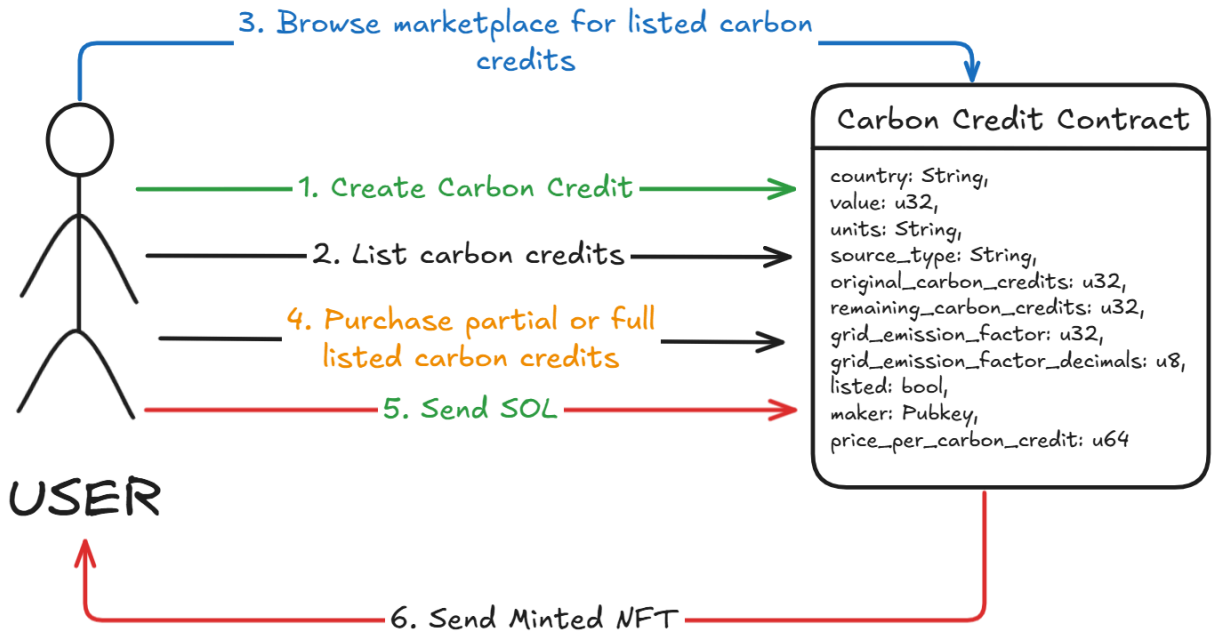
Protocol POC Requirements

- The protocol shall allow users to register their solar power plant data (energy production metrics) on-chain.
- The protocol shall allow users to input their solar power plant's data and based on the corresponding grid emission factor, automatically calculating the number of carbon credits to be created.
- The protocol shall allow users to initiate a purchase of partial or full amount of carbon credits after depositing the required funds (Amount paid is equal to the number of carbon credits multiplied by price per carbon credit).
- The protocol shall mint an NFT of the number of carbon credits purchased and deposit to the user.

