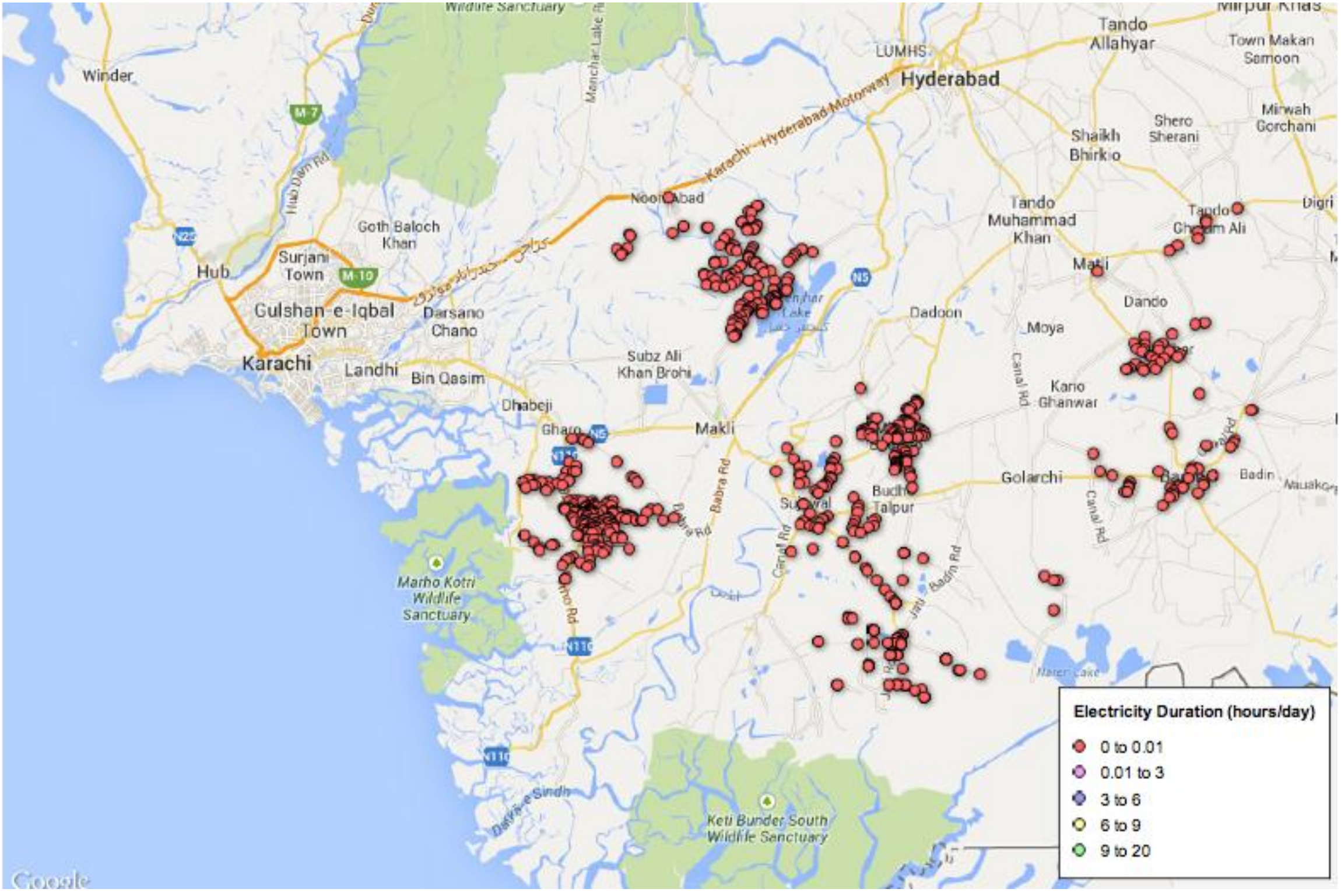
To M2M or Not?

