



## IFC IMPACT INVESTING CHALLENGE 2024

*Gender-Climate Nexus*

#IFCIMPACTCHALLENGE2024



**Aura of Amina**

Tsinghua University (China)

Harvard Kennedy School (USA)

# IMPACT INVESTING CHALLENGE 2024



*Creating Markets, Creating Opportunities*





**Tanzania: Off-Grid Solar PAYGo  
Gender-Responsive Social Securitization**

## Team: Aura of Amina

\*Amina is a common Tanzanian female name, meaning "faithful"



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# The Challenge: PAYGo model has a great potential to unlock energy access in SSA, yet challenges remain in sources of financing and gender inclusivity

## Lack of energy access in Sub-Saharan Africa (SSA) is greatly hindering progress in the SDGs

- **49.4%** of people in SSA live w/o electricity ([World Bank](#), 2021)
- This shortage of electricity cost **~2% of its GDP** ([IRENA](#), 2015)
- **Women are disproportionately affected by energy poverty:** (1) additional efforts for cooking fuels and its health damage, (2) increased Gender-Based Violence when no lighting, etc.

## Off-Grid Solar PAYGo is a promising pathway to unlock clean and affordable energy access<sup>1</sup>

- **Off-Grid Solar (OGS):** Solar systems independent from grid, like solar kits, solar home systems, etc.
- **Pay-As-You-Go (PAYGo):** A “lease-to-own” model that enables consumers to gradually acquire OGS assets through small installments over time, rather than requiring upfront payment
- PAYGo removes the financial barriers of gaining access to OGS, particularly benefiting unbanked or underbanked populations (Bottom of the Pyramid, women, rural, etc.)

## Yet, this model is facing two challenges...



### Undersupply of Financing to Roll out Off-Grid Solar

- **Huge Demand:** PAYGo is a capital intensive model. With liquidity trapped in receivables, OGS companies need substantial financing to fill the working capital gaps
- **Limited Supply:** OGS financing is a underdeveloped market, currently highly reliant on DFIs. Complex credit profiles of PAYGo users make financing limited and expensive



### Current OGS Fast Growth is Leaving Women Behind

- **Women Have Less Access:** Only 32% of OGS customers are women ([60 Decibels](#), 2024), due to socio-economic gender gaps (education, income, etc.) and OGS operational shortfalls
- **Women Face Unique Risks:** poor service quality; agent-based fraud; sexual harassment; lack of knowledge, etc.
- **Operational Shortfalls:** Most OGS companies have a male-dominated workforce, only 27% of employees being women ([World Bank](#), 2022). Lack of gender lens in operation

[1] See [Appendix 1](#) for more details about Off-Grid Solar and PAYGo model



# The Solution: Securitization that unlocks liquidity for PAYGo companies, with a gender tranche that channels capital into gender-responsive projects (1/2)

## Proposed: d.light Tanzania: \$120M Off-Balance Sheet PAYGo Gender-Responsive Securitization Facility

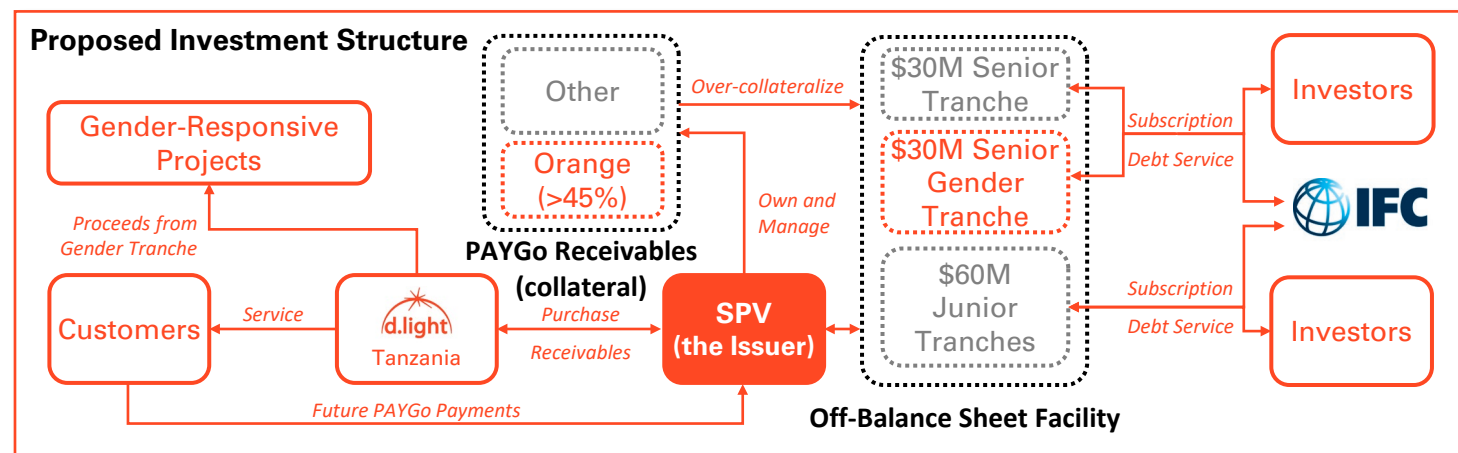
### Investment Target: d.light



d.light is a for-profit global leader in delivering solar-powered solutions to households and small businesses that lack access to reliable energy

d.light delivers **>2/3 of its OGS through PAYGo**, and only **~33% of its customers are female**<sup>1</sup>

### Investment Structure<sup>2</sup>



#### 1 Securitization of PAYGo receivables

- An SPV is set up as a bankruptcy remote, which will buy PAYGo receivables totaling \$150M from d.light on a **revolving basis**<sup>3</sup>
- The SPV issues multi-tranche asset-backed securities sized \$120M to investors, with a tenor of 2 years (tentative)

#### 2 Minimum % of “Orange” Collateral

- **>45%** of receivables in the collateral will be **“orange” (women-owned)** as per a pre-defined scorecard
- Significantly higher than d.light’s 33% baseline

*To be defined in Gender Finance Framework, see next page*

#### 3 Use-of-Proceeds (UoP) Gender Tranche

- The facility will have two senior tranches, one ordinary and **one dedicated UoP gender tranche**
- **IFC will anchor invest** up to \$30M into senior tranches and up to \$10M into junior tranches. IFC will maximize its allocation into the gender tranche without crowding out private investors

[1] Data about d.light collected from public resources, see [Appendix 3](#) for a company profile of d.light

[2] Details like size and tenor of the Facility, over-collateralization ratio, % of tranches, % of orange collaterals, are subject to change based on further communication with client as well as market conditions

[3] The SPV will continuously purchase receivables (typically 12 months repayment) as they are generated and paid off, such that there will always be \$150M of receivables in the “warehouse”

# The Solution: Securitization that unlocks liquidity for PAYGo companies, with a gender tranche that channels capital into gender-responsive projects (2/2)

## Proposed: d.light Tanzania: \$120M Off-Balance Sheet PAYGo Gender-Responsive Securitization Facility

### Gender Finance Framework (GFF)





#### Orange (color of SDG5) Collaterals

>45% of collaterals will be PAYGo receivables from<sup>1</sup>:

- OGS household products that are formally **registered under the name of a woman**
- OGS products deployed in **Women-Owned SMMEs**<sup>1</sup>

#### Gender-Responsive Use of Proceeds

Proceeds from gender tranche will be dedicated to **gender-responsive initiatives** including<sup>2</sup>:

-  **Better Reach:** Community-based women-Led solar PAYGo workshop
-  **Product & Service:** Review algorithms and re-design products & payment schemes
-  **Customer Protection:** Dedicated support team for women customers
-  **Workforce:** Training more female solar technicians and sales agents

