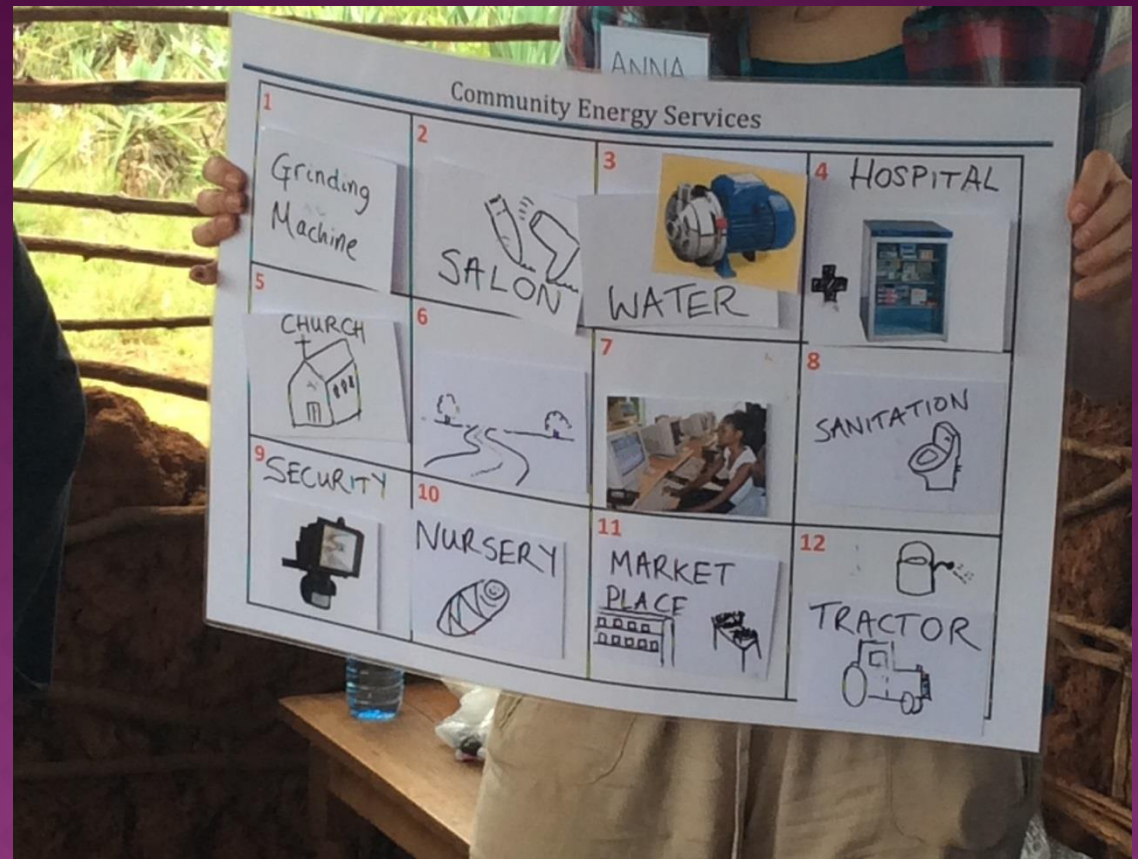


SOLAR NANOGRIDS (THE SONG PROJECT)



Dr JON CLOKE
(GEOGRAPHY DEPARTMENT, Loughborough
university)

LCEDN - Low Carbon Energy for Development
Network

WHAT IS A SOLAR NANOGRID? NOT AN 'IT' BUT A 'THEY'...