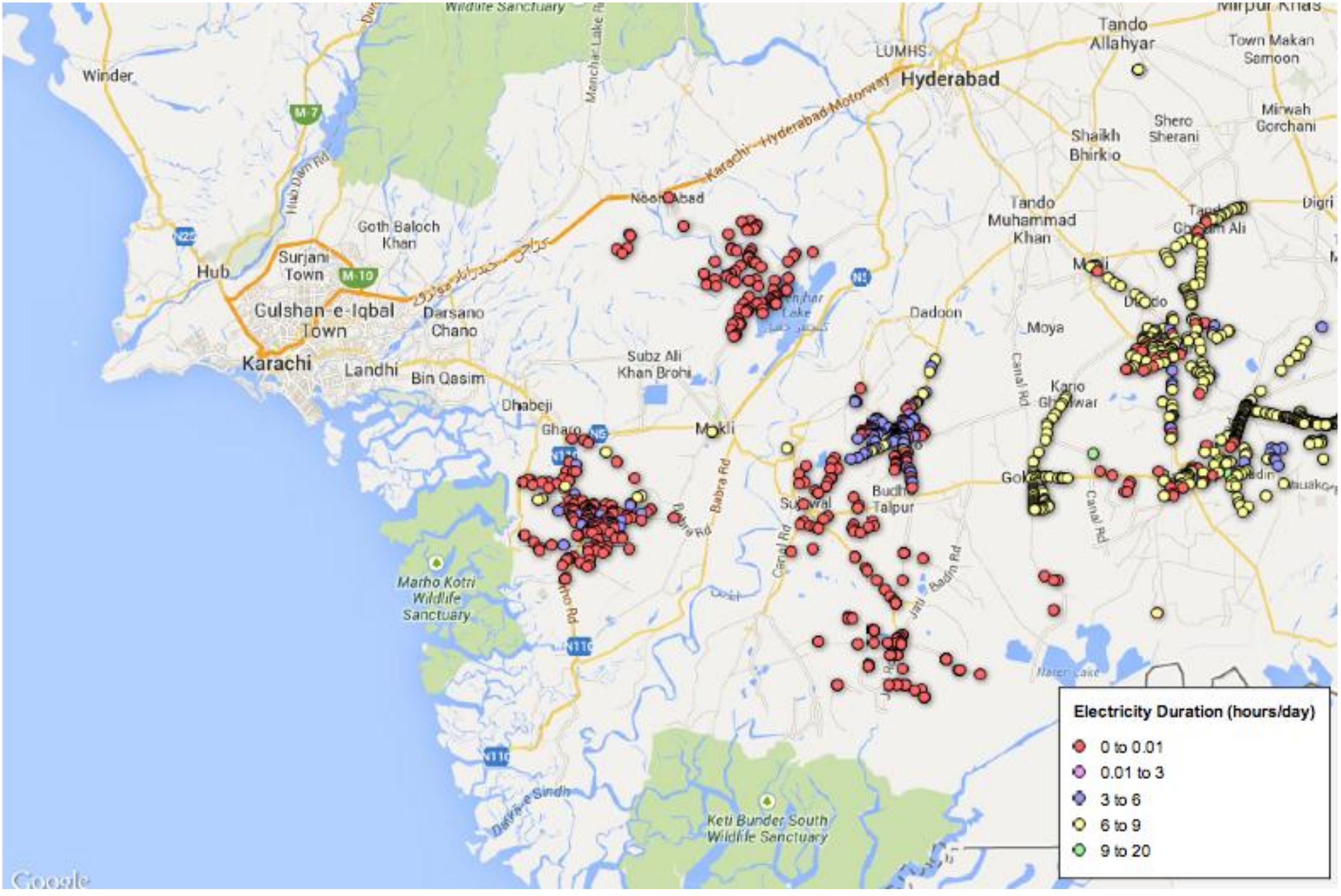
MECS Asia Working Group
25/06/2014

But first, a little about EcoEnergyFinance



35% of 1993 villages without electricity

EcoEnergy



80% of 1993 villages < 9 hours electricity

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Across Pakistan, 40%
without access to electricity

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Make clean energy affordable and accessible to the energy poor

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So that…

- Increased education opportunities
- Increased safety and health
- Increased savings and income

To do this, we:

- create demand for
- sell, and
- provide support on

clean energy solutions



The Challenge

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The Challenge

- Customers are often cash-strapped
- Used to spending $2-3/month on torches
- Credit sales are important

The Challenge

- Collecting payments is expensive and time-consuming
  - Unpredictable income from crops
  - *“I don’t have money now - please come back in 2 weeks.”* (ad nauseum)
  - Multiple trips each month to the same [remote] village to collect payments

