

PROLOG | Monday, December 4, 2017 |
Scaling up Renewable Energy Program (SREP) Countries Roundtable
(Invitation only)

Objective: Continue peer exchange and learning among SREP countries

TIME	SESSION
7:30	Registration
8:30	Welcome: Brief overview of SREP support to mini grids
9:00	Tour de table introductions of SREP countries
10:30	Coffee Break
11:00	Status updates on: <ul style="list-style-type: none"> · Regulations and Financing · Creating Demand · Technology Costs · Institutional set up and Ease of doing business · Capacity Building /Training · Role of the Private Sector
12:30	Lunch
1:45	Roundtable Discussions of SREP Process: <ul style="list-style-type: none"> · Getting started · Working with the government · Implementation and operational phase
4:00	Coffee Break
4:30	Joint Session with GMG-Africa
5:30	Adjourn

Mini Grid Action Learning Event
Upscaling Mini Grids for Least Cost and Timely Access to Electricity | December 4-8, 2017
Location: Sheraton Hotel, No.1, Ladi Kwali Way, Maitama, Abuja, Nigeria

DAY 1 | Tuesday, December 5, 2017 |
Nigeria Mini Grid Roundtable
(Open to the Public)

Objective: Explore the opportunities, regulatory and financial landscape, and engagement with states and communities in Nigeria

TIME	SESSION	SPEAKERS/MODERATOR
7:30	Registration	
9:30	Welcome & Opening Remarks	HE Babatunde Fashola, SAN , Minister for Power, Works & Housing Mr. Rachid Benmessaoud , World Bank Nigeria Country Director
9:45	Overview of off-grid opportunities and challenges in Nigeria	Mrs. Damilola Ogunbiyi , Managing Director, Rural Electrification Agency
10:00	Press Event & Coffee	
10:30	Creating an Enabling Environment: Regulatory Landscape in Nigeria	Moderator: Adam Kendall, McKinsey Panelists: Dafe Akpeneye , Commissioner Legal, NERC (tbc) Olusegun Odunaiya , CEO of Havenshill Synergy Ernest Mupwaya , Abuja DISCO (tbc) John Alonge , Ministry of Environment
11:45	Access to Finance	Moderator: Wieber Boer, AllOn Panelists: Olivier Delefosse Country Director, AFD James Lykos/ Roseann Casey , USAID George Ogbonnaya , Head of SME Division, FCMB Philip Osafo-Kwaako, McKinsey (tbc) Mudashir Olaitan Director Development Finance, Central Bank of Nigeria (tbc) Jon Exel , TTL Nigeria Rural Electrification Project, WB
1:00	Lunch	
2:00	Private Sector - Ease of Doing Business	Moderator: Amaka Okechukwu, Private Sector Specialist, World Bank Panelists: Lazarus Angbazo , Country Director, General Electric Yewande Sadiku , Nigerian Investment Promotion Council Junoke Oduwole , Presidential ease of doing business committee; Mohammed Mijindadi , Managing Director, GE Gas Power Systems (tbc);

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		Ifeanyi Oriajaja, CEO GVE
3:15	Engaging with States	<p>Moderator: Muhammad Wakil, World Bank</p> <p>Panelists:</p> <p>Dr. Mustapha Lemu, Niger State</p> <p>Rev. James Olugbebi, Ogun State</p> <p>Dolapo Poopola, Kaduna State</p>
4:15	Coffee Break	
4:30	DisCos - Opportunities for Collaboration	<p>Moderator: Rahila Thomas , Country Director, Energy Market and Rates Consultants (EMRC)</p> <p>Panelists: Sanusi Ohare, Executive Director, Rural Electrification Fund, REA</p> <p>Baba Umara Mustapha, Yola Disco</p> <p>Dr. Umar Hashidu, Kano Disco</p> <p>Lawal Lawal, Kaduna Disco</p> <p>Chigoziri Egeruoh, Port Harcourt Disco</p> <p>Bola Odubiyi, Abuja Disco (tbc)</p>
5:30	Closing Remarks	Sanusi Garba , Acting Chairman NERC
6:00	Reception	Outside Ballrooms

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DAY 2 | Wednesday, December 6, 2017 |
Global Mini Grid Technical Conference
(Open to the Public)

