

# Building blocks to scale up off-grid business models

Some of the barriers to scaling up off-grid business models are set out below along with strategies that companies can implement to complement regulatory reforms and drive the scaling up of off-grid business models.

## Barriers to scaling up off-grid business models

### Disperse, and difficult to understand, risks

The risks associated with new off-grid business models are very different to those encountered by investors in traditional utilities. Risks, such as credit risk, are more disperse and disaggregated, and it can be difficult to acquire good data to evaluate those risks. For larger off-grid solutions, such as mini-grids, a lack of data and local knowledge can mean that it is difficult to understand unmet demand.

If these risks are not efficiently allocated and mitigated, this impacts the cost and availability of capital. More innovation in this area could further reduce the cost of off-grid solutions.

Impact of a reduction in cost of capital on the capital repayment component of the monthly cost of a \$150 Soar Home System

Monthly payments (\$) 7, 6, 5, 4, 3, 2, 1, 0

25% Cost of capital 10% Cost of capital

Source: Kuungana analysis

### Politics, perception, and regulation

There are wide-ranging political barriers to off-grid power. Some of these barriers are political and result from the perception that off-grid power is a second class good when compared to grid-based power. This can result in opposition to off-grid business models, but ignores the fact that the true counterfactual is no access to electricity. Further barriers result from specific regulations. In some countries regulation might constrain the tariffs that can be offered, or may fail to offer a workable framework if or when the main grid arrives.

Example policy and regulation barriers to off-grid development

**Planning**

- Planning is focused on on-grid
- No provision for integration of off-grid systems to main grid

**Economic framework**

- Taxes / duties on imported products
- Subsidies impacting on-grid power
- Costs of mobile money options

**Quality delivery**

- Lack of / poor enforcement of standards
- Inadequate consumer protection
- Lack of capacity for training

Source: Kuungana analysis

### Capital to scale up

Most of the capital deployed in off-grid businesses to date is sourced from grants, impact funds, venture capital and angel investors. The availability of these sources, and the cost of some of the capital, limits the potential to scale off-grid businesses.

In 2016, \$223m in private sector finance was raised by pay-as-you-go solar companies (Bloomberg New Energy Finance). There is private sector capital for the right projects, but innovative structures are required to unlock those resources and to allow donor funds to be better targeted.

Investor, by type, engaging in at least one investment round in off-grid solar, 2015

Funding types sought by off-grid companies, 2015

Source: Bloomberg New Energy Finance, UN Foundation Energy Access Practitioner Network, Kuungana analysis

## Building blocks to address these barriers

### Local currency finance

The revenues earned by off-grid companies are in local currency, and financing in local currency reduces currency risk priced in for consumers. The cost of local currency finance can be high, but the smaller amounts required (when compared against a large IPP investment) make local currency a more viable option.

### First loss buffers

The sector is currently largely dependent on donor and DFI support. If other building blocks can be used to bring in more private sector finance, then government, donor, and DFI funding can be focused more efficiently on residual risks. These funds can create a first loss buffer that can be withdrawn as the sector matures.



### Economies of scale in finance

Another role that governments / donors can play is to aggregate the financing requirements of multiple off-grid companies, bringing economies of scale. A common financing platform can also be used to require standardised due diligence, credit procedures, technical standards, and interoperability.



### Community funds

Off-grid companies can adopt community energy business models, and set aside funds for communities. The fund might provide systems to those unable to afford them, or subsidised energy to a local facilities. Such funds could build support and overcome prejudices against off-grid electricity in communities.

### Securitisation

Securitisation is increasingly cited as a way to bring more private sector money, including local currency finance, into the sector. Once customer contracts are signed, they can be securitised at a price that takes into account risks such as credit, but leaves the off-grid company to manage these risks.

### Bottom of the pyramid

Bringing modern, clean energy to those least able to afford it is a social imperative. Implementing other building blocks to release private sector finance should allow donor funding to focus on this area. Result-based financing (RBF) could be focused on expanding off-grid solar offerings to the poorest communities.

### Energy champions

Paying local energy champions could be a successful strategy for off-grid energy companies, mitigating many of the risks that challenge the sector. Community energy champions can help build support for new business models, educate consumers on the benefits of new products, and help identify unmet demand.



### Understanding needs

Understanding unmet demand – in public institutions, in businesses, and in households – is key to promoting the right product for a community. This is especially important for mini-grid developers. Energy champions can play a role, but companies could also cooperate in developing national databases.

### Tariff innovation

Comparing off-grid energy to on-grid energy in terms of \$/kWh cost is the wrong comparison when consumers are switching from using candles and/or kerosene. Moving to tariffs that treat Energy as a Service (EAAS) or sell Energy Daily Allowances (EDAs) can be used to change the conversation.