

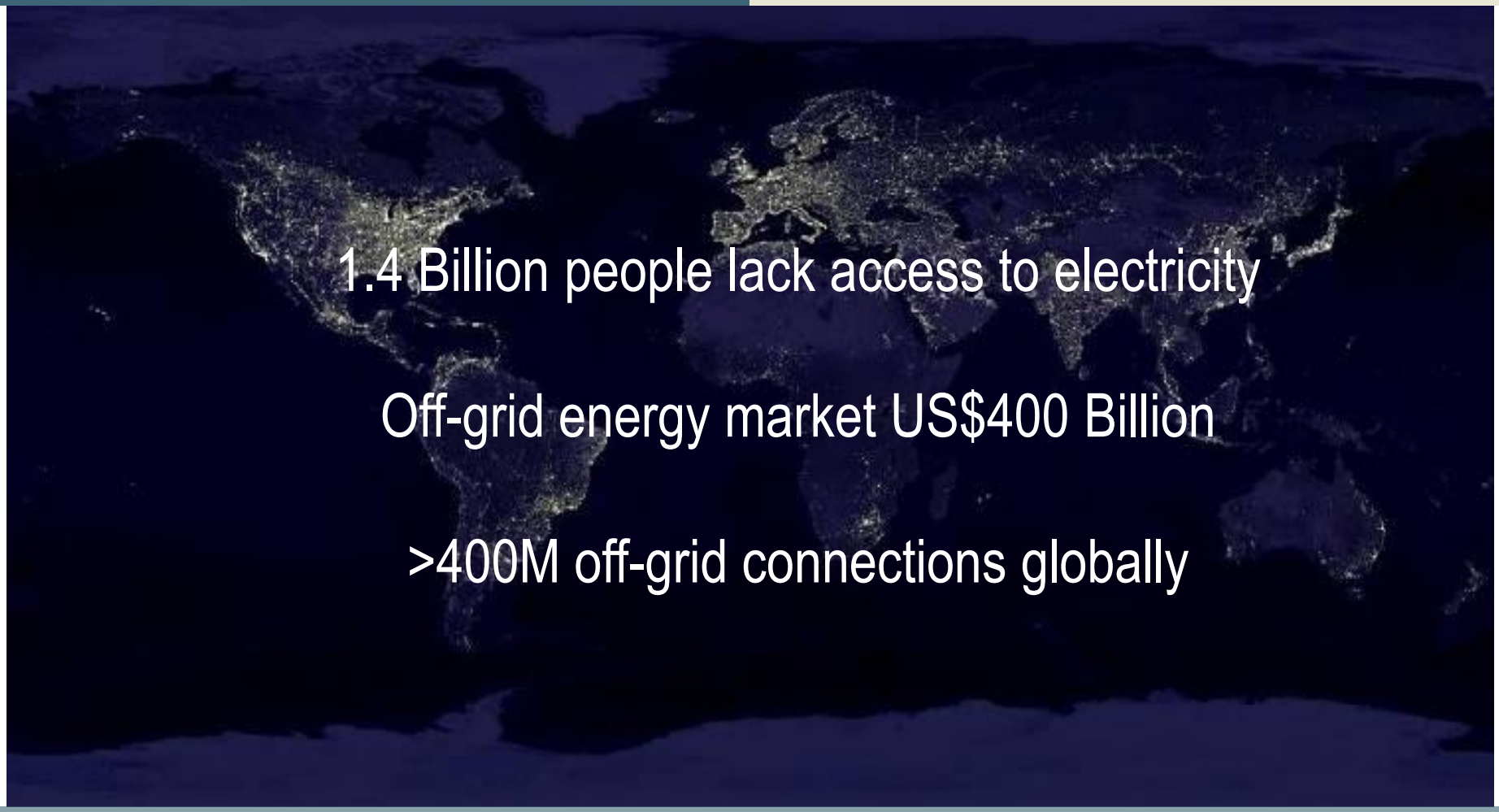
Community Power from Mobile

IFC International Finance Corporation World Bank Group

Cambodia Working Group