Objective: How to make mini grids viable around ten key enabling factors

TIME	SESSION	SPEAKERS/MODERATOR
7:30	Registration	
8:30	Opening Remarks	Louis Edozien , Permanent Secretary to the Ministry of Power (tbc) Mr. Malcolm (Mac) Cosgrove-Davies , Global Lead Energy Access, World Bank
8:45	Frontier Developments in Mini Grids <ul style="list-style-type: none"> ▪ Geospatial Planning ▪ Private Sector Innovations ▪ Cost Reductions - Benchmark Cost Study ▪ Regulatory Framework 	Prof. Ignacio Perez Arriaga , MIT, Geospatial Planning Ricky Buchs , GE Power (tbc) Pol Arranz , TTA David Ehrhardt , Castalia
10:00	Coffee Break	
	Parallel Clinics 1, 2 and 3	
10:30	Clinic 1 Demand Creation and Productive Uses	Clinic 1 Moderator - Sam Duby , TFE Consulting; Expert - TBD, Panelists: Emily Moder , Steamaco; Manoj Sinha , Husk Energy (tbc); Sebastian Massmann , Solar Kiosk (tbc); Nick Virr , BRAC (tbc)
	Clinic 2 Workable Regulations	Clinic 2 Moderator - Ashley Brown , Harvard University; Expert - Chris Greacen , Mini grid consultant; Panelists (TBC) - Rik Wuts , Powerhive; Ernest Mupwaya , Abuja Distribution Company (tbc); David Ehrhardt , Castalia Strategic Advisors; Godfrey Chibulunje , TZ regulator
	Clinic 3 Access to Finance	Clinic 3 Moderator - Subodh Mathur , consultant; Expert - Wiebe Boer , All On; Panelists (tbc) - Malcolm Cosgrove-Davies , World Bank; Godfrey Mwindaaire , Acumen; Krishna Raghunathan , MIT Sloan Business School; (tbc), Nigeria Bank of Industry; Farzana Raman , IDCOL
12:15	Lunch	

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DAY 2 | Wednesday, December 6, 2017 |
Global Mini Grid Technical Conference
(Open to the Public) --- (Continued)

Objective: How to make mini grids viable around ten key enabling factors

Parallel Clinics | 4, 5 and 6

Parallel Clinics 4, 5 and 6		
1:30	Clinic 4 Technology and Costs	Clinic 4 Moderator: Shashi Buluswa , The Institute for Transformative Technologies Expert: Pol Arranz , TTA Panelists: Mir Islam , EM-ONE; Hasna Khan , ITT; Stephen Doig , RMI
	Clinic 5 Geospatial Planning	Clinic 5 Moderator: Prof. Ignacio Perez Arriaga , MIT Expert: (tbc) Panelists - Peter Lilienthal , HOMER
	Clinic 6 Community Engagement	Clinic 6 Moderator: Jechoniah Kitala , Practical Action Expert - Srishti Sehgal/Kabir Daivid , Quick Sand; Panelists: Geoffrey Mburu , Renewable World East Africa; Digital Green (tbc); Rik Wuts , Powerhive
3:15	Coffee Break	

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Parallel Clinics | 7, 8, 9 and 10

Parallel Clinics 7, 8, 9 and 10		
3:45	Clinic 7 Taking Mini Grids to Scale Sustainably	Clinic 7 Moderators - Ekaterina Grigoryeva-and Elijah Abiodun Siakpere, World Bank Expert - Dr. Ibrahim Salau, Environmental Accord Panelists: Patrick Schroeder, Green Transformations, Institute of Development Studies; Luca Tasciotti, International Institute for Social Studies; Farzana Rahman, IDCOL; Lillian Rushaigo, Renewable Energy Performance Platform (REPP)
	Clinic 8 Capacity Building/Training	Clinic 8 Moderator: Felix Nitz, Winrock Expert: Bulent Bicer, Arizona State University Panelists: - Viviane Mike-Eze, Schneider Electric (tbc); Stephen Awoyele, AHK vocational training project (tbc); James G. Lykos, USAID (tbc); Sharon Kaburuk, GIZ Nigerian Energy Support Program (tbc); Kashim Abdul Ali, COREN (tbc)
	Clinic 9 Institutional Set-up (Auctions)	Clinic 9 Moderator - Steven Hunt, DFID Experts: Emily McAteer, Odyssey Energy Solutions Panelists: Nico Peterschmidt, Inensus (tbc); Ashley Wearne, GIZ Uganda (tbc); Sam Slaughter, Powergen
	Clinic 10 Private Sector joint ventures	Clinic 10 Moderator: David Ehrhardt, Castalia Strategic Advisors Experts: Ifeanyi Orajaka, GVE; Panelists: Ifeanyi Odoh, Schneider Electric- Nigeria (tbc); Frank Bergh, Sigora International (tbc); Rik Wuts, PowerHive- Kenya/Tanzania; Kelly Carlin, Rocky Mountain Institute
5:30	Wrap up and Adjourn	Tbc

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DAY 3 | Thursday December 7, 2017 |
Nigeria Mini Grid and Off Grid Electrification Clinics
(By Invitation Only) --- (Getting to Work)

