

THE RURAL FUTURES FUND

EMPOWERING THE RURAL ENTREPRENEUR

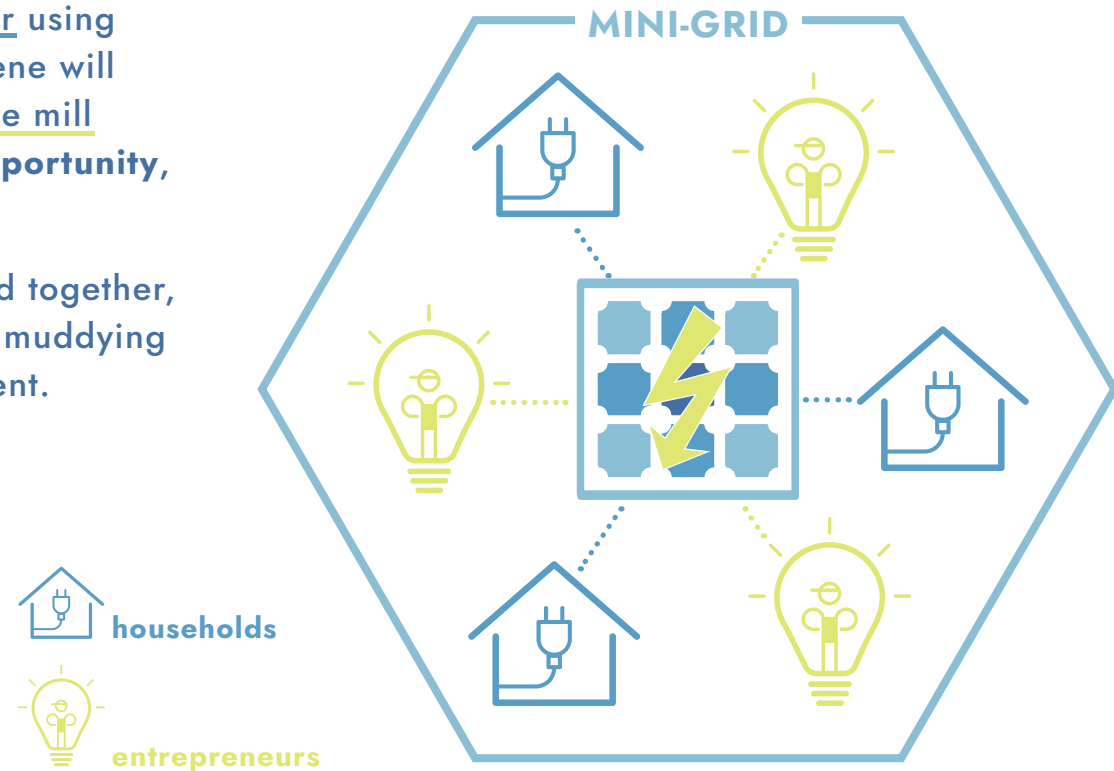
28 June 2021

To achieve universal electrification we need to reimagine how energy services are delivered in frontier markets

Not all mini-grid connections are equal. A small householder using a minigrid connection to replace dirty and dangerous kerosene will generate a tiny fraction of the revenue of a commercial maize mill operator. The latter represents a **commercial investment opportunity**, the former a socially responsible intervention.

Until now, these very different customers have been tranced together, damaging the financial case for private sector investors and muddying the waters for social impact or national government investment.

For the first time, these connections can be disaggregated and **packaged according to the finance most suitable for each**. This unbundling promises to open up more targeted developmental interventions and unlock the hitherto inaccessible types of commercial investor necessary for the industry to **finally reach scale**.