### Tackling the Challenge: ClimateXGender<sup>3</sup>, parallel & integrated



**Climate Impact:**  
*Address the undersupply of financing to roll out Off-Grid Solar*

- Relieve liquidity constraints of PAYGo companies to **accelerate rolling out of OGS clean energy**
- Lower funding cost at scale and wider investor pool, develop the OGS financing market and **improve affordability of OGS clean energy**

#### ClimateXGender Integrated

**1 More women ready to use clean energy products**

**2 More women prepared for green opportunities**

**3 More women in the renewable energy industry workforce**



**Gender Impact:**  
*Empower women with access to Off-Grid Solar clean energy*

- **Incentivize gender inclusivity** in OGS customer base by a minimum % hurdle in collateral portfolio
- **Better reach and protection of women customers** through initiatives ranging from marketing to service, funded by dedicated capital

[1] A detailed and 2nd-party verified gender scorecard (prototype in [Appendix 13](#)) will be developed to determine whether a receivable can be classified as “orange”; SMME: small, micro, medium size enterprises

[2] More potential interventions in [Appendix 11](#). Gender-responsive initiatives will be identified and second-party verified during project preparation

[3] The solution will also have cross-cutting benefits for other SDGs, incl. SDG 7 (energy access), SDG 11 (sustainable communities), SDG 8 (SMEs empowered), SDG 3 (cleaner cooking), SDG 2 (refrigeration), etc.

# Feasibility and Implementation: Building on d.light's existing capacity, project implementation will focus on the drafting of GFF and mitigating key risks

## Enabling Conditions

### Success of Past PAYGo Securitizations

- The PAYGo Securitization model has **proven its bankability and profitability** as **market-rate private investors** start to participate<sup>1</sup>
- d.light has **done 4 securitizations** in SSA, one of which has been fully repaid in advance ([Kenya, 2020/2021](#))<sup>1</sup>

### d.light's Digitalization Capabilities

- d.light's **digital system** has a proven capability to give detailed insights into receivable **asset quality** and **monitor recovery** performance

### Mkt Demand & Business Sustainability

- 1st gender bond in SSA was in Tanzania ([NMB bank 2023](#)), **strong market interest** in gender-responsive finance
- d.light has a **huge market to tap into** in Tanzania, as the gov. targets to achieve universal energy access by 2030, 25% through off-grid ([World Bank, 2022](#))

## Implementation Plan

### Financial Structuring

- Modelling, pricing, and scenario simulations

↓  
*New in this transaction*

### Gender Finance Framework (GFF) Drafting

- d.light to set up gender working group, and provide **sex-disaggregated data**
- Together with IFC and other stakeholders, d.light to **prepare its gender strategy and GFF**



### Legal Structuring

- Clear legal and regulatory issues, negotiate with stakeholders to draft legal documents



### Company Due Diligence



### Placement, Marketing and Closing

- Finalize terms sheets & placement documents; meet potential investors, negotiate and close

## Key Risks and Mitigation

### ① Counterparty Risk

- If d.light becomes inoperative or its service quality deteriorates, it can greatly hit the SPV (the Issuer)  
→ Specify a **contingency plan**; **Performance triggers** tied to d.light's operational metrics

### ② Credit Risk (Moral Hazard)

- Unbundling asset financing from d.light could incentivize aggressive sales tactics resulting in compromised asset quality  
→ **SOP** for customer acquisition; **A dynamic risk-based pricing mechanism**

### ③ Social Washing & Data Manipulation

- d.light might not genuinely engage in gender-responsive initiatives or could manipulate data to meet financial or operational targets  
→ Obtain a **Second Party Opinion**<sup>2</sup> for the GFF. Implement a regular, transparent, 3rd party audited **reporting mechanism**

[1] See [Appendix 5](#) for a list of all closed OGS PAYGo securitization transactions in Sub-Saharan Africa

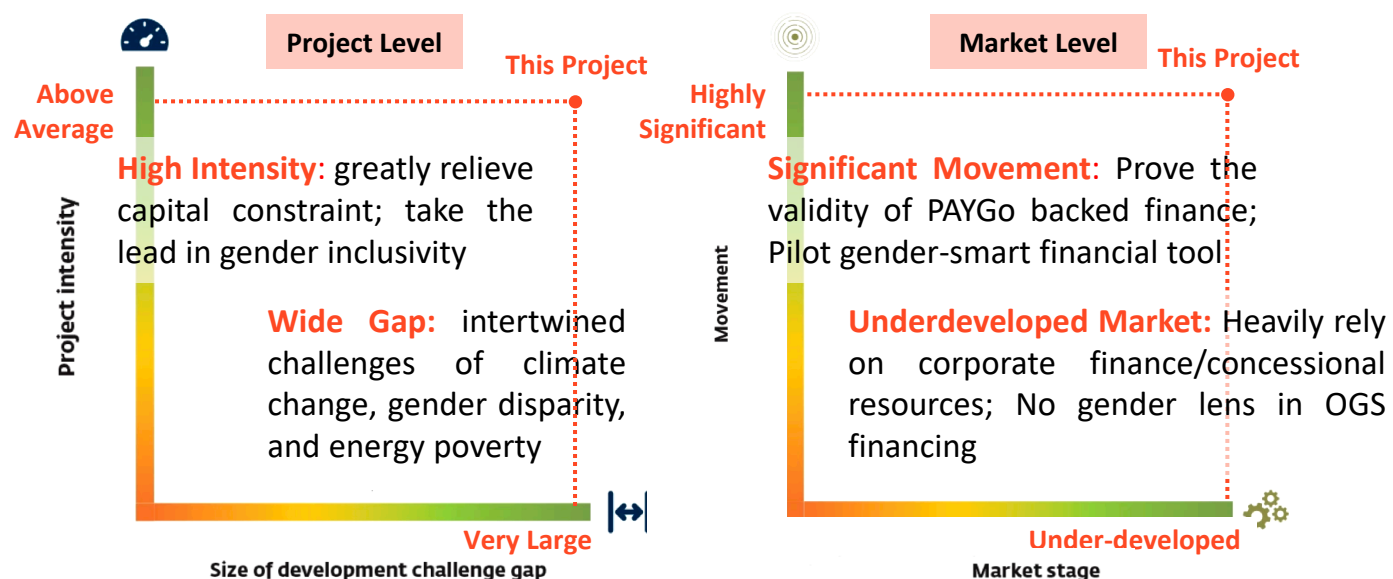
[2] The Second Party Opinion will assess the Gender Finance Framework in relation to the ICMA Social Bond Principles, with reference to IIX's Orange Bond Principles

**Development Impact:** The project has huge potential on both project level and market level, equipped by a data-driven impact monitoring approach

## Key Beneficiaries

- People and business in Tanzania, especially women & women-owned SMMEs
  - Access to energy and overall living conditions improved
  - Women empowered as green energy consumers and employees/leaders
- d.light and other OGS companies
  - Liquidity unleashed and more working capital to expand PAYGo
  - A new, verified and replicable gender-smart financing model for OGS
- The Country, Government of Tanzania
  - Facilitate the Govt's goal of 100% energy access by 2030 (25% through OGS)
  - Support the Govt's climate action (NDCs)
- Emerging Market (EM) Impact Investors
  - Provide easy access to EM infrastructure
  - Offer GenderXClimate enhanced impact investing solutions

## Anticipated Impact Measurement – based on AIMM



## Data-Driven Impact Monitoring

- d.light's digital mgmt. platform will be a one-stop impact monitoring tool for investors incl. IFC, featuring sex-disaggregated data to highlight gender-specific impacts
- An independent third-party evaluator, such as 60 Decibels<sup>1</sup>, can be helpful in helping auditing monitoring system and enhancing the integrity of impact monitoring
- The project team has developed an **Impact Measurement Framework** (see [Appendix 7](#)), incl. **project-level** (access to energy, affordability), and **market-level** (integration, inclusiveness)