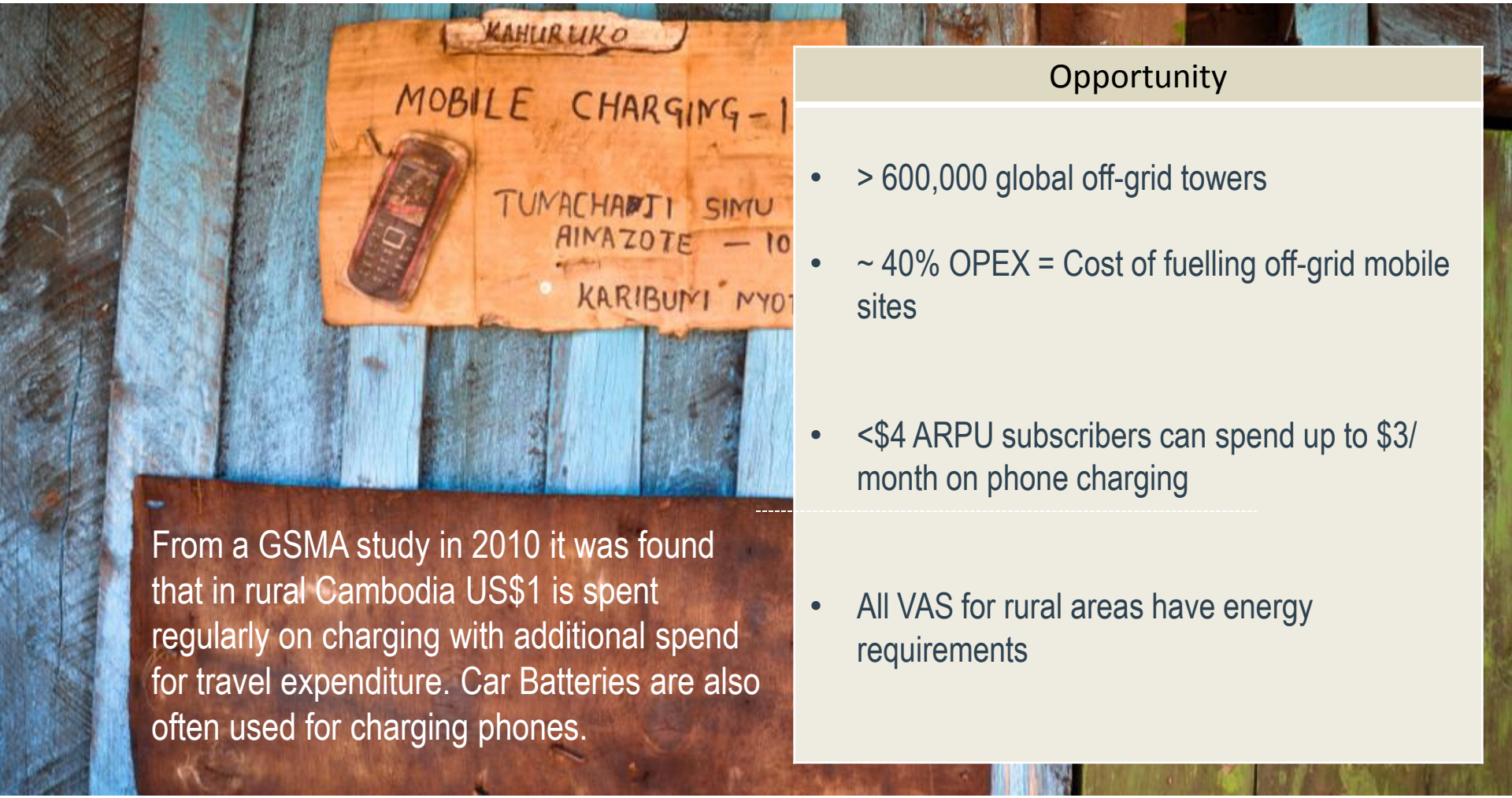
24/25th July 2012

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Why should the Mobile industry care?



