UNDP Sustainable Energy Hub

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WEBINAR

THURSDAY, 15 JUNE

08:00 NEW YORK | 14:00 GENEVA | 15:00 KAMPALA

FINANCIAL AGGREGATION FOR DISTRIBUTED RENEWABLE ENERGY IN EAST AFRICA

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Agenda

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1. **Introduction & Opening Remarks**
   About the Climate Aggregation Platform

2. **Presentation of the CAP Market Development work**
   Market Assessments and Action Plans for DRE financial aggregation in East Africa & Zooming in on Globally Relevant Market Development Activities

3. **Panel Discussion on streamlining financial aggregation transactions**

4. **Q&A**

UNDP's Sustainable Energy Offer

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1

Energy is a key element of UNDP's Strategic Plan

Ambitious goal of supporting 500 million people to gain access to clean energy

2

Integrated Solutions for Multidimensional Challenges

SDG7 is a key enabler for achieving the SDGs

3

Significant footprint and active portfolio on the ground

105 projects

74 countries across 5 regions

$444 million of grants – ~$5 billion in co-financing leveraged

Energy access, energy efficiency, renewables, access, transport.

Climate Aggregation Platform (CAP)

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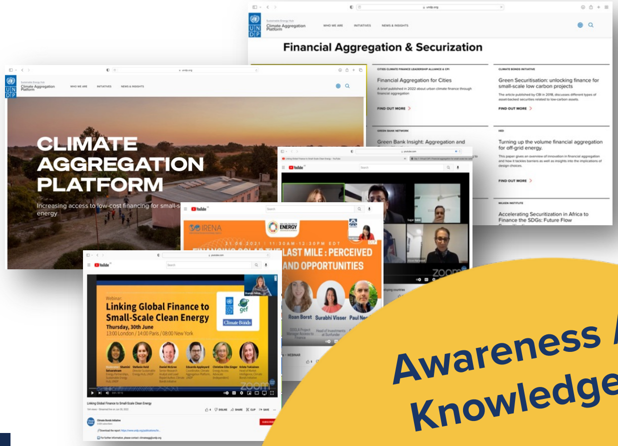
Promote **financial aggregation** for **small-scale, low-carbon energy assets** in **developing countries**

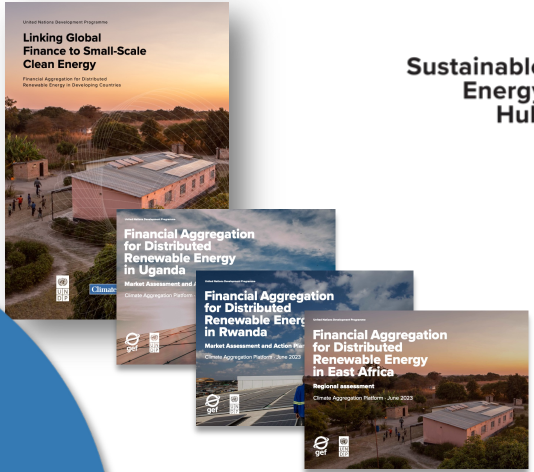
Increase access to **low-cost financing** for **low-carbon energy**

Contribute to improving the lives of people in developing countries, bringing about **affordable, reliable** and **clean energy**

Learn more: **www.undp.org/climate-aggregation-platform**

What we do





CAP Financial Innovation Challenge
A PLATFORM FOR SCALING UP OFF-BALANCE SHEET RECEIVABLES FINANCING FOR OFF-GRID SOLAR
Financial aggregation solution by Solaris Offgrid

CAP Financial Innovation Challenge
EXPLORING SECURITIZATION FOR MINIGRID PROJECTS
Financial aggregation solution by Hypoport Africa

CAP Financial Innovation Challenge
CARBON CREDIT AGGREGATOR PLATFORM
Financial aggregation solution by Mirova SunFunder

CAP Financial Innovation Challenge
POWERBLOCKS, A PLATFORM TO ACCELERATE CLEAN ENERGY ACCESS IN EMERGING MARKETS
A financial aggregation solution by Incharge Energy

CAP Financial Innovation Challenge
AI-ENABLED FINANCING TO SCALE ENERGY ACCESS
Financial aggregation solution by Nithio

CAP Financial Innovation Challenge
E2W AFRICA, A FINANCING PLATFORM FOR ELECTRIC VEHICLES
Financial aggregation solution by PJ&Company

