

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

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

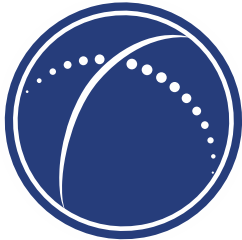
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CrossBoundary facilitates the investment of private capital into frontier markets

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

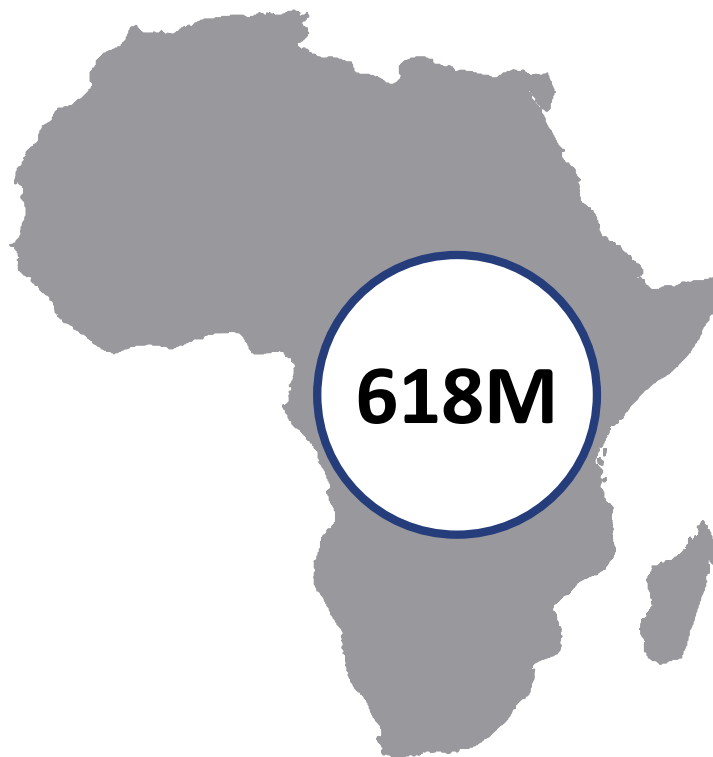


Main-grid extension



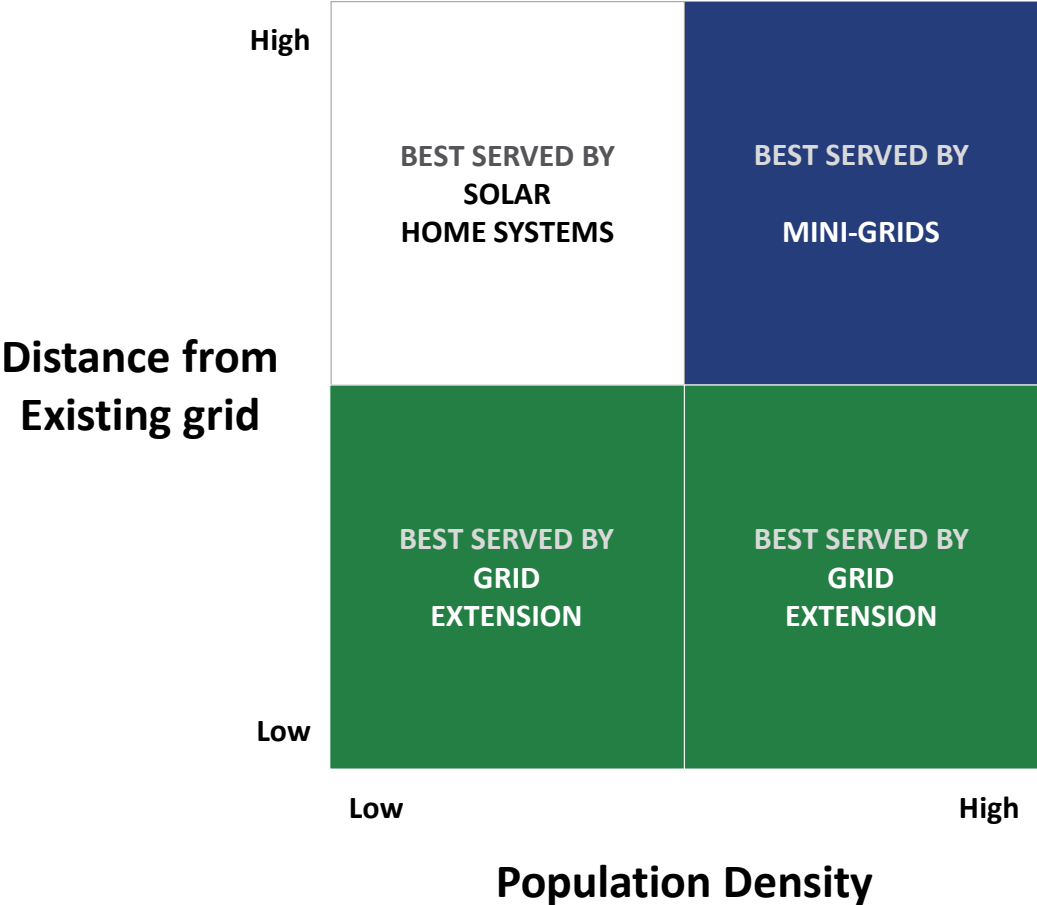
Solar Home Systems (SHS)

