

Community Power from Mobile

GPM Working Group

Accra, Ghana

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Community Power from Mobile



Leverages mobile technology & infrastructure to provide access to rural energy services while improving the business case for network and tower operators

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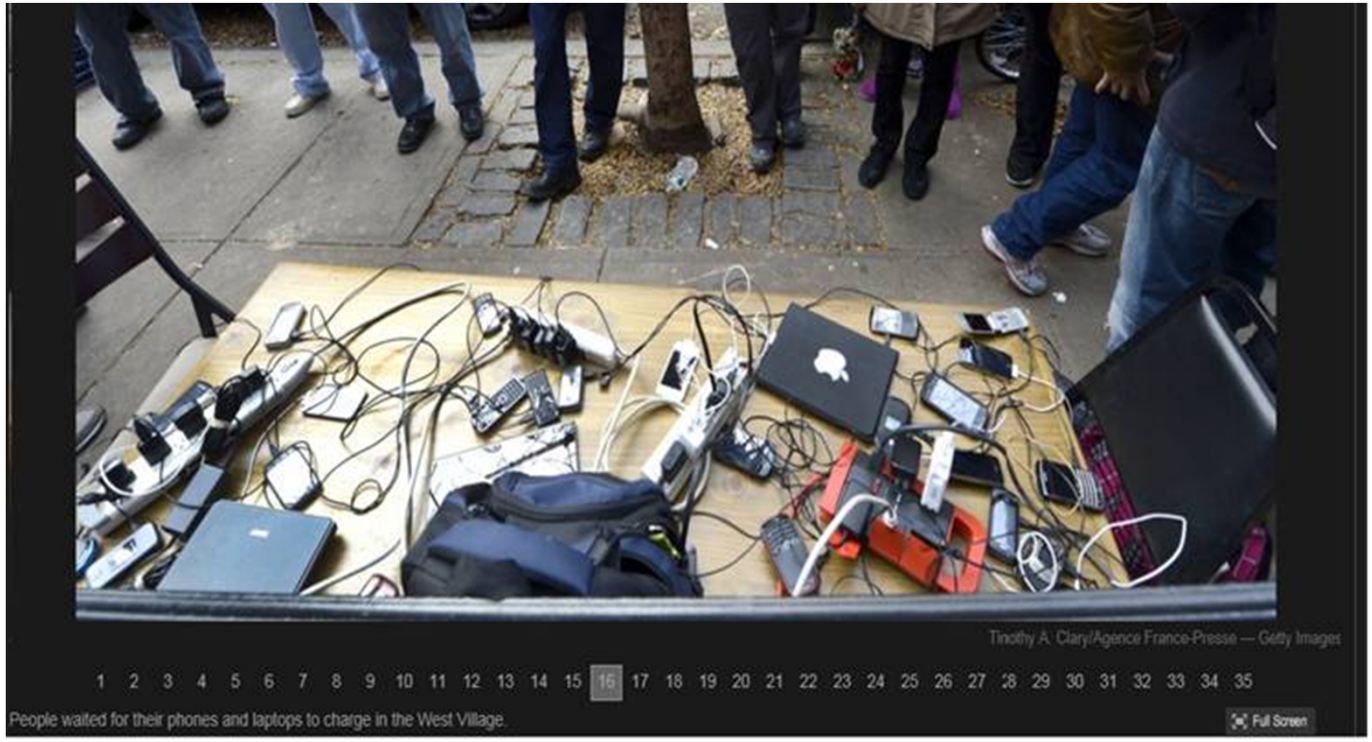
People have a thirst for communication…& spend accordingly





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But this is not only a rural problem…