CAP Financial Innovation Challenge
A DIGITAL PLATFORM TO BUNDLE DEBT AND RESULTS-BASED PAYMENTS WITH CLIMATE FINANCE
Financial aggregation solution by 4R Digital

Learn more: **www.undp.org/climate-aggregation-platform**

Presentation of the CAP Market Development work

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Market Assessments and Action Plans for DRE financial aggregation in East Africa

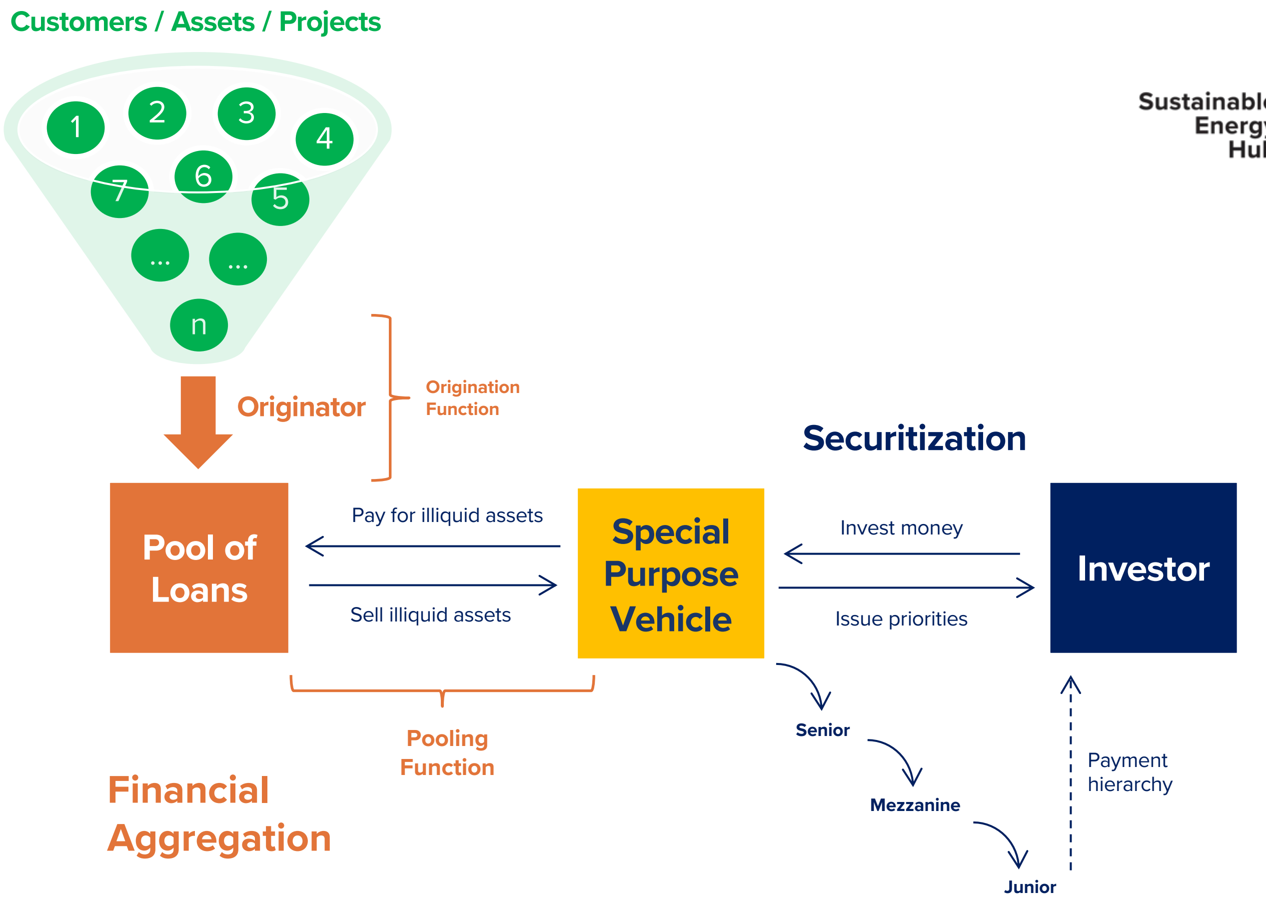
& Zooming in on Globally Relevant Market Development Activities

André Troost, TFE

What is Financial Aggregation?

