IFC International Finance Corporation World Bank Group

GSMA Green Power for Mobile

In partnership with Netherlands

airtel

Green Power for Mobile Nigeria specific Working group

30th January 2013

Agenda

Opening session and Government role

0930 – 1120

- GSMA role to promote green power, by Ferdous Mottakin of GSMA
- Sustainable business advisory: Green power for Telecom , Solomon Quaynor & Arata Onoguchi of IFC
- Greening the network: Strategy and initiative by Awadhesh Kalia, CTO, Airtel Nigeria
- Regulator role in Green telecom development, by Alh Abdullahi Maikano, Secretary, USPF, NCC
- Moderated break-out session

Greening network strategy and technology development

1135 – 1300

- Greening the network, by Ugochuckwu Ezenwa, Head of Mechanical and electrical, Etisalat Nigeria
- Technology Development: Green Hybrid, by Eze Chibuzor, Eltek West Africa
- Technology Development: Storage & Renewable energy by Prof Olurinde Lafe, Chairman, MIDATCO

Energy efficiency, last mile operation, Green energy outsourcing and Investment

1400 – 1545

- Financing to promote renewable energy, by Central Bank of Nigeria
- Network energy efficiency: Strategy and initaitive, by Sandeep Kaul, Operations Director, IHS Nigeria
- Technology development: Remote site monitoring, by Ann Louise Johansson, VP Strategy, Flexenclosure
- Green energy outsourcing for telecom, by Kwabena Smith, Executive Chairman, Orun Energy Global

Break Out session

1600 – 1700

- Moderated break-out session

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Problem Statement



More than 2.6 billion people live in unreliable electricity

Presently in Nigeria, more than 45% people don't have access to electricity

(source: IEA World energy outlook 2012)

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Problem Statement

- Future mobile subscriber growth will be heavily **dependant on off-grid populations** (expected 50-100k new off-grid BTS per year for the next 5 years)
- Currently diesel generators are the predominant off-grid power source, however they are **costly to run**, require regular fuel distribution and maintenance and have a **negative environmental impact**
- Available grid power is often **unreliable** or it is prohibitively **expensive** to gain access



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What We Have Done?

- 27 feasibility studies
- 14 WG
- 7 bi-annual reports
- More than 250 people trained
- 2 GPM Database



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Green Power for Mobile Programme: Phase 2



"To demonstrate the technical and financial viability of renewable energy as a potential option, maximise the return on investment achieved when implementing a solution and transfer of the Green Power of Mobile methodology and knowledge for analysing telecom sites" - GPM2

