TFE Africa

The Rural Futures Fund

EMPOWERING THE ENTREPRENEUR

TFE Africa

Using a mini-grid's existing, energy consuming entrepreneurs and other high-yield connections as collateral to provide developers with low-cost capital to build more mini-grids.

Problems

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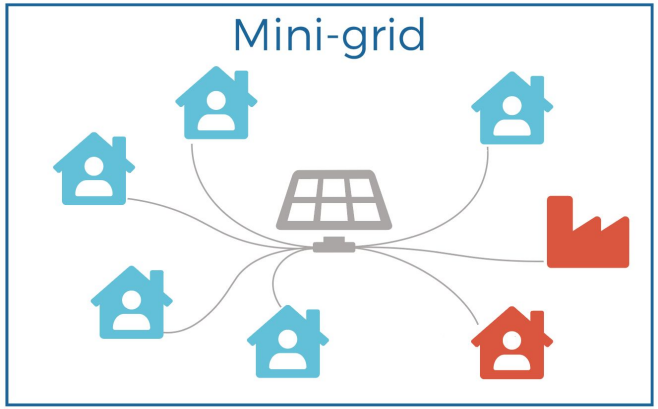
- Rural entrepreneurs are held back by a lack of reliable, affordable energy to power their businesses and a lack of capital to invest in them;
- Mini-grid developers are burdened by an asset heavy balance sheet; they own more assets then they'd like to.
- At 20+%, the cost of capital/equity (often more than half of total project costs) is too high[1];
- The flow of private capital into the sector is not currently enough to support scale.



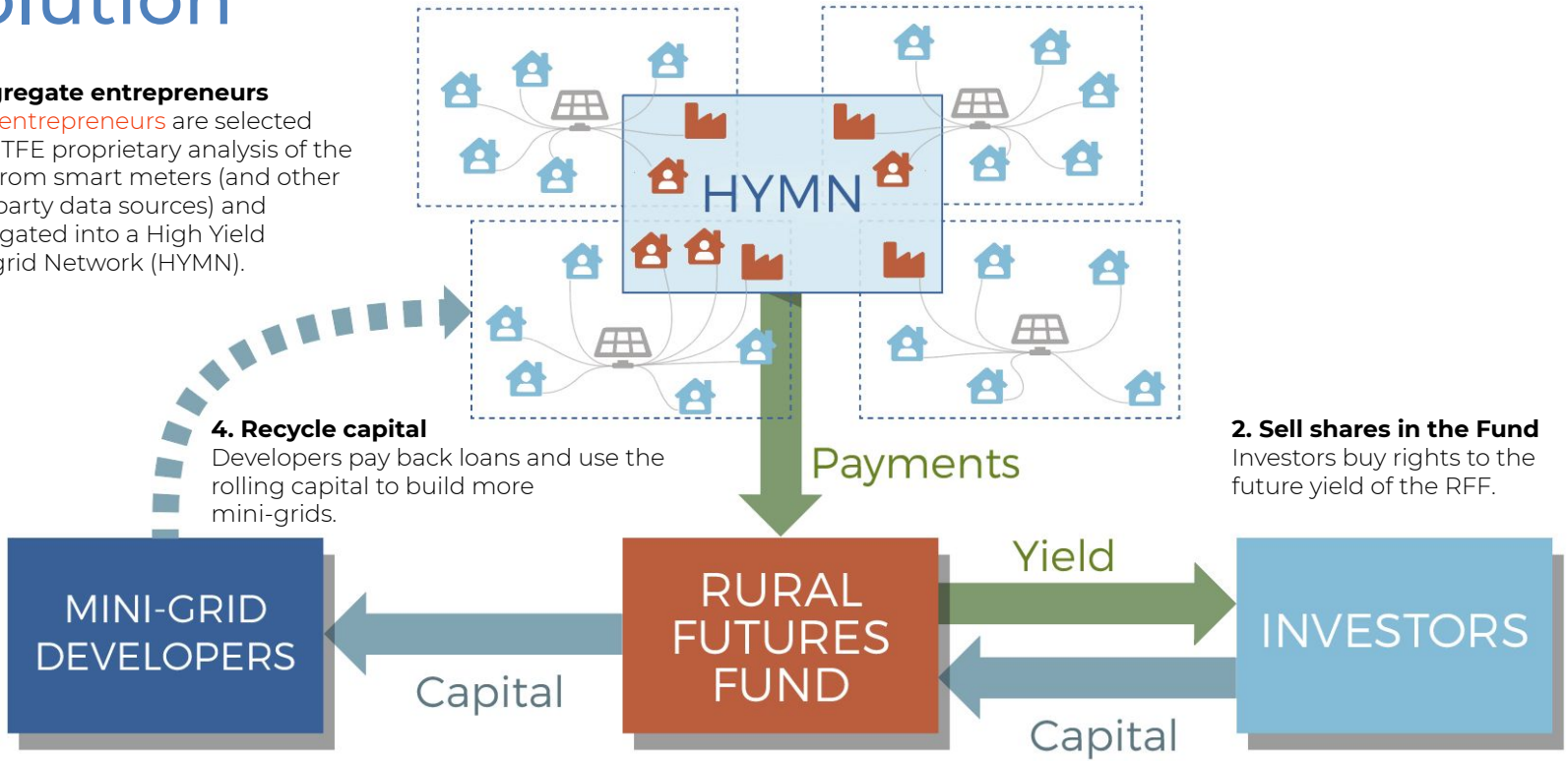
As a unit of investment, the individual mini-grid suffers from:

- Small ticket size;
- High due diligence costs;
- Risky market perception (e.g. sovereign risks);
- Entrepreneurs (high yield) and households (low yield) are aggregated together.

1. *Derisking Renewable Energy Investment: Off-Grid Electrification* - Report by UNDP

Solution

1. Aggregate entrepreneurs
Rural entrepreneurs are selected using TFE proprietary analysis of the data from smart meters (and other third party data sources) and aggregated into a High Yield Mini-grid Network (HYMN).



4. Recycle capital
Developers pay back loans and use the rolling capital to build more mini-grids.

2. Sell shares in the Fund
Investors buy rights to the future yield of the RFF.

3. Pool and pay yield
The pay-as-you-go payments the entrepreneurs make for mini-grid energy are pooled in the RFF Fund. This flows to the investors as yield.

FACTS

Typically, 80% of mini-grid revenues come from 20% of customers, mainly productive use connections.

PAYG smart meters provide usage and payment data at **individual connection level.**

Value

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- By reducing the cost of capital the overall costs of a mini-grid are significantly reduced;
- **Developers** gain access to cheaper source of rolling capital to build more mini-grids;
- **Commercial investors** are insulated from risks and the high costs of due diligence and can engage in the sector;
- **Governments** can focus on electrifying the non-profit making connections;
- **DFIs** can target de-risking efforts on stabilising the HYMN and supporting governments (e.g. tariff design, policy etc.…);
- More **Rural entrepreneurs** are connected to power.

Business model

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According to the AMDA Benchmarking Report there were 40,735 mini-grid connections across Africa in 2019.

There was a 161% growth in the number of connections in 2017 and a 267% growth in 2018.

A high growth rate is likely to be maintained as ESMAP estimates that over 490 million people will be most cost-effectively electrified through mini grids.

This presents a significant commercial opportunity for investors and developers.

Opportunity for developers

- The RFF Model has the potential to funnel **$5 billion of private capital** into the mini-grid sector over the next 10 years.
- HYMN connections have a (growing) average electricity demand of 70 kWh per month, assuming a tariff of $0.30, an operating cost per kWh of $0.15 and an operating margin of 50%; a connection has a predicted revenue (Net Present Value) of **$851 over a 20 year cycle.**
- The RFF Model has the potential to provide up to **$783 of upfront liquidity per connection**[1] (assuming an investor target ROI of 8%).
- By separating (volatile) development and (stable) operational phases through refinancing active connections, the weighted average capital (WACC) for developers (often 20%+) will be significantly reduced.

Opportunity for investors

- High impact, low risk, data driven assets with good stable dividends over long periods.

To initiate the fund by buying rights to 2,000 high yield connections over 15 years, **$1.7 million of investment is required.**

1. *In addition to a ongoing service fee of $0.15 per kWh*

Why TFE?