[1] d.light Tanzania is a participant of 60 Decibels [Off-Grid Solar Social Impact research program](#), which monitors a set of impact indicators on a yearly basis



# Anticipated Impact

(within the 2-year commitment period)

Climate

Integrated

Gender



**627K tons**  
of CO2 emissions  
prevented



**1.2 Million** women in Tanzania  
with improved energy access



**~3,000** women potentially  
engaged as solar technicians  
and sales agents



**81K** women-owned SMMEs nationwide  
incl. **51K** women-owned SMMEs in rural areas  
empowered with clean energy access



**164K** women positively  
impacted by reduced air pollution



**131K** households with more  
income streams thanks to  
OGS Solar Home Systems



**510K** girls with  
better study  
conditions with  
reliable solar  
lighting

# **Innovation:** As 1<sup>st</sup> gender social securitization in SSA, the project provides a scalable way for mobilizing private capital in gender-inclusive climate finance



**Ground-breaking**

- **1<sup>st</sup> gender-responsive social securitization** in SSA
- **1<sup>st</sup> to integrate gender gens** into Off-Grid Solar financing



**Market Potential**

- **OGS** is expected to reach at least an additional **200 million people** in SSA by 2030, with est. **CAGR at ~5%** ([World Bank](#), 2023)
- **Increasing gender focus** among PAYGo companies and investors brings strong market demand



**A Holistic Solution from Roots to Rise**

- The collateral hurdle – **KPI component: more acquisition of women customers** and more registration of OGS assets under women's names
- The gender tranche – **UoP component: address the underlying socio-economic gender gaps and operational shortfalls** with long-lasting impact



**Highly Scalable**

- **At least 6 other scaled players can potentially replicate** to embed gender into PAYGo financing<sup>1</sup>
- **Pooling of receivables from different originators** (small-to-medium-sized) can be made possible with a unified PAYGo mgmt. system or through collaboration with MFIs (micro-finance institution)



**Mainstreaming Financial Aggregation in SSA**

- A first-mover works out challenges, accelerates securitization's growth in Africa where it is **promising but under-developed** ([gef, UNDP](#), 2024)
- Africa needs an additional **\$500 billion ~ \$1.2 trillion annually** for SDGs financing, which securitization can help address ([Brookings](#), 2019)

[1] Market leaders in SSA including Azuri, BBOX, ENGIE Energy Access, Fenix, M-KOPA and Zola Electric, see [IRENA](#), 2020





**Thank you for listening!**

Team: Aura of Amina



# Appendix

Aura of Amina

1. Off-Grid Solar and PAYGo
2. PAYGo model from a Gender Perspective
3. d.light Company Profile
4. Tanzania Country Profile
5. Previous OGS PAYGo Securitizations in SSA
6. Illustrative Implementation Timeline
7. Impact Measurement Framework
8. Risks and Mitigation
9. E&S and Corporate Governance
10. Tentative Capital Structure
11. Gender Tranche: Use of Proceeds
12. Anticipated Impact Calculations
13. Scorecard Prototype
14. IFC's Past Securitization Projects (1996-2024)

## References

# Appendix 1: Off-Grid Solar and the Pay-As-You-Go model

## Off-Grid Solar: selected products

### Light only (~0.3W)



### Mobile Charging (2~3W)



### Solar Home System (SHS) (9~80W)

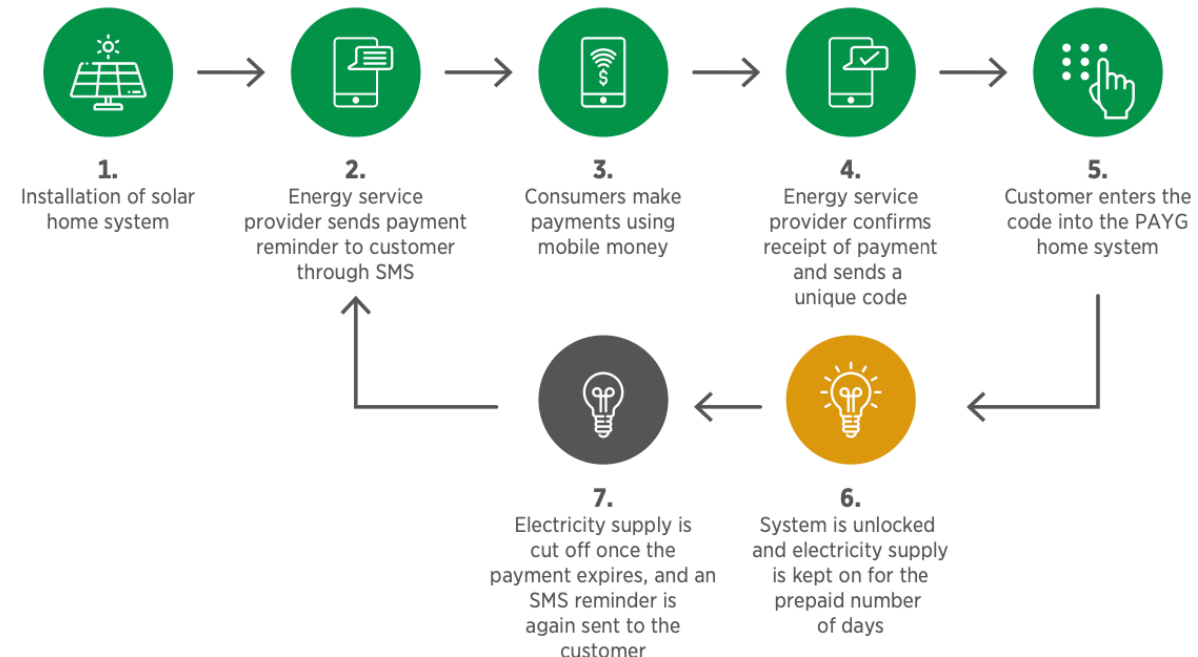


Off-grid solar (OGS) independently produces and stores electricity for a household, without being connected to the utility grid. Common products include both solar energy kits and off-grid solar appliances.

## Pay-As-You-Go Model

- The model:** An energy service provider offers solar PV systems for rent or sale, with customers making regular payments through mobile payment systems. d.light introduced pay-as-you-go (PAYGo) plans—involving an initial down payment followed by daily payments typically less than \$1.50, spanning 12-18 months.