Objective: unlock mini grid and off-grid opportunities at scale under new regulatory, financial and institutional landscape in Nigeria

TIME	SESSION	SPEAKERS/MODERATOR
9:00	Registration	
9:30	Opening remarks and Overview of Clinic Topics and Purpose	Mrs. Damilola Ogunbiyi, Managing Director, Rural Electrification Agency Mr. Jon Exel, TTL, Nigeria Rural Electrification Project
10:00	Parallel Clinics 1 and 2	
	Clinic 1 Unlocking barriers to large scale deployment of mini grids <ul style="list-style-type: none"> ▪ What financing mechanisms will allow mini grids to scale? ▪ What are the biggest opportunities to reduce cost of power from mini grids? ▪ What is required for mini grids to achieve commercial viability? ▪ What is the role of demand stimulation in supporting large scale deployment of mini grids? 	Clinic 1 Moderator: Steven Doig , Rocky Mountain Institute Speakers: Ms. Lolade Abiola , Head of Renewables, REA; Ashish Shrestha , World Bank
	Clinic 2 Unlocking barriers to large-scale deployment of individual solar systems <ul style="list-style-type: none"> ▪ What regulatory improvements are required? ▪ What consumer affordability mechanisms can be deployed (e.g. payment structures, vouchers for the extremely poor)? ▪ What incentives or partnerships can enable solar home system companies to enter challenging-to-reach areas? 	Clinic 2 Moderator: Leigh Vial , World Bank Consultant Speakers: Timothy Shekarau , Rural Electrification Agency Besnik Hyseni , Energy Specialist, World Bank
12:00	Lunch	

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DAY 3 | Thursday December 7, 2017 |
Nigeria Mini Grid and Off Grid Electrification Clinics
(By Invitation Only) --- (Getting to Work) --- (Continued)

Objective: unlock mini grid and off-grid opportunities at scale under new regulatory, financial and institutional landscape in Nigeria

Parallel Clinics 3, 4 and 5		
1:00	Clinic 3 Funding Nigeria's Off Grid Strategies <ul style="list-style-type: none"> ▪ How can we coordinate different funders and types of financing into more platform-based finance? ▪ How can we ensure that investors and financiers are keeping commitments (e.g., local job creation, ethical working conditions), and that donors are consistently acting in the best interest of Nigeria/REA? 	Clinic 3 Moderator: James Sherwood , Rocky Mountain Institute Speakers: Godfrey Osamuyi Ogbemudia , EU Ebi Clark , Central Bank of Nigeria (tbc) Nigerian Commercial Bank (tbc); Eme Essein , IFC (tbc)
	Clinic 4 Energizing Education <ul style="list-style-type: none"> ▪ What can we do to ensure good O&M of the future plants and other factors to make projects more sustainable? ▪ How can we increase awareness within the Universities for the need to save energy? ▪ What are sustainable mechanisms to allocate the power and energy within the universities? ▪ How can we apply lessons learned from other solar IPP projects? ▪ What can we do to promote a successful bidding process? 	Clinic 4 Moderator: Kelly Carlin , Rocky Mountain Institute Speakers: Anita Otubu , Head of Special Projects, REA Malcolm (Mac) Cosgrove-Davies , World Bank
	Clinic 5 Energizing Economy <ul style="list-style-type: none"> ▪ What needs to be done to make Energizing Economies attractive to investors? ▪ What are the best metering solutions for each market? ▪ What have been the lessons learnt to date? 	Clinic 5 Moderator: Eric Wanless , Rocky Mountain Institute Speakers: Mr. Ubani Nkaginieme , Total Support Energy Habeeb Alebiosu , REA Consultant (tbc)
3:00	Report back from Clinics	
3:45	Closing Remarks and 4:00 Adjourn	TBD
5:00	RECEPTION	Outside Ballrooms

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DAY 4 | Friday December 8, 2017 |

Field Trip

(Limited Spaces: participation limited to 100 individuals)

Objective: To visit an operating mini grid facility, learn about the construction and operation, and talk to its customers about the benefits.

TIME | 6:00am

WHERE | Bisanti, Niger State: Solar Mini grid

N09° 21.311', E006°12.407'



Bisanti is a landlocked community with GPS Coordinates 9.19° N, 6.12° E located in Katcha Local Government Area of Niger State Nigeria. The Community is approximately one hour away from the heart of Minna (off Maraya junction, Minna/Bida Road) and about 20 minutes away from Bida. Bisanti has agriculture and petty commercial activities as its prevailing economic drivers. The community has a total estimated population density of about 200 houses. The community is serviced by a school, health center, corps members abode, a security post (local vigilantes) and mosques as social amenities, but there is no mobile telephony service to the village. The predominant means of transportation within the community is by foot or motorbikes. Quite a handful of the inhabitants have access to electricity through petrol-powered generators while the rest are at the mercy of kerosene lamps, candle lamps, firewood etc. The major challenge facing economic development in the community is the lack of electricity access for residential and commercial activities most importantly for the processing of agro-products before taking them to the market.

