IMPACT PAY

Coalescence'25

SRIJAN

The Tech Hackathon

Team Name: **KRISHNA**

Team Members :

SANYAM JAIN
SAMYAK JAIN
ARIN CHOURASIA
SHIVANSH CHOURASIA

“The Energy Blindspot: Why India Needs GaiaOS”

ImpactPay

GAPS & OPPORTUNITY

Energy Blindness

Lack of awareness about energy sources among citizens

Individual Waste

Inefficient energy use by individuals

EV + Renewables Mismatch

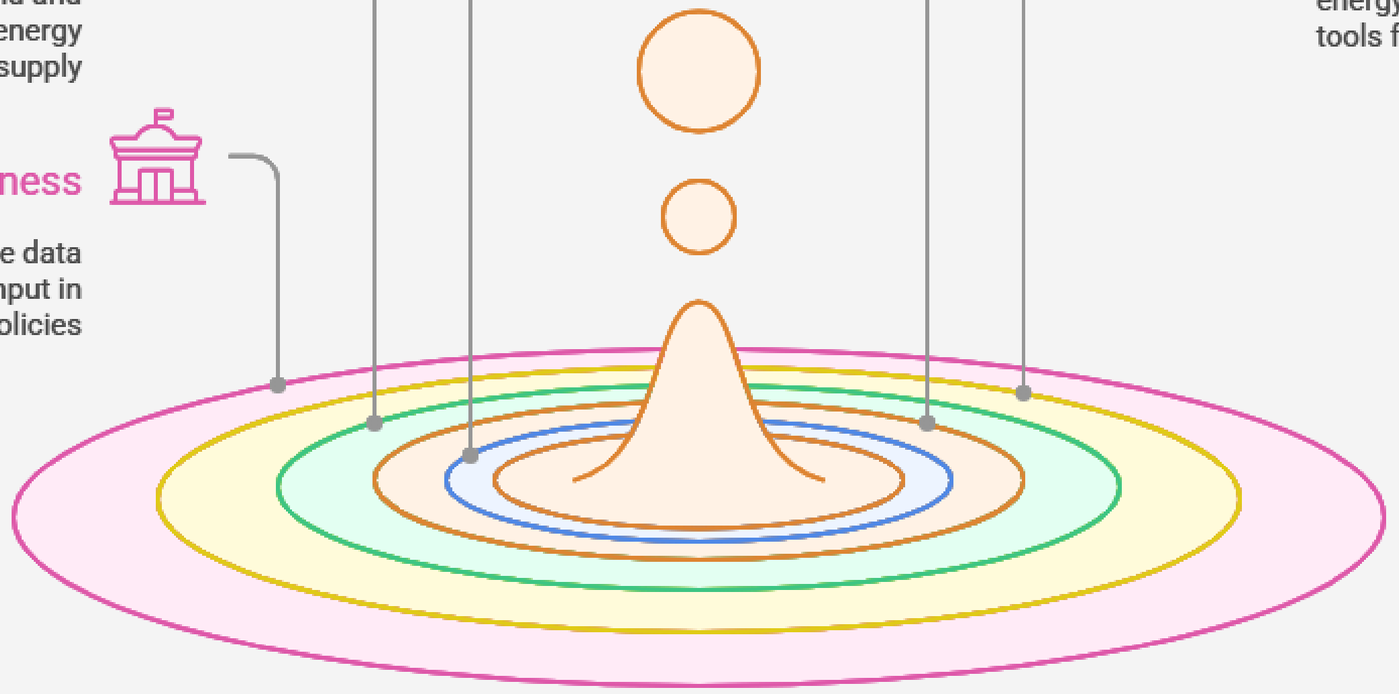
Timing issues between EV demand and renewable energy supply

No Citizen Engagement

Lack of interactive energy management tools for citizens

Policy Blindness

Lack of real-time data and citizen input in energy policies



Energy today is blind, static, and dumb. To achieve Mission LiFE, we must make energy visible, dynamic, and smart.