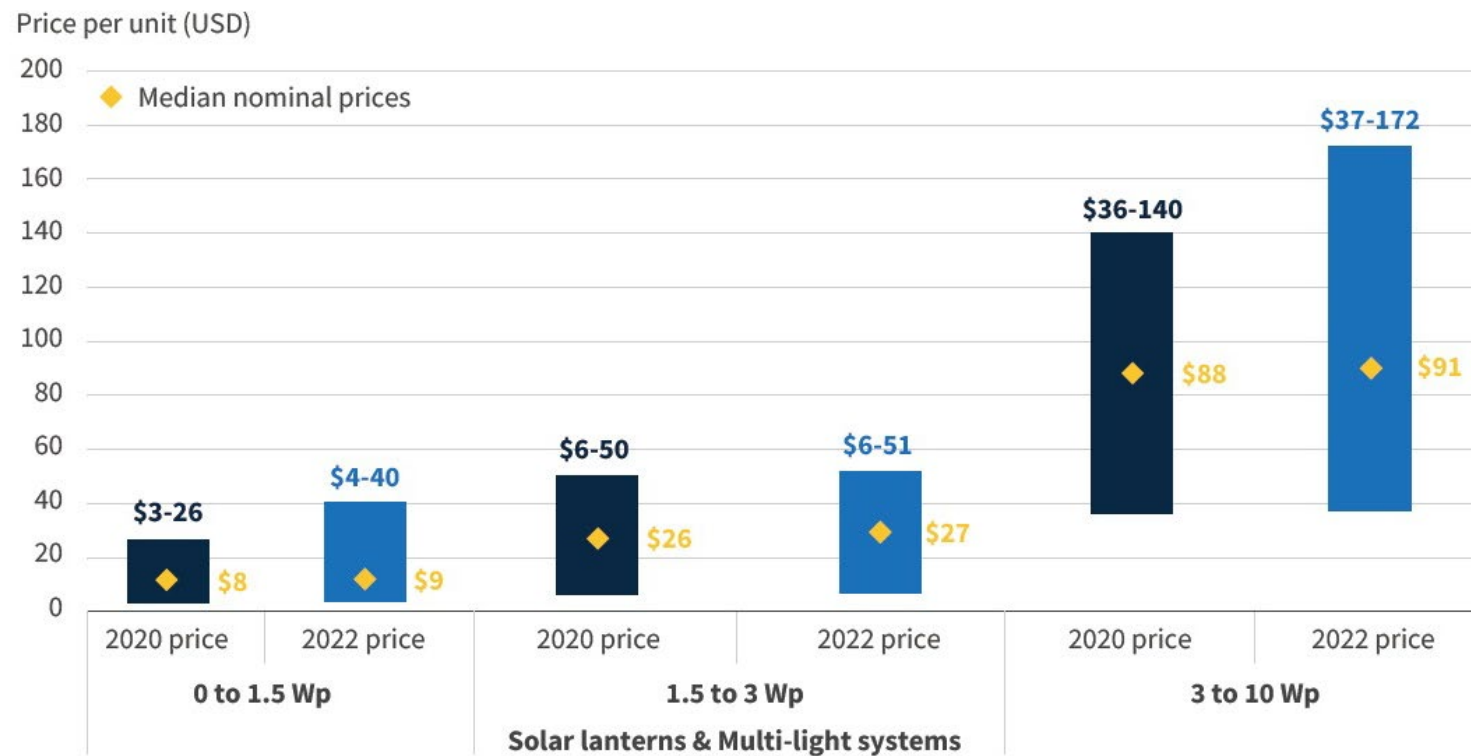
**74%** of the customers opted to buy their energy products through a payment plan or loan like **PAYGo** (60 Decibels, 2024)



## Appendix 1: Off-Grid Solar and the Pay-As-You-Go model (continued)

### Off-Grid Solar: Price ranges

Figure 33: Global indicative cash price ranges of solar lanterns and multi-light system products by wattage (2020 versus 2022)<sup>92</sup>

