the Singapore WAY

USE CASE

City as a Service

City as a Service: How an Energy Provider Built Micro-Grids in Tier-2 Markets

1. Context Snapshot – A Captivating Story

- City Name: Gulu
- Country: Uganda
- Population: 250,000
- Year of Launch: 2023

Gulu was growing—but the grid wasn't. As one of Uganda's emerging Tier-2 cities, it faced a paradox: rapid urbanization and industrial ambition, but unreliable, centralized electricity. Outages could last days. Factories ran diesel generators. Households shared solar lamps. The grid was failing the city it was supposed to serve.

Engineer Paul Okello, a systems thinker from Gulu Energy Solutions Ltd., asked a radical question: What if the city itself was a service—and power was its first offering? Drawing from The Singapore Way, particularly Singapore's model of reliable, anticipatory infrastructure, Paul helped reimagine energy not as a utility, but as a platform for local growth.

Thus began GridBlocks—modular, demand-driven micro-grids designed for scale, autonomy, and integration.

2. LOCAL LEADER'S Vision Statement

"Singapore built for certainty. We build for emergence. Our cities may be small, but our grids now think big—block by block."
— Engineer Paul Okello

3. 10 Lessons from The Singapore Way Adapted to the City

Singapore Strategy	Local Adaptation
Infrastructure as Enabler	Power provided as a bundled service with data, water, and WiFi in key hubs
Modular Urban Planning	Created GridBlocks—standalone energy units serving 200–500 households each
Public-Private Collaboration	Partnered with landlords and SMEs to co-finance installations
Long-Term Resilience	Designed micro-grids to withstand 72-hour outage from main grid
Data-Driven Maintenance	IoT sensors track voltage, theft, and overloads in real-time
Pragmatism & Innovation	Used recycled EV batteries in storage to cut cost by 35%
Access for All	Off-grid settlements receive pre-paid energy packages via mobile wallets
Local Talent Pipeline	Trained 120 technicians from the city's vocational college
Interagency Coordination	Electricity mapped alongside sanitation and roads to avoid duplication
Service Ethos	Energy uptime SLA (Service Level Agreement) promised 97% availability—like cloud computing

4. The Local Plan

- **Name of Initiative: GridBlocks: Energy-as-a-Service for Tier-2 Cities**
    - Objectives:
        - Deliver modular, affordable, high-uptime power to underserved urban areas
        - Shift from central utility dependency to distributed energy resilience
        - Treat power as a civic platform, not just a product
    - Key Design & Policy Tools:
        - Tier-2 City Energy Charter signed by 5 municipalities
        - Open-grid architecture standard allowing plug-in by third-party solar providers
        - SLA-backed municipal contracts for micro-grid performance

5. Implementation Framework

Phase	Activities	Duration	Stakeholders
Phase 1	Identify and electrify 3 underserved wards	4 months	Local authorities, community groups
Phase 2	Launch public-private pre-paid energy program	6 months	Telecom partners, fintech startups
Phase 3	Expand GridBlocks to 8 cities + logistics hubs	9 months	Energy ministry, diaspora investors
Phase 4	Integrate smart meters and AI-driven demand shaping	Ongoing	Research labs, tech companies

6. Outcomes & Impact (18–24 Months)

- Quantitative:
  - 63% reduction in diesel use across pilot wards
  - 92% uptime achieved across 12 micro-grids
  - Over 48,000 residents and 1,200 SMEs served

- Qualitative:
  - A seamstress doubled her output after night power became reliable
  - A tech youth hub used a GridBlock's WiFi node to build and sell 3 local apps
  - Parents in informal settlements now charge devices and lights safely at home
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7. Challenges Faced & How They Were Overcome

Challenge	Solution or Mitigation
Resistance from national grid monopolies	Created cooperative agreements to share load and report metrics
Theft and misuse	Installed tamper-resistant meters and community watch incentives
High upfront cost for SMEs	Offered "Power-as-a-Subscription" with daily rates and energy credits
Infrastructure gaps	Combined energy rollouts with roads and drainage upgrades for holistic service

8. LOCAL LEADER'S Reflections

"Singapore didn't wait for scale to build excellence. We took the same path, block by block. Our power grid doesn't just light homes—it powers hope."
— Engineer Paul Okello