

SIDE EVENT: Energy Access Innovation Lab Session



October 17, 2018, 09:00 - 12:30 hrs



Hosted by Affordable Energy for Humanity (AE4H), Nigel Moore

Wednesday, October 17, 2018

13:15	REGISTRATION OPEN
14:00 14:20	Opening Address 14:00 - Xavier Vallvé , TramaTecnoAmbiental, Spain 14:05 – Dr. Andreu Moià , Universitat de les Illes Balears, Palma de Mallorca, Spain 14:15 - Dr. Llorenç Huguet , Rector de la Universitat de les Illes Balears, Palma de Mallorca, Spain

OPENING SESSION Chair: Dr. Carsten Hellpap, GIZ, Germany Xavier Vallvé, Trama TecnoAmbiental, Spain	
14:20	Mini Grids for Timely and Low-Cost Electricity Access: Where We Are, Where We Need To Go, and How We Can Get There Jon Exel, Senior Energy Specialist and Lead, ESMAP Global Facility on Mini Grids, World Bank
14:45	Impacts and Adoption of Decentralized Modern Energy – State of Knowledge in Academic Research Prof. Jörg Peters, University of Passau/RWI-Research Institute, Germany

SESSION 1: PROGRAMS AND MARKET DEVELOPMENT

Chair: Kilian Reiche, iiDevelopment GmbH, Germany

15:10	Cost-benefit Analyses Favour Solar Systems over Grid Electrification of Households in East Africa Dr. Mirco Gaul, SiNERGi GmbH, Germany
15:25	Power to the Myanmar Village: are Mini- or Microgrids the (only) answer? Jörund Buen, Differ Group, Norway
15:40	Towards Increased Electricity Access through Solar Mini-grids in African Countries: Barriers and Opportunities for better Regulations, Policies and Support Mechanisms Dr. Kirsten Ulsrud, University of Oslo, Norway
15:55	Discussion
16:05	Integrated Grid and Off-grid Energy Supply Models: Regulation, Planning, innovation and Governance for Universal Access to Energy Andrés González García, Universal Energy Access Lab MIT & IITComillas at the Instituto de Investigación Tecnológica Universidad Pontificia Comillas and the Massachusetts Institute of Technology, US
16:20	Review of Mini-grid Policy and Development in East Africa Dr. Mathilde Brix Pedersen, UNEP DTU Partnership, Technical University of Denmark, Denmark
16:35	Discussion
16:45 17:15	Coffee Break 

SESSION 2: INDUSTRY FORUM AND POSTER SESSION

Chair: Tobias Zwirner, Phaesun, Germany

INDUSTRY FORUM

17:15
17:35

- **acciona.org**, The Energy & Water Foundation, Spain
- **Bornay Aerogeneradores, S.L.U.**, Spain
- **MuRata**, The Netherlands
- **Stäubli Electrical Connectors AG**, Switzerland
- **Studer Innotec SA**, Switzerland

17:35
18:30

POSTER SESSION

P1

Policy Options, Perceptions and Interests a big Obstacle to Massive Adoption of Renewable Energy. The Peruvian case.
Valentín Bartra, Consejo Peruano de Energía Solar Fotovoltaica, Perú

P2

Off-Grid Hybrid Renewable Electricity System (OHRES) techno-economic assessment, system size optimization and design (Based on comparative case-studies in Uganda and Canada)
Mohamed Mamdouh Elkadragy, KIT, Germany

P3

Impact Improvement of Public Subventions in Rural Electrification. NESAP case.
Isahac Esteve, ANPER, Niger

P4

Can Solar Energy Address Nigeria's Households Energy Poverty?
Sule Zubairu, Lancaster University, UK

P5

Study of Photovoltaic Energy for the Reduction of Energy Poverty in the Spanish Household
Andreu Moià, Universitat de les Illes Balears, Palma de Mallorca, Spain