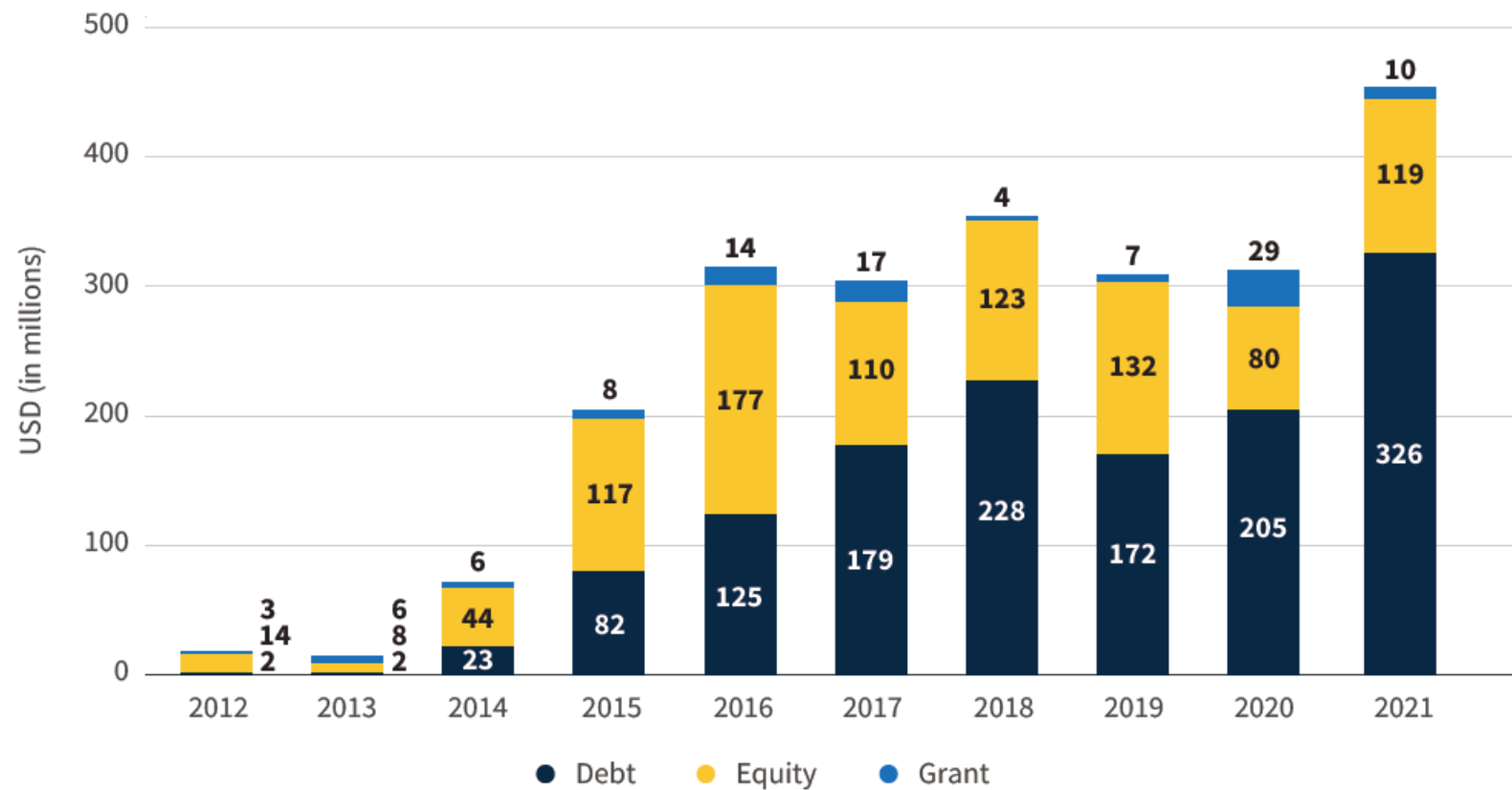




## Appendix 1: Off-Grid Solar and the Pay-As-You-Go model (continued)

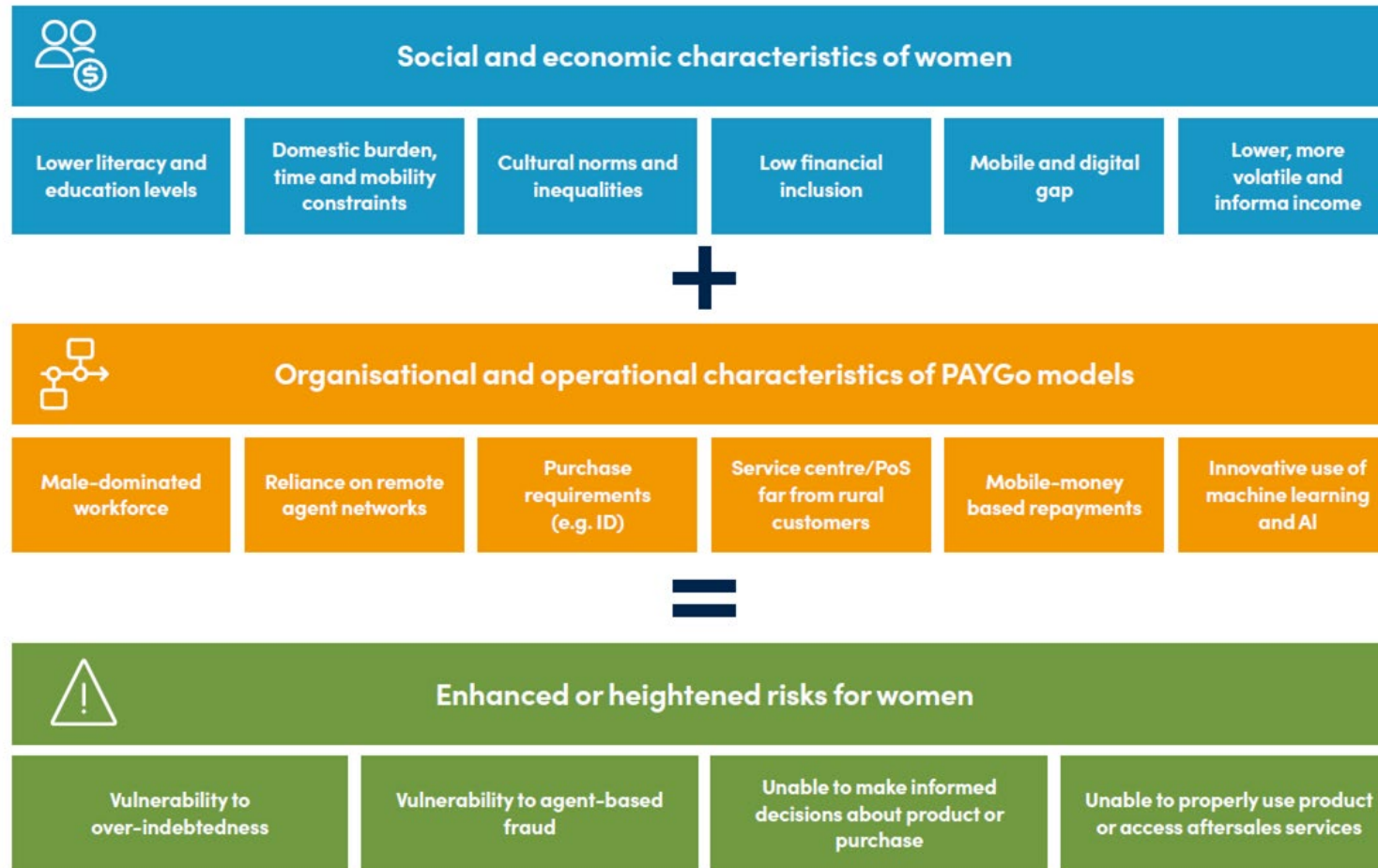
### Off-Grid Solar: Investment

Figure 62: Investment amount by investment type



## Appendix 2: PAYGo model from a Gender Perspective

Women face unique and heightened risks as consumers, which are affected by socio-economic norms and some characteristics of OGS operational models.



## Appendix 3: d.light Company Profile

### Investment Target: d.light



Established	2006
Headquarter	Kenya; USA
Revenue	>\$200M (2023)
Revenue YoY	>40% (2023H1)
Geographic Focus	East Africa (Kenya, Tanzania, Uganda), West Africa (Nigeria), South Asia (India)
Value Chain	Manages the entire value chain from design to distribution, including manufacturing and financing. It has recently unbundled some of its financing through securitization
Sales Model	>2/3 through PAYGo
Customer Base	~33% female, ~67% male
Gender Lens in Operation	Previous initiatives on workforce level, none on customer level

### Financials

(\$ Millions)

#### ASSETS

	FY16	FY17	FY18
Cash and Cash Equivalents	2.2	5.9	15.1
Accounts Receivable, net	6.7	11.1	26.4
Inventory	4.9	12.5	15.4
Other Current Assets	1.8	1.7	4.7
<b>Total Current Assets</b>	<b>15.6</b>	<b>31.2</b>	<b>61.6</b>
<b>Non-Current Assets</b>	<b>2.0</b>	<b>3.9</b>	<b>3.0</b>
<b>Total Assets</b>	<b>\$17.6</b>	<b>\$35.1</b>	<b>\$64.6</b>

#### LIABILITIES

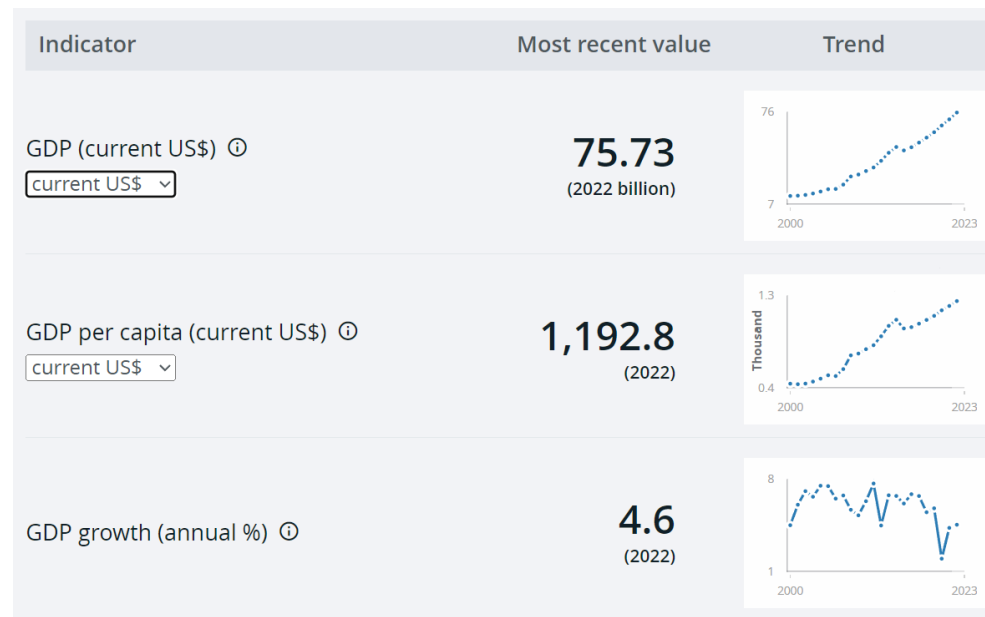
Accounts Payable	4.7	5.4	4.9
Other Current Liabilities	15.9	6.0	8.9
<b>Total Current Liabilities</b>	<b>20.6</b>	<b>11.4</b>	<b>13.8</b>
Other Non-Current Liabilities	0.0	0.1	0.1
Long-term Debt		10.0	33.1
<b>Total Liabilities</b>	<b>\$20.6</b>	<b>\$21.5</b>	<b>\$47.0</b>

Revenue	\$44.7	\$49.7	\$65.1
<b>Accounts Receivable Turnover (simplified)</b>	<b>6.7x</b>	<b>4.5x</b>	<b>2.5x</b>
<b>Accounts Receivable/Total Assets</b>	<b>38.07%</b>	<b>31.62%</b>	<b>40.87%</b>