To create scale, small-sized projects or aspects of projects can be combined into a portfolio in a process known as bundling.

Larger-scale financing can then be provided across these bundled assets based on their future cash flows.



Benefits of Financial Aggregation?

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Buy-side benefits:

- **Risk diversification:** Achieved by funding multiple projects and companies with investment returns delinked from global market indices
- **Scale:** As the investment pool grows, ticket sizes increase and can attract larger investors
- **Lower transaction costs:** Increased process standardisation can eliminate costs associated with structuring, underwriting, and due diligence of individual companies
- **Transparency:** Collective analysis of anonymised consumer credit information combined with improved process standardisation, monitoring, and evaluation helps to understand asset risk and performance
- **Risk separation:** Securitised assets held in an SPV can be legally separated from the company, ensuring business-specific risks are isolated and do not impact debt repayments

Sell-side benefits:

- **Lower financing costs:** A combination of benefits can lower the cost of capital; as seen in other ABS markets, financing costs further decrease over time as the asset class grows
- **Growth:** Increased refinancing potential for individual projects using lower-cost capital
- **Increased access to new sources of finance:** Increased investor participation can encourage other market entrants. Securitisation can increase the pool of investors that might otherwise be out of reach, reducing the reliance on a single investment source
- **Appropriate finance:** Long-term financing needs can be matched with patient capital to promote business longevity over immediate ‘growth-at-all-costs’

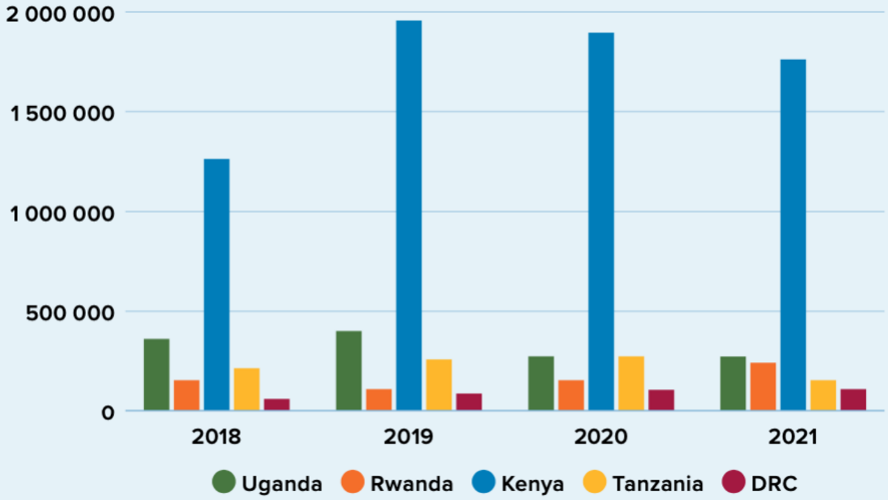
Off-grid Solar

Industry Performance

- **Most mature** DRE market
- About **100 OGS companies in EA**, Kenya largest market
- About **50% PAYGO** penetration in 2020 in East Africa

Financing

- The OGS sector **attracts more debt** than other DRE sectors
- **Multinationals' deal sizes much larger than that of local companies** (4x in Uganda, similar in other markets)
- **Local banks largely absent**



