

# Unlocking private capital for mini-grids

5th Mini Grid Action Learning Event & Summit

**26th June 2019**

**PRIVILEGED AND CONFIDENTIAL**

## To invest in mini-grids today, CBEA needs proven developers, delivering grid-quality power, in countries with supportive regulations and financing

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CrossBoundary's mission is to unlock the power of capital to impact frontier markets

Finance at scale is the key to unlocking the potential of mini-grids in Africa

We invest in businesses designed for scale, in markets with supportive regulation

# Agenda

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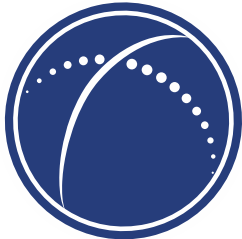
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# CrossBoundary facilitates the investment of private capital into frontier markets

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Our mission is to  
*unlock the power of capital*  
to make a **strong return** and a **lasting difference** in frontier markets



## CROSSBOUNDARY ADVISORY

Investment advisory services to  
unlock private capital for key  
sectors in frontier markets



## CROSSBOUNDARY ENERGY

Dedicated investment fund to  
finance commercial and  
industrial solar in Africa



## CROSSBOUNDARY ENERGY ACCESS

Project finance fund for  
solar mini-grids in  
Africa

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# There are 3 principal means of bringing electricity to the 618M people in SSA who lack electricity