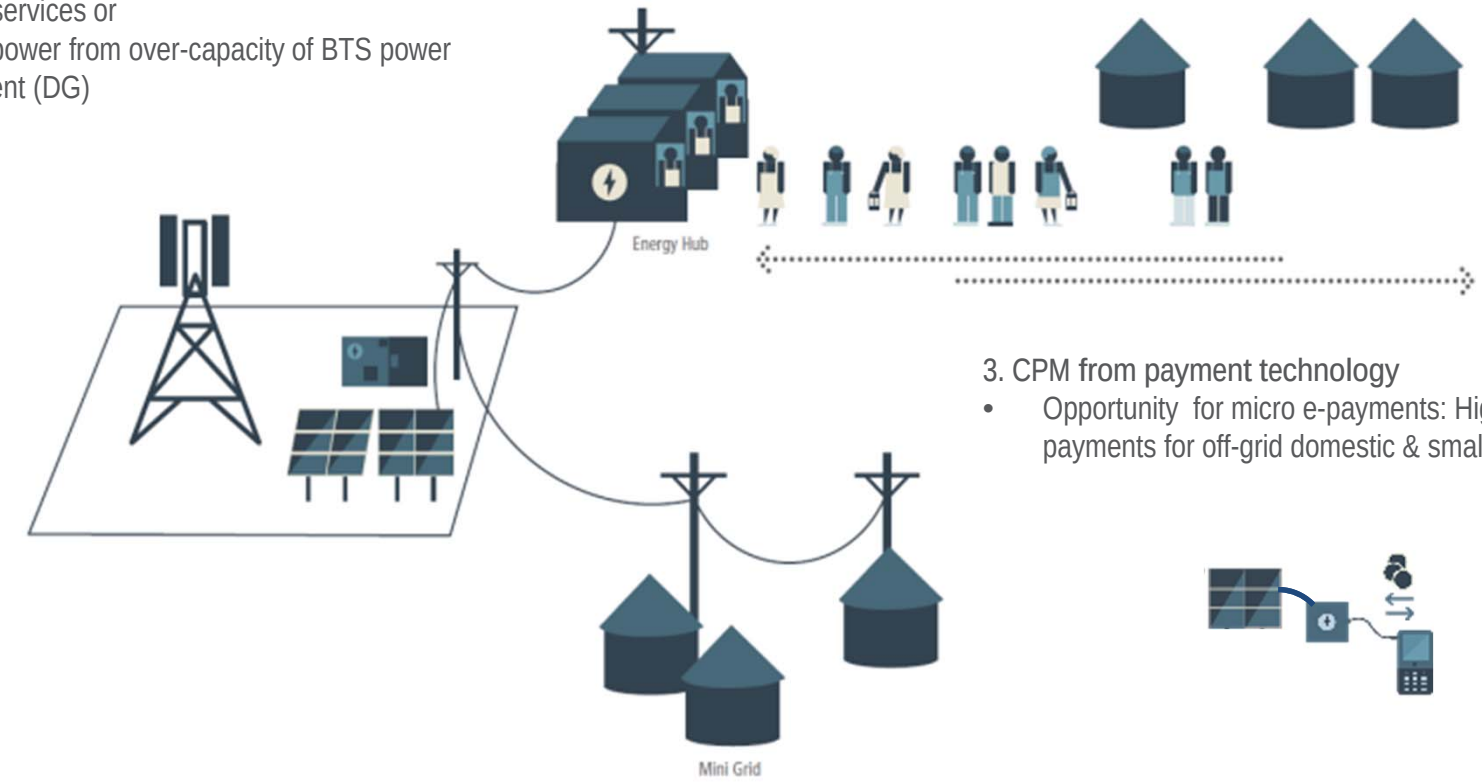
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Mobile can provide energy access through three channels

Potential impact on ARPU for off-grid customers is 14%+

1. CPM from BTS infrastructure
- (i) Outsource power solution to ESCo who sells community energy services or
- (ii) Sell power from over-capacity of BTS power
- equipment (DG)

2. CPM from retail distribution network
- Leveraging extensive rural sales dealer/ retail network for distribution or sale of charging/ lighting devices through commercial partnerships



3. CPM from payment technology
- Opportunity for micro e-payments: High volumes of small payments for off-grid domestic & small business energy

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Lessons from 2011 influencing our work in 2012