GOGLA-affiliated sales in East Africa, 2018-2021

Off-grid solar investment flows in Uganda

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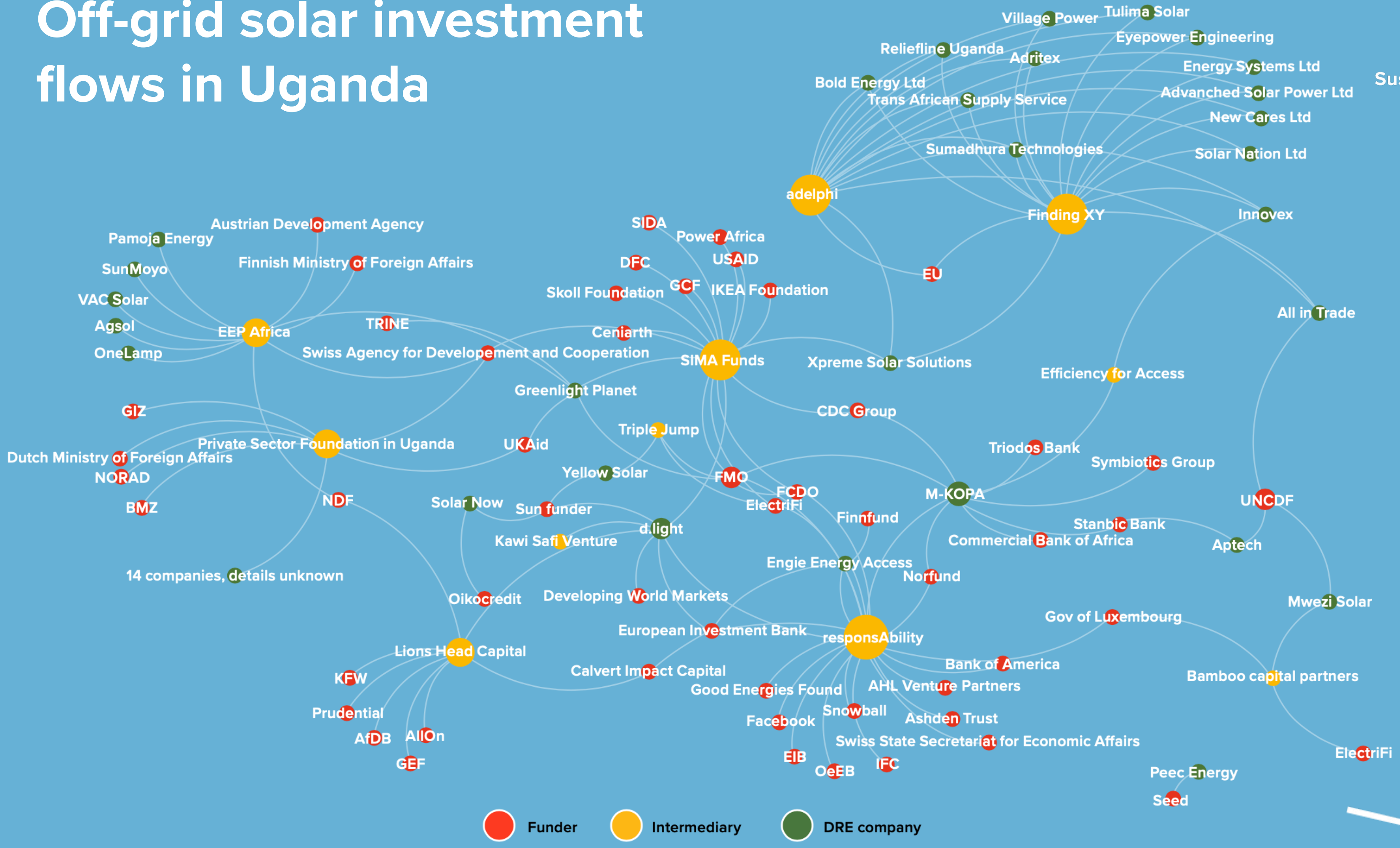


Mini-grids

Industry Performance

- **Varying maturity**
- **41 companies**
- Estimated **469 operational sites** in 2022

Financing

- **East Africa has** for many years been the **investment hub for mini-grids in SSA**
- **Most deals have grants** included
- **Domestic investment relatively absent**

Photo credit: UNDP Tanzania

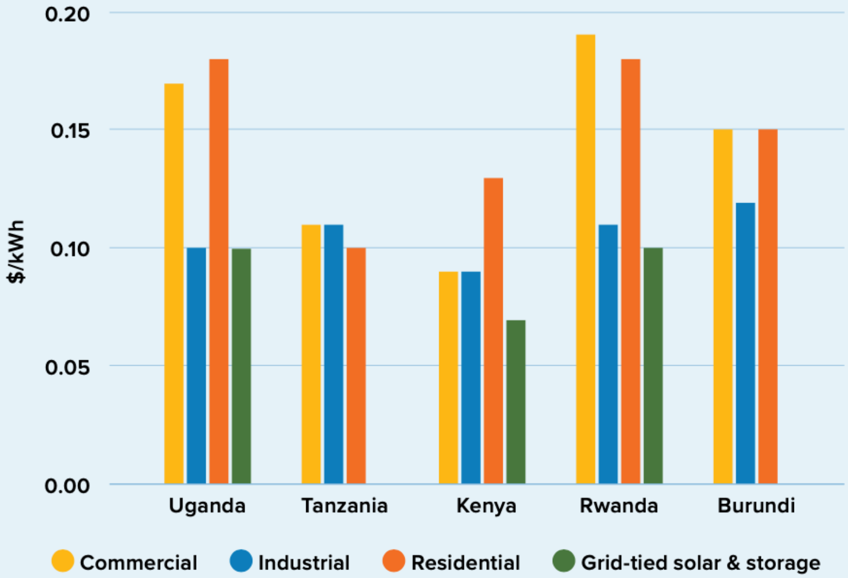
Captive Power

Industry Performance

- **Growing fast**
- **C&I the largest segment**
- 39MW **installed capacity** in 2020 to **100MW in 2023** (C&I solar)