## Appendix 4: Tanzania Country Profile

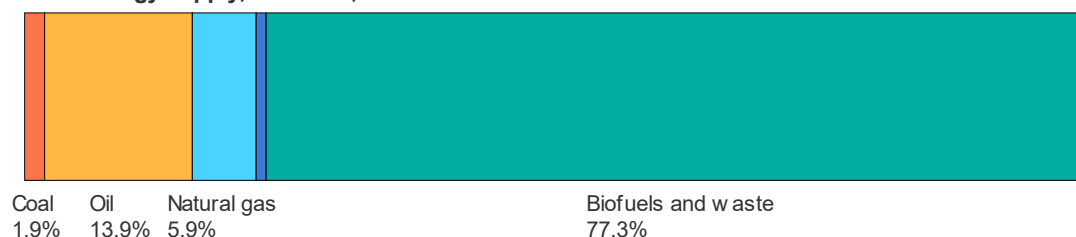
### Macroeconomy



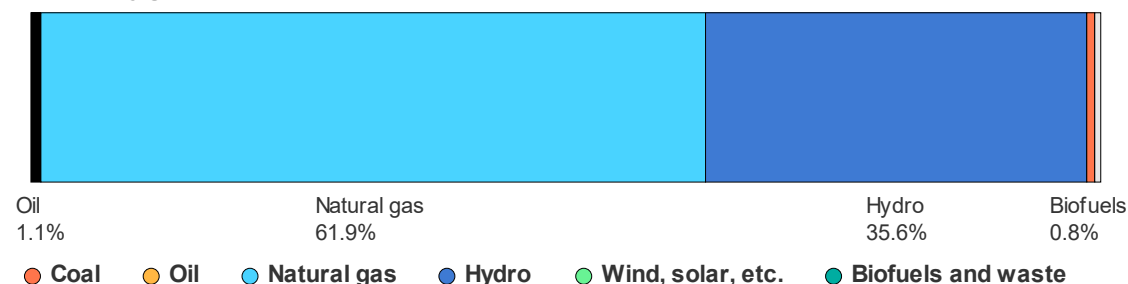
- Considered one of Africa's safest and most stable countries
- **Strong growth with over 6% real GDP growth on average in the past decade**
- Upgraded to **lower-middle income** by the WB in 2020
- Projected 5.6% GDP growth (2024); potentially 6% long-term with structural reforms ([World Bank, 2020](#))
- Most populous in East Africa with over **65 million people**

### Energy and Climate Action

Total energy supply, Tanzania, 2021



Electricity generation, Tanzania, 2021



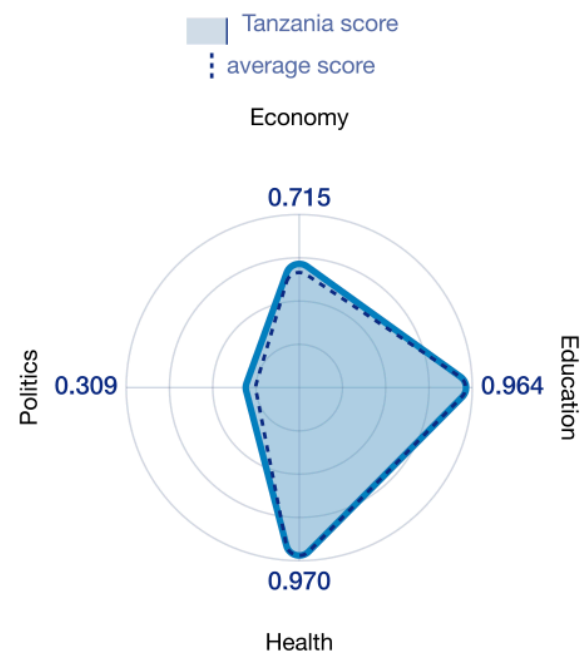
- **Huge consumption of biomass** with traditional methods ([IEA, 2022](#))
- **Reliance on hydropower for electricity generation**; frequent droughts cause power shortages ([AFP, 2023](#))
- Aim for universal electricity access by 2030 (75% from grids, 25% off-grid) ([World Bank, 2022](#))
- **Promote and support gender-related activities within the energy sector**, aiming to foster gender equality across both the demand and supply sides of the energy sub-sector ([Pueyo, 2020](#))

## Appendix 4: Tanzania Country Profile (continued)

### Global Gender Gap Index Rankings (2023)

Economy Profile	Score (imparity = 0, parity = 1)	Rank (out of 146 countries)	Index Edition
<b>Tanzania</b>	<b>0.740</b>	<b>48th</b>	<b>2023</b>

Global Gender Gap Index 2023 Edition



Overview

Index and Subindex	2023		2022	
	Score	Rank	Score	Rank
Global Gender Gap Index	0.740	48th ↑	0.719	64th
Economic Participation and Opportunity	0.715	53rd ↑	0.705	65th
Educational Attainment	0.964	108th ↑	0.957	110th
Health and Survival	0.970	75th ↑	0.970	80th
Political Empowerment	0.309	45th ↑	0.245	60th

## Appendix 5: Previous PAYGo Securitization History in SSA

PAYGo Company	Time of Issuance	Geography	Size	Currency	Investors
d.light	2024	Nigeria	N10m (\$7.6m) facility	Nigerian Naira	Chapel Hill Denham (a Nigerian AMC)
d.light	2023	Tanzania	\$30m facility, revolving to finance \$125m receivable	USD	TDB
d.light	2022	Kenya	\$238m	multi-currency	DFC, Oikocredit, Norfund, responsAbility, African Frontier Capital
d.light	2020/2021	Kenya	\$65m OBS facility	USD	DFC, Norfund, African Frontier Capital
Zola Electric	2020	Côte d'Ivoire	€40m (approx. \$40.1m) OBS facility	EUR	Société General Cote d'Ivoire, AfDB, Crédit Agricole
SolarNow	2019	Uganda	\$9m	USD	SunFunder, Oikocredit
Bboxx	2015	Kenya	\$500,000	USD	Oikocredit



## Appendix 6: Illustrative Implementation Timeline

Activity	Month														Responsible
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Financial Structuring															
Grant access to internal accounting system data															d.light
Prepare financial models for pricing and simulation															Financial advisor
Gender Finance Framework (GFF) Drafting															
Adopt gender strategy															d.light
Establish gender working group															d.light
Provide sex-disaggregated data															d.light
Prepare "orange" collateral scorecard under GFF															d.light, IFC experts
List eligible initiatives for use of proceeds															d.light, IFC experts
Integrate stakeholder comments															d.light
Legal Structuring															
Analyze legal and regulatory issues															Lawyers
Negotiate with stakeholders to draft legal documents															Lawyers
Due Diligence															
Due diligence on <u>d.light's</u> financial performance															Investors
Due diligence on d.light's commercial performance															Investors
Due diligence on d.light's operational performance															Investors
Placement, Marketing, and Closing															
Finalize terms sheets and placement documents															d.light
Meet potential investors															d.light
Finalize pricing															d.light, Investors
Sign contracts															d.light, Investors
Transfer funds															d.light, Investors

## Appendix 7: Impact Measurement Framework

This framework is based on: (1) *IFC Anticipated Impact Measurement and Monitoring (AIMM)*<sup>1</sup> (2) *Client's existing monitoring framework*<sup>2</sup>

### Project Outcome Indicators

	Indicator	Sex-disaggregated
Stakeholders	<b>Access to Energy</b>	
	New users reached, disaggregated by income groups, #	●
	OGS installed during the reporting period, MW	●
	<b>Quality of Delivery</b>	
	Net Promoter Score	●
	Challenge Rate and Issue Resolution Rate, %	●
	<b>Affordability of Energy</b>	
	Average cost of generation (incl. interest costs), USc/kWh	
	Non-performing loans rates, %	●
	<b>Microfinance and SME finance</b>	
	Number and volume of outstanding PAYGo leases	●
	Percentage of OGS for income-generating use, %	●
	New SMEs deploying OGS through PAYGo, #	●
	<b>Jobs and Human Capital</b>	
	New solar technicians trained, #	●
	Women in workforce, disaggregated by level, %	
<b>Economy-wide:</b> Indirect and induced employment, #		
<b>Environmental:</b> GHG emission reduction/avoidance, tons		

