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Making Feed-in Tariffs Work for Mini-Grid Developers

Practical Insights from the Field

Power

Innovate

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SESSION OVERVIEW

1. **The FiT Promise vs. Mini-Grid Reality**
   Why conventional FiTs fall short for developers

2. **Parameters That ‘’Make or Break’’ FiT Design**
   Tariff level, duration, indexation, guarantees, grid rules

3. **Field Insights: What Actually Works**
   Hard-won lessons from operating projects across Africa & Asia

4. **The Bankability Equation**
   What financiers need to see before they commit capital

5. **Recommendations for Policymakers**
   actionable steps to unlock mini-grid FiT markets

The FiT Promise vs. Mini-Grid Reality

THE PROMISE

- Revenue certainty for 10–20 years
- Bankable offtake contracts that unlock debt
- Cost-reflective pricing for rural communities
- Transparent, stable investment climate

THE REALITY

- FiTs designed for utility-scale, not mini-grids
- Payment delays of 6–18 months are common
- Tariff levels set below mini-grid cost recovery
- No provision for grid-arrival exit or buyout

Bottom line: A FiT that ignores mini-grid cost structures is not a FiT, it is a barrier dressed as policy.

Parameters That Make or Break a Mini-Grid FiT

Tariff Level

Must recover capex + opex at realistic capacity factors

Contract Duration

Minimum 10–15 yrs to match debt tenor & asset life

Indexation

Currency & inflation linkage; fixed tariffs erode real returns

Payment Security

Escrow, guarantee, or sovereign backing removes offtake risk

Grid-Arrival Rules

Clear buyout/integration rules when national grid arrives

Tariff Level: The Cost-Recovery Trap

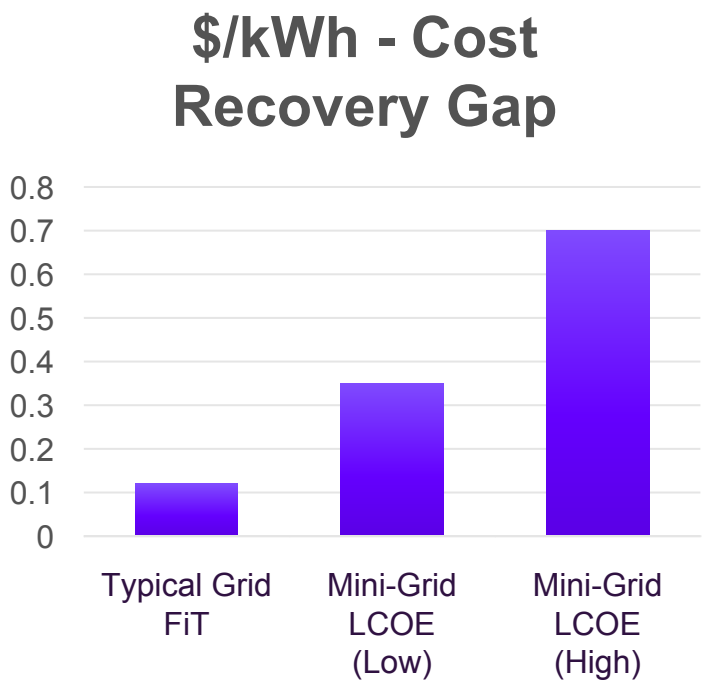
What the evidence shows:

▶ Mini-grid LCOEs range $0.35–$0.75/kWh depending on geography, load profile, and technology mix

▶ Most national FiTs in sub-Saharan Africa are set at $0.08–$0.20/kWh - a 2–4× structural gap

▶ Regulators benchmark to utility-scale solar, ignoring distribution, storage, and O&M costs unique to mini-grids

▶ This gap is not a negotiating position - it is a structural viability failure that kills projects before they begin



Payment Security: The Bankability Bottleneck

HIGH RISK

Direct Utility Offtake

- Utility creditworthiness often poor
- Invoice-to-payment: 6–18 months
- No recourse mechanism for delays
- Kills project financing on its own

MEDIUM RISK

Government Escrow Account

- Dedicated fund reduces delay risk
- Requires fiscal discipline to maintain
- Works in stable-revenue governments
- Seen in Tanzania, Rwanda mini-grid models

BEST PRACTICE

Partial Risk Guarantee (PRG)

- DFI or MDB backstops payment default
- Unlocks commercial debt financing
- Reduces blended cost of capital
- Growing use in AMDA-supported frameworks

Regulatory Complexity: The Hidden Project Killer

Complexity is a cost that developers bear, not regulators.