Financing

- **Unreliable grid** – need for energy security
- **LCOE** of grid-tied solar & storage **competes well with grid tariffs**
- Varying use of **ESCO models** across countries. ESCO models make up **30%** of projects in **Kenya**; **62%** in **Uganda**



Electric mobility

Industry Performance

- **Still nascent**
- **35 companies**
- **< 1,000 e-motorcycles** per country

The Market

- Estimated **4 million boda-bodas in Rwanda, Uganda, Kenya and Tanzania**
- **Rising fuel costs** creating a market opportunity
- **Equity & grant** funded
- **Incentives** in Kenya and Rwanda are **spurring growth**
- **Infrastructural constraints** - charging

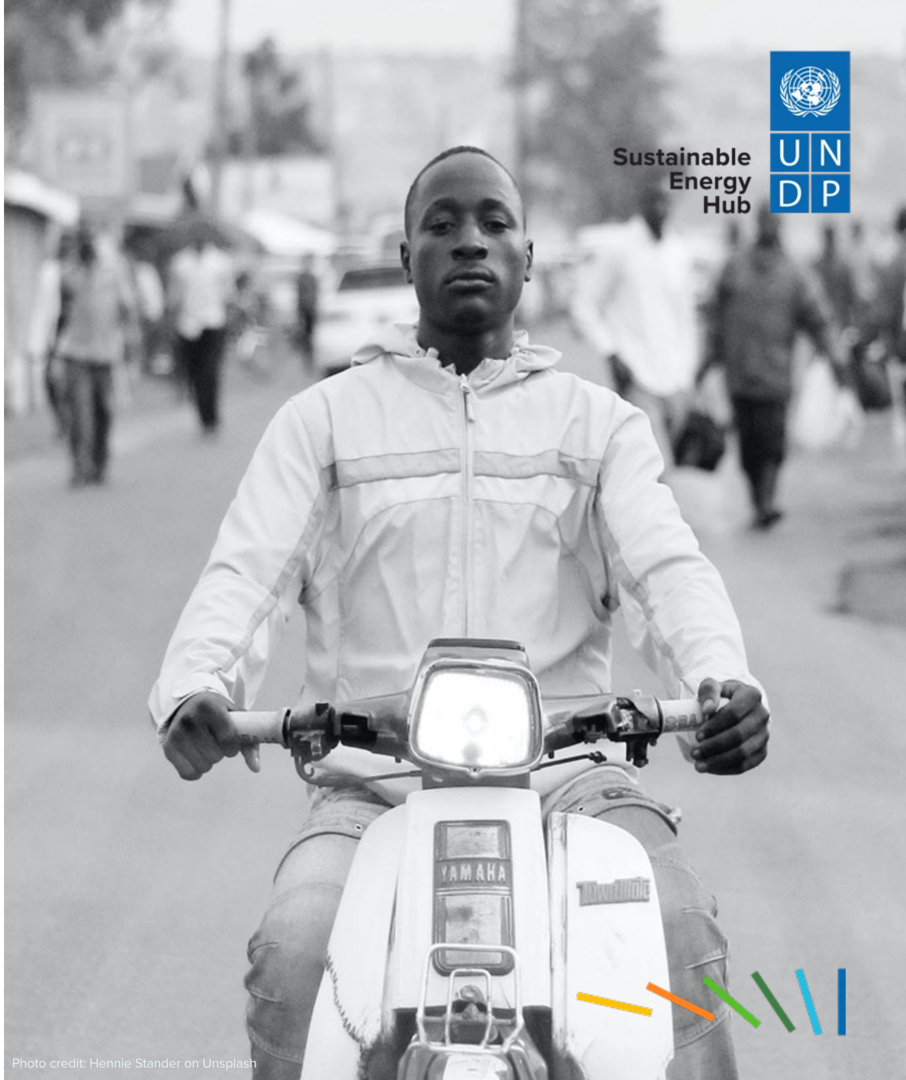


Photo credit: Hennie Stander on Unsplash

Future financial aggregation market opportunity of DRE sectors in East Africa vs current readiness