From a GSMA study in 2010 it was found that in rural Cambodia US$1 is spent regularly on charging with additional spend for travel expenditure. Car Batteries are also often used for charging phones.

Opportunity

- > 600,000 global off-grid towers
- ~ 40% OPEX = Cost of fuelling off-grid mobile sites
- <$4 ARPU subscribers can spend up to $3/ month on phone charging
- All VAS for rural areas have energy requirements

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

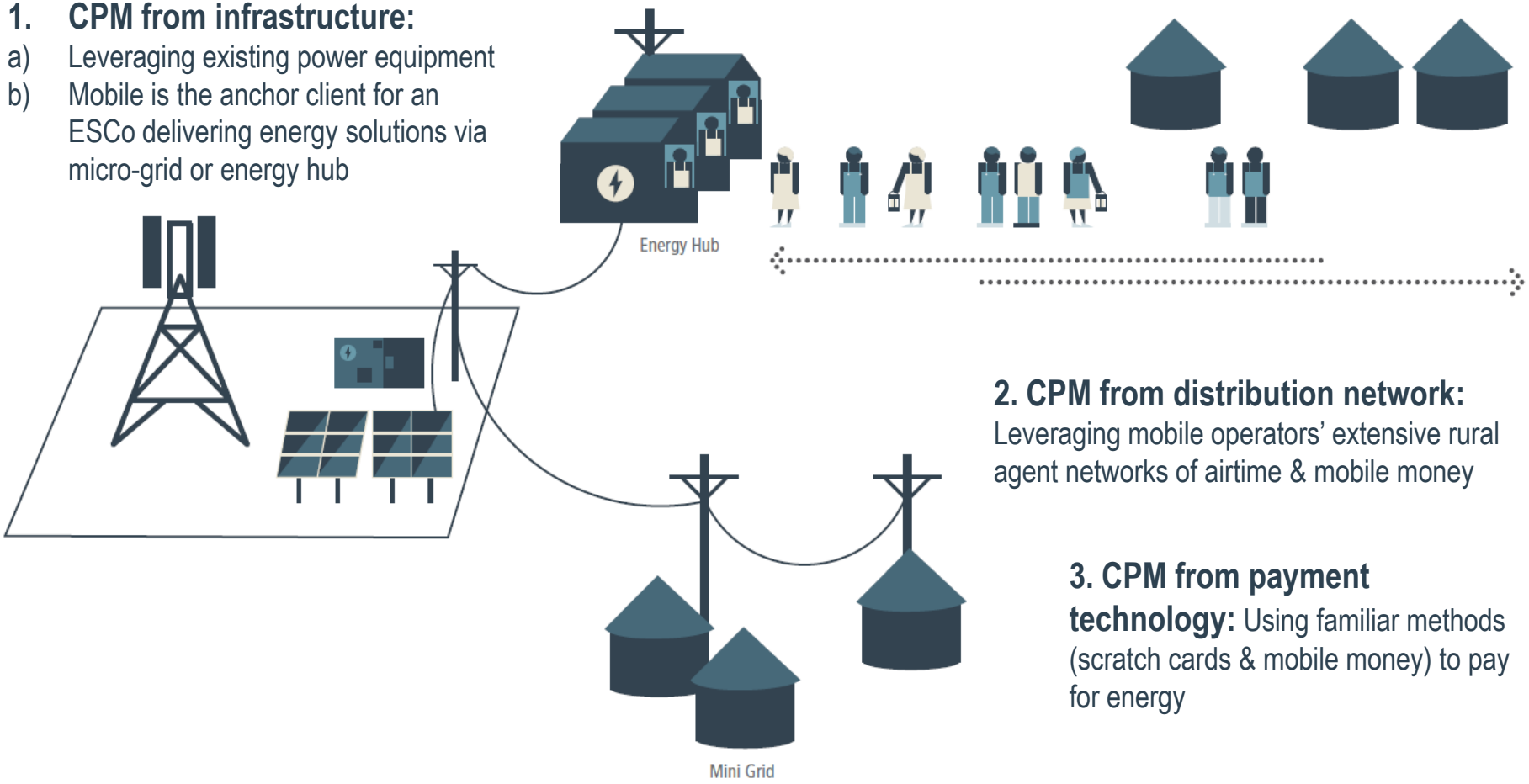
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Three aspects of Mobile providing sustainable energy access through off-grid mobile

