HDPE, Status__c = Collected, and Location__c (auto-mapped).
- **Validation Rule:** Ensures Weight__c is greater than 0.

2. Recycling Center Assignment

- The collected waste is routed to the **Vijayawada Recycling Center**.
- In Salesforce:
 - The Recycling_Center__c lookup is assigned in the Plastic Waste record.
 - Status__c is updated to "Processing".

3. Recycling and Product Creation

- After processing, the waste is converted into **HDPE Pellets**.
- In Salesforce:
 - A new record is created in Re_Plastic_Innovations_Recycled_Product__c:
 - Name = HDPE Pellets
 - Stock_Level__c = 30
 - Threshold__c = 15
 - Price__c = ₹40 per kg

4. Order Placement

- A client (e.g., ABC Pvt. Ltd.) places an order for **20 kg** of HDPE Pellets.
- In Salesforce:
 - A new Re_Plastic_Innovations_Order__c record is created:
 - Customer__c = ABC Pvt. Ltd.
 - Recycled_Product__c = HDPE Pellets

- Quantity__c = 20
 - Delivery_Date__c = [+3 days from today]
- **Apex Trigger:**
 - Deducts 20 kg from the stock → Stock_Level__c becomes 10
- **Validation Rule:**
 - Prevents stock from going below 0

5. Inventory Monitoring

- The system detects that Stock_Level__c = 10, which is below the defined threshold (Threshold__c = 15).
- A **Scheduled Flow** runs:
 - Creates a new record in Re_Plastic_Innovations_Restock_Request__c
 - Sends an **Email Alert** to the Warehouse Supervisor

6. Email Notifications

- When an order is placed or a restock is triggered:
 - **Flows + Email Alerts** are executed
 - Example email to warehouse:
 - "Stock Alert: HDPE Pellets have dropped below the restock threshold. A restock request has been generated."
- Example loyalty email to customer:
- "Thank you for your continued support! Your loyalty status is now Gold."

7. Users and Roles in Action

The following users actively participate in this workflow:

Name	Role	Profile
John Production Engineer	Recycling Manager	Platform 1
Quality Inspector Mike	Sales Representative	Platform 2
Plant Manager Albert	Warehouse Supervisor	Platform 3