Avg. licensing time in best-practice markets	**3–6 months**
Avg. licensing time in problematic markets	**18–36 months**
Early-stage developers who abandon licensing	**~40%**
Pre-development cost lost per dropped project	**$80K–$200K**

What Works:

Class-based licensing
Automatic approval for systems <100kW - no discretionary review

One-stop shop
Single authority for FiT application, grid interconnect & permit

Standardised PPA
Government-published template; no bespoke legal negotiation per project

Digital registry
Online submission, tracking & payment eliminates physical bottlenecks

Grid-Arrival Risk: The Existential Threat to Investment

"When the national grid arrives, do we get bought out, integrated, or simply abandoned?"

- Every mini-grid developer, every market, every conversation

Without grid-arrival clause

- Asset stranded with no compensation
- Debt remains; revenue disappears
- Investors absorb 100% technology risk
- Chilling effect on all subsequent investment

With clause (basic framework)

- Defined buyout formula
- Minimum notice period (18 months typical)
- Partial protection; execution risk remains

Best practice: Hybrid integration

- Developer becomes distribution franchisee
- Mini-grid assets integrated into national plan
- Revenue stream transitions, not terminates
- Emerging in Nigeria, Bangladesh market models

What Financiers Actually Need to See

Cost-Reflective Tariff

Revenue certainty

+

Secure Payment

Default protection

+

Long Tenor

Debt servicing runway

+

Grid-Arrival Protection

Asset risk mitigation

=

Commercial debt at scale

Blended finance at 8–12% vs. 18–25% concessional-only

Longer loan tenors

10–15 yr amortization matching asset life, dramatically improves Debt to Service Ratio

Equity mobilization

Impact & institutional investors enter when downside is structured away

Actions to Unlock Mini-Grid FiT Markets

01

Build Mini-Grid-Specific Cost Models

Commission standardised LCOE studies by system size & geography. FiTs must be set above these , and not below utility-scale benchmarks.

02

Establish Payment Security Mechanisms

Create escrow facilities or negotiate PRG agreements with DFIs. Payment certainty is more critical than headline tariff level.

03

Mandate Grid-Arrival Compensation Clauses

Publish a model buyout formula and embed it in all FiT agreements. No clause = no bankable project.

04

Streamline Licensing to Class-Based Approvals

Sub-100kW systems should receive automatic licences. Reduce pre-development risk to attract more developers into the market.

05

Index Tariffs to Inflation & Currency Baskets

A fixed tariff eroded by local inflation kills real returns. Build automatic adjustment mechanisms into FiT regulations from day one.

The Market Is Waiting — Policy Must Lead

600M+

People without electricity across sub-Saharan Africa

$150B

Investment needed for universal electricity access by 2030

~50%

Of that gap addressable by mini-grids with right policy

3–5×

More capital attracted when FiT design is genuinely bankable

The technology exists. The demand is unambiguous. The constraint is policy design.

Well-structured FiTs don't just enable mini-grid projects, they **create conditions for a self-sustaining private sector.** Developers de-risk communities while FiTs de-risk developers. That is the chain of trust electrification depends on.

NERC NET-METERING POLICY

What Is NERC Net Metering?

The Nigerian Electricity Regulatory Commission (NERC) Net Metering Regulations allow electricity consumers who self-generate via solar or other renewables to export surplus electricity to the grid and receive bill credits, measured by a bi-directional meter.

Key Policy Parameters

Eligible generators:	≤1MW capacity residential, commercial & industrial
Export credit rate:	Set at retail tariff rate (not a wholesale or FiT rate)
Metering:	Bi-directional smart meter required at customer's cost
Credit rollover:	Monthly rollover with annual cash-out provision
DisCo obligation:	DisCos mandated to connect eligible net-metering users

Opportunities for Mini-Grid Developers

- ✦ Prosumer model: customers become co-investors in the system
- ✦ Reduces capex: smaller storage needed, surplus exports to grid
- ✦ Unlocks C&I anchor customers who demand export rights
- ✦ Aligns mini-grid economics with national policy direction

NERC net metering is a promising step, but its interaction with mini-grid FiT frameworks must be explicitly resolved

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Thank you

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