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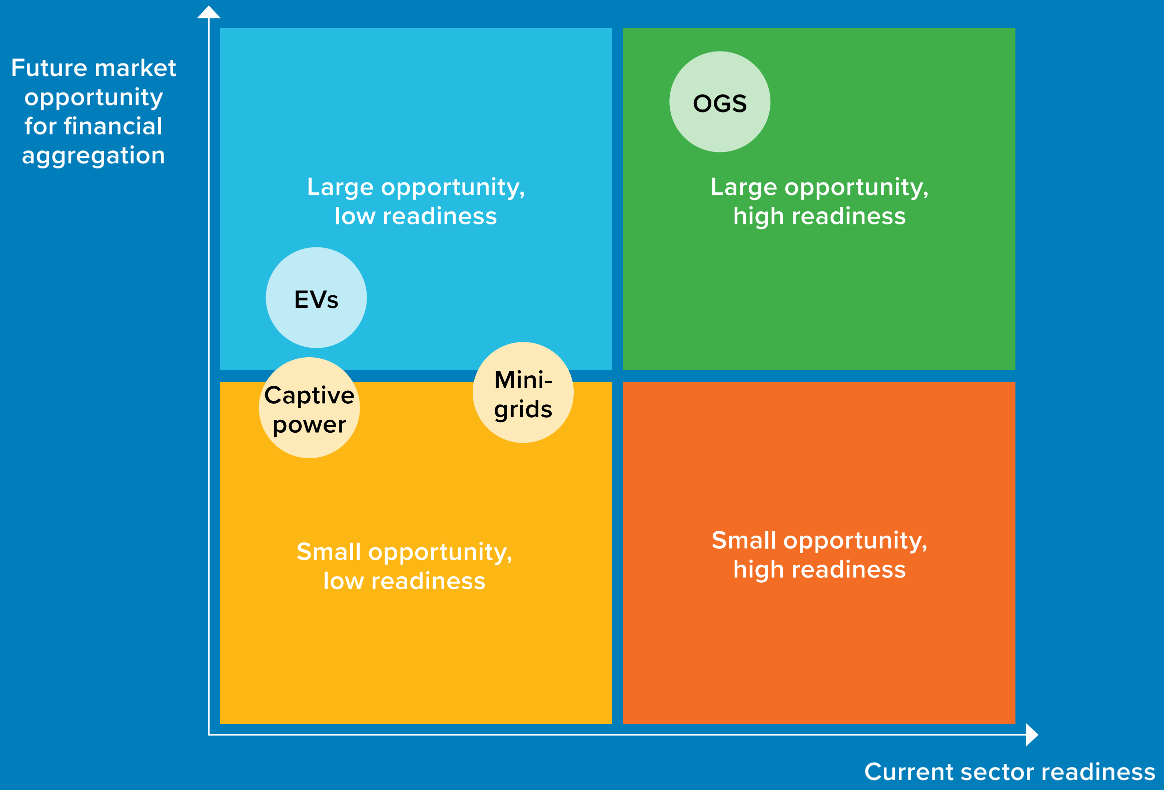

Key challenges facing DRE financing in East Africa

Small projects and companies often do not meet **minimum investor ticket sizes** (minimum range is $1 - $10 million)

High interest rates (6-15% in USD and 15-25% in local currency) and **extensive collateral** requirements (often up to 100% of deal value)

Transactions take long to close (a couple of months to more than a year in extreme cases). Companies need to keep funding their operations while waiting for due diligence processes to conclude

Photo credit: UNDP South Soudan

Ingredients for an enabling financial aggregation market

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Conducive supply-side

(DRE projects & products)

Large DRE asset base & pipeline with receivables:

- Favourable DRE regulations
- PAYGO business models
- High mobile cellular subscriptions
- High mobile money penetration

Standardisation of DRE operations

+

Conducive demand side

(investor base)

Investors to fill each position in the capital stack

Grants/guarantees
Junior debt
Senior debt

+

Favourable macro-operating environment

Financial sector conducive for thriving capital markets

Conducive macroeconomic conditions

(e.g. Stable currency → Low FOREX risk)

Ease of doing business

(e.g. Licensing)

=

DRE Financial Aggregation

Barriers to financial aggregation persist

- High cost of setting up and running off-balance sheet securitisation structures, leading to investor appetite for larger deals only;
- Pipeline of aggregatable assets too small to warrant larger deals;
- Low quality financial reporting among DRE companies in the opinion of investors;
- Lack of data, especially consumption data;
- Low levels of standardisation in DRE operations;
- Supply-side regulations are often unfavourable;
- Securitisation laws exist, but with little to no real-world testing.