1. CPM from infrastructure:

a) Leveraging existing power equipment

b) Mobile is the anchor client for an ESCo delivering energy solutions via micro-grid or energy hub



2. CPM from distribution network: Leveraging mobile operators' extensive rural agent networks of airtime & mobile money

3. CPM from payment technology: Using familiar methods (scratch cards & mobile money) to pay for energy

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What do CPM Trials Look Like?

Mobile network operators are trialling commercial approaches:

- Providing **excess power** from towers to community for low demands - charging mobile handsets, household batteries and rechargeable lanterns: brand impact
- Committing as a stable **anchor client** to third party ESCO that is powering BTS and energising community
- Using **vendor network** for airtime and mobile money to distribute and sell phone charging and lighting services to their customers and at kiosks



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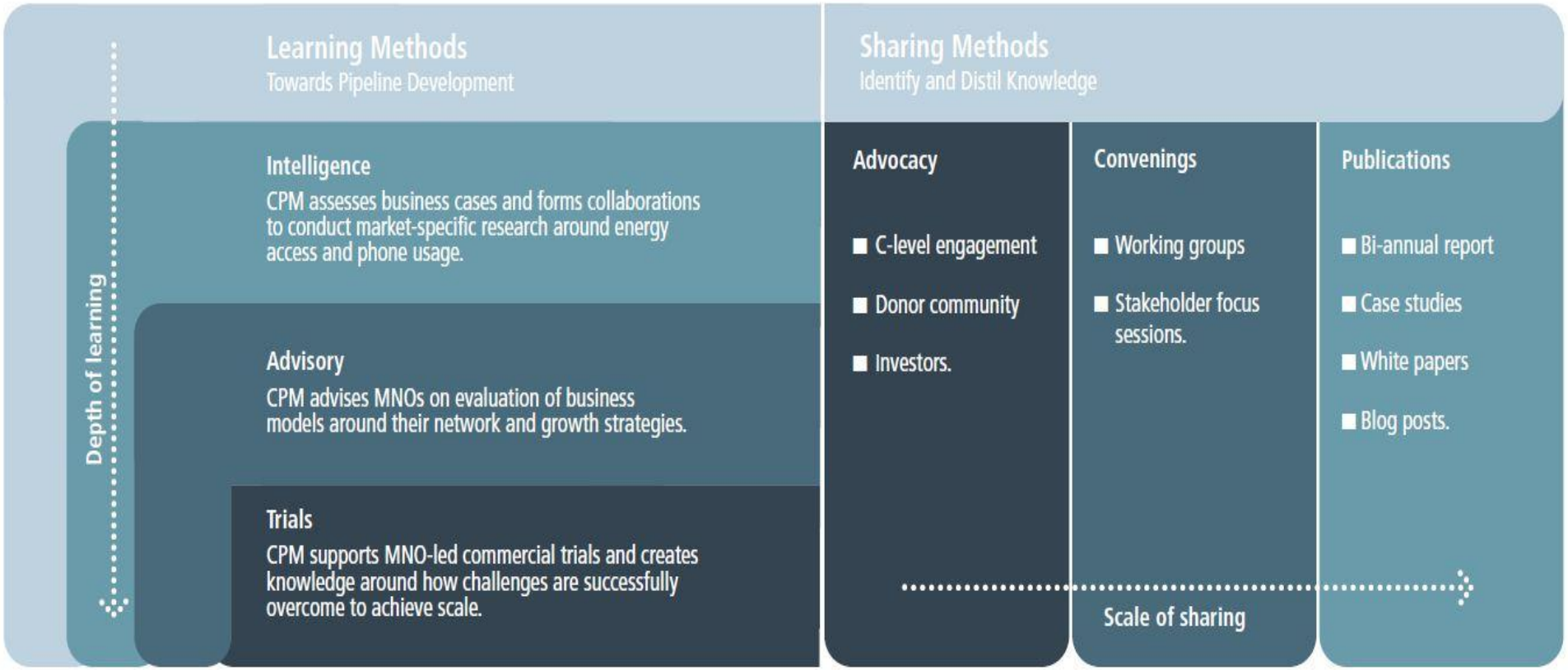
Challenges CPM faces

