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## Detailed highlights from Green Power for Mobile's Nigeria & Ghana Working Group in Lagos, Nigeria – 29<sup>th</sup> & 30<sup>th</sup> January 2014

The Green Power for Mobile (GPM) has successfully convened its Nigeria & Ghana Working Group in Lagos, Nigeria during 29<sup>th</sup> and 30<sup>th</sup> January 2014. The working group was co-hosted by IHS Towers Nigeria, is a follow up on our Nigeria specific working group a year ago. The working group was attended by 41 people across 28 organizations including MNOs, ESCOs, vendors, solution integrators, infrastructure partners and development

### Day one – 29<sup>th</sup> Jan:

Opening Session:

Ferdous Mottakin, programme manager of GPM started the session with a welcome note and agenda walkthrough and invited key guests to deliver a welcome note. The opening session of the day hosted key personnel from IFC Nigeria and IHS Towers Nigeria, the local co-host of the working group.

Femi Akinrebiyo, Senior Investment Officer, IFC Nigeria, welcomed the participants and briefed about the role of IFC, supporting GSMA's GPM programme in the promotion of green power adoption. Femi, while highlighting the abysmal status of current green power deployments as compared to the size of potential opportunity in Nigeria and Ghana, extended a strong support from IFC Nigeria to provide financial support to bring scale to the green power deployments in the country.

Sandeep Kaul, CTO, IHS Towers Nigeria, briefed about their role in promoting energy efficient solutions to reduce OPEX, emphasized the need for strong partnerships and industry collaborations to drive the adoption of green telecoms and welcomed the participants for fruitful discussions during the following sessions of the working group.

The opening session concluded with a presentation from Satish Kumar, Africa Project Manager, GPM, briefly looking at the opportunities and prospects for green telecoms in the Nigeria and Ghana. Satish highlighted the current state of the industry, market size, green power potential, and business model opportunities in green power for mobile for both Nigeria and Ghana.

The second session of the day started with MNO/TowerCo presentations on key initiatives and deployment experiences and then followed by a panel discussion.

MNO/TowerCo Session and Panel Discussion:

The session started with a presentation from Sandeep Kaul, CTO, IHS Nigeria, highlighting their strong track record of growth in tower portfolio and operations across Africa. Sandeep, briefed in detail on their key energy efficiency and green power initiatives and highlighted the outcomes and future plan of focus. He also touched up some of the new products under focus including DC Airconditioners, efficient storage technologies and green power technologies such as fuel cell and gas based generators. Sandeep also emphasized that the challenges still exist in terms supplier's local presence, long lead times, business model viability and local technical support.

Oladapo Olofin, Senior Manager - Power, MTN Nigeria, presented on their overall network expansions plans and their strategy to address the energy challenges in the country. He briefed on their current green power strategy and explained in greater detail their green power initiatives currently being implemented on the network. He also highlighted that poor grid power infrastructure and unfavourable local operating conditions are key operating challenges impacting the OPEX and operational efficiency.

Kieron Osmorthly, CEO of TowerXchange (a boutique research company focusing on Tower Industry in emerging markets), presented on the changing industry landscape across Africa and highlighted the latest developments in tower outsourcing across countries in Africa. While highlighting the implications for MNOs and broader supply eco-systems, Kieron, explained the key phases and timelines of investment focus of TowerCos in energy efficiency and green power solutions for powering the tower assets.

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In the MNO/TowerCo panel session we had three panellists – Sandeep Kaul, from IHS Nigeria, Oladapo Olofin, from MTN Nigeria and Kieron Osmorthly, from TowerXchange. The panel discussion, moderated by Ferdous Mottakin of GPM, touched upon various aspects affecting the network operations and green power deployments in region. The discussions were focused around outsourcing – tower and energy, deployment challenges including technical resources, unfavourable tax regulations and their impact on scaling the adoption of green power alternatives for powering the network.

#### Technology development Session:

The third session of the day started after the lunch break, with presentations from technology and solution providers introducing new technologies and their feasibility for Nigeria and Ghana markets. The session critically focused on technology, supporting eco-system, feasibility as well as economic benefits and total cost of ownership of the systems.

Simon Albury, CEO, Controllis, started the session with an introduction to complete DC power system approach to powering mobile networks. Following a brief overview of the company, Simon highlighted the key market needs and the associated driving factors around fuel efficiency, reliability, security, ease of deployment and environmental and community impact. Simon explained in detail on their product range with unique positioning to address the challenges and market needs, and the benefits thereof to MNOs and TowerCos through some of their African deployments.