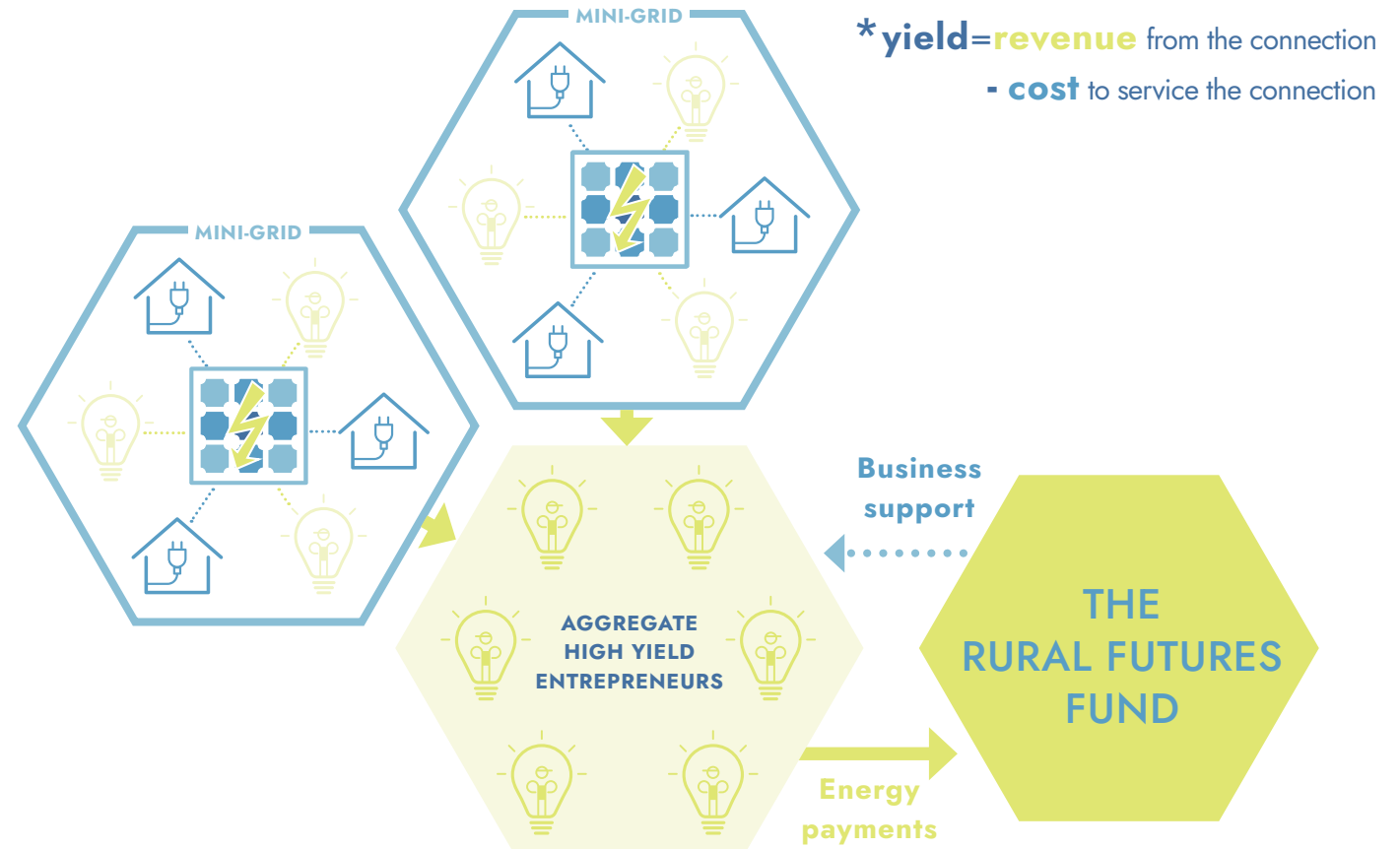


TFE will use existing site data to identify and aggregate high yield* entrepreneurs into the Rural Futures Fund

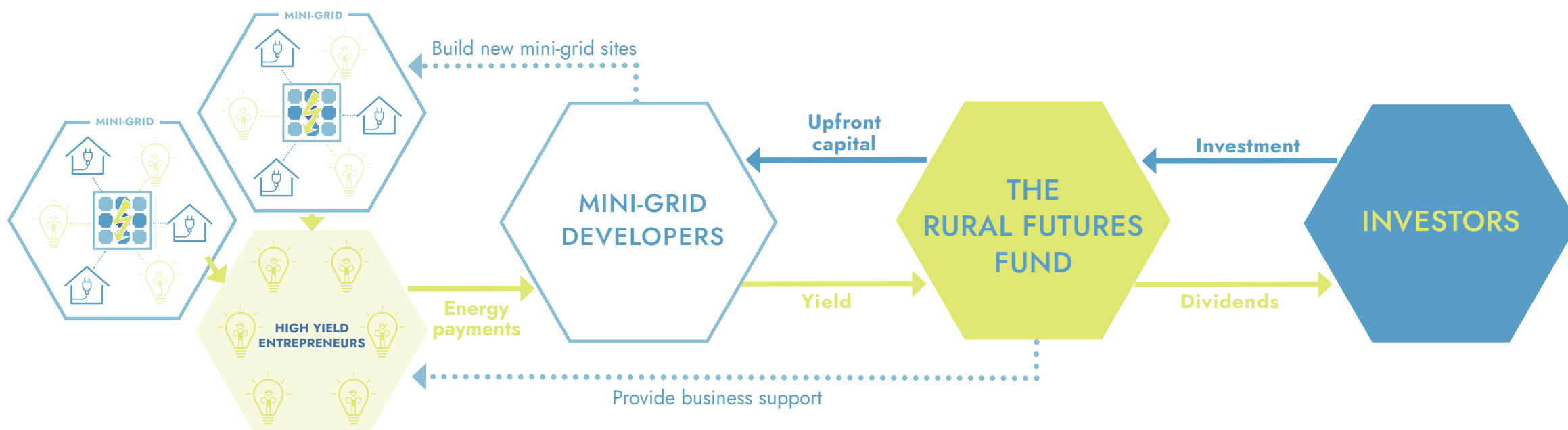
Financial innovation: Segmentation and aggregation of **high yield connections** (entrepreneurs) to create high performing financial instruments - the Rural Futures Fund.

Technology innovation: Proprietary data technology which determines the future yield (revenue) of a connection on existing mini-grids.

Development innovation: Entrepreneurs in the RFF (who in a rural community are most often **women and the youth**) can be targeted with support to grow their businesses further (e.g. access to financial services, access to markets, business development support).



Bridging the gap by creating high-performance data-backed financial instruments driven directly by rural entrepreneurs



1.

Aggregate entrepreneurs

High yield entrepreneurs on existing mini-grids are aggregated and their pay-as-you-go energy payments are pooled.

2.

Refinance high yield connections

Developers keep an operating fee and pay remaining yield to the RFF in exchange for upfront capital to build more sites.

3.

Provide capital and business support

The RFF pays the entrepreneur's future energy bill directly to developers upfront and provides support to entrepreneurs.

4.

Sell shares in the Fund

Investors make a single, high impact investment into a fund diversified across mini-grid sites, developers, and countries.