- **Regulatory** framework that supports mobile-enabled rural energy access
- Understanding **community level** energy needs & ability to pay
- Accounting for diversity across **geographies**
- Accessing **R&D capital** for large scale trials
- Who's **role** is it to prove the business models?
- Room to trial several **business models** before choosing a winner
- Quantifying the opportunity demands much more **data**

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GSMA CPM Programme

Framework for Engagement and Knowledge Sharing



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Objectives of the feasibility studies

Your Network: assessing the case for trials and scale-up

- **Assist Management** in defining the strategic and financial goals of CPM deployment
- **Shortlist** the sites with greatest potential for impact and business returns
- Size the **opportunity & costs** of 3 business cases:
  - Leveraging infrastructure & power systems for energy delivery to the community
  - Using rural service supply chains & agents to distribute & sell energy solutions
  - Using mobile payment technologies for users to pay for energy solutions
- Creating replication **guides** for internal use

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Moving Forward

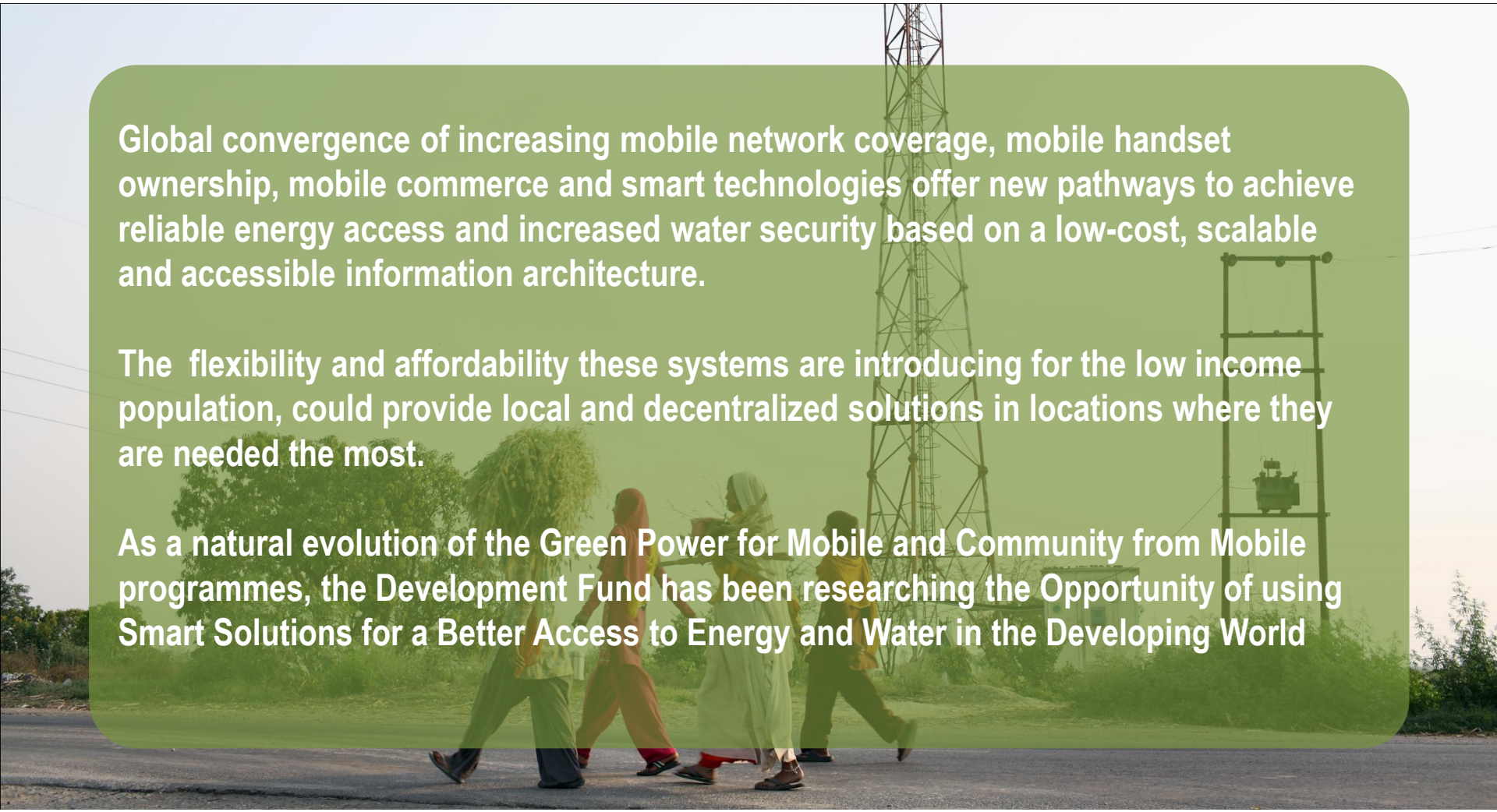
- Seeking committed partners for further study engagements
  - Completing studies in Malawi, Kenya and Nicaragua
  - Q3/4: Mozambique