Screenshots

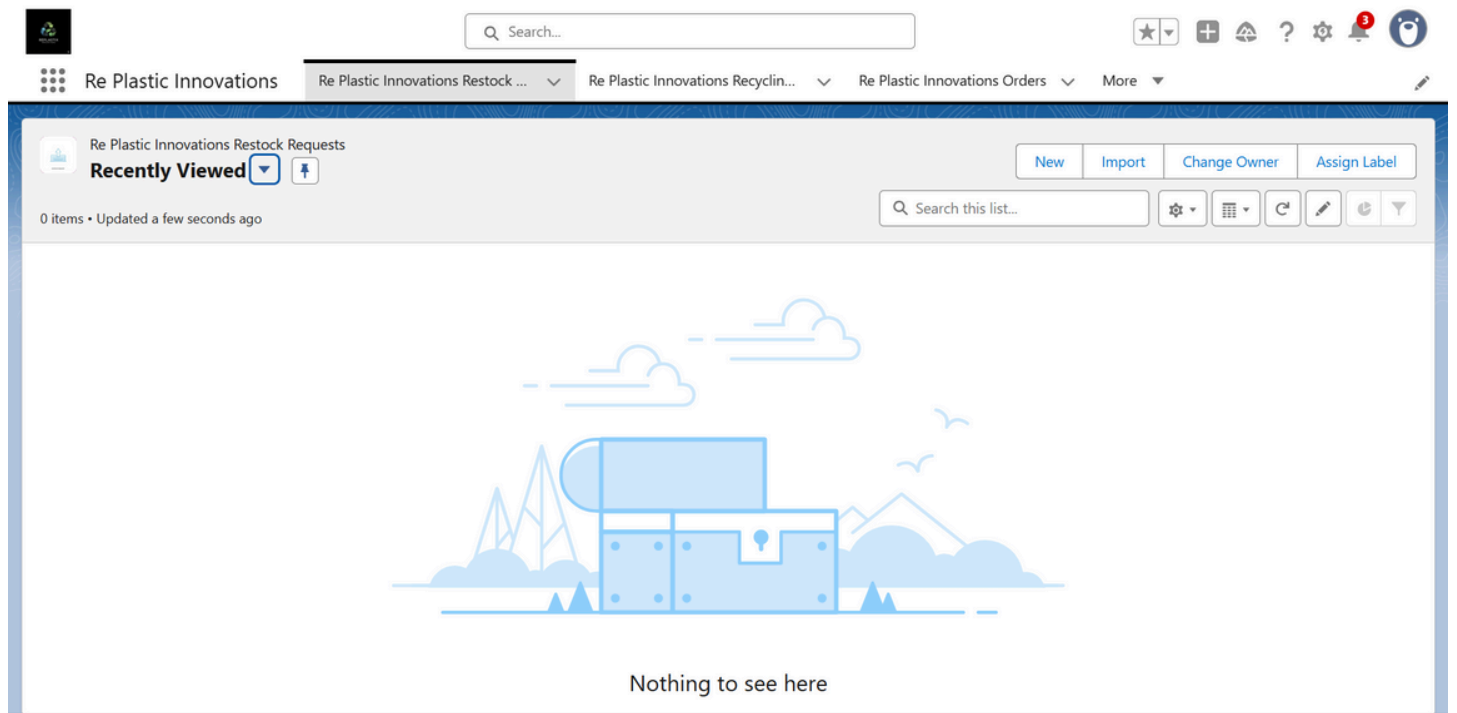


Fig: Custom App For Re Plastic Innovation

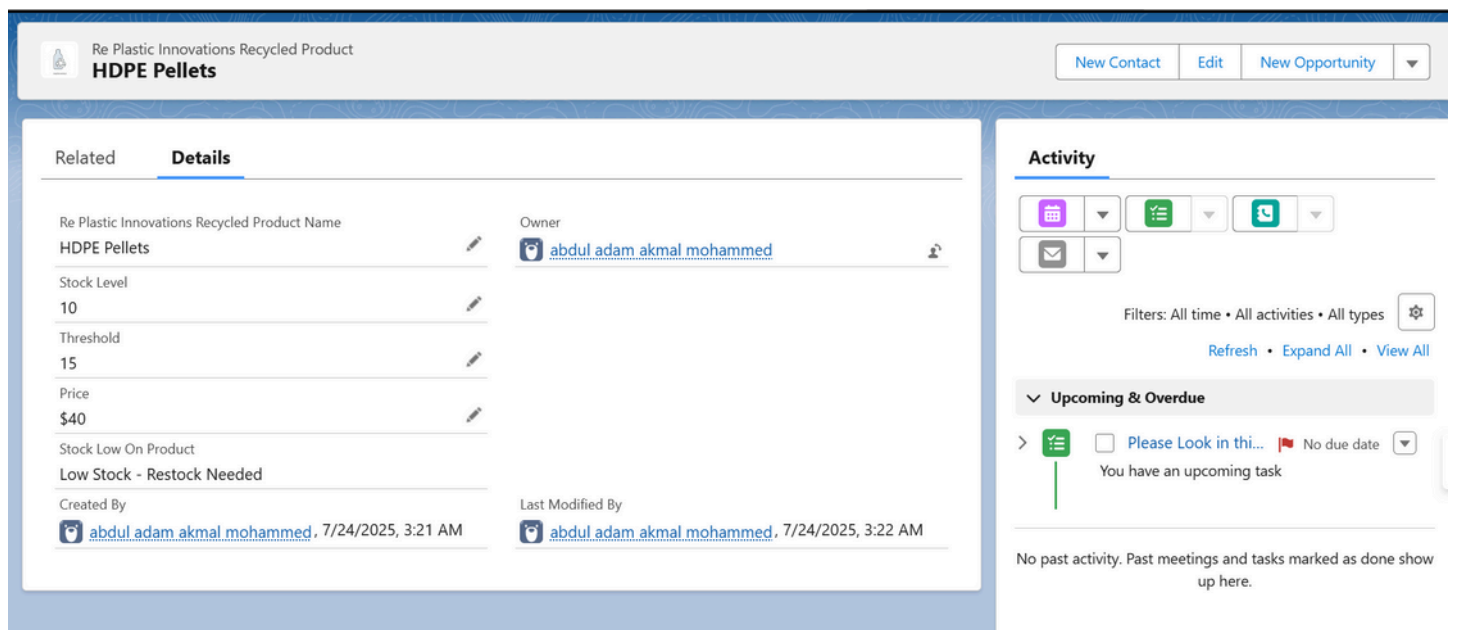



Fig: Recycled Product Creation in Re Plastic Innovation(See that stock level is less than threshold so a task is created)