### Contribution to market creation indicators

	Indicator
<b>Integration</b>	Private capital mobilized, % (measured by % of private investors' subscription to the facility)
<b>Inclusiveness</b>	Increased energy access to underserved group (especially women, rural and low-income)
	Setting a market-leading example of a gender-inclusive OGS PAYGo model
<b>Sustainability</b>	Adoption of gender standards in operation Innovations in instruments (social securitization) to support changes in market practice

[1] We have referred to IFC's AIMM for Power; Micro and Digital Financial Services; SME Finance

[2] d.light Tanzania is a participant of 60 Decibels Off-Grid Solar Social Impact research program, which monitors a set of impact indicators on a yearly basis

## Appendix 8: Risks and Mitigation

Risk	Risk Description	Proposed Mitigation Measures
<b>Operational Counterparty Risk</b>	If d.light becomes inoperative or its service quality deteriorates, it can have a significantly negative impact on the SPV (the Issuer)	<ul style="list-style-type: none"> <li>• A contingency plan where investors take control of the originator's systems and rehire key staff can help to maintain continuity should the servicer falter or fail.</li> <li>• Performance triggers tied to d.light's operational metrics to ensure service delivery quality</li> </ul>
<b>Operational Credit Risk as Moral Hazard</b>	Unbundling asset financing from d.light could incentivize aggressive sales tactics resulting in over-indebtedness of customers and compromised asset quality	<ul style="list-style-type: none"> <li>• Well-designed customer acquisition SOP (Standard Operating Procedure), ensuring that customers are fully aware of the risks of such PAYGo purchase</li> <li>• A dynamic risk-based pricing mechanism, where pricing or advance rate will change regularly (for example, monthly) to reflect the latest collateral portfolio</li> </ul>
<b>Governance Social Washing</b>	Social washing risk when d.light misleads stakeholders without truly engaging in meaningful initiatives	<ul style="list-style-type: none"> <li>• Design and implement a transparent and robust mechanism for measuring and reporting impact</li> <li>• Seek Second Party Opinion for the GFF, to ensure its alignment with ICMA Social Bond Principles and other relevant regulatory guidelines</li> </ul>
<b>Governance Data Manipulation</b>	Data manipulation risk when d.light alters or misrepresents data, including performance statistics	<ul style="list-style-type: none"> <li>• Strengthen internal controls of d.light and invite third-party auditors to engage with data verification</li> </ul>
<b>Political</b>	A change in energy policy could impact on receivables projection that the repayment structure is based on; Political turmoil with protests over constitutional reforms. 2025 presidential election with change in administration.	<ul style="list-style-type: none"> <li>• Engage with the host government to better understand the government's energy strategy and seek its support for the project</li> <li>• Seek de-risking instruments from political risk insurers like MIGA</li> </ul>
<b>FX Risk</b>	High volatility in exchange rates can lead to unexpected impacts on the SPV	<ul style="list-style-type: none"> <li>• Consider hedging strategies at the SPV level, which has been the common practice in previous securitizations (d.light in Kenya)</li> </ul>

## Appendix 9: E&S and Corporate Governance

Category	ESS Affiliation	Issue	Approach
<b>Environmental</b>	ESS3 - Resource Efficiency and Pollution Prevention and Management	Solar panels and batteries can become a source of pollution if not disposed of or recycled properly.	d.light to collaborate with the local government to establish disposal and recycling programs.
<b>Social</b>	ESS4 - Community Health and Safety	Solar panels and batteries not disposed of or recycled properly could release toxic substances.	
<b>Social</b>	ESS2 - Labor and Working Conditions	Safe and healthy working conditions for female workers are paramount. Sexual harassment in the workplace is concerning when it involves women.	Establish protocols and a grievance mechanism
<b>Corporate Governance</b>	N/A	A breach of data privacy may occur. Sensitive customer information risks being exposed.	Implement a robust data protection policy.



## Appendix 10: Tentative Capital Structure

	Size (\$M)	% of Capital Structure
Senior Tranche 1	30	21%
Senior Tranche 2 (Gender Tranche)	30	21%
Junior/Mezzanine Tranches	60	43%
Total Debt	120	86%
Preference Shares	20	14%
Total Equity	20	14%

## Appendix 11: Gender Tranche: Use of Proceeds

Areas	Examples of Gender-Responsive Initiatives
<b>Product &amp; Service</b>	<ul style="list-style-type: none"><li>● Review and rectify algorithmic bias that may unfairly reject quality women consumers from PAYGo</li><li>● Sex-disaggregated customer feedback collection tool to incorporate into product design</li><li>● Women-oriented product research &amp; development, meeting gender-specific needs</li></ul>
<b>Marketing</b>	<ul style="list-style-type: none"><li>● Adopt gender-targeted marketing campaign, like gender-specific messaging targeting women</li><li>● Community-based women-led workshops that provide participants with knowledge about solar energy and basic finance</li><li>● Marketing materials and channels tailored for women customers</li><li>● Advertising and impact tests using gender-disaggregated data</li></ul>
<b>Sales &amp; Distribution</b>	<ul style="list-style-type: none"><li>● Provide women sales agents with “demonstration kits”</li><li>● Mapping strategic sales locations and training female agents in group sales techniques, allowing them to reach many customers in a public location at one time, rather than time-consuming door-to-door model (women sales agents often face gender-specific constraints, including lack of reliable transportation, safety concerns, constrictive social norms, multiple demands on their time due to gendered social norms that attribute household and care responsibilities to women)</li><li>● Develop gender-specific communications during the upsell process</li><li>● Gendered mapping and analysis for distribution partners</li></ul>

## Appendix 11: Gender Tranche: Use of Proceeds (Continued)

Areas	Examples of Gender-Responsive Initiatives
<b>Customer Protection &amp; After Sales</b>	<ul style="list-style-type: none"><li>• Training for standardized customer protection protocols to ensure women customers have the same good product and service quality</li><li>• Incorporate gender-specific messaging during custom service calls</li><li>• Gendered helpline dedicated to women needs and staffed with women agents</li><li>• Analyze sex-disaggregated data on customer loyalty and trends</li><li>• Grievance mechanisms for sexual harassment</li></ul>
<b>Workforce and Human Resources</b>	<ul style="list-style-type: none"><li>• Implement gender-aware recruitment, training, and compensation changes to retain female agents</li><li>• Training more female solar technicians and sales agents</li><li>• Diversity trainee programs for training and monitoring future female executives</li><li>• Gender analysis in recruiting of female employee growth and retention</li></ul>
<b>Supply Chain</b>	<ul style="list-style-type: none"><li>• Consider integrating DEI into supplier assessment</li></ul>

## Appendix 12: Anticipated Impact Calculations

Population Demographics	
% of population with access to electricity in Tanzania	42.74
% of population without access to electricity in Tanzania	57.26
Total population in Tanzania (in Millions)	63.59
Total female populaton in Tanzania (in Millions)	32.17
Population without access to eletricity in Tanzania (in Millions)	36.41
Female population without access to electricity in Tanzania (in Millions)	18.42
% of HHs with electricity in Tanzania	45.8
% of HHs without electricity in Tanzania	54.2
Total number of HHs in Tanzania (2021) (in Millions)	12.45
Number of HHs without electricity in Tanzania (in Millions)	6.75
Women Beneficiaries	
Number of units sold by Dlight (assuming 1 unit per HH and consistent sales rate) (in Millions)	0.45
Number of women per household in Tanzania	2.58
<b>Total women beneficiaries through the project (in Millions)</b>	<b>1.17</b>
Employment Creation for Women	
Number of HHs per solar technician (assumption)	150
Total number of solar technician created	3030
Educational Benefits to Girls	
% of population in the age group 0-14 (2022)	43.46
number of people in the age group 0-14 (2022) (in Millions)	27.64
number of girls in the age group 0-14 (2022) (in Millions)	13.98
Total number of girls beneficiaries in the age group 0-14 in a year (in Millions)	0.51