## 3 principal means of providing electricity to those in need in SSA



Mini-grids

*CBEA focus*

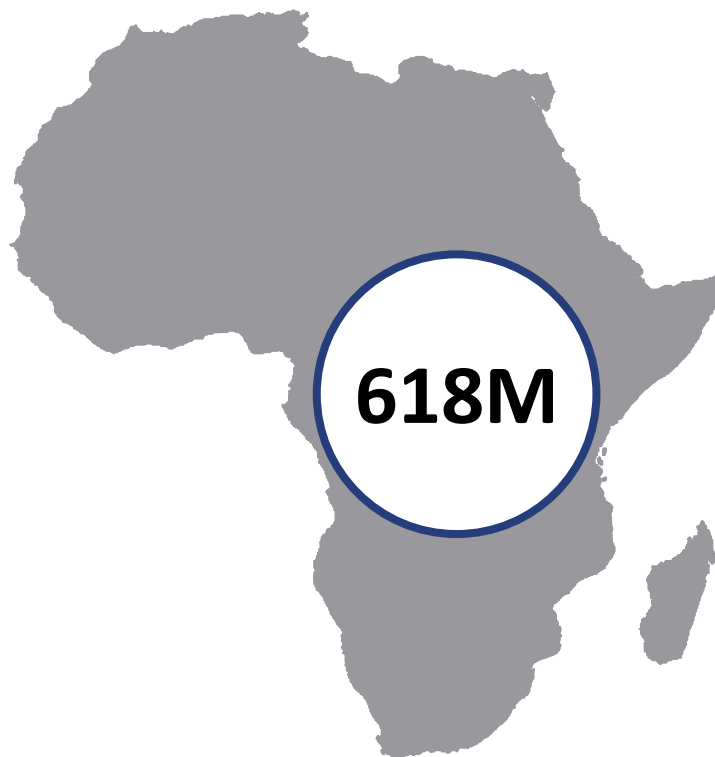


Main-grid extension



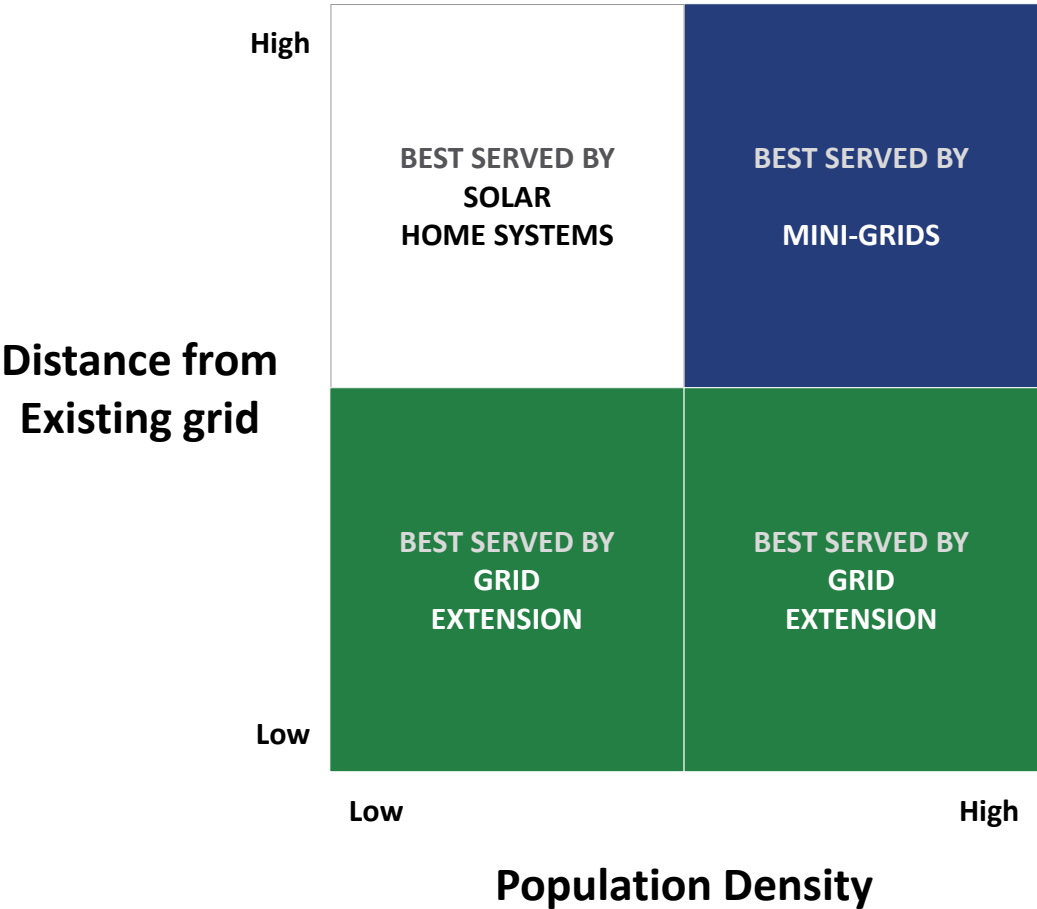
Solar Home Systems (SHS)