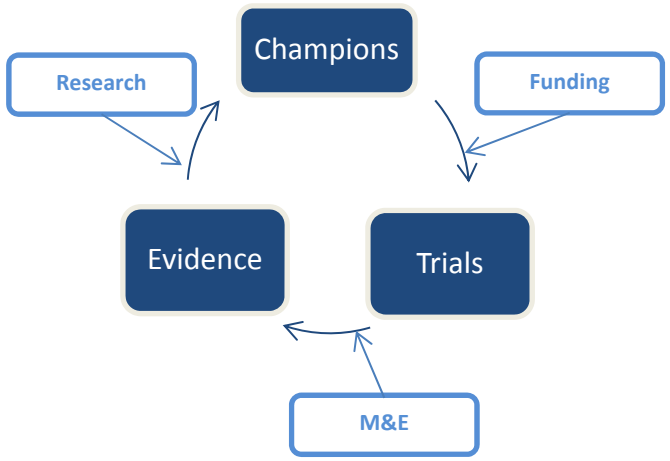
- Need to develop more champions:
  - MWC 2012: Digicel, Econet, MNO roundtables
  - Increased outreach: Carbon War Room, Rio+20, WEF, WB
- Focus on developing the business model:
  - Completed 5 feasibility studies with operators
  - April 2012 event in India between ESCOs and energy access practitioners
  - Nov 2012 stand alone CPM event
  - Engage, visit and document energy access business models
- Improve understanding of rural customers wants and needs
  - Engaged NGO and academics: GVEP, Practical Action, Oxford
  - Increase visits to off-grid areas
  - Quantify the phone charging and lighting spend: approximately 50% of ARPU
- Focus on raising R&D funding for mobile industry led trials
  - Treat CPM as a New Product Introduction
  - Engage the impact investor space
  - Suggested: 50% matched funding up to a total of £350k per grant

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GSMA process of catalysing commercial solutions



Virtuous Cycle of Market Facilitation



Community Power from Mobile focusses on market facilitation delivering the evidence, champions and trials required to drive solutions to the next phase of maturity.

Key Elements In the process of commercialisation:

Evidence: The data required to push Champions to action
Champions: Mobile operators, tower companies, ESCOs who commit to test a potentially scalable CPM product or service
Trials: Experiment, pilot, or commercial roll-out of CPM Product or Service

Research, innovation funding and monitoring and evaluation provide additional inputs and lower the barriers to industry wide adoption.

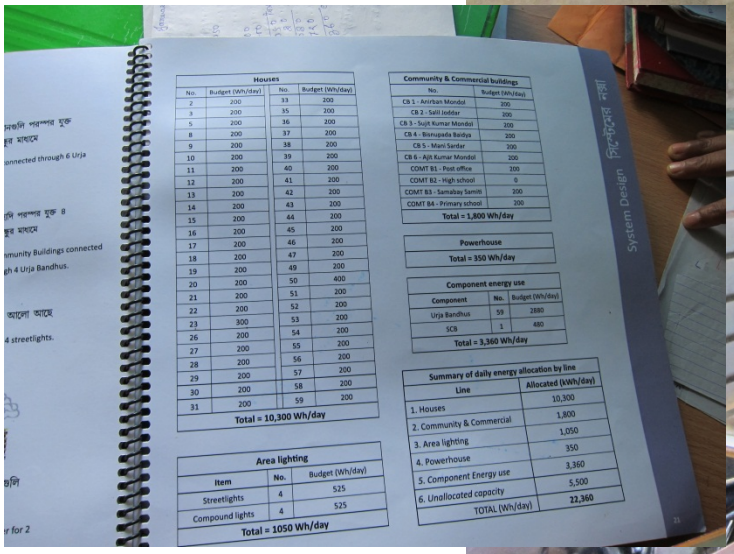
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Highlights of different models: CAT Projects –Bushlight India



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Houses

No.	Budget (Wh/day)	No.	Budget (Wh/day)
2	200	33	200
3	200	35	200
5	200	36	200
8	200	37	200
9	200	38	200
10	200	39	200
11	200	40	200
12	200	41	200
13	200	42	200
14	200	43	200
15	200	44	200
16	200	45	200
17	200	46	200
18	200	47	200
19	200	49	200
20	200	50	400
21	200	51	200
22	200	52	200
23	300	53	200
26	200	54	200
27	200	55	200
28	200	56	200
29	200	57	200
30	200	58	200
31	200	59	200