618M people in Sub-Saharan Africa (SSA) lack access to electricity¹



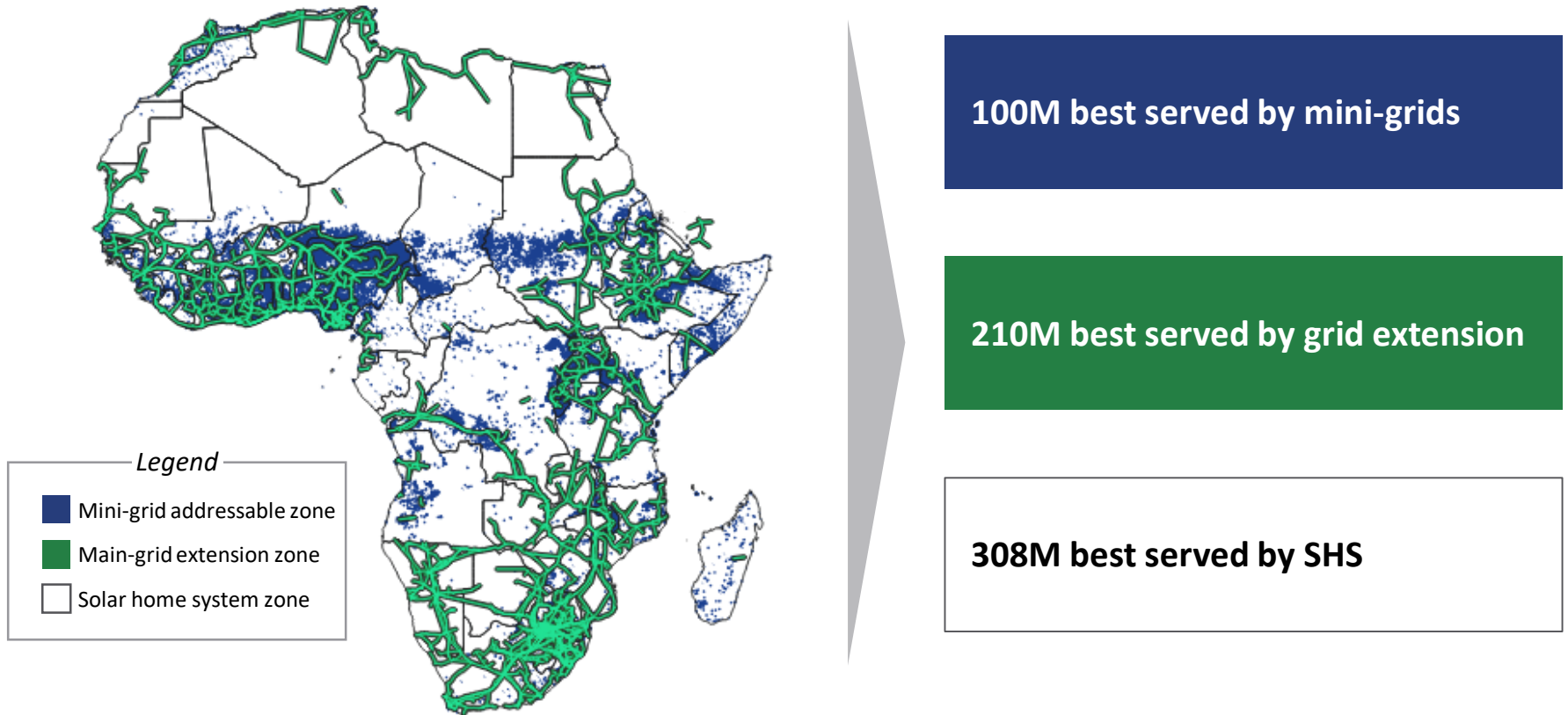
1. World Bank population and electrification rate data, 2014; UNEP population data 2015 onwards