Ingrid David, Business Development Manager at Ballard, presented on the fuel cell technology and its feasibility for the African markets and specifically for Nigeria. She explained in greater depth, their current market focus, needs of the market and their product offerings and value proposition to MNOs and TowerCos. Ingrid, also highlighted some of their deployments across Africa and presented sample TCO analysis to explain the costs and saving benefits. She highlighted their future product roadmap and key partnerships to develop the supply chain eco-system for fuel cell deployments across Africa and Nigeria.

Mike Bergey, President of Bergey Wind Power, introduced their wind turbine technology and their approach to making wind technology feasible for telecom applications. Building on their technological strength in developing long lasting products and strong deployment experience across industries including telecom, Mike highlighted some of their recent key developments in products range and key elements of making wind turbines solutions to work for telecom and off-grid power applications. He also presented cases from their deployments across Africa with key lessons and outcomes.

The last speaker of the session, Thomas Thillou, Sales Director - Offgrid, SunPower Corp, brought in supply side innovations around solar power technology, solutions and business models driving the adoption of green power in mobile telecom industry. Thomas presented on their new high efficiency solar cells and associated key benefits in terms of savings in space requirements and long term performance and reliability. He also briefly presented on the feasibility of high efficiency solar systems and the economic as well as TCO analysis for Nigeria.

#### Break-out Session:

In the last session of the day, GPM conducted a moderated break-out session around the industry needs and eco-system challenges for green power adoption in Nigeria and Ghana. The MNOs and TowerCos stressed that reliability, security, presence of local technical support as key requirements for any green power solution deployment and management. Besides the technical and operational challenges, the group discussed and highlighted that the industry requires a strong support from government implementing favourable regulations and tax incentives. The group also agreed on common standards for technology and operations in order to integrate different solutions and technologies.

The first day concluded post the technology development and break-out sessions, and was followed by a cocktail networking dinner arranged by the co-host IHS Nigeria.

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### **Day two – 30<sup>th</sup> Jan:**

The second day of the working group focused on management practices in energy provision and energy outsourcing models for mobile network operators and tower companies.

The first session of the day started with a presentation by Satish Kumar, GPM Africa Project Manager, on various deployment cases from across the world and the learning experiences in terms of best practices adopted for successful deployments. The presentation was followed by an open discussion on energy outsourcing and financing challenges for green power adoption in telecoms in Nigeria and Ghana.

In the second session, a focused discussion around energy outsourcing and business models was facilitated by inviting key speakers from the ESCO players currently focusing and operating in Nigeria and Ghana.

Ferdous Mottakin from GPM presented on the various aspects of energy outsourcing and briefed on comparative analysis of business models and key elements for their successful adoption.

This was followed by a presentation from Louw Cilliers, Group Operations Manager, INALA technologies, who presented on their 'Energy Monitoring as a Service' offering and the roadmap to ESCO business opportunity. Louw highlighted the challenges with product driven energy monitoring approach, and explained how their Energy Monitoring as a Service offering will overcome those challenges in order to provide benefits of reliable, efficient, cost effective energy operations and monitoring services. He then briefed on their roadmap to becoming an ESCO to offer Energy as a Service and highlighted key partnerships in the direction of becoming an ESCO.

Emeka Ndu, Managing Director, C&I Leasing, an ESCO focusing on Nigeria, brought forward their strength in financing and leasing business, and their strong focus on offering ESCO business model to MNOs and TowerCos in Nigeria. Emeka highlighted their approach and strength in terms bringing strong technical, operational and financial partners to build win-win business model for MNOs and TowerCos in Nigeria to enable them to outsource their energy operations.

The presentations were followed by panel discussion with Emeka Ndu from C&I Leasing, Louw Cilliers from INALA and Punish Jain from Africa Towers as the panel members, moderated by Satish Kumar of GPM. The panel discussed on broad strategic questions related to energy outsourcing business models, the eco-system readiness including the interest from MNO/TowerCos, and also, the financing requirements and possible future plans. Besides willingness to bring investments, the ESCOs expressed keen interest on working with MNOs/TowerCos on a win-win business model and were open for collaborative efforts to drive the adoption of energy outsourcing models in Nigerian telecom industry.

The second part of the day was dedicated to GPM's training on Green Power design using the HOMER software. The training focused on a step-by-step approach to green power design and analysis for better understanding of technical and financial feasibility.

Following the training session, GPM concluded the working group by bringing in key discussions, outcomes and possible future plan of actions for Nigeria and Ghana for driving adoption green power alternatives and energy outsourcing business models.