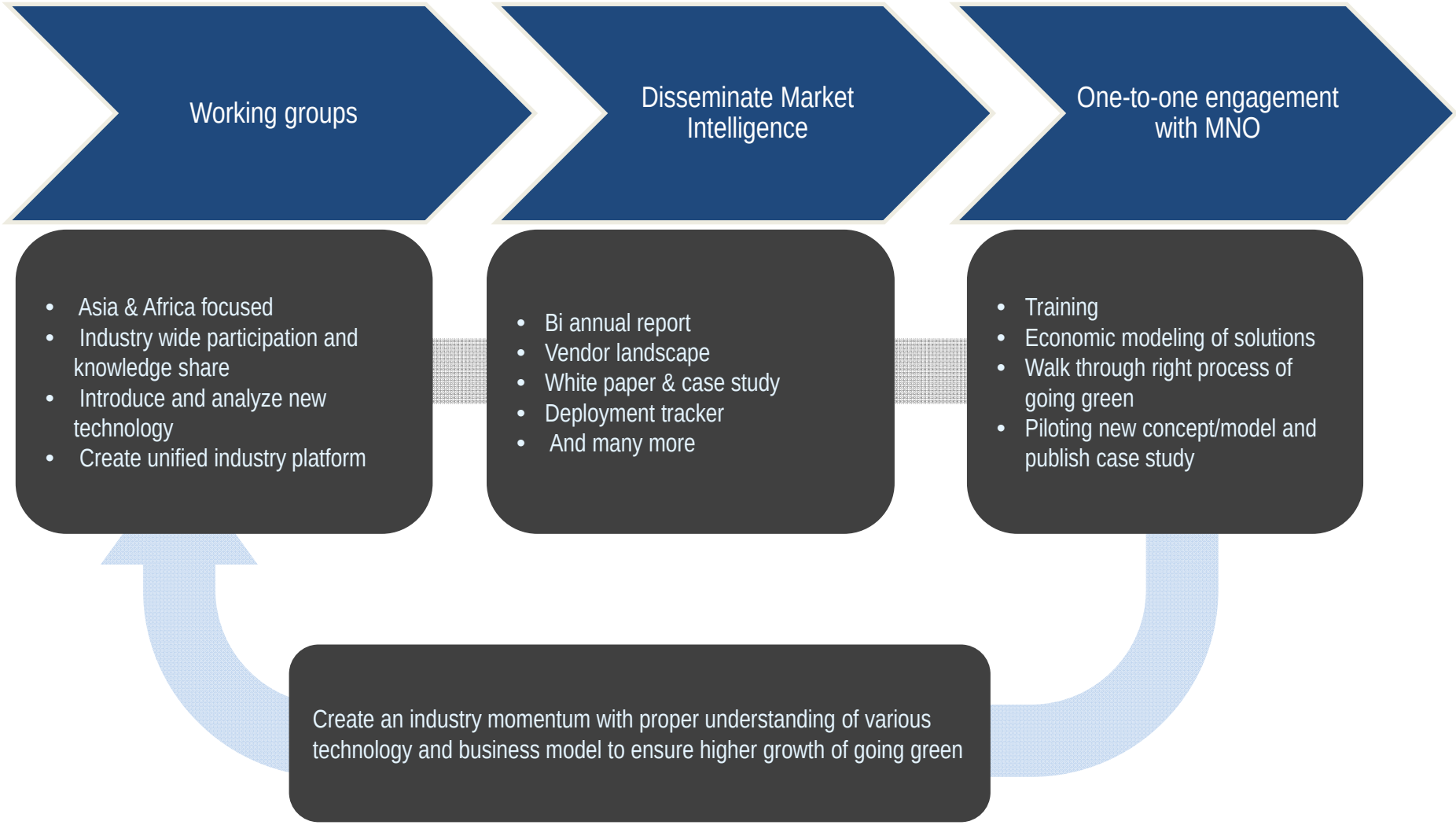
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The Green Power for Mobile Programme works in 3 major areas:



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Market Clarification

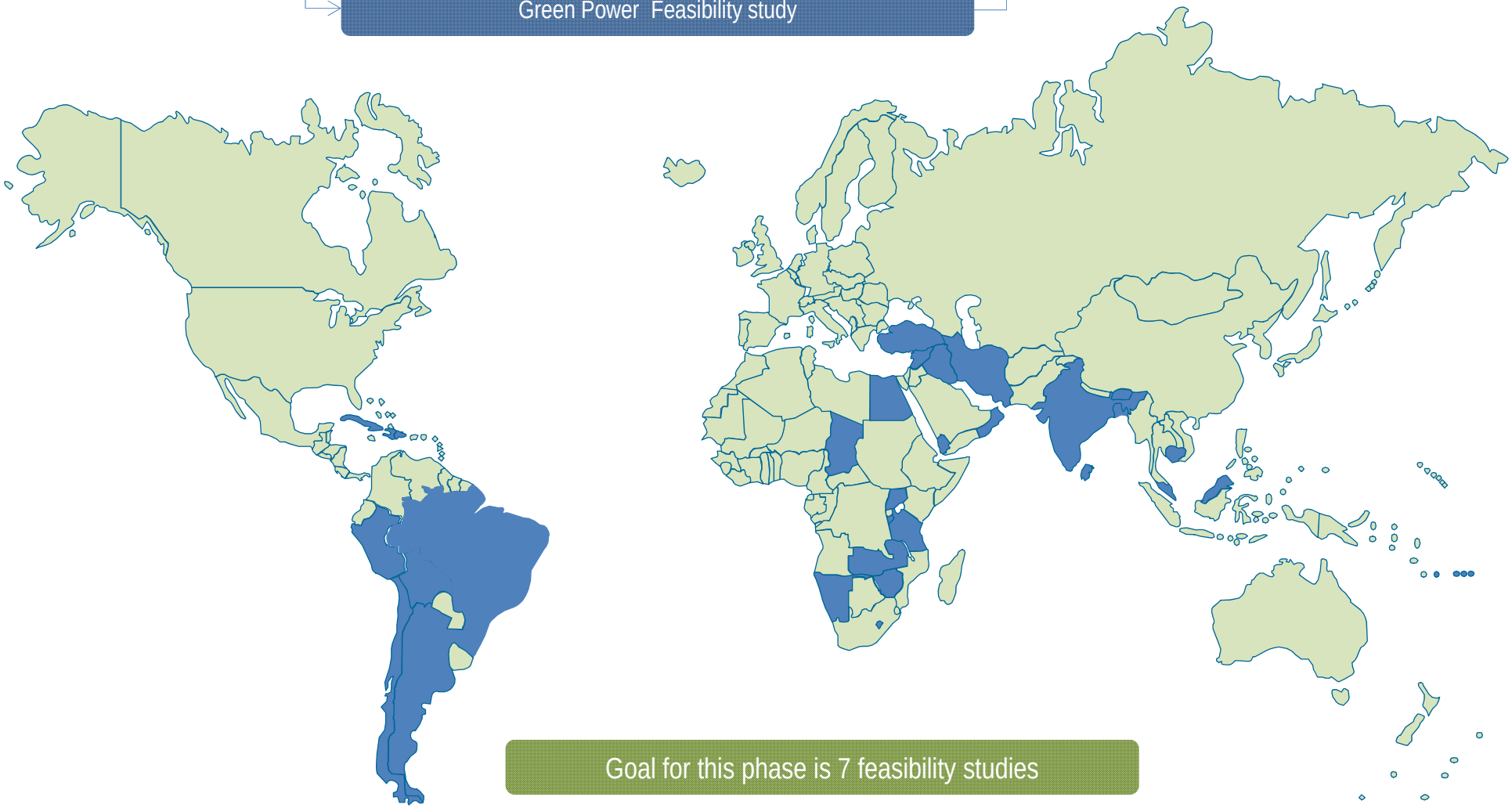


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Technical Assistance

On-Going Innovation and Industry collaboration

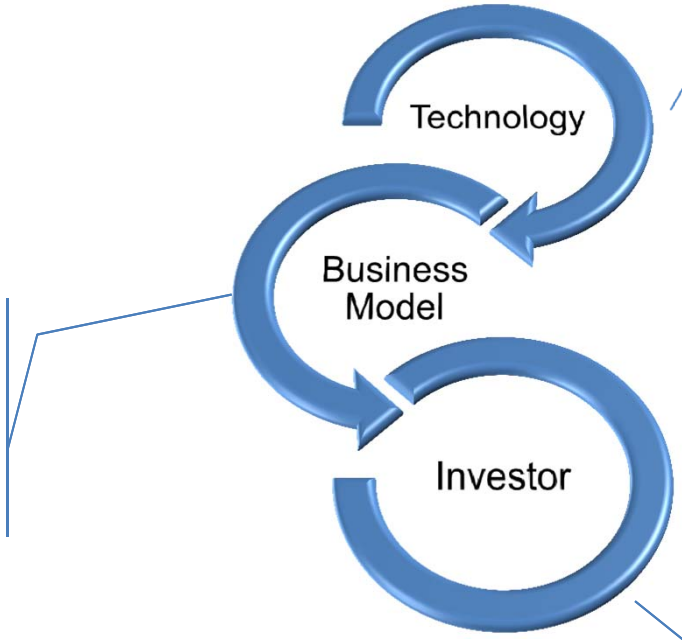
Green Power Feasibility study



Goal for this phase is 7 feasibility studies

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Business Case Development and Investor Connection



Different technologies and enormous number of solutions

Different business models and financial feasibility of each models

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What will GPM do in West Africa (Nigeria & Ghana) Market?

Market Analysis Report

Market analysis document to understand the market potential, challenges and the context. To derive strategies to address the challenges.

Jan 2013

Vendor Landscaping

To understand the supply side scenario by developing a complete list of vendors and their offerings to assist operators with reliable vendor options.

Q2 2013

Best Practice Procurement Guide

To provide operators with implementation and operational guidelines to assist in streamlining green power deployments.