Estimating the addressable market for DRE financial aggregation in East Africa

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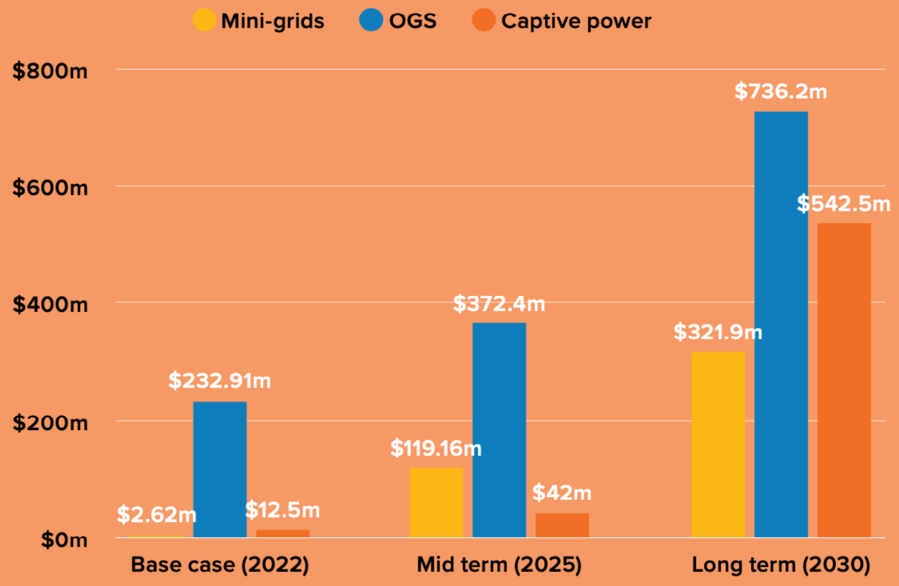
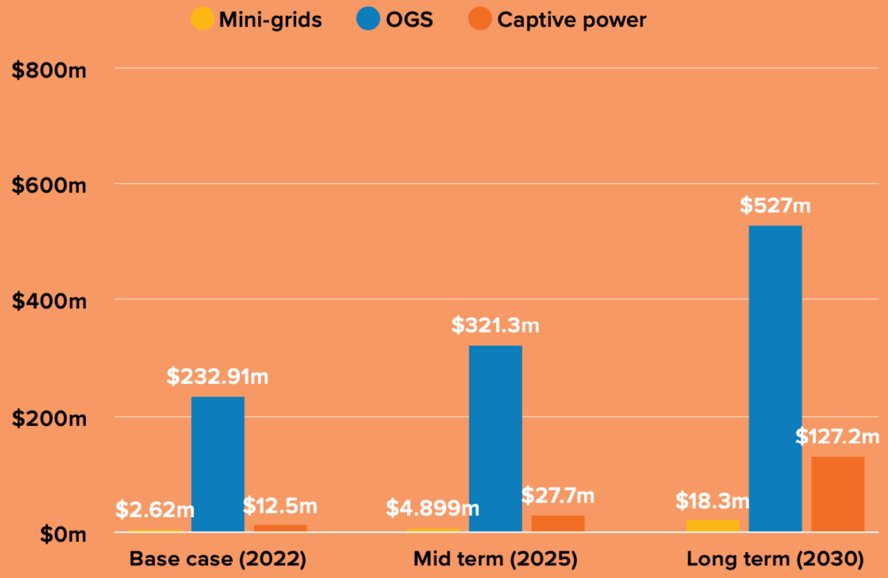


Estimated annual aggregatable revenues per DRE sector (ambitious scenario)



Estimated annual aggregatable revenues per DRE sector (conservative scenario)

How to move the market closer to aggregation-readiness?