Women Owned Businesses Supported	
Total number of SMMEs in Tanzania (in Millions)	3
% of women owned SMMEs in Tanzania	54
Total number of women owned SMMEs in Tanzania (in Millions)	1.62
% of the female population owning SMMEs in Tanzania	5.04
Number of women owned SMMEs supported in Tanzania at 5% coverage (in Millions)	0.08
Rural population in Tanzania as a % of total	63.00
Total number of women owned SMMEs in rural Tanzania (approx.) (in Millions)	1.02
Number of women owned SMMEs supported in rural Tanzania at 5% coverage (in Millions)	0.05
Impact on Women's Health	
Cookstove sales as a % of total sales	14
Number of women beneficiaries using cookstove (in Millions)	0.16
Environmental Impact	
CO2 emission prevented for 110 million securitization (in tonnes)	460000.00
<b>CO2 emission prevented for 150 million securitization (in tonnes)</b>	<b>627272.73</b>
Economic Impact	
% of households with OGS Soalr Home Systems undertaking more work	58
Solar Home System Sales as a % of Total Sales	50
Number of Solar Home Systems Sold (in Millions)	0.23
Number of households with OGS Soalr Home Systems undertaking more work (in Millions)	0.13



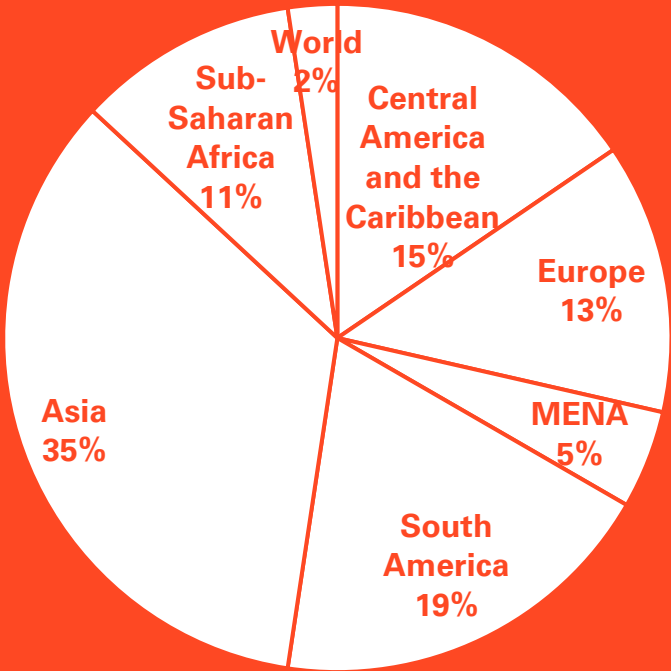
## Appendix 13: Scorecard Prototype

1	Entrepreneurship & Ownership OR	1A. Share of women ownership	51%	
		OR 1B. Business founded by a woman	50%	
2	Leadership OR	2A. Share of women in senior management	30%	The benchmark is based on the statistic that <b>23%</b> of senior managers are women in Tanzania overall in 2022 ( <a href="#">The World Economic Forum, 2022</a> ).
		OR 2B. Share of women on the Board or Investment Committee	30%	
3	Employment OR	Share of women in the workforce	50%	The benchmark is based on the statistic that <b>49%</b> of the workforce are women in Tanzania overall in 2023 ( <a href="#">World Bank, 2023</a> ).
		AND One "quality" Employment indicator beyond what is legally required	Yes/No	
4	Supply Chain OR	Explicit commitment to women in the supply chain is demonstrated	Yes/No	<ul style="list-style-type: none"> <li>► Diversity efforts to increase the share of women in the workforce</li> <li>► Equal pay efforts to address any gender pay gap(s) identified</li> <li>► Equal care efforts to support employees with their care responsibilities</li> <li>► Health &amp; well-being efforts to support the gender-specific health &amp; well-being needs of employees</li> <li>► Efforts to address and prevent gender-based violence &amp; harassment</li> </ul>
		AND One "quality" Supply Chain indicator beyond what is legally required	Yes/No	
5	Products & Services	Product(s) or service(s) enhance(s) well-being of women/girls and/or drives gender equity	Yes/No	<ul style="list-style-type: none"> <li>► Regular collection and analysis of gender-/sex-disaggregated data regarding the share of women-owned/-led suppliers and/or supply chain workers, gender pay gaps(s), health and well-being and GBVH, among others</li> <li>► Supplier diversity programme that includes women-owned/-led businesses</li> <li>► Market access/outreach initiatives to communicate procurement opportunities to women-owned/-led businesses</li> <li>► Efforts to educate (procurement) employees on opportunities and barriers that women suppliers face</li> </ul>

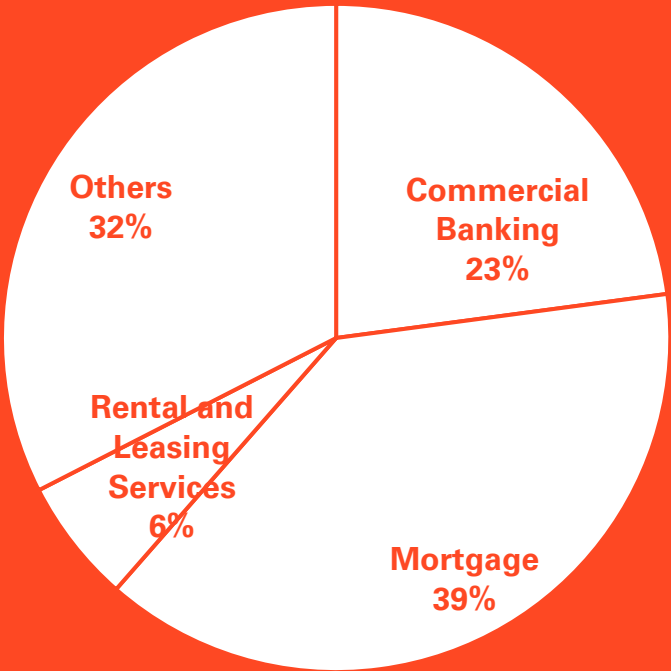
# Appendix 14: IFC’s Past Securitization Projects (1996-2024)

None of IFC’s previous securitization in SSA has a gender focus.

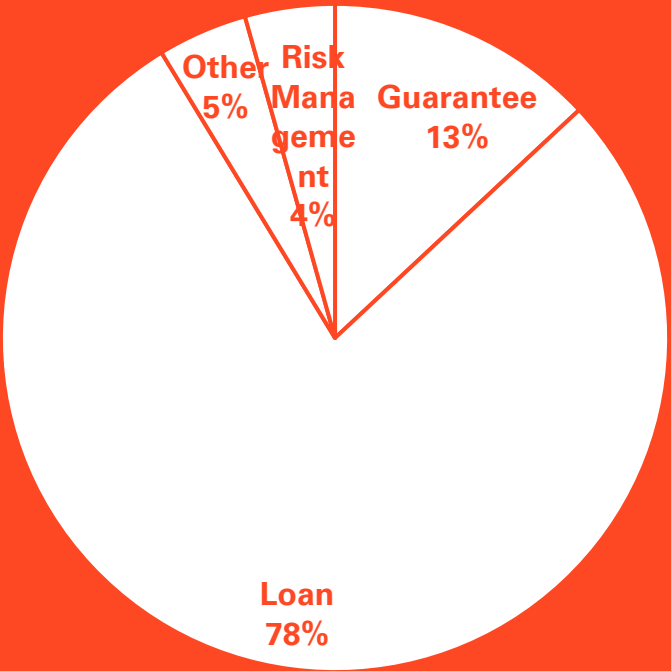
BY GEOGRAPHY



BY SECTOR



BY PRODUCT



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