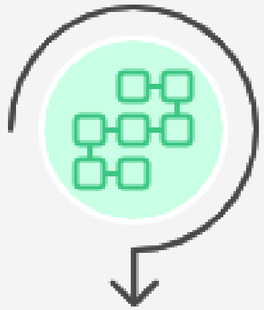
“GaiaOS – The Energy Internet”

Citizen Energy Wallet

Bill shows source, dynamic tariffs, and energy score linked to incentives.

AI + AR Copilot

Usage guidance and AR lens to scan devices for cost, kWh, and CO_2 footprint.



Blockchain Energy Grid

Peer-to-peer solar trading with smart contracts for auto-purchase of clean kWh.

Gamification & GreenCoins

Leaderboards for communities with GreenCoins redeemable for cashback and credits.

Unique Edge: Just like UPI transformed money, GaiaOS transforms energy into a visible, tradable, gamified ecosystem.

“Citizen Energy Wallet – UPI for Energy”

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Citizen Wallet

Wallet Integration

Citizens see ₹ + kWh + source label on every bill.

Dynamic Pricing

Tariffs auto-adjust with renewable mix (coal expensive, solar cheap).

Energy Score

Rewards good habits → linked to financial incentives (loans, rebates).

Instant Rewards

Cashback + GreenCoins directly in wallet.

Impact

Makes energy visible, tradable, and financially meaningful for everyone.

Tech Stack:

- **Frontend:** Flutter / React Native (Android + iOS)
- **Backend:** Node.js + Express
- **Data Layer:** Smart meters + IoT → live usage; DISCOM API → billing & tariffs
- **Payments:** UPI (NPCI API)
- **Database:** PostgreSQL + TimescaleDB
- **Analytics:** Kafka + Spark

DISCOMPAY

NPCI भारतीय राष्ट्रीय भुगतान निगम NATIONAL PAYMENTS CORPORATION OF INDIA

PostgreSQL

“AI Energy Copilot + AR Energy Lens”

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AI Energy Copilot

Learns user habits and suggests optimal usage to save money and reduce CO_2. It can even auto-schedule appliances via IoT.

Impact: Saves money, reduces CO_2, maximizes renewable use.

AR Energy Lens

Scan any device with phone camera to see live overlay of cost, usage, and carbon footprint. Makes invisible energy visible and actionable.

Impact: Makes invisible energy visible and actionable.

Examples:

“Shift ironing to 3 PM → save 25% CO_2.”

“Charge EV at midnight → 40% cheaper.”