## 618M people in Sub-Saharan Africa (SSA) lack access to electricity<sup>1</sup>



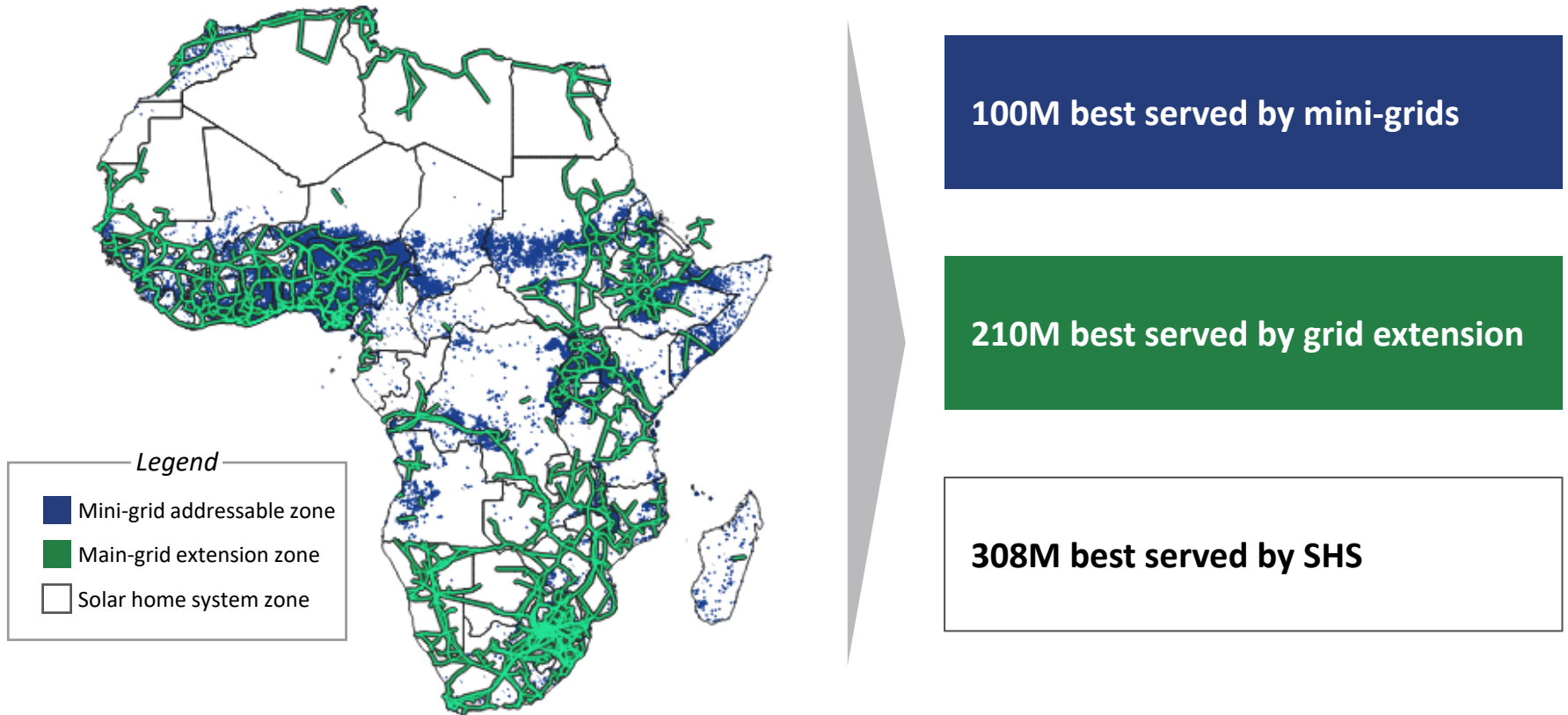
1. World Bank population and electrification rate data, 2014; UNEP population data 2015 onwards