P6

Renewable Energy Resource Development and Procedural Application of Environmental and Social Impact Assessment Tool: Lessons from Kenya
Philip Manyi Omenge, Egerton University, Kenya


P7	<p>Optimal Site Selection of PV Plants for Rural Mining area in North Korea using GIS Analysis Prof. Hyeong-Dong Park, Seoul National University, South Korea</p>
P8	<p>Master Plan for the Deployment of Renewable Energy in Chad Abderamane Choua, Ministry of Energy, Tchad</p>
P9	<p>How have Subsidies Impacted the Market for Commercial Solar Home Systems Providers in Rural Myanmar? Jörund Buen, Differ, Norway</p>
P10	<p>The Typical Myanmar Rural Off-grid Electricity Consumer is more Advanced than you think Jörund Buen, Differ Group, Norway</p>
P11	<p>Pre-feasibility Study of a Solar PV-Hybrid Plant in Bahia Negra, Paraguay Marilena Lazopoulou, Trama TecnoAmbiental, Spain</p>
P12	<p>Prospective Analysis of Solar-powered Sesame Oil Production System in Burkina Faso Dr. Victor Torres Toledo, University of Hohenheim, Germany</p>
P13	<p>A Partnership Model for Innovative Solar Technology in Emerging Markets Greg Nau, MPower Ventures AG, Switzerland</p>
P14	<p>Optimization of Rooftop Solar Installations for Industrial Buildings for Demand Side Management - A Case Study Prof. Manoj Kumar Soni, Birla Institute of Technology and Science, India</p>
P15	<p>Linking Energy Access to Sustainable Rural Village Livelihoods in Botswana Cheddi Kiravu, University of Botswana, Botswana</p>
P16	<p>BOSS Milk cooling Kit – Increasing Milk Production and Economical Success in Rural Areas Tobias Zwirner, Phaesun, Germany</p>
P17	<p>Optimized Fuzzy Energy Management for Autonomous PV-Hybrid Systems with Battery and Hydrogen Storage Path Lisa Gerlach, Technical University Dresden, Germany</p>

P18	Potential use of the blockchain technology in decentralized energy systems Caspar Priesemann, GIZ, Germany
P19	Daily Global Solar Radiation Prediction using Artificial Neural Networks: a New Approach Dr. Youness El Mgouchi, Moulay Ismail University, Morocco
P20	Wind Turbine Emulator with Real Time Monitoring of the State of the Turbine Juan de Dios, Bornay, Spain
P21	Study of Energy and Block Chain in Spain Dr. Andreu Moià, Universitat de les Illes Balears, Palma de Mallorca, Spain
P22	Smart Grids in the European Union: Assessing Energy Security, Regulation & Social and Ethical Considerations Prof. Dr. Leal-Arcas, Queen Mary University of London, UK
P23	Impact of desert dust on West African solar energy yields Stefanie Meilinger, Internationales Zentrum für Nachhaltige Entwicklung, Germany
P24	Hybrid System for Community Waste Water Treatment Plant in Hammana, Lebanon Carla Nassab, American University of Beirut, Lebanon
P25	Analysis of the Mini-grid Potential for the Small Island Landscape of the Philippines Dr. Philipp Blechinger, Reiner Lemoine Institut, Germany
P26	Development of Control Strategy for Distributed Off-grid Solar Photovoltaic Mini Grid Application Dipta Majumder, Inensus GmbH, Germany
18:30	Visit to the Trade and Poster Exhibition 
19:15	Welcome reception 
20:00	End of the First Conference Day

Thursday, October 18, 2018

SESSION 2: ENERGY FOR LOCAL DEVELOPMENT AND SUSTAINABILITY


Chair: Dr. Andreu Moià, Universitat de les Illes Balears,
Palma de Mallorca, Spain