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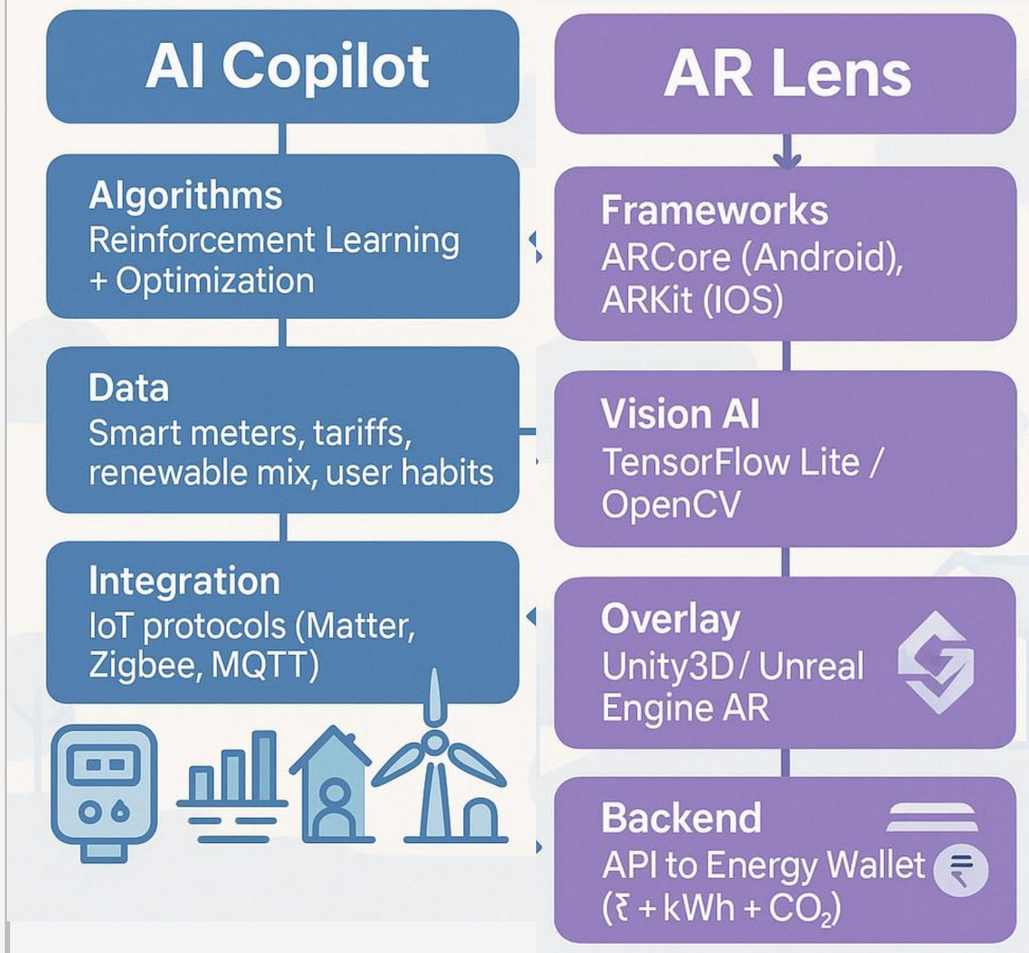
Tech Stack



Decentralized Energy Grid + Gamification

ImpactPay

Decentralized Energy Grid

Exmplè: House A sells 2 kWh → EV Station buys via smart contract."

Impact: Builds local micro-grids, reduces fossil fuel dependency, prevents waste

Impact: Energy becomes social, rewarding, and fun.

Gamification with GreenCoins

- Citizens earn GreenCoins for saving, shifting loads, or buying renewables
- Redeemable for cashback, EV charging; discounts
- Leaderboards: Communities ranked by energy savings → *positive competiton*

Example: Block A saved 500 kWh → Rank #1.

Tech Stack

BLOCKCHAIN LAYER:

Frameworks: Hyperledger Fabric / Polygon

Smart Contracts: Solidity Chaincode

Consensus: Proof of Aut-hority (low energy, fast)

Assets: Tokenized kWh units

Integration: DISCOM APIs + Citizen Wallet

GAMIFICATION LAYER:

Backend: Node.js Gamification Engine

Database: Redis (leaderboards, real-time scoring)

Rewards: GreenCoins via smart contracts

UI: React Native / Flutter front-end

Integration: UPI Wallet for redemption

“From Hackathon to Real-World”

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“Feasibility”

IoT Sensors

Cost-effective sensors priced under $1

DISCOM APIs

Existing APIs facilitate integration

Blockchain Infrastructure

Mature infrastructure supports project

UPI Infrastructure

Mature infrastructure supports project

“Impact”

Citizens	Communities	Govt	Planet
Save ₹1000–₹2000/month + earn from surplus	Local energy independence, fewer blackouts	Real-time enforcement, smarter subsidies	Billions of CO_2 tons avoided

“Scalability”

Phase 1: Wallet + AR Demo
Initial demonstration of wallet and AR technology in housing societies

Phase 2: State-wide DISCOM Integration
Integration of DISCOMs across a state with a blockchain pilot

Phase 3: Nationwide Energy UPI
Implementation of a nationwide Energy UPI system

Global Blueprint
Development of a global blueprint for energy systems

“Demo video & Prototype Link”

https://drive.google.com/drive/folders/1rz0civ3iPhHLPL81X60XGn4COcj3DUQr

Demo video

https://gaia-os-frontend.vercel.app/

Prototype