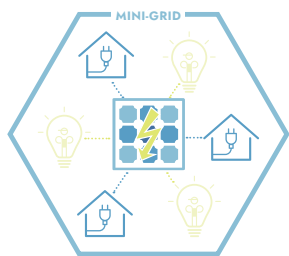
FINANCIAL INNOVATION

"We strongly support this concept as a means to provide draw-down, upfront, rolling construction capital and to potentially reduce our weighted average cost of capital"

PowerGen mini-grid developer

Not all mini-grid connections are equal. Nor are mini-grid investors.

The RFF allows accurate, flexible matching of the two



Segmentation: *Categorising and tranching individual mini-grid connections (by a set criteria i.e high yield only).*

- Using data at this resolution allows greater precision and flexibility (for example targeting female entrepreneurs).
- Gives RFF the flexibility to accurately match size and cost of capital to individual developer capital requirements and investor risk appetites.



Aggregation: *Aggregating connections across developers and geographies provides valuable diversification;*

- Reduces site specific, developer and sovereign risks.
- Provides a single point of interface for developers to access capital and investors to invest.
- Increases potential investment size (and reduces transaction costs) enabling participation of larger financial institutions.

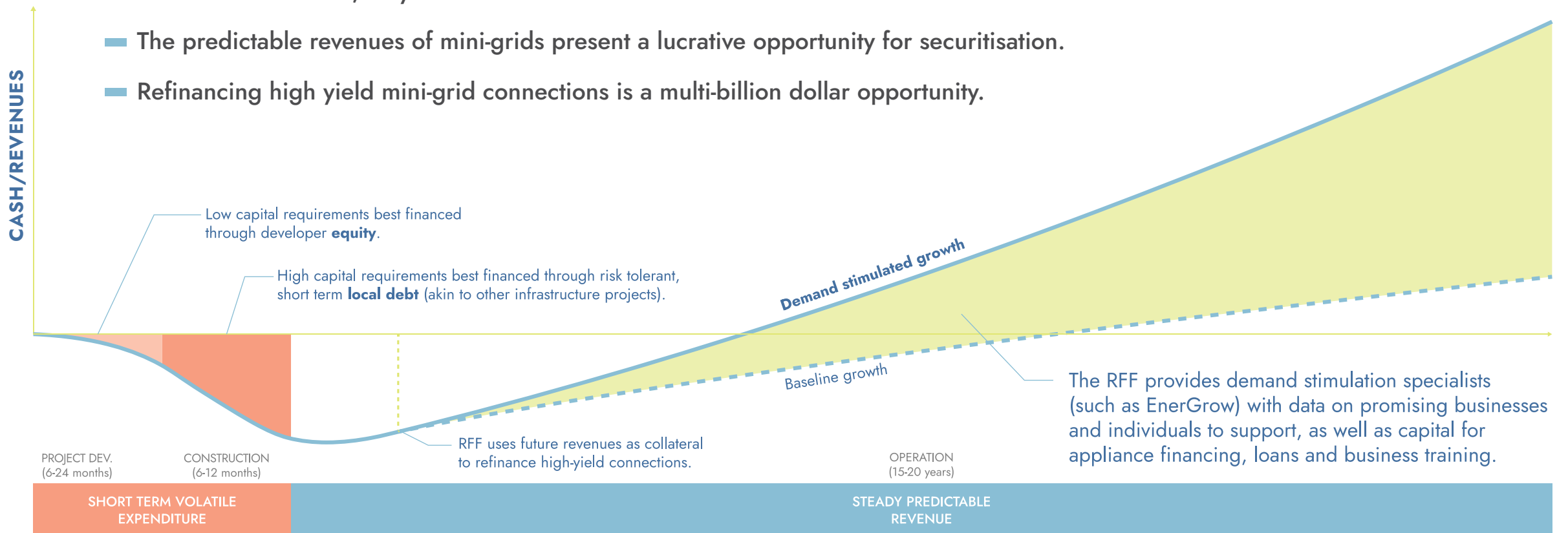
Investment timing: *Investing at operational stage and with flexible tenors;*

- Enables the separation of (volatile) development risk (such as R&D and construction) from (stable) predictable operational cash flows allowing high risk, high interest capital to swapped out when appropriate.
- Enables developers and investors the flexibility to better match investment tenor to their capital requirements and expected rates of return.



Refinancing means higher risk, higher interest construction capital can be swapped for low interest capital once operations are underway

- As industries mature, they tend to securitise.
- The predictable revenues of mini-grids present a lucrative opportunity for securitisation.
- Refinancing high yield mini-grid connections is a multi-billion dollar opportunity.