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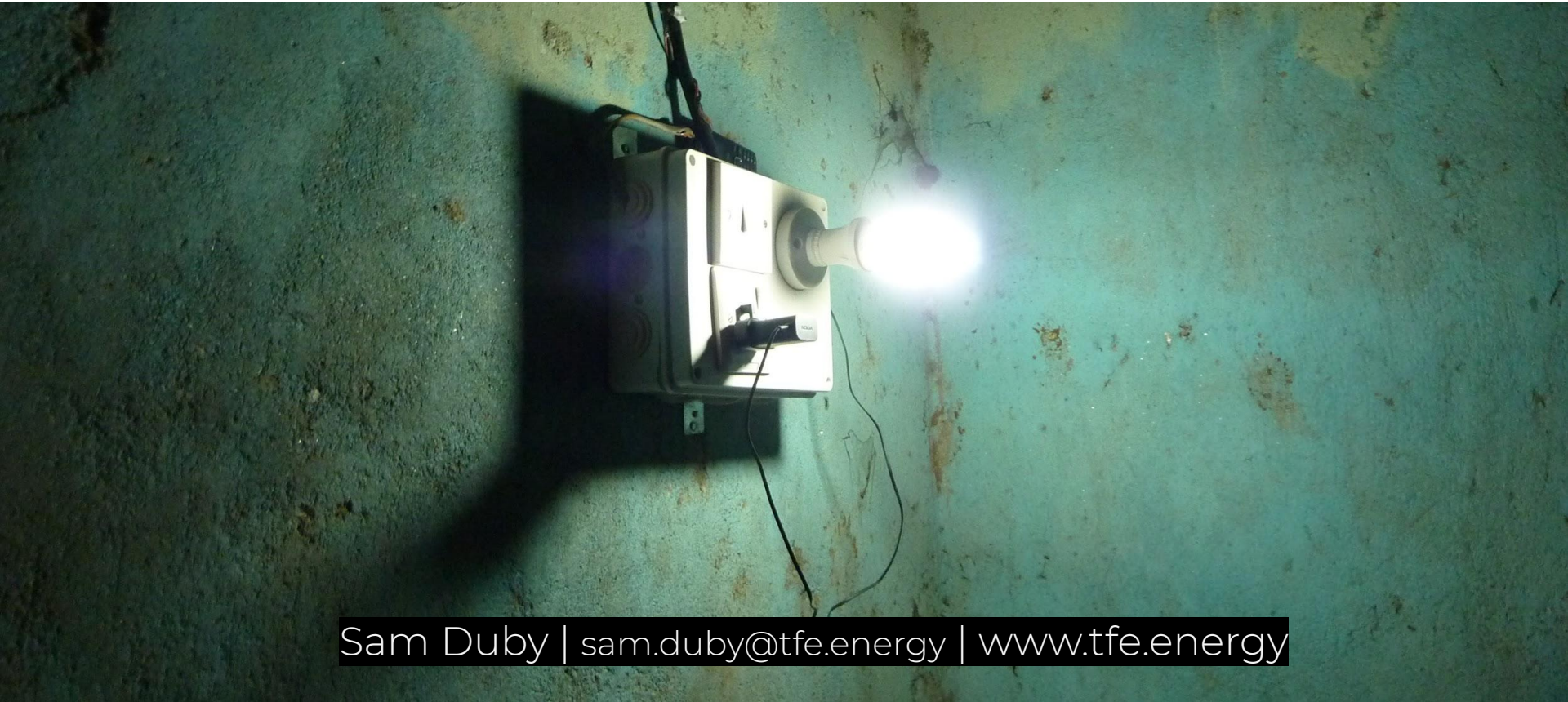
- We have deep **technical expertise** with data in the sector, and an **extensive network** across the industry;
- We have already engaged with financiers, DFIs, investors and developers and all support RFF;
- Mini-grid developers PowerGen, ANKA (Madagascar) and GVE (Nigeria) have expressed interest in partnering with us on this pilot project;
- We work closely with **appliedAI,** Germany's largest Artificial Intelligence technology initiative;
- We use the proprietary machine learning toolset **VIDA** specifically built **to find and process data** for commercial mini-grids;
- We have **built commercial mini-grids** in some of the most remote corners of Africa and understand what works at the community level;
- TFE Africa Ltd. is **an African business**, staffed exclusively by Africans supporting fellow African entrepreneurs.

Find out more



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