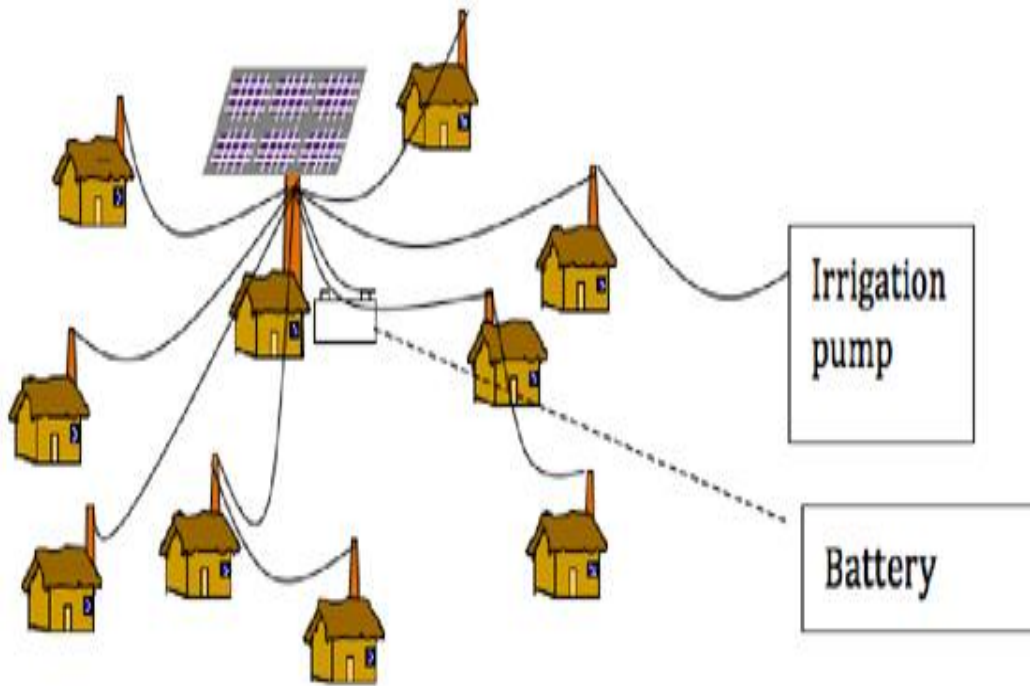
A METHODOLOGY: energy access provision is insufficient as a driver of development by itself and in some cases actually imposes additional financial burdens.

A TOOL: “ To provide policy-makers and other stakeholders in Bangladesh and Kenya with new understanding of patterns of energy use on a daily and seasonal basis and new evidence of the wider community impacts of the diffusion of solar home systems.

LEADING TO =>

A SET OF BESPOKE, FLEXIBLE SOLAR ARRAY POSSIBILITIES:
“targeted at enhancing the ability of small-scale solar technologies to provide real economic opportunities for communities to engage in income-generating activities”

SAY WHAT?



Nanogrids take advantage of the fact that in many countries in development, houses can be clustered in rural areas in settlements of 15-20, within +/- 150m.

The nano-grid system is a basic (1.5 to 3kWp, DC) PV rooftop system, or a solar hub.

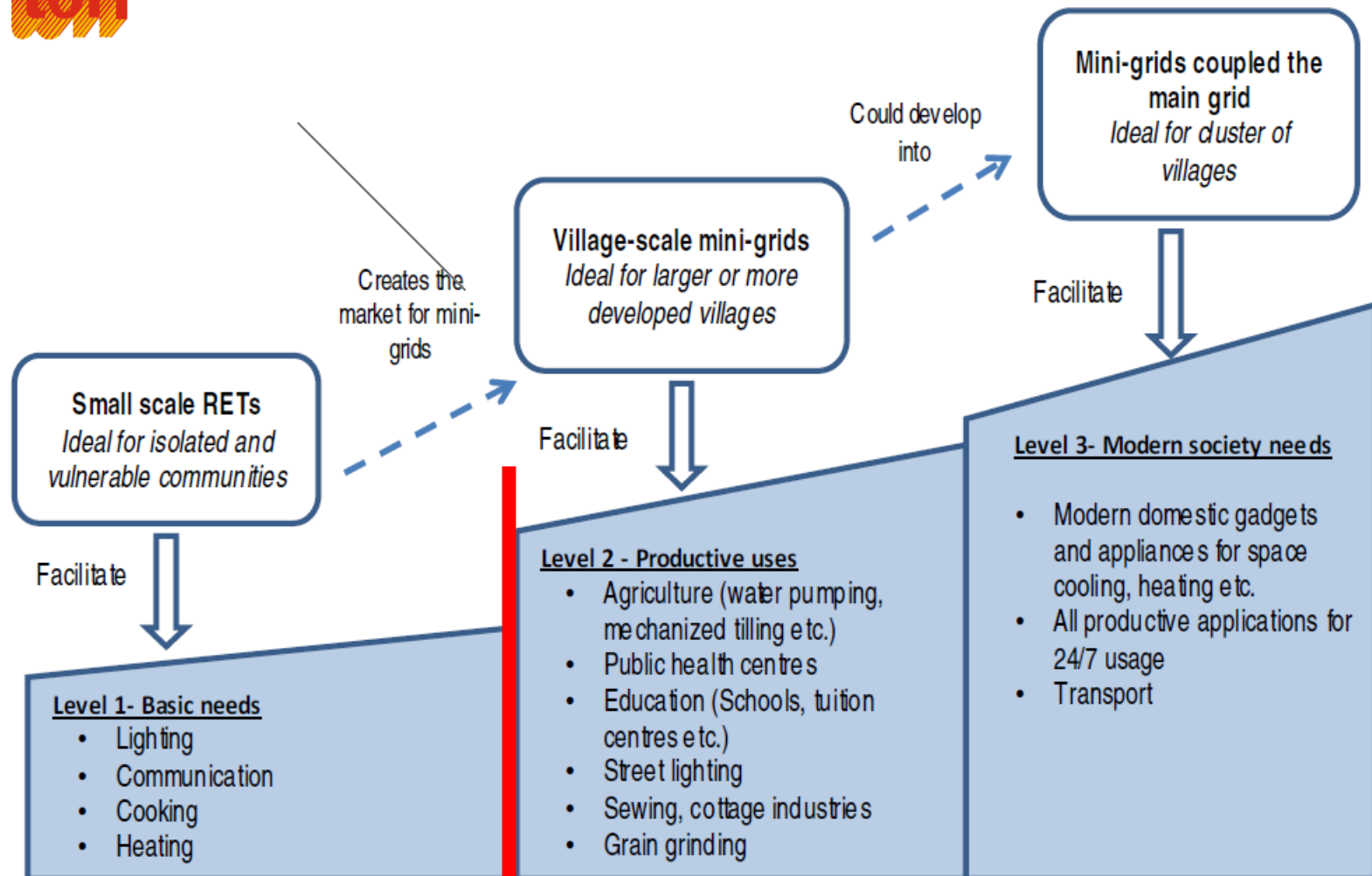
Based on:

- 1) clusters of households a short distance from each other; power distributed to households from hub system.
- 2) Dispersed battery system.

Solar-Nano-Grids have the advantages of less line loss and less line voltage drop compared to mini-grid systems.



Framework for Scale up



Source: TERI, 2012

Solar Nanogrids



Where Is SONG? Not where we'd like it to be...



THANKFULLY SOMEONE'S DOING IT BETTER...

Lohadi-K1 Nanogrid, constructed by Solaric, is the oldest extant solar nanogrid in Bangladesh, having been completed in 2011

Lohadi provides a solar array (5Kw) for irrigating rice and provides energy for 67 households - up to 5 lights, 1 TV and 1 or 2 Fans.

Solaric do not provide the equipment (apart from 1 free light), which is purchased by householders – TVs can be either AC or DC

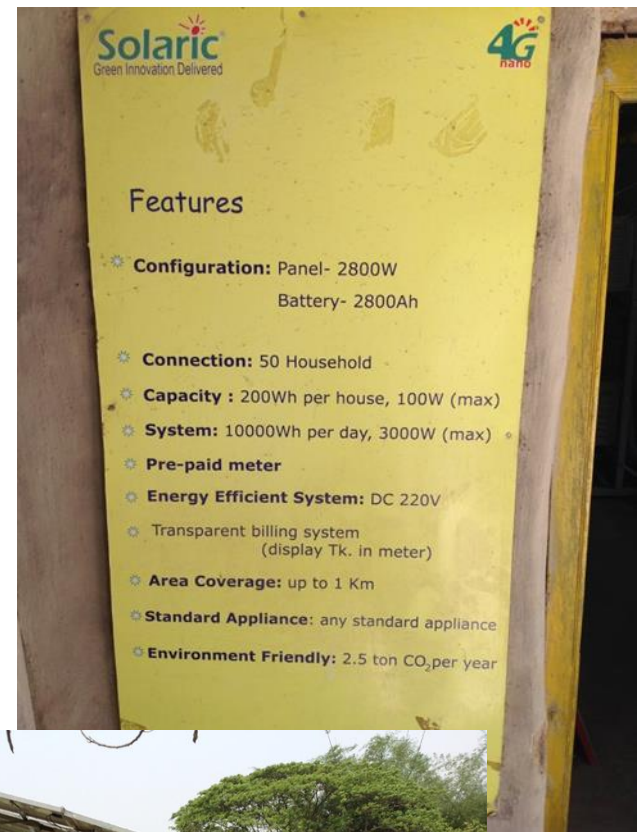


PAYMENT FOR SERVICES WITH BACK-UP

Payment for the services provided by flat monthly fee (around BDT 20,000 monthly) is collected by the Solaric representative from the community.

There is a back-up diesel generator but the movement of the solar array to their current position means it has not been used.

Solaric maintain a hotline for breakdowns – if a call is made the technician talks the client through the most common problems but will always come out if that doesn't work. The engineer covers 3 Solaric nanogrids.



UKEF MISSION “TO ENSURE THAT NO VIABLE UK EXPORT FAILS”

- 1 UK finance for fossil fuels abroad increased 10x in 2 years in 2013/ 2014
- 2 £1.76bn in Export Credit Guarantees 2010-2014.
- 3 “The UK government has provided fossil fuel companies with £6.9 billion in financial support since 2000!”
(Energydesk)



2010-2015 UK government gave £3.6m to green energy projects globally – meanwhile, UKEF allocated £1.13bn for fossil fuel energy operations –

314 times more

(Guardian, 10/2/15)