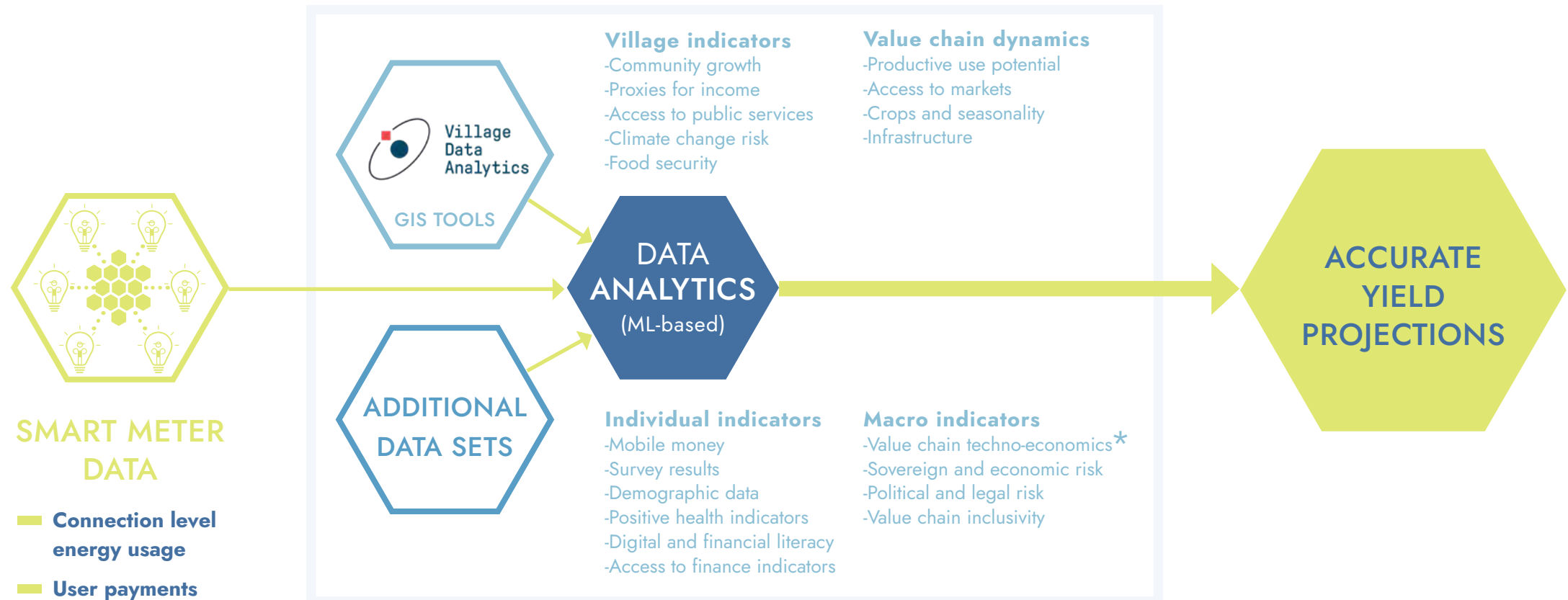
The background image shows a solar mini-grid system. It features a large array of solar panels mounted on a metal frame. Below the panels is a control cabinet with the 'TEAM' logo and 'POWER TO THE PEOPLE' text. The scene is set outdoors with some vegetation visible at the bottom. A bright sunburst effect is visible on the left side of the image.

TECHNOLOGY INNOVATION

"We believe that this product [the Rural Futures Fund] will be a gamechanger in the mini-grid industry."

African Mini-grid Developers Association

Combining smart meter data with supporting data layers means we can more accurately predict future yield



*read our report [here](#).

Accurate yield prediction and risk assessment at the level of the individual is ground-breaking for the sector

Precision personalisation at scale

Data analysis at the individual connection resolution enables the RFF to create **hyper personalized interventions** for entrepreneurs. Automating this allows it to be done at scale.

This level of precision drastically **improves impact** and increases the economic and development outcomes of interventions.

Simplified due diligence and ESG reporting

RFF's data infrastructure enables **automated due diligence** and ESG reporting at any scale, significantly reducing transaction costs.

This widens the pool of projects eligible for investment and unlocks additional revenue streams such as carbon credits.

Value stacking

RFF's data infrastructure enables value stacking at a low marginal cost. The RFF can seamlessly add -for example- financial services such as credit and insurance to its product offering. This can be offered through the RFF itself and or through 3rd parties.

These services will improve our value proposition to entrepreneurs as well as boosting their businesses and increasing their energy use.

Rapid innovation cycles

Real time data analysis means that interventions can be **rapidly prototyped** and improved. These could be innovations from the RFF, a DFI, the developer or a 3rd party service provider.

More data means the algorithms constantly improve. This will increase accuracy, improve returns and reduce risk.

The background image is a blue-tinted photograph of a rural setting. On the left, there is a building with a corrugated metal roof and a satellite dish. In the foreground, there is a fence made of wooden posts and wire. To the right of the fence, several children are standing. The overall scene suggests a rural environment in Kenya.

DEVELOPMENT INNOVATION

"To boost electricity consumption so that Kenya Power's investments in the rural areas make economic sense, the government must uplift the living standards of people. This can only be done by investing in enterprises that will create employment in rural areas."