Total = 10,300 Wh/day

Community & Commercial buildings

No.	Budget (Wh/day)
CB 1 - Anirban Mondol	200
CB 2 - Salil Jeddar	200
CB 3 - Sujit Kumar Mondol	200
CB 4 - Bishupada Baidya	200
CB 5 - Mani Sardar	200
CB 6 - Ajit Kumar Mondol	200
COMT B1 - Post office	200
COMT B2 - High school	0
COMT B3 - Samabay Samiti	200
COMT B4 - Primary school	200

Total = 1,800 Wh/day

Powerhouse

Total = 350 Wh/day

Component energy use

Component	No.	Budget (Wh/day)
Urja Bandhus	59	2880
SCB	1	480

Total = 3,360 Wh/day

Area lighting

Item	No.	Budget (Wh/day)
Streetlights	4	525
Compound lights	4	525

Total = 1050 Wh/day

Summary of daily energy allocation by line

Line	Allocated (kWh/day)
1. Houses	10,300
2. Community & Commercial	1,800
3. Area lighting	1,050
4. Powerhouse	350
5. Component Energy use	3,360
6. Unallocated capacity	5,500
TOTAL (Wh/day)	22,360

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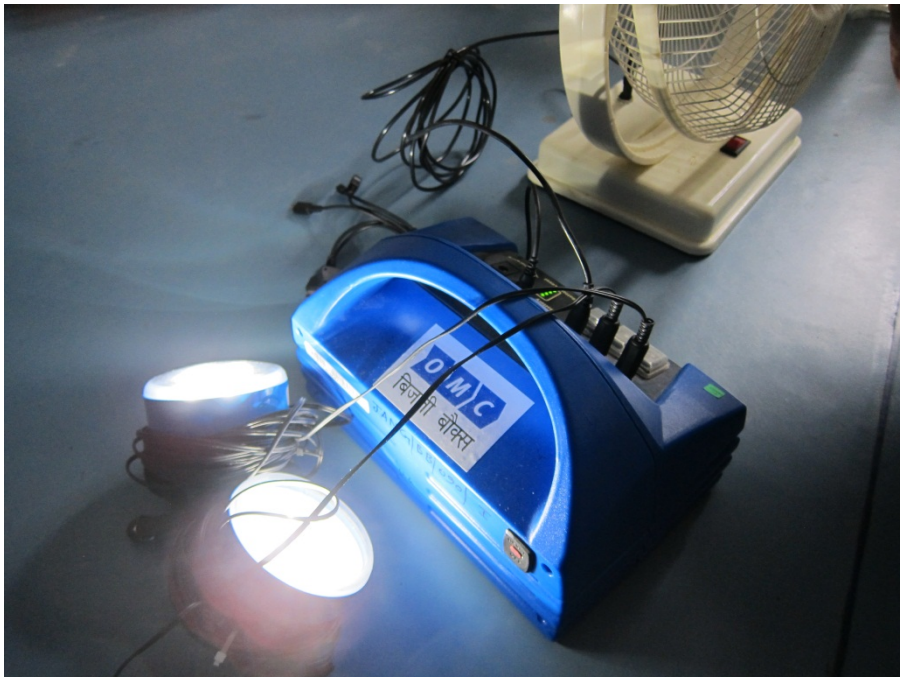
Highlights of different models: OMC Power - India



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Highlights of different models: INENSUS - Senegal





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Highlights of different models: INENSUS - Senegal

- Have electrified 2 villages:
    - 900 inhabitants in 70 households, 5 kW wind turbine, 5 kW PV, 11 kVA genset, 1.5 km mini-grid
    - 1200 inhabitants in 90 households, 5 kW wind, 5 kW PV, 11 kVA genset, 2 km mini-grid
- Innovative ways to manage ESCO village relationship and risk of long-term engagement
- Smart meters that allow for customers to pay in “Energy Blocks” and support load prioritisations

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