SOLAR MINI-GRID ECONOMICS

The volume risk

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Cost and revenue

- **Revenue**: Annual costs
- **Cost**: Planned annual electricity sales
- **Energy price**: Basic price
- **Total revenue**: Calculated margin
- **Total cost**: Variable costs
- **Fixed costs**
PAYG Solar Home Systems

Revenue

Cost

Annual electricity sales

EXCITING
Benefits of Mini-Grids

Power Tools
Large Mills and Processing
Heavy Irrigation Pumps
Powerful Welding Machines
Telecom Towers
Diesel based mini-grid

Annual electricity sales

Generation station capacity limit – load shedding if demand crosses this limit
Solar Battery - only

Annual electricity sales: 15%
IRR: [value]

Challenge: Create a demand which exactly fits into this slot.
Generation station capacity limit – load shedding if demand crosses this limit.
Solar Battery - only

- Challenge: Create a demand which exactly fits into this slot

- Generation station capacity limit – load shedding if demand crosses this limit

- Annual electricity sales → unsatisfied customers
Solar battery diesel

Annual electricity sales

Demand slot widens with diesel introduction

Diesel generator starts

Revenue

Cost
Higher fixed charge

Demand slot widens further with higher fixed service charge

Break even point shifts to lower consumptions – reducing risk of losses due to low consumption, increasing connection burden for customer

Margin decreases if too much energy is sold
Oh no, that is too expensive!
JUMEME vs. TANESCO tariffs

Monthly payments - households and small commercial customers

Electricity usage expenditure [TZS/month] vs. Consumption [kWh/month]

Comparison includes:
- TANESCO [TZS/month]
- JUMEME PAYG
- JUMEME ECO 50
- JUMEME ECO 100
- JUMEME COMMERCIAL DUAL
With 20% TANESCO electricity outage

Monthly payments - households and small commercial customers

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- JUMEME PAYG
- JUMEME ECO 50
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Free support to African mini-grid developers

http://greenminigrid.se4all-africa.org/
THANK YOU FOR YOUR ATTENTION!

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