In July 2015, GVE Projects Ltd in collaboration with the Bank of Industry Nigeria (BOI)/United Nations Development Program (UNDP) and the Institute of Electrical Electronics Engineers (IEEE) announced the implementation of a 37.8 kWp PV solar based mini-grid pilot project. The project was aimed at field-testing the technical and commercial viability of adopting renewable energy for off-grid rural electrification. The project created 60 direct and indirect jobs during implementation while creating an estimated N2.75 million (\$13,000.00) in wealth in the beneficiary community through construction, survey, labor and other related expenditures. The project utilizes a pay-as-you-go platform and was completed within 3 months.

The project is estimated to offset about 365.2 metric tons of CO₂ annually in the community thereby preserving the natural environment while enhancing the living standards of the inhabitants. This project features transfer of knowledge by training of locals to oversee the daily operation of the site post implementation, which has led to the sustainability of the project. The project currently serves 200 Households (i.e. 1,600 people @ 8 persons per house).

Other project impacts include:

- 22 street lighting points along the main street of Bisanti Community
- Enhanced security at night
- Extended business operating hours
- Children gather around the street lighting points to study/play at night.
- 50% reduction in energy related expenditure.
- The impacts an additional 300 people indirectly through the street lighting component.

Executing Agency: N/A

Development Partner: United Nations Development Program (UNDP)

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DAY 4 | Friday December 8, 2017 | Field Trip *(Continued)*

TIME | 6:00am

WHERE | Kperegi/Swasun, Niger State: Solar Mini grid

N09o 21.311', E006o12.407'



Kperegi/Swasun is a landlocked community with GPS Coordinates N09o 21.311', E006o12.407' located in Katcha Local Government Area of Niger State Nigeria. The community is approximately one hour away from the heart of Minna (off Maraya junction, Minna/Bida Road) and about 30 minutes away from Bida. Kperegi has agriculture and petty commercial activities as its prevailing economic drivers. The community has a total estimated population density of about 230 houses. The community is serviced by a school, health center, a security post (local vigilantes) and mosques as social amenities but there is no mobile telephony service to the village.

The predominant means of transportation within the community is by foot or motorbikes. Some inhabitants have access to electricity through petrol-powered generators; the remainder rely on kerosene lamps, candle lamps, firewood etc. The average cost of petrol in Kperegi is N250.00 (72% costlier than open market rate) while the average cost of kerosene is N350 (300% costlier than open market rate). The major challenge facing economic development in the community is the lack of electricity access for residential and commercial activities, most importantly for the processing of agro-products before taking them to the market.

In June 2017, GVE Projects Ltd in collaboration with the Bank of Industry Nigeria (BOI)/ United Nations Development Program (UNDP) and the Institute of Electrical Electronics Engineers (IEEE) announced the implementation of a 40.95 KWp PV solar based mini grid pilot project. The project is aimed at scaling of adopting renewable energy for off-grid rural electrification. The project has created 51 direct and indirect jobs during implementation while creating an estimated N4.68 million (\$13,000) in wealth in the beneficiary community through construction, survey, labor and other related expenditures.

This project will utilize a pay-as-you-go platform and train local community members to oversee the daily operation of the site after commissioning. The project will serve 200 households (i.e. 1,600 people @ 8 persons per house) upon commissioning in early November, 2017. It is estimated that this project will offset about 365.2 metric tons of CO₂ annually in the community, thereby preserving the natural environment while enhancing the living standards of the inhabitants.

The project, with a total cost of \$250,000, was financed 68% by Bank of Industry Nigeria through concessional debt financing, 22% grant from UNDP and a 10% equity contribution from the GVE.

Other project impacts include:

- 24 street lighting points along the main street of Kperegi Community
- Enhanced security at night
- Extended business operating hours
- Children gather around the street lighting points to study/play at night.
- 50% reduction in energy related expenditure.
- 80% reduction in malaria cases.
- The impacts an additional 260 people indirectly through the street lighting component.

Executing Agency: N/A; **Development Partner:** United Nations Development Program (UNDP); **Technical Consultant:** N/A

Project Cost: The project with a total cost of \$250,000 was financed 68% by Bank of Industry Nigeria through concessional debt financing, 22% grant from UNDP and a 10% equity contribution from GVE.

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