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

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

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)

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
Awareness / Knowledge

Innovative Financial Structures & Models

Market Development

What we do

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

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.
5.2 Leading benefits of financial aggregation for small-scale clean energy

The general barriers (presented in section 4.2) can impede access to finance, including financial aggregation mechanisms. On the other hand, the main stakeholders involved in financing DRE and other small-scale, low-carbon energy solutions can benefit from financial aggregation to address or counter these general barriers.

Firstly, financial aggregation can help reduce risk through diversification, thereby creating enhanced financing opportunities for enterprises. Secondly, investors also benefit from aggregated financing structures as these create scalable opportunities that justify transaction costs. Thirdly, governments can equally overcome other market barriers related to policy, tax, and regulation by creating a centralised platform to engage with investors.

More broadly, establishing this asset class within the DRE sector could provide a blueprint for similar developments in other SME-dominant sectors and industries contributing to the SDGs.

The leading benefits for the buy- and sell-side are listed below:

**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’

**Box 6: The role of financial aggregation for small-scale clean energy**

Securitisation enables companies and lenders to sell off existing financial assets to free up capacity for more business. It is the process through which an issuer creates financial instruments (asset-backed securities or ABS) backed by financial assets such as mortgages or lease receivables. The ABS bonds are sold to investors who receive a return drawn from the cash flows of the underlying assets.

By aggregating the funding into a common structure, securitisations enable institutional investors to finance small-scale assets and SME businesses.

A securitisation can be defined as green when the underlying cash flows relate to low-carbon assets or where the proceeds from the deal are earmarked to invest in low-carbon assets.

Transforming a pool of illiquid assets (typically thousands of separate ones) into tradable financial instruments (securities) can help drive financing of sustainability projects/assets if done correctly.

Hence, GSS securitisations can improve access to capital for companies and provide small-scale loans to projects and businesses associated with positive sustainability outcomes. The money raised from the sale of securitised products such as ABS can be used to create new loan portfolios. In addition, the aggregated loans and securitised pool can make sustainable deal sizes for bond market investors.

Excerpt from CBI’s Green securitisation and the low-carbon transition report (Source: Green Securitisation - Unlocking finance for small-scale low-carbon projects, CBI 2018).
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**
Off-grid solar investment flows in Uganda
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
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
Financial Aggregation for Distributed Renewable Energy in East Africa

Key highlights

- The distributed renewable energy (DRE) market in East Africa has experienced considerable growth over the past decade. In the captive power market, the installed capacity of commercial and industrial (C&I) solar projects has almost tripled in three years, from only 39 megawatt (MW) in 2020 to 100 MW in 2023.

- By 2019, 38.5 million people in the region were using distributed energy systems, equating to four times more than the population using distributed systems in West Africa and eight times more than in Southern Africa.

- Annual sales of off-grid solar (OGS) products reached 2.8 million units in 2021. This indicates considerable growth since sales were first recorded in 2017, when annual sales amounted to 2.1 million units. The mini-grid market has grown to a total of 469 projects operating across the region as of 2022;

- Despite this growth, the market for small-scale, low-carbon, energy assets in most individual countries of the East African Community (EAC) is not yet ready for financial aggregation and several market barriers must be addressed to enable its development;

- Deployment of aggregation instruments is hindered by sector-wide barriers that stretch across countries as well as by conditions that are country specific. At a country level, Kenya is the most attractive market for DRE financial aggregation, followed by Uganda and Rwanda in joint second place. Tanzania comes in third place. The Democratic Republic of the Congo (DRC), Burundi and South Sudan are the most nascent markets and the least ready for DRE financial aggregation;

- Considering current levels of industry maturity, the OGS sector is the DRE sector with the most developed financial aggregation maturity, followed by mini-grids, captive power and finally electric vehicles (EVs);

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

However, financial aggregation can offer a solution to most of these issues!
Ingredients for an enabling financial aggregation market

**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

Estimated annual aggregatable revenues per DRE sector (ambitious scenario):

- Base case (2022): $232.91m
- Mid term (2025): $372.4m
- Long term (2030): $736.2m

Estimated annual aggregatable revenues per DRE sector (conservative scenario):

- Base case (2022): $2.62m
- Mid term (2025): $119.16m
- Long term (2030): $527.2m
How to move the market closer to aggregation-readiness?

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?

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
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<th>MARKET DEVELOPMENT PATHWAY</th>
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<th>BARRIER TARGETED</th>
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**Table 4: Overview of financial aggregation barriers and associated market development activities**
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

Manon Dubois
Solaris Offgrid

Eddie Sembatya
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Eric de Moudt
Solar Frontier
Capital

Moderator: Eduardo Appleyard, UNDP
Q&A
Thank you

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

www.undp.org/energy
@UNDPClimate

#EnergyForDevelopment

Or contact us at: climateagg@undp.org