Kenyan Business Daily Newspaper -Tuesday July 06 2021

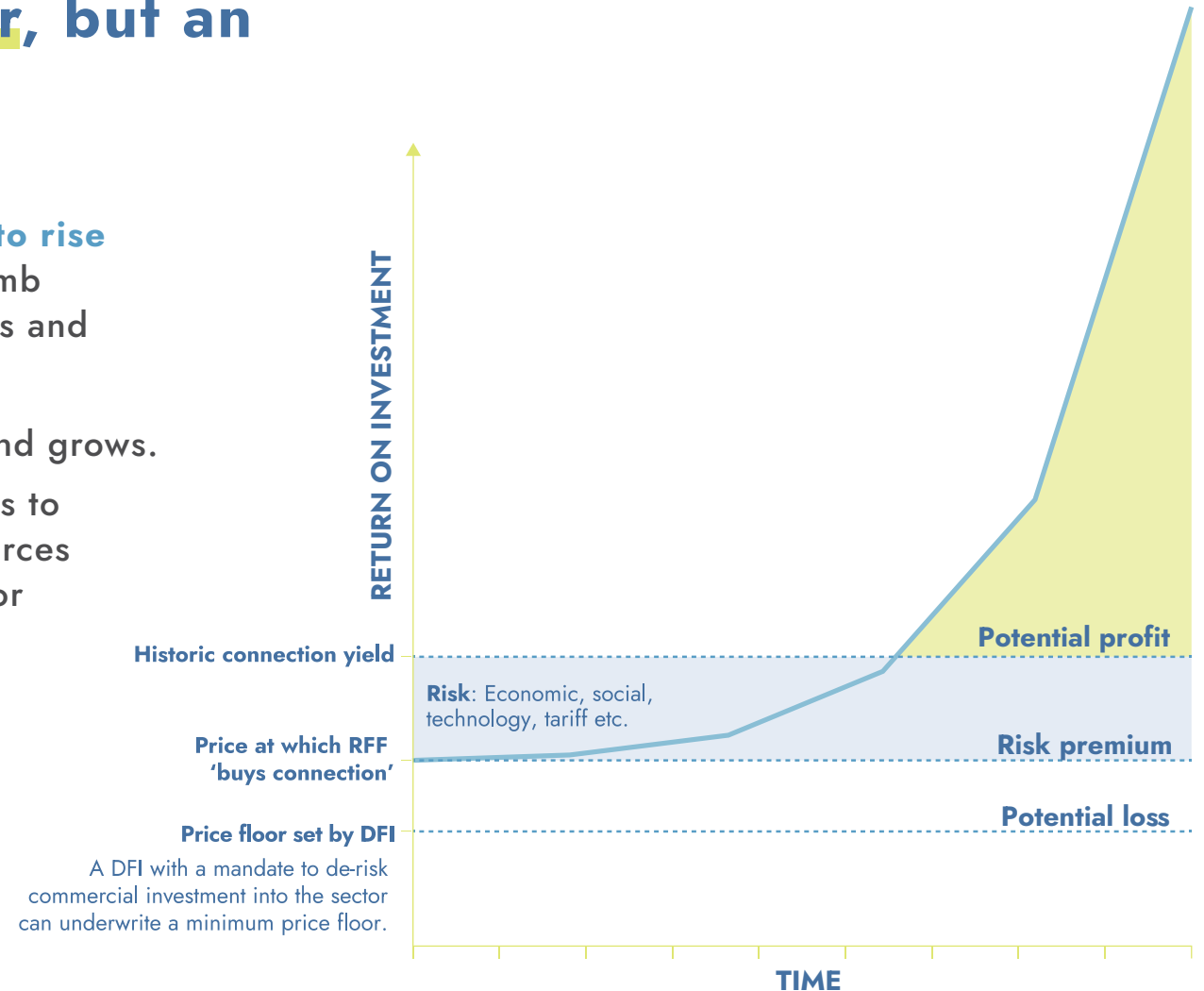
The RFF is not a passive investor, but an active value addition partner

The average return per high yield connection is likely to rise over the tenor of an investment as rural entrepreneurs climb up the energy ladder, buy more productive use appliances and communities and businesses grow.

Incentives are aligned: As local businesses grow, the Fund grows.

The RFF is incentivised to work directly with entrepreneurs to **drive growth**. This is done by linking them with the resources they need to develop their businesses (e.g. finance, donor or government support programs and demand stimulation specialists like [EnerGrow](#)).

Likewise, the RFF is motivated to leverage its data to guide developers on new demand stimulation strategies that **drive mini-grid utilization and boost revenues**.



Data allows precision targeted support



JUDY SAIDI “Aspiring Shopkeeper”

Smart Meter Data:

Energy usage: 25 kWh/p.m

Tariff: \$0.55 kWh

Payment rate: 65% p.a

Satellite Imagery: Judy is from a growing off-grid fishing village in Kenya. The village has recently been connected to the urban centre with a new road making it an ideal fishing aggregation point.

Other 3rd party data sets: Judy is 27 and has a perfect credit record according to her mobile money. The Kenyan economy has a positive economic outlook.

Report: Judy is a **low yield connection**. She is a perfect to support with finance to purchase a refrigerator for her store. With this support she can increase her income and reduce income seasonality. A refrigerator will boost her business, increase her energy usage and payment rate after which she will be a **high yield connection**.



GEORGE JUMA “Welder”

Smart Meter Data:

Energy usage: 95 kWh/p.m

Tariff: \$0.50 kWh

Payment rate: 95% p.a

Satellite Imagery: George is from a mining town in Eastern Nigeria. The village is 200km to the nearest tarred road and its agriculture is under pressure from climate change.

Other 3rd party data sets: George is 35 and has no credit record. The Nigerian economy is volatile but his region has a positive economic outlook.

Report: George is a **high yield connection**. His business is likely to grow given the positive economic outlook of his region. The climate change risk in his village should be discounted from his projection estimate and should be flagged for possible area of support.

BUSINESS MODEL

“WACC reduction could allow developing regions to reach net-zero earlier. Such economies fall into a climate investment trap when high investment needs are coupled with high WACCs, preventing such investment from taking place. To avoid this, radical changes are needed to facilitate capital allocation towards what investors appear to perceive as high-risk assets and to align current investment pathways with climate targets.”