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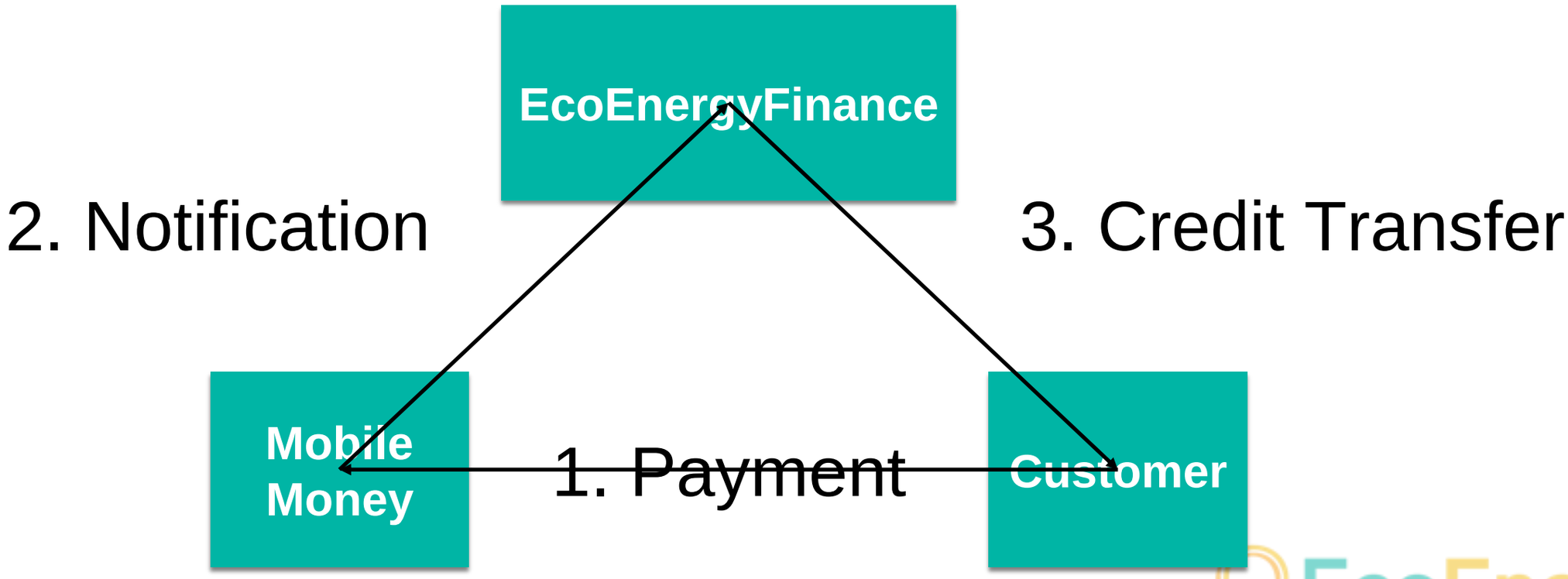
The Challenge

- Credit on larger solar systems increases the payback period and risk

Why PAYG & M2M?

Why?

- De-couple payment collection from field staff
  - Allows staff to focus on sales and customer service



Why?

- Enforce payback by customers
- Remote disabling of device after missed payment

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Our Implementation

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Products

- BBOXX SMART solar systems
- PAYG-enabled entry-level lantern with Angaza technology

BBOXX SMART

- Utilises GSM SIM for M2M communication
- Allows for:
  - Remote monitoring
  - Fault detection
  - Location tracking
  - Remote enable/disable
  - Credit transfer



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SMART Portal

Serial Number	Owner	Last Connection	Created at	Battery Data	Enabled	Alarms
BB17SMART-2014_MAY21-074		21 minutes ago *(June 11th 2014, 5:38 pm)*	11 days ago *(May 31st 2014, 7:20 am)*		Enabled	
BB17SMART_LongTermTest4		34 minutes ago *(June 11th 2014, 5:25 pm)*	a month ago *(May 3rd 2014, 8:22 am)*		Enabled	

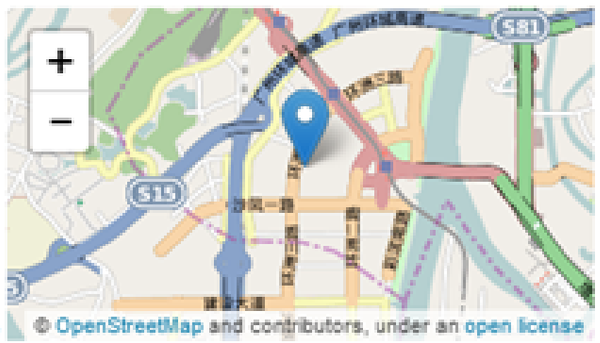
Hardware Errors

Alerts				
Tampered	Temperature	Undervoltage	Overvoltage	Other
Status Okay	Status Okay	Status Okay	Status Okay	Status Okay