Q3 2013

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Training & Knowledge Transfer

- To provide training on necessary tools and design analysis and assist operators with in-house capacity building for taking up green power designs
- Training on business modelling and business case analysis
- Green Power for Mobile methodology and process
- Comparison and assessment of technology choices for green power

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Detail engagement & Objectives

Site Selection

- Analyse the current power solutions and OPEX
- Define a site selection criteria based on geographic, operational and site specific characteristics

Site Dimensioning

- Categorize and group sites based on renewable energy resources and load characteristics
- Design analysis and solution dimensioning based on renewable potential and load analysis

Business Case Development

- Financial analysis and business case development based on existing operational costs and expected CAPEX for renewable solution
- Analyse the financial metrics for economic viability
- Prioritise potential sites based on financial, operational and network parameters for phase-wised implementation and investment planning

RFP Definition

- Assist operators in writing the technical aspects of an RFP to be distributed to vendors
- RFP to follow from site dimensioning and site selection

RFP Evaluation

- Define evaluation criteria to include technical solution, project timelines, vendor experience, payment terms, and cost
- Assist operators to objectively evaluate proposals from vendors participating in the RFP

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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

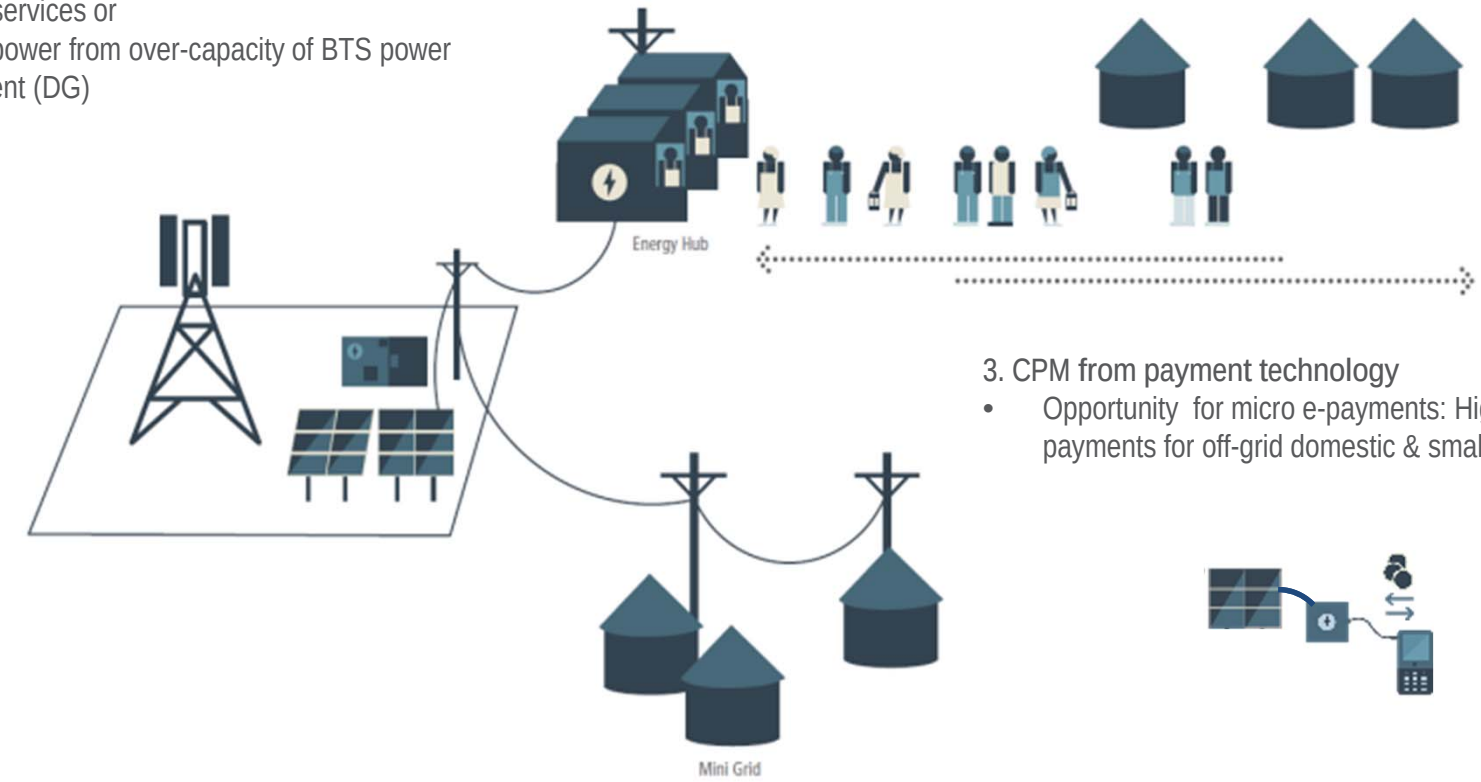
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Mobile can provide energy access through three channels

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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Contributing Operator



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