- Establish research partnerships
  - Evaluate regulatory landscape
  - Community energy access baselines

- Establish a financial support mechanism for industry R&D
  - ➢ achieve POCs & analysis for multiple business models



GSMA Metering Project:
Potential of Smart Solutions for Utility Services in the Developing World



Global convergence of increasing mobile network coverage, mobile handset ownership, mobile commerce and smart technologies offer new pathways to achieve reliable energy access and increased water security based on a low-cost, scalable and accessible information architecture.

The flexibility and affordability these systems are introducing for the low income population, could provide local and decentralized solutions in locations where they are needed the most.

As a natural evolution of the Green Power for Mobile and Community from Mobile programmes, the Development Fund has been researching the Opportunity of using Smart Solutions for a Better Access to Energy and Water in the Developing World

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More smart solutions are leveraging the strength of mobile technologies

- The concept of such solutions is based on the integration of a GSM communication module to the renewable solution allowing
  - Data exchange Over The Air with a central server
  - Flexible incremental payments from customers
  - Remote Maintenance and alerts if malfunction

- A new breed of companies has emerged to offer these 'pay as you go' solutions for energy access, where customers top up for energy the same way they would top up for mobile airtime:
  - Eight 19
  - DT Power
  - Shared Solar
  - Simpa Networks
  - mKopa

- As revenue collection is a major challenge for off grid projects sustainability, the integration of mobile banking solutions (such as MPESA in Kenya, GCash in the Philippines,..) with these charging solutions represents a clear disruption in the way BoP consumers access to affordable energy.



Source DT Power



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Challenges of Water Access and Impact of Smart Solutions

	Challenges	Impact
Utilities/WSPs (Water Service Providers)	**Payment efficiency is low** (sometimes <80%) **High water wastage** due to unmetered connections **Unreliability** of water connections and handpumps	**Improved payment processing** Leak and theft detection (~25% to up to 50% of the sector budget – 6.8 Billion Kshs in Kenya) Billing Accuracy **Higher Collection rate**
Consumers	Problems of disconnection when payment is not properly taken into account People often **need to travel** to fetch water or reports water usage **High Cost of water** in underserved areas **Water Security** is not proven	**Save Time** **Save Money** Better maintenance of water infrastructure Increase water security Stimulate entrepreneurial activities (ex. growing gardens for families)
MNOs	-	Drives Transaction Volumes (through mobile money use) **Attract/Retain subscribers**

- "Technology innovation is occurring both incrementally in the domain of existing water meters becoming 'smart' and also transformationally with innovative applications of mobile technology in the water sector."

  Hope, R.A., Foster, T., Money, A. and Rouse, M. (2012, in press) Harnessing Mobile Communication Innovations for Water Security. Global Policy

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