Fetch all the logs

Location

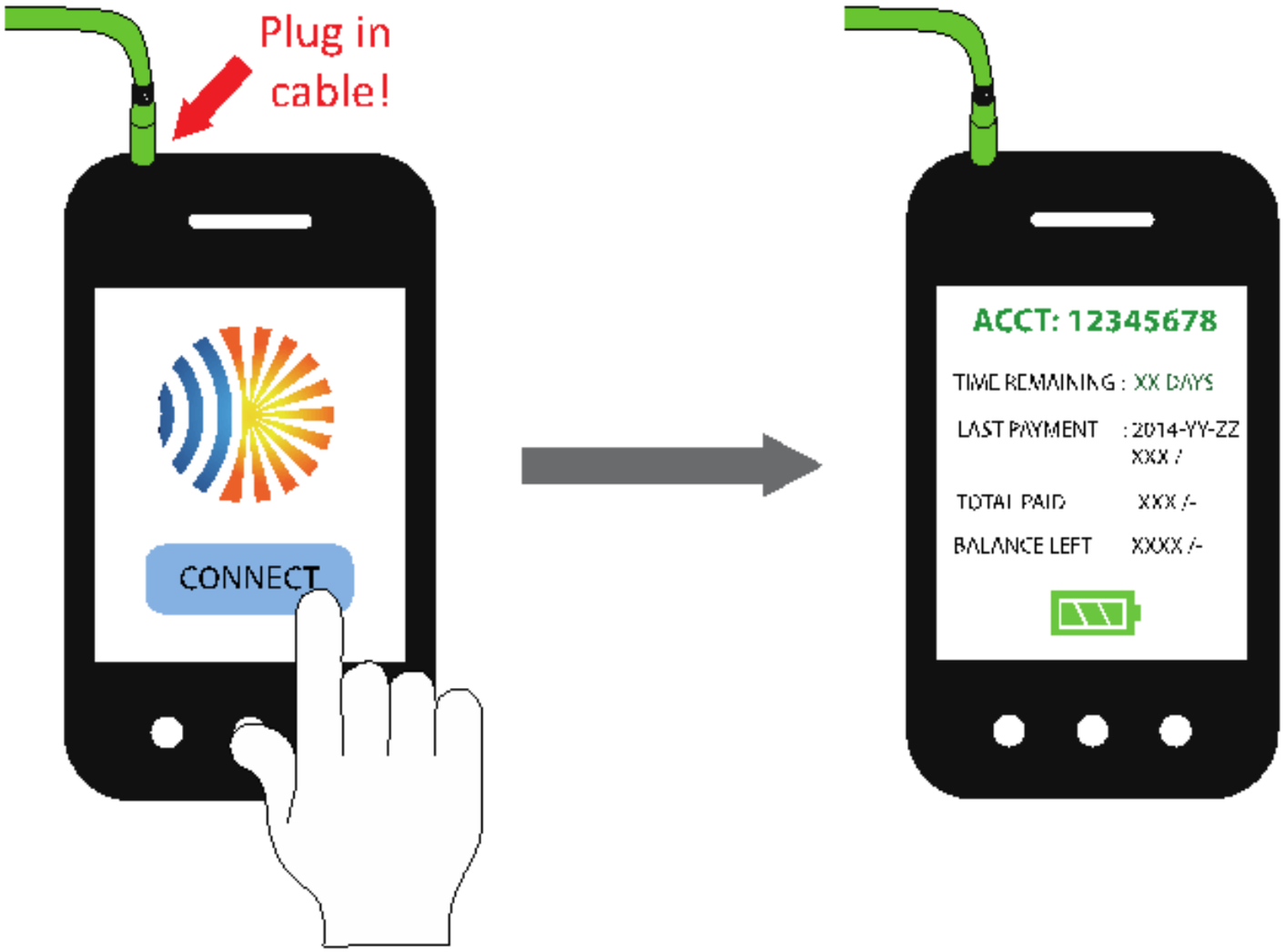
Address: *环洲三路, Guangzhou, 佛冈县, Guangdong, People's Republic of China*



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Angaza PAYG Lantern

- Low-cost, two-way data transfer through attached device
- Allows for:
  - Configuration of “out of credit” behaviour
  - Transfer of usage/battery data
  - Credit transfer
- Ideal for agent-based distribution


Plug in cable!
CONNECT
ACCT: 12345678
TIME REMAINING : XX DAYS
LAST PAYMENT : 2014-YY-ZZ XXX /
TOTAL PAID XXX /-
BALANCE LEFT XXXX /-

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Our Findings

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Data is King

- Angaza Hub provides easy collection of and access to data
- CRM interface built into agent app
- Who has/hasn’t recharged
- Automated SMS reminders to customers

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Different Approaches

- Trying to determine the better approach: remote connection (GSM) or credit transfer (Angaza)
  - GSM adds significant cost
    - Monthly GSM SIM subscription
    - Device circuitry
  - Credit transfer requires in-person presence

For more information:

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- http://www.ecoenergyfinance.org/