# This 618M can be segmented by the most cost-effective means of electrification; (i) grid extension, (ii) Mini-Grids or (iii) SHS



# CBEA analysis shows mini-grids are the most cost-effective means of electrifying at least 100 million people, based on today's costs

## Analysis of mini-grid and main-grid expansion addressable zones - African continent, 2015

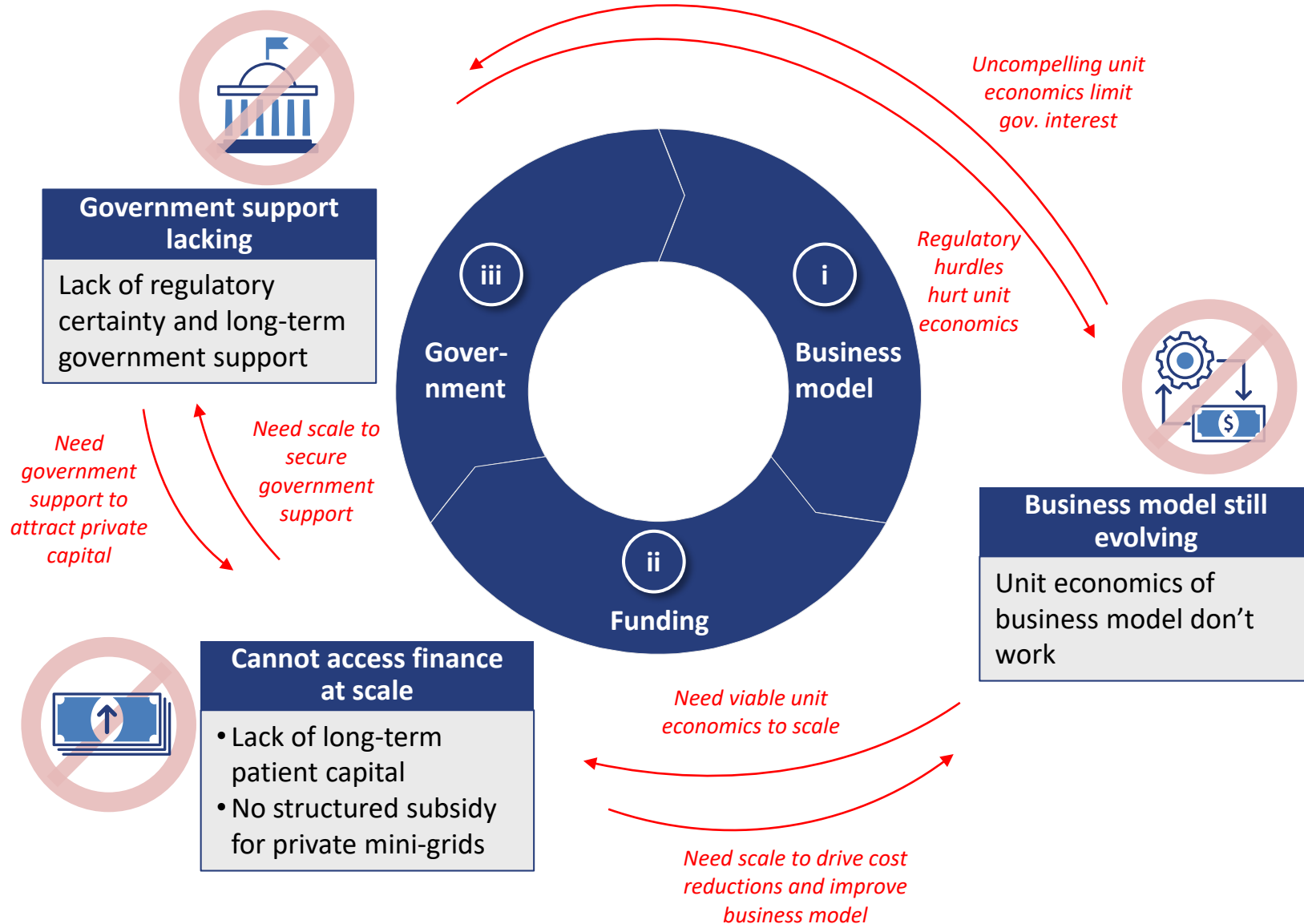


**Note:** Zones in Algeria, Libya, Tunisia, and Egypt have been excluded from total potential given high electrification rates (99%+)

Source: Electrification for Under Grid households in Rural Kenya, Kenneth Lee et al 2016; Africa's Pulse, April 2017, volume 15, World Bank; World Bank African Transmission and Distribution lines 2017; WorldPop 2015 population density map, Africa, UN adjusted, International Energy Agency Africa Energy Outlook 2014



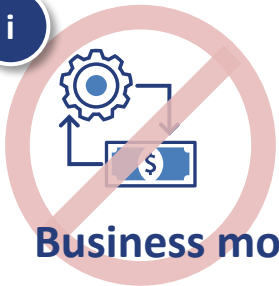
# Mini-grids have historically been stuck in a 'doom loop', need (i) improved unit economics, (ii) finance to scale and (iii) government support to thrive



# Progress is being made on unit economics and regulations; Mini-grid financing is emerging as a binding constraint

3 primary factors have held mini-grids developers back from scaling in the past...

i



**Business model**

Unit economics don't work

- Revenues don't cover costs, even with subsidy



ii



**Finance**

- Lack of access to long-term patient capital
- Lack of structured subsidy



iii



**Government**

Lack of regulatory certainty through:

1. Unclear permitting
2. Tariffs don't cover costs
3. Grid integration plan unclear

... however all are currently progressing except for providing finance at scale



**Business model**

Unit economics improving

- Revenues on track to cover costs with subsidy



**Finance**

- Private investors have mandates, but can't deploy
- Structured subsidy available, but can't flow due to lack of matching private capital



**Government**

Increasing regulatory certainty through:

1. Streamlined permitting
2. Cost-reflective tariffs
3. Clear grid integration plan

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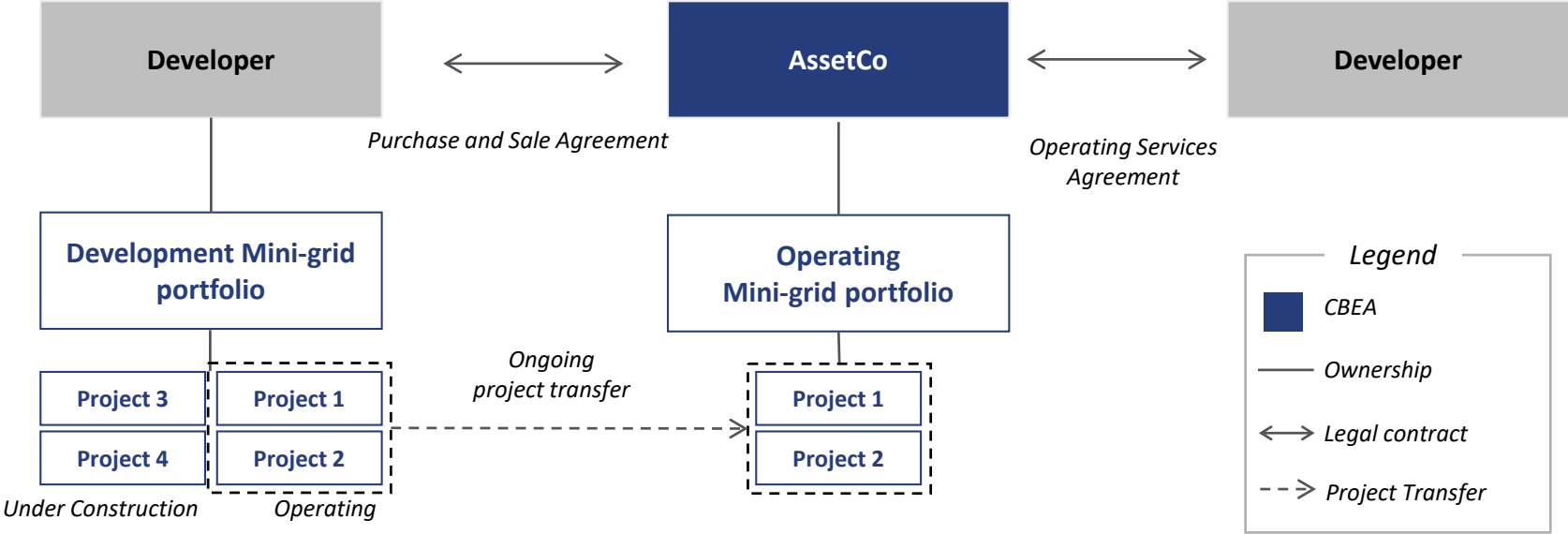
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# CBEA finances mini-grid assets directly, acquiring a mini-grid portfolio and becoming the long-term owner of the assets

Mini-grids developed according to pre-agreed standards...

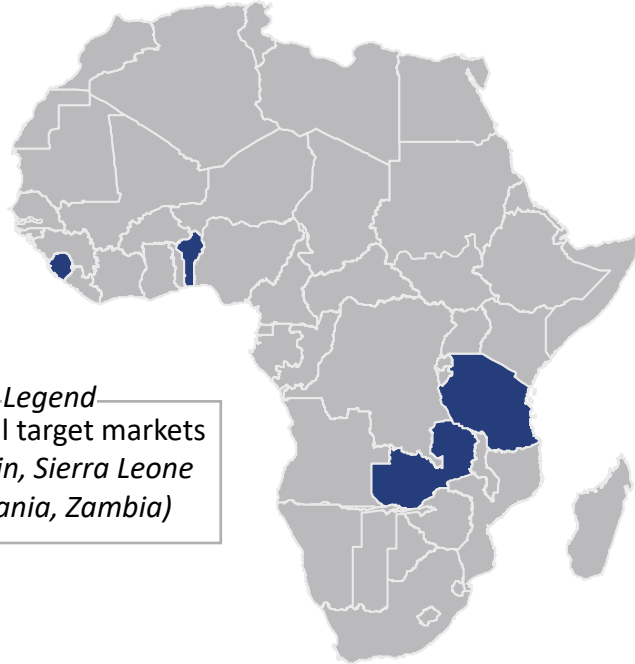
... then sold into AssetCo once operational



**This project finance approach has the potential to unlock substantial capital that is willing, but currently unable to invest in mini-grids**

# CBEA's investment approach focuses on partnering with proven developers, delivering grid-quality power, in countries with favourable regulations

**CBEA invests in markets with strong regulatory frameworks and environments...**



*Legend*  
■ Initial target markets  
(Benin, Sierra Leone  
Tanzania, Zambia)

**...and partners with top tier developers providing customers with grid-quality power**

## Developer partners



- ✓ Demonstrated success building mini-grids
- ✓ Corporate funding secured
- ✓ Extensive pipeline

## System characteristics



- ✓ Solar PV + battery storage + diesel backup if necessary
- ✓ 6kW – 250kW PV peak
- ✓ 100+ connections
- ✓ Smart meters

## Regulatory environment



- ✓ Streamlined permitting
- ✓ Cost-reflective tariffs
- ✓ Grid integration

## Power quality



- ✓ 92.5% customer uptime
- ✓ Productive use power (more than just lighting)