08:30	Are Mini-grids Instrumental in Fostering Development in India? Dr. Harald Richter, GIZ, Germany
08:45	Solar Water Pumping Market Transformation: An Assessment of Trends and Opportunities in Solar Water Pump Technology and Commercial Markets Makena Ileri, CLASP, USA
09:00	How to Measure Employment Effects in Energy Access Programs? Andreas Michel, GIZ, Germany
9:15	Discussion
09:25	Energy & Water 4.0: Combined Off-Grid Water & Energy production in the Digital World and its Business Models Oliver Kopsch, MFT, Germany
09:40	Project Gumbi: Integrating Energy, Enterprise & Safe Water in East Zambia Dr. Stephanie Terreni Brown, Clean Water Wave, UK
09:55	How to Promote Productive Use of Solar Power in Rural Africa? Dr. Carsten Hellpap, GIZ, Germany
10:10	Discussion
10:30 11:15	Coffee Break and Visit to the Trade Exhibition  Solar Cooking in Action Starts

SESSION 3 A - PARALLEL SESSIONS: SOLAR COOKING (EXHIBITION AREA)

Convenor: Prof. Celestino Ruivo, ISE – University of Algarve, ADAI, Portugal

11:15	Heliac Solar Cooker - Efficient Solar Cooker at Lower Price Akiko Ishibashi, Heliac, Denmark
11:25	On the Users Acceptance of Solar Cookers Prof. Celestino Ruivo, ISE - University of Algarve, ADAI, Portugal


11:35	Design and testing of a solar box cooker with thermal storage unit based on phase change materials Giovanni Di Nicola, Università Politecnica delle Marche, Italy
11:45	Electric solar cooking (PV-eCook) - what are the differences and synergies with solar thermal cooking? Dr. Jon Leary, Loughborough University, Gamos Ltd, UK
11:55	Discussion and Solar Cooking in Action
13:00	LUNCH and  Visit to Trade and Poster Exhibition

**SESSION 3 B - PARALLEL SESSIONS:
DESIGN AND TECHNOLOGY (ROOM 1)**

Chair: Prof. Peter Adelman, University of Applied Sciences, Ulm, Germany

11:15	Solar Electricity & Hot Water for Dispersed Off-grid Households in Botswana: Demand-based Sizing and Initial Results from Tests on Prototypes Dr. Adrian Pugsley, Ulster University, Northern Ireland
11:25	Electric and Thermal Power Supply in Off-grid and On-grid Systems are Merging Hubert Deubler, Planungsbüro Deubler, Germany
11:35	Battery Selection for PV-Hybrid and Mini-Grid Criteria and Assessments Claude Campion, 3C Projects, France
11:45	Mini-grids with Distributed Energy Generation and Frequency Control. Return of Experience after 6 Years of Operation of a Pilot Project in Switzerland. Victor Peñas, Studer Innotec, Switzerland
11:55	Discussion
12:15	Flexible Mini-Grids based on a Swarm Algorithm Alessandro Medici, Power Blox, Switzerland
12:25	Potential of Transactional-based Control in the Optimization of Microgrid operation Prof. Dr. Antonio Notholt, Reutlingen University, Germany

12:35	Tools for Remote Operation and Maintenance of Off-Grid and Hybrid Power Systems Patrick Cousins, Infinite Fingers GmbH, Germany
12:45	Discussion
13:00	 LUNCH and Visit to Trade and Poster Exhibition

SESSION 3 C - PARALLEL SESSIONS: TRAINING AND KNOWLEDGE TRANSFER (ROOM 2) Chair: Dr. Hedi Feibel, Skat Consulting Ltd., Switzerland	
11:15	Human Resources and Energy Assets Performance Management System for Solar Organizations in Developing Countries Govinda Upadhyay, LEDsafari, Switzerland
11:25	The AIR Project: Strengthening Higher Education in Renewable Energies in Southern Africa Prof. Dr.-Ing. Wilfried Zörner, University of Ingolstadt, Germany
11:35	Discussion
11:45	PV Off-Grid Activities of the IEA PVPS Program Georg Bopp, IEA PVPS, Switzerland
11:55	Global Online Knowledge Management on Energy Access via Energypedia Johanna Hartmann, Energypedia, Germany
12:15	Discussion
12:25	Visit to Session 3 A or 3 B or Trade and Poster Exhibition
13:00	 LUNCH

SESSION 4: PRACTITIONERS ROUND TABLES (DIFFERENT ROOMS)

Session organizer: Nigel Moore (WISE), Canada
14:15 – 15:20

1.	Topic: Use of Blockchain in Renewable Energy Delivery Models Moderator: Andreu Moià, UIB, Spain Rapporteur: Caspar Priesemann, GIZ
2.	Topic: Which Electric Storage Technology to Choose? Moderator: Georg Bopp, Fraunhofer ISE, Germany Rapporteur: Claude Campion, 3C Projects, France
3.	Topic: Subsidies, Public Investment and Market Development Moderator: Hamidine Salouhou; ANPER, Niger Rapporteur: Kirsten Ulsrud, University of Oslo, Norway
4.	Topic: Islands Electrification with Renewable Energy Moderator: Geoff Stapleton, GSES, Australia Rapporteur: Victor Martínez, UIB, Spain
5.	Topic: How to Make Mini-Grids More Sustainable? Moderator: James Knuckles, The World Bank, US Rapporteur:
6.	Topic: Integrated Decentralised Electrification in Africa (IDEA) Moderator: Dean Cooper, SNV, The Netherlands Rapporteur: Mathilde Brix Pedersen, DTU, Denmark
7.	Attendants Suggest a Topic of their Interest During Registration Moderator: n.n. Rapporteur: n.n.

SESSION 5: BUSINESS MODELS / DELIVERY MODELS

Chair: Dean Cooper – Netherlands Development Organisation (SNV),
The Netherlands

15:25	Social Enterprises for Energy Access: a Review of Ashden Awards Daniel del Barrio Alvarez, The Policy Alternatives Research Institute, Japan
15:40	Solar-battery Micro-grids vs. Solar Home Systems for Rural Electrification – Benefits+Drawbacks, Economics, and Opportunities Arnaud Henin, Gommyr Power Networks, Switzerland
15:55	Discussion

16:05	Off-Grid Practitioners' Views: Customer Service Challenges in Rural Off-Grid Solar PV Markets Hira Wajahat, Stimulus, Pakistan
16:20	Energy Access after a Natural Disaster: Evidence from Higashi-Matsushima, Japan Hiroshi Komikado, University of Tokyo, Japan
16:35	Discussion
16:45 17:15	Coffee Break 

SESSION 6A: PARALLEL SESSIONS: TECHNICAL INNOVATIONS (ROOM 1) Chair: Georg Bopp, Fraunhofer ISE, Germany	
17:15	Cost-effective Concentrated Solar System for High-temperature & High efficiency Thermal Energy Production Rafael Anson, AnsonLab, Spain
17:25	Photovoltaic Water Heating Daniel Goldbach, Nexol Photovoltaic Ag, Germany
17:35	Concentrated Solar Heat at Costs Below Natural Gas Jakob Jensen, Heliac, Denmark
17:45	Discussion
17:55	Energy Storage based on Hydrated Quick Lime Dr. Marc Linder, German Aerospace Center (DLR), Germany
18:05	Evolution of Storage in Solar Home Systems Prof. Peter Adelman, University of Applied Sciences Ulm, Germany
18:15	Experimental Investigation of Heat Retention of a Novel Asymmetric Formed Reflector with Integrated Collector and Storage (AFRiCaS) System Ronald Muhumuza, Ulster University, Northern Ireland, UK
18:25	Discussion
18:35	End of the Conference Day <i>Buses to the dinner restaurant are leaving in front of the University</i>

**SESSION 6B: PARALLEL SESSIONS:
SOLAR FOR PRODUCTIVE AND INSTITUTIONAL USES (ROOM 2)**

Chair: Tatia Lemondzhava, The World Bank

17:15	Barrier Analysis for the Deployment of Renewable Energy Based Mini-grids in Myanmar Masako Numata, University of Tokyo, Japan
17:25	Low cost solar application in laundry and solar drying for Indian villages Prof. Manoj Kumar Soni, Birla Institute of Technology and Science, India
17:35	Unlocking the potential of PUE through Solar Home Systems for Non-Commercial Users: Opportunities and Challenges Samuel Adiprakoso, MicroEnergy International (ME), Germany
17:45	Discussion
17:55	3 Years on-Field Experience in Implementing a Small-Scale Solar Milk Cooling Solution in Kenya, Colombia and Tunisia Dr. Victor Torres-Toledo, University of Hohenheim, Germany
18:05	Aysén Region, Patagonia, Chile: A Territory with Multi-Experiences of Decentralized Electrification for Local Entrepreneurship Juan Carlos Osorio-Aravena, Campus Patagonia, Universidad Austral de Chile
18:15	Tanzanian Mini-grids Improve Standard of Living & Economy Stefan Trittler, Eon OffGrid Solutions GmbH / Rafiki Power, Germany
18:25	Discussion
18:35	End of the Conference Day <i>Buses to the dinner restaurant are leaving in front of the University</i>

20:00	Conference Dinner with Poster Award
	Ceremony Award Committee: Kilian Reiche , iiDevelopment GmbH, Germany Prof. Jatin Nathwani , WISE, Canada Georg Bopp , Fraunhofer ISE, Germany

Friday, October 19, 2018

SESSION 7: MARKET OUTLOOK AND PLANNING

Chair: Prof. Jatin Nathwani, WISE, Canada

09:00	<p>Potential for Integration of Small Wind Turbines in Mini-grids in East Africa Ivan Nygaard, UNEP DTU Partnership, Technical University of Denmark, Denmark</p>
09:15	<p>From a Satellite Picture to an Optimized Mini-grid: the TAOS.ai Modelling Tool Dr. Ibrahim Abada, ENGIE – Tractebel, Belgium</p>
09:30	<p>Discussion</p>
09:40	<p>Mini-Grid Project Development – Reducing Transaction Costs using Remote Data and GIS Dr. Philipp Blechinger, Reiner Lemoine Institut, Germany</p>
09:55	<p>Renewable Energy-Based Mini-Grids for Electrification of Rural Settlements within Southern Africa – A Simulation-Based Analysis Fabian Junker, University of Ingolstadt, Germany</p>
10:10	<p>Discussion</p>
10:20	<p>Round Table's Conclusions Nigel Moore, WISE, Canada </p>
10:35 11:30	<p> Coffee Break</p>

SESSION 8: FIELD EXPERIENCE

Chair: Cyprien Hauser, REPIC Plattform, Switzerland

11:30	<p>Quality Assurance of Photovoltaic and Solar Thermal Systems: Lessons Learned in PTB's International Cooperation Niels Ferdinand, Physikalisch-Technische Bundesanstalt, Germany</p>
11:45	<p>Renewable Energy-based Mini-Grids for Electrification in Island Communities - the State of Pilot Projects in Ghana Seth Mahu, Ministry of Energy & Petroleum, Republic of Ghana, Ghana</p>

12:00	Discussion
12:10	Innovative Electricity Delivery Models to Electrify Remote and Dispersed Households with Third Generation Solar Home Systems José Gabriel Martin, Acciona.org, The Energy & Water Foundation, Spain
12:25	Diesel Reduction in Remote Arctic Communities through Solar PV Systems Klaus Dohring, Green Sun Rising Inc., Canada
12:40	PV-Diesel Mini Grids Solution in Rural Communities – the Case of Community led Virtual Net-Metering in Qabrikha South Lebanon Carla Nassab, UNDP, Lebanon
12:55	Mini-grid Sustainability Factors – the Case of Indonesia Dr. Hedi Feibel, Skat Consulting Ltd., Switzerland
13:10	Discussion
13