Project Name: RegenCredit

1. User Persona

- **Name:** Sarah
  Role: Consumer (Business Sustainability Manager)
  Goal: Purchase carbon credits to offset her company's carbon footprint and meet ESG goals efficiently.
- **Name:** Alex
  Role: Producer (Solar Power Plant Owner)
  Goal: Sell carbon credits generated from his solar power plant to monetize his sustainable energy production.

2. User Stories

For Sarah (Consumer):

- As a Sustainability Manager,
- I want to browse and purchase verified carbon credits directly from the platform,
- so that I can offset my company's carbon emissions transparently and meet our ESG commitments.

For Alex (Producer):

- As a Solar Power Plant Owner,
- I want to list and sell the carbon credits generated from my solar energy production,
- so that I can earn revenue from my contributions to sustainable energy.

3. Acceptance Criteria

For Sarah:

- **Functionality:**
  - The platform should display a marketplace with available carbon credits, categorized by region, type, and source.
  - Sarah should be able to filter and select carbon credits based on her company's region and emission goals.
  - The platform should provide a detailed breakdown of credits, including source verification and grid emission factors.
  - Sarah should receive a certificate of purchase upon completion of the transaction.
- **Attributes:**
  - Transparency in credit source and calculations.
  - Integration with regional grid emission factor data for accuracy.
  - User-friendly interface for credit selection and payment.

- **User Interaction:**
    - Sarah should be able to search, filter, and view details of carbon credits.
    - She should have a secure payment option and access to transaction history.

For Alex:

- **Functionality:**
    - The platform should allow Alex to create an account, list carbon credits, and manage his inventory.
    - Alex should be able to input his solar power plant data, including energy production and get corresponding carbon credits.
    - The platform should provide insights into his sales performance.
- **Attributes:**
    - Secure and transparent credit listing process.
    - Real-time updates on credit sales and payments.
- **User Interaction:**
    - Alex should be able to upload his solar power plant details and register carbon credits for sale.
    - He should receive notifications about sales and payouts.

4. Priority

- **For Sarah:** High
- **For Alex:** High

5. Technical Notes

Dependencies:

- Verified grid emission factor data from regional government sources.
- Smart contracts on Solana for transparent credit generation, sales, and purchases.

Considerations:

- Ensure the platform maintains accuracy in calculating carbon credits using the grid emission factor.
- Provide a seamless and intuitive user experience for both buyers and sellers.
- Include robust security measures for transactions and data protection.