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Broad market development work, typically tailored to the country context

- Raise awareness about good **financial reporting, data management and customer creditworthiness** assessment:
  - To **increase investability**
  - To **reduce customer default rates**
- Test approaches to **remedy low repayment rates**
- Bridge the gap between **early stage and late stage funding**
- Streamline **cross-country aggregation** of DRE assets in the EAC

How to move the market closer to aggregation-readiness?

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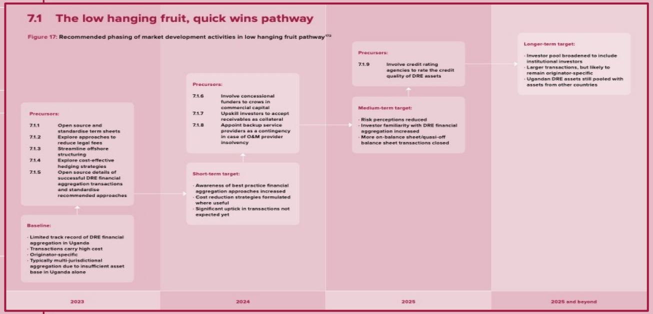
Globally-relevant market development work specifically for DRE financial aggregation:

- **Open source** details of **successful financial aggregation transactions** including **term sheets**
- Engage **concessional funders** to crowd-in commercial capital
- Explore approaches to **reduce legal fees**
- Raise awareness among **financial institutions/investors** to accept **receivables as collateral**
- Appoint **backup service providers** to continue servicing assets in case of O&M provider insolvency
- **Credit rating** of DRE assets

Market Development Pathways

Table 4:
Overview of financial aggregation barriers and associated market development activities

MARKET DEVELOPMENT PATHWAY	MARKET DEVELOPMENT ACTIVITY	BARRIER TARGETED	GENERAL / UGANDA- SPECIFIC
Quick wins	7.1.1 Open source and standardise term sheets	High cost of setting up and operating off-balance sheet structures	General
	7.1.2 Explore approaches to reduce legal fees		
	7.1.3 Streamline structuring of transactions that involve Ugandan DRE assets and offshore holding facilities		
	7.1.4 Explore cost-effective hedging strategies and local currency lending	High exchange rate volatility	Uganda- specific
	7.1.5 Open source details of successful DRE financial aggregation transactions and standardise recommended approaches	Commercial investors attach high risk perceptions to DRE investments. Risk is amplified further due to the limited track record of aggregation instruments in the DRE sector	General
	7.1.6 Engage concessional funders to crowd in commercial capital		
	7.1.7 Upskill investors on accepting credit-assessed receivables as collateral		
	7.1.8 Appoint backup service providers as a contingency in case of O&M provider insolvency		
	7.1.9 Engage credit rating agencies to rate the credit quality of DRE assets		
Slow moving	7.2.1 Less mature companies: Raise awareness about good financial reporting, data management and creditworthiness assessment and offer technical assistance to improve in these areas	Majority of DRE companies in Uganda are not investment ready, while "missing middle" companies lack access to scaling capital	Uganda- specific
	7.2.2 Missing middle companies: Bridge the gap between seed funding and late-stage funding		
	7.2.3 Employ bulk procurement to grow the market		
	7.2.4 Test approaches to remedy low payment rates	High customer default rates	
	7.2.5 Communicate necessary regulatory improvements to ERA and MEMD	Supply-side regulations and policies that are in place are generally well-formulated, but amendments are recommended. Unregulated DRE sectors would benefit from policy and regulatory guidance.	
	7.2.6 Motivate for a consistent subsidy for off-grid and mini-grid connections		
	7.2.7 Compile a common data reporting framework with input from investors and developers	Lack of data and low levels of standardisation	General
	7.2.8 Raise awareness about shared application programming interfaces to standardise mobile money payment flows		
	7.2.9 Raise awareness about standardisation of customer contracts		
	7.2.10 Reduce or remove stamp duties on asset transfers and withholding tax on interest payments	Unfavourable environment in Uganda for domiciling aggregation facilities	Uganda- specific
	7.2.11 Involve the CMA and Ministry of Finance in executing a model securitisation transaction		



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Thank you!

Please get in touch with any comments or questions:

andre.troost@tfe.energy / www.tfe.energy

Panel Discussion on streamlining financial aggregation transactions

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Moderator: Eduardo Appleyard, UNDP

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Q&A

Thank you

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#EnergyForDevelopment

Learn more:

www.undp.org/climate-aggregation-platform

Or contact us at: climateagg@undp.org