Nadia Ameli in Nature Communications -30 June 2021

The RFF fund creates a **single, simple, significant and stable investment opportunity** for financiers

Our addressable market is defined as mini-grid connections which are:

- Privately held.
- Likely seeking refinancing.
- Financially viable.
- Pass a Quality Assurance criteria (using QAF).
- High yield (minimum average revenue of \$10 per month)

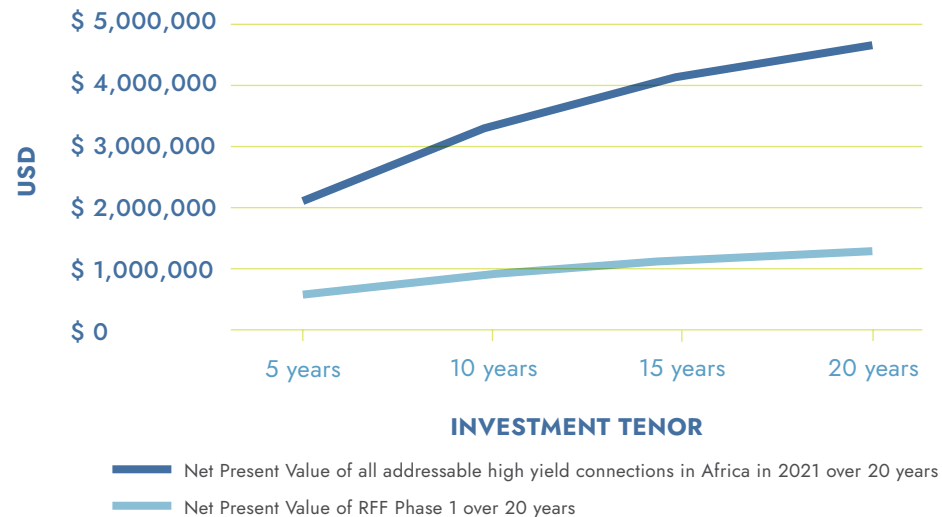
[Click to see model](#)

Income Potential	No. of Connections	Average revenue per annum
A single high yield connection	1	\$300
Addressable market in Sub-Saharan Africa, 2021	1,800	\$540,000
Expected size of RFF1 (\$1.2M)	500	\$150,000

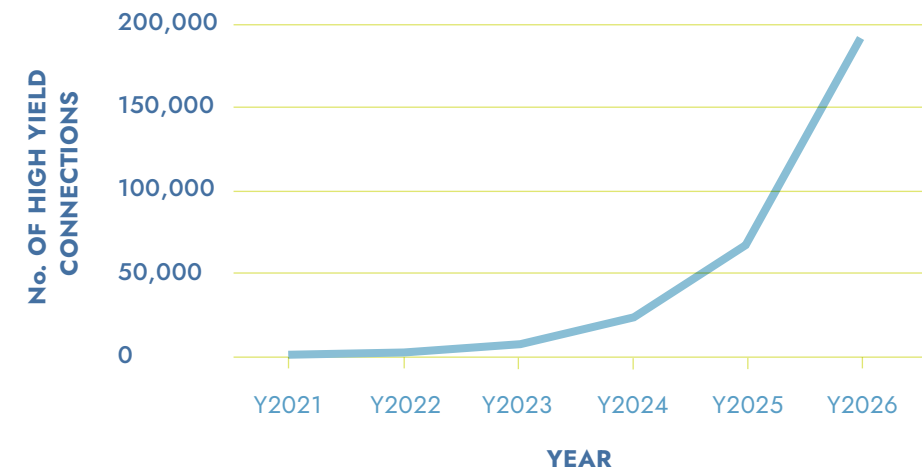
The mini-grid sector is set to grow at more than 200% per annum (based on AMDA/ESMAP data). This means that the addressable market for the RFF also grows rapidly.

Rural Futures Fund Potential

Income Potential @ discount rate of 10%



Addressable Market



Based on AMDA/ESMAP data and TFE modelling

Paying the energy bills of entrepreneurs years in advance gives developers liquidity, freeing them up to build more sites

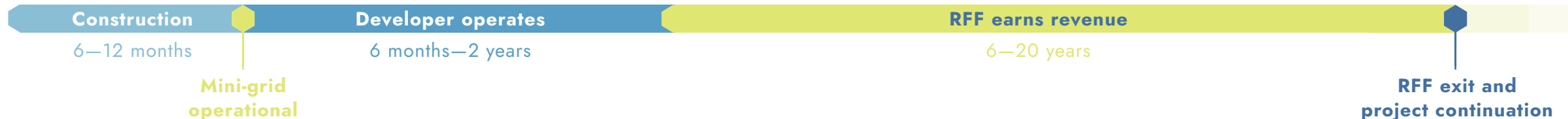
A mini-grid is typically built with a Weighted Average Cost of Capital of about 17%:

- 70% Equity at an average cost of capital of 20%.
- 30% Debt at an average cost of capital of 10%.
- Some form of grant subsidy.

