Beta Presentation
Remote Energy Distribution Payment Platform

The Capstone Experience
Team Caxy Interactive

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Project Overview

• The issue of grid electricity in Cameroon and other African nations.
  ▪ 55% has access to the electrical grid.
  ▪ Only 17% in rural areas.

• Off-grid energy exchange marketplace to allow for the access of reliable, off-grid electricity.
  ▪ Phase 1 - Device Design and Prototype (Completed by FS21 ECE Capstone)
  ▪ Phase 2 – SMS-based Payment System Design and Prototype
System Architecture

- SMS/Voice
- Web App
- Arduino Charge Station
- Server
  - Framework/API: Express, JS
  - MongoDB
  - Twilio
  - Stripe
  - Firebase
- App Frontend: HTML, CSS, JS

Admin Analytics
Admin Live Transactions
Admin Station Management

![Admin Station Management Interface](image_url)
User Home

Welcome, admin123

Current Balance

793.85
FCFA

Energy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Charge Station</th>
<th>Amount (FCFA)</th>
<th>Energy (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/02/22 13:19</td>
<td>aqua</td>
<td>1.31</td>
<td>0.2</td>
</tr>
<tr>
<td>04/02/22 13:44</td>
<td>aqua</td>
<td>0.92</td>
<td>0.14</td>
</tr>
</tbody>
</table>
User Fund Additions
User SMS Interaction

2:31
Sent from your Twilio trial account - Welcome to Energy Wells charging station. How much FCFA do you plan on spending (ex: 20, 15, etc.)?

12345

Sent from your Twilio trial account - Please select a valid charge mode (1, 2, or 3)

12345

Sent from your Twilio trial account - What setting will you be using?
- 1 - 6v
- 2 - 24v
- 3 - 120v

1

Sent from your Twilio trial account - Success! To begin charging, please plug in your device and enter the following code: 512356. When you are complete, please test the code from the LCD display to this number.

62485

Sent from your Twilio trial account - Your transaction has been completed. Your account has been charged: 0.02 FCFA. Your remaining balance is: 2292.26 FCFA.
What’s left to do?

• Features
  ▪ Feature Complete

• Stretch Goals
  ▪ Voice pay
  ▪ Multiple station functionality
  ▪ Resolution changes for various screen sizing

• Other Tasks
  ▪ Finalize any last routing changes
  ▪ Add more help content
  ▪ Finding edge cases in inputs
Questions?