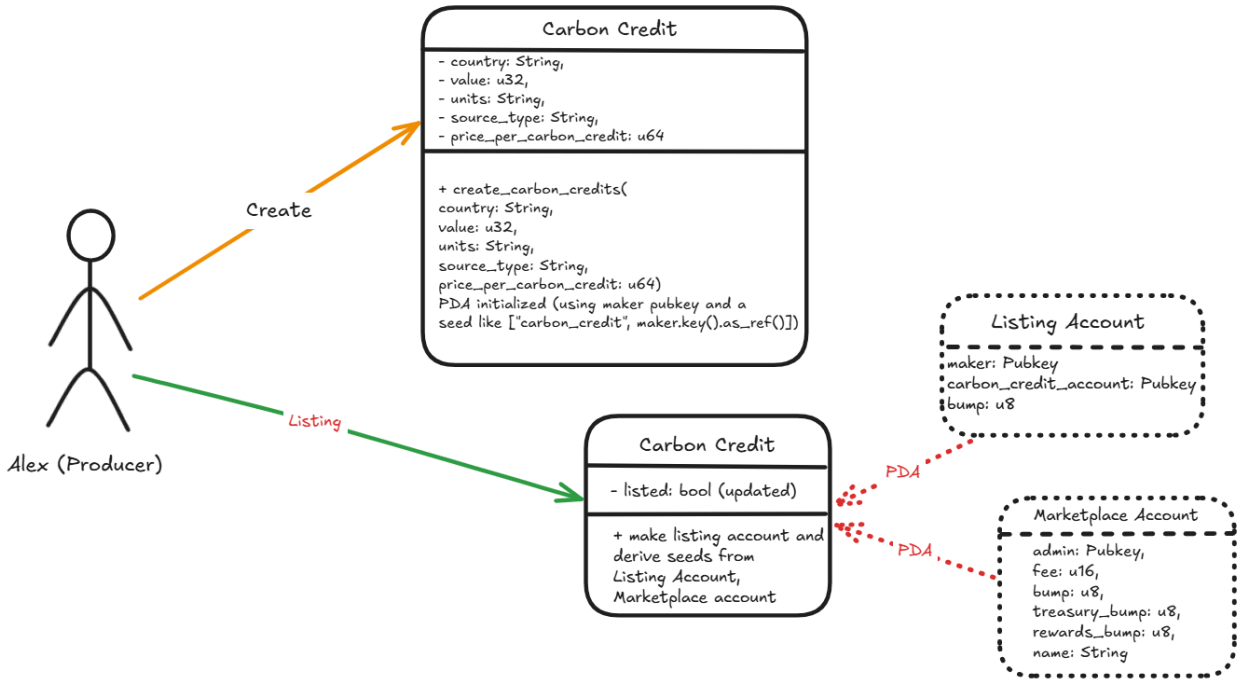
Overview



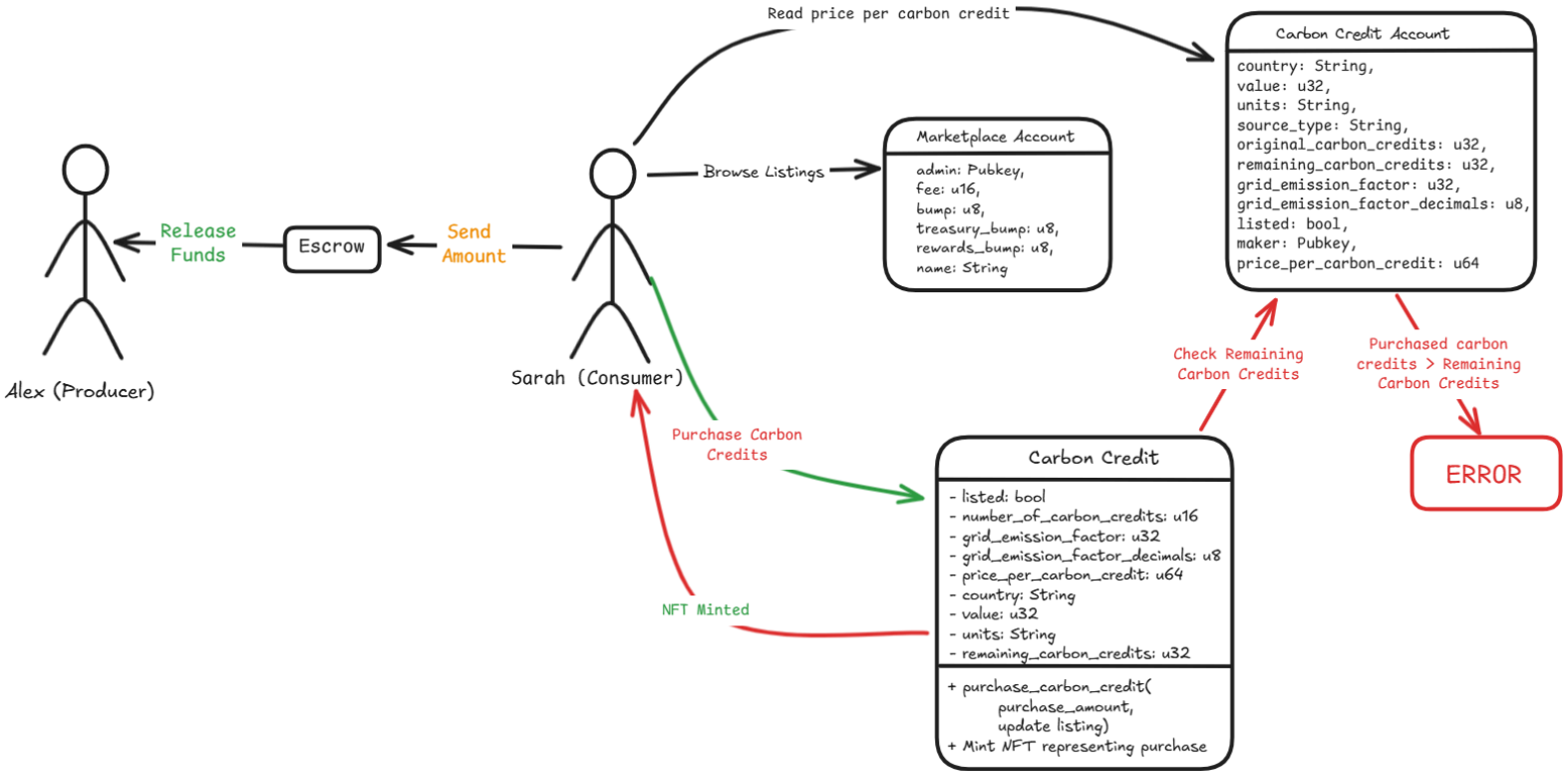
1. **User Creates Carbon Credits**
    - On-chain protocol account gets created
    - User enters information like country, energy metrics (value and unit), source type and price per carbon credit
    - Contract calculates carbon credits based on grid emission factor and saves on-chain
2. **List Carbon Credits**
    - User decides to list carbon credits on marketplace
3. **Browse marketplace for listed carbon credits**
    - User browses marketplace to make purchase of carbon credit
4. **Purchase partial or full listed carbon credits**
    - User initiates purchase of partial or full carbon credits
    - Contract checks remaining carbon credits and returns error if purchased credits more than remaining credits
    - Contract checks if the carbon credits are listed, return error otherwise
5. **Send SOL**
    - Contract will calculate SOL amount to be paid based on number of carbon credits purchased and price per carbon credit
    - Contract will charge marketplace fee, if applicable
6. **Send Minted NFT**
    - Contract will check if SOL received then NFT is minted and transferred to user

Details

Producer Flow



Consumer Flow



- Escrow holds the funds until NFT is minted, released once NFT is minted to Sarah.