

TIEC3.0 THE SOLAR CAFE

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Proposed Solution

The Solar Café is a solar-powered energy access solution designed to meet the unique needs of Nigerian tertiary students who struggle with limited or expensive electricity. It offers containerized study spaces powered by solar energy, device charging stations, WiFi access, affordable power bank rentals, and a mini-mart for snacks and refreshments. Energy access is priced very low to make it highly affordable for students.

Beyond reliable clean energy access, the Solar Café also creates job opportunities for students and local youth, providing valuable work experience, skill development, and income while promoting clean energy awareness. It bridges the energy gap while offering comfort, safety, and affordability for students.

Technical Design

The Solar Café features a container framing an open-air study space, and serving as a secure powerhouse and refreshment center. Rows of study tables are equipped with integrated power outlets and USB ports for device charging. Artificial grass flooring, comfortable seating, and open space create a quiet, student-friendly environment. The unique design supports easy replication across multiple campuses, with capacity to serve 30–50 students daily.



Economic feasibility/Proposed Business Model

Our business model offers daily access at ₦1,000, targeting at least 10 daily subscribers to generate a baseline revenue of ₦10,000/day. We also provide: Mobile charging service at ₦100 per device, Powerbank rentals at ₦500 per day, Monthly subscription plan at ₦10,000. Subscription packages for longer academic periods.

With a total capital expenditure (CAPEX) of ₦5 million, we project to break even within 18 months of operation. Additional revenue will be generated through the sale of snacks and beverages, creating a secondary income stream.

The café also functions as a convenient and secure solar-powered charging station, helping students stay productive in a power-deficient environment. This hybrid model ensures financial sustainability, affordability for students, and aligns with our vision of expanding clean energy access while supporting educational success.

Timeline for developing prototype/trial

Pilot Phase (1month): Launch and operate the first Solar Café at Federal Polytechnic Ile-Oluji, test systems, train staff, and collect usage data.

Redo Phase (after 3months): Analyze customer feedback, optimize pricing, improve services, and strengthen operational efficiency.

Development Phase (after 24 months): Scale to additional campuses, replicate modular setup, expand student employment, and establish partnerships with student unions for sustainable growth.

Budget & Target User/Market/Scale

The Solar Café is launching with a budget of ₦5 million, covering setup, solar system, interior, and operations. Our primary users are over 5,000 students at The Federal Polytechnic Ile-Oluji, including faculty and staff. The café provides clean energy, charging access, and study space at an affordable daily fee.

We aim to impact 5,000+ students in year one and scale to other campuses by year two through our modular, replicable design, creating jobs, improving energy access, and supporting education in underserved school communities.

References

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