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

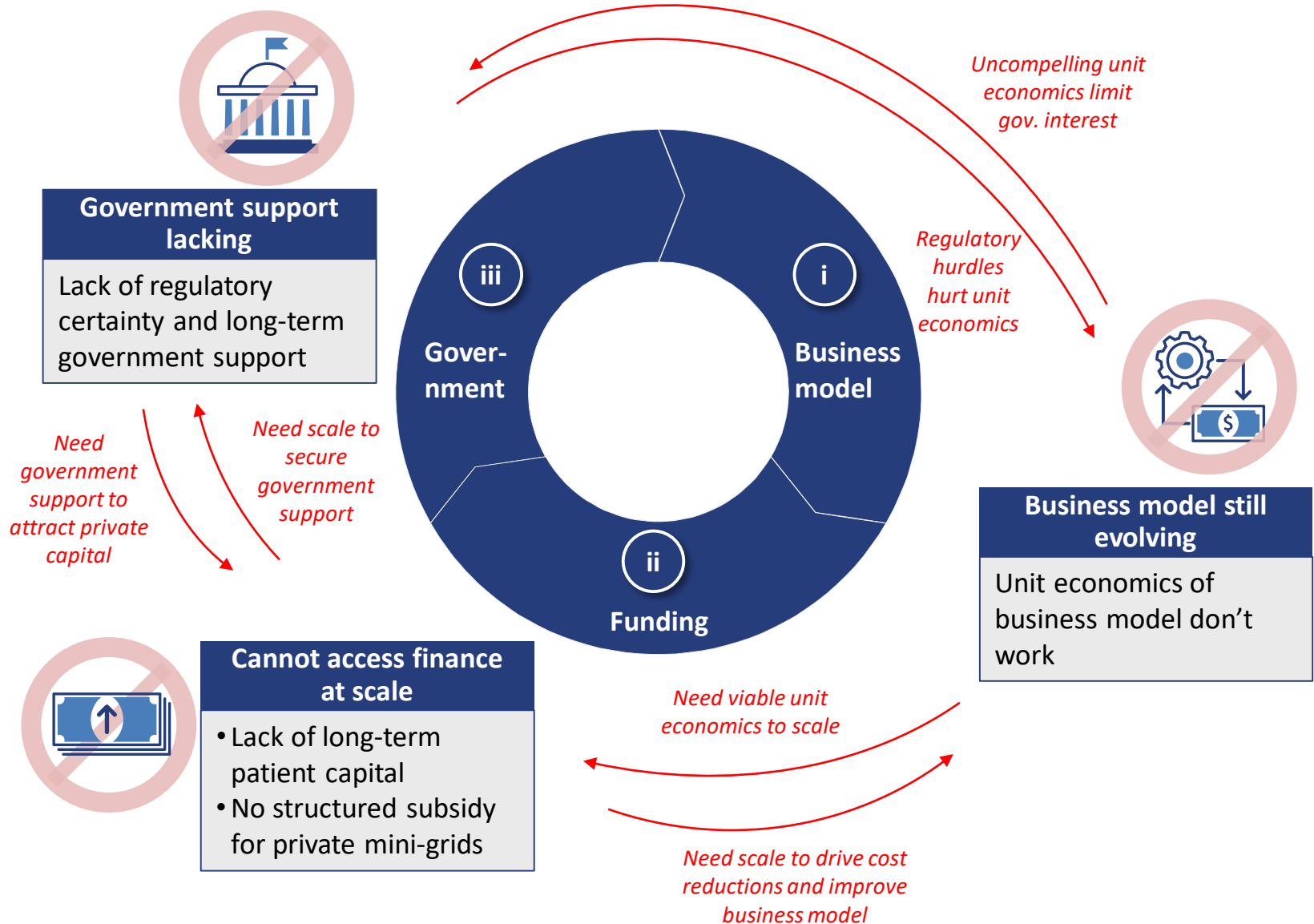
Analysis of mini-grid and main-grid expansion addressable zones - African continent, 2015



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




Unit economics don't work

- Revenues don't cover costs, even with subsidy

Business model


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



Unit economics improving


- Revenues on track to cover costs with subsidy

Business model



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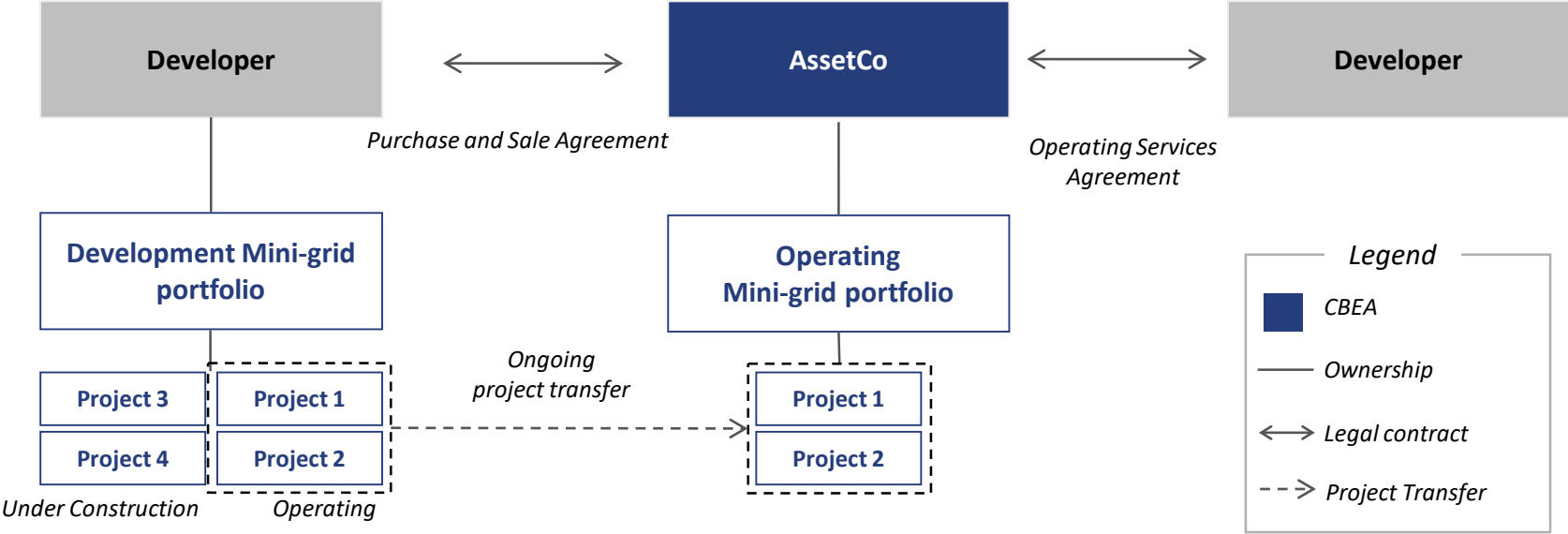
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CBEA finances mini-grid assets directly, acquiring a mini-grid portfolio and becoming the long-term owner of the assets

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

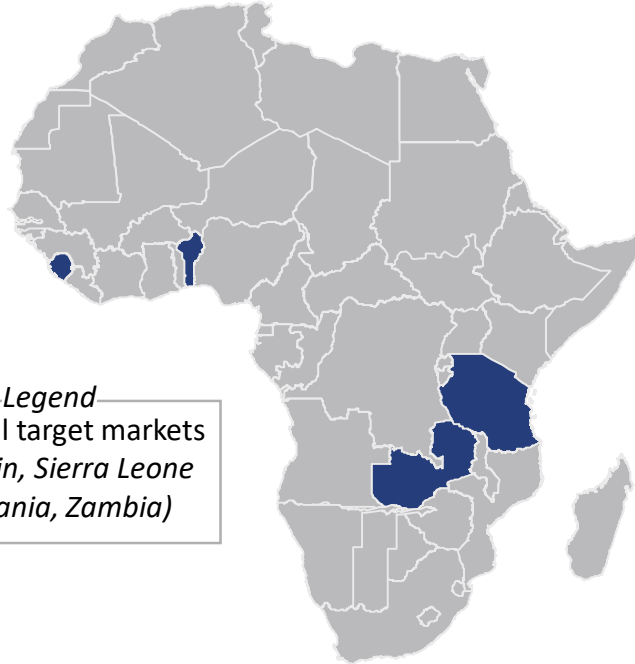
... then sold into AssetCo once operational



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)