 Task

Please Look in this Stock Is Low Fill The Stock ASAP

✓ Mark Complete

Edit Comments

Change Date

Create Follow-Up Task

Name


Related To

HDPE Pellets

Details

Related

Assigned To

 [abdul adam akmal mohammed](#)

Subject


Please Look in this Stock Is Low Fill The Stock ASAP

Due Date

Priority

High

Created By

 [OrgFarm EPIC](#), 7/24/2025, 3:24 AM

Comments

Status

In Progress

Name

Related To

HDPE Pellets

Last Modified By



 [OrgFarm EPIC](#), 7/24/2025, 3:24 AM

Fig: Task the pop us when the stock level is less

 Re Plastic Innovations Restock Request

RPIRR-0002

New Contact

Edit

New Opportunity

Related

Details

Re Plastic Innovations Restock Request Name

RPIRR-0002

Product

HDPE Pellets


Requested Quantity

50


Status

Pending

Created By

 [abdul adam akmal mohammed](#), 7/24/2025, 3:22 AM

Owner

 [abdul adam akmal mohammed](#)

Last Modified By


 [abdul adam akmal mohammed](#), 7/24/2025, 3:22 AM

Fig: Restock Request created for the Recycled Product(status: Pending)

Re Plastic Innovations Recycled Product
HDPE Pellets

[New Contact](#)
[Edit](#)
[New Opportunity](#)

Related

Details

Re Plastic Innovations Recycled Product Name
HDPE Pellets

Stock Level
60

Threshold
15

Price
\$40

Stock Low On Product
Sufficient Stock

Created By
[abdul.adam.akmal.mohammed](#), 7/24/2025, 3:21 AM

Owner
[abdul.adam.akmal.mohammed](#)

Last Modified By
[abdul.adam.akmal.mohammed](#), 7/24/2025, 3:34 AM

Activity

Filters: All time • All activities • All types

[Refresh](#) • [Expand All](#) • [View All](#)

Upcoming & Overdue

No activities to show.

Get started by sending an email, scheduling a task, and more.

July • 2025

This Month

Please Look in this Sto...

Today

No more past activities to load.

Fig: Stock Level is added as soon as we change orders status to approved

Restock Request Approved

Restock Request 11:35 AM
to ▾

The restock request for product HDPE Pellets has been approved. Please proceed with stock update.

Fig: Restock Request Approval Email

Conclusion

The RePlastix Innovations CRM system, built on Salesforce, successfully streamlines critical business operations such as plastic waste tracking, recycling center management, recycled product inventory, order handling, and stock monitoring. By leveraging Salesforce tools like **Custom Objects, Flows, Validation Rules, Email Alerts, and Apex**, the platform ensures clean data, timely updates, and a seamless operational experience.

Through automation and a clearly defined role hierarchy, the system reduces manual errors, increases operational efficiency, and provides deep visibility into real-time stock, recycling status, and customer orders. This implementation lays a strong foundation for RePlastix Innovations to scale its sustainable waste management operations with confidence and control.

FUTURE SCOPE

1. Customer Portal Integration

- Build a **Customer Community Portal** where clients can log in, place orders, view delivery timelines, and track recycling impact reports.

2. Mobile App using Salesforce Mobile SDK

- Enable field agents and warehouse staff to access inventory and order modules through a dedicated mobile interface for real-time updates and actions.

3. Reports & Dashboards

- Create detailed **recycling and sales dashboards** to monitor:
 - Stock depletion trends
 - Center-wise waste processing performance
 - Monthly order volume and customer metrics

4. AI-Powered Recommendations (Einstein)

- Integrate **Salesforce Einstein** to suggest restock volumes, detect recycling bottlenecks, and provide order suggestions to customers based on their purchase patterns.

5. WhatsApp/SMS Integration

- Notify users and customers through **WhatsApp or SMS** for:
 - Order confirmations
 - Stock alerts
 - Loyalty status changes
 - Environmental impact summaries (optional)

