SOLAR MINI-GRIDS FOR ADDRESSING COMMUNITY **ENERGY NEEDS IN INFORMAL SETTINGS**

Informal settings often do not receive formal grid-based electricity. Consequently, residents resort to self-help options (e.g., paraffin, charcoal, candles, and illegal connections) to meet their energy needs. Self-help energy sources are often unsafe when burnt, contributing to respiratory ailments and chronic diseases, and present a lethal electrocution risk. Standalone solar-powered mini-grids can address these concerns by providing safe, renewable, and reliable energy that can be scaled up to provide additional infrastructure and services.

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Co-Producing Innovative and Disruptive Off-Grid Energy

Co-Producing Innovative and **Disruptive Off-Grid Energy Services**

ASSESSING COMMUNITY ENERGY NEEDS

As the energy needs of communities differs from place-to-place, a step change is required in linking service provision to community needs.

Placing community needs at the heart of electrification projects involves understanding:

- (1) Individual energy use and access to energy sources
- Satisfaction with existing energy sources 2
- Most desired energy services 3

TOP 3 ACTIVITIES QANDU-QANDU* RESIDENTS USE ENERGY FOR IN THEIR HOUSEHOLD N=223



SOLAR MINI-GRIDS FOR ADDRESSING COMMUNITY ENERGY NEEDS

Solar mini-grids provide safe and reliable energy services that can be tailored to meet community energy needs (e.g., lighting, TV, radio, and refrigeration).



5 BENEFITS OF A SOLAR MINI-GRID

I. Cleaner, safer, and more reliable than self-help options 2. Modular, and can be scaled up (or down) 3. Reduces energy transmission losses over long distances 4. Enables involvement by a broad range of stakeholders 5. Can be used in densely populated and built up areas



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THINKING OUTSIDE THE BOX: ADDITIONAL SERVICES AND INFRASTRUCTURES

Solar mini-grids can power productive use appliances such as fridges; these can, in turn, can help to enhance local livelihoods. Linking mini-grid operators with grants and funding opportunities (angel and/or venture capital funding) can support the following additional services and infrastructures.

- Repeaters, powered by solar, that make community wifi available.
- Community infrastructures such as cold rooms.
- Embedded generation through grid-linked transformer units.

* Qandu-Qandu is an informal settlement in Cape Town, South Africa