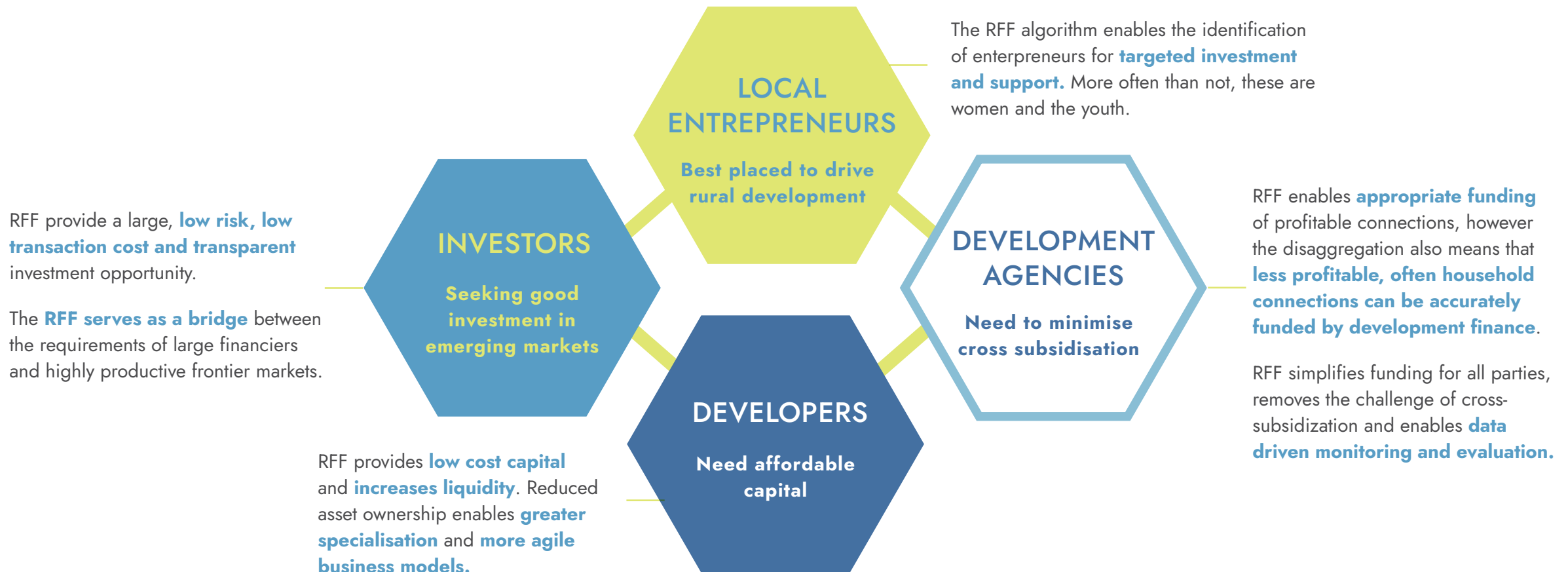
The RFF offers an interest rate of +/- 10%, significantly lower than expected return on equity of 20%.

It can do this because:

- The RFF algorithm, based on real demand, provides a more accurate yield projection than predevelopment estimates.
- Segmentation, aggregation and investment timing significantly reduces risk.



Leveraging data means that incentives can be aligned, interventions targeted and value shared across all stakeholders



Data is unlocking numerous innovative energy financing models

The RFF differs from other leading mini-grid financing solutions (e.g. Cross Boundary EA and Sunfunder) by:

- Financing at individual connection level as opposed to site or corporate level.
- Using (real time) consumer, site and geospatial data in assessing risk.

The RFF differs from Nithio's innovative product offering by:

- Focusing on the mini-grid subsector which has lagged behind the solar home system (SHS) sector in terms of financial and data innovation.
- Targets the productive uses of energy (PUE) sub-sector which has high return on investment and is the lever that can affect the greatest change in rural communities.

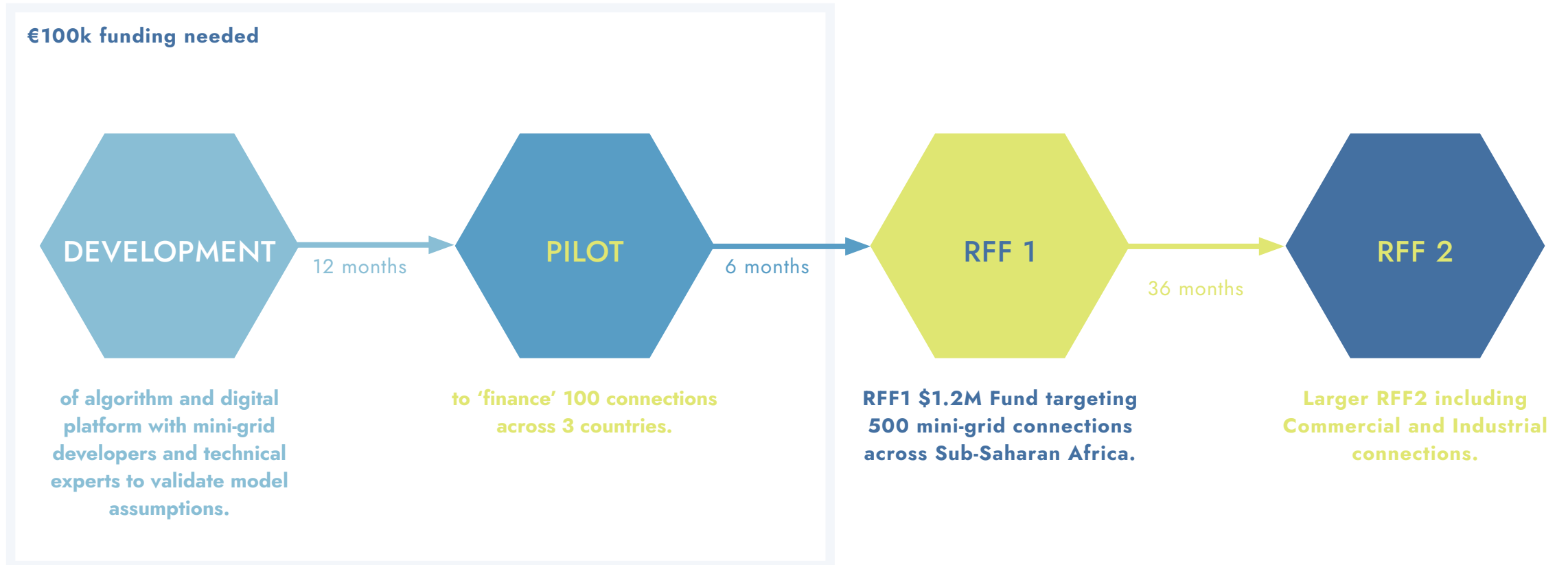
Organisation	Financial Assessment Level			Market				Risk Assessment Metrics					
	Corporate	Project	Connection	SHS	C&I	Mini-Grid	PUE Focus	National	Corporate	Project	Consumer	Site	Satellite Imagery
Rural Futures Fund			●		●	●	●	●	●	●	●	●	●
Nithio			●	●				●	●	●	●	●	●
CB Energy Access		●			●	●		●	●	●			
SunFunder	●				●	●		●	●				



A person wearing a hard hat and safety glasses is working on a piece of industrial machinery. The scene is dimly lit, and the entire image is overlaid with a semi-transparent blue filter. The person is focused on their task, and the machinery appears to be part of a larger industrial system. The text "LAUNCHING THE RFF PILOT PHASE" is prominently displayed in white, bold, sans-serif capital letters on the left side of the image. Below the text is a short, thick yellow horizontal line.

LAUNCHING THE RFF PILOT PHASE

We need €100k to match and activate €100k existing funding and launch our RFF pilot phase in August 2021





WHY TFE?

Our team combines commercial finance expertise and industry leading technology with practical community level market experience

DR. SAM DUBY CEO and CTO

"It is an exciting time for the energy access sector. I believe that real innovation in the financing of projects is our next big challenge. The RFF is our practitioner born, industry incubated contribution."



JOHANNES HORSTMAN CFO and Transaction advisory

"Mini-grids hold the potential to supply millions of people across Africa with affordable clean energy. Key to unlocking this potential is to increase funding for mini-grids. I'm excited by the RFF as it attracts a new set of commercial investors needed to bridge this financing gap."



VILLAGE DATA ANALYTICS (VIDA)

"The RFF is a perfect application of the VIDA technology. It can change electrification and impact the lives of millions".

-Tobias Engelmeier VIDA Director

ANDRE TROOST Minigrid finance

"Providing sustainable, universal access to energy is imperative to creating thriving societies and promoting continued social, environmental and economic development. The RFF is a mechanism to drive this development."



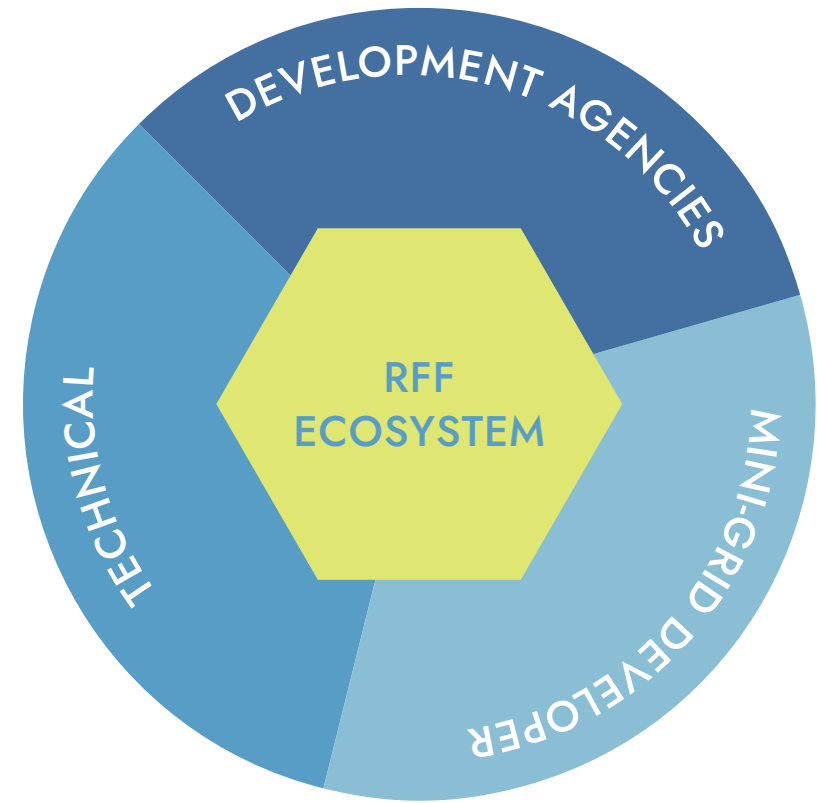
KUMBIRAI MAKANZA COO and Frontier markets

"I am drawn to how the RFF puts existing local rural entrepreneurs at the forefront. This bottom up approach is refreshingly divergent to many energy access models which have a tendency to prescribe productive use solutions."



We have deep technical expertise with productive uses of energy, finance and data in the sector, and an extensive network across the industry

- 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.



GET IN TOUCH

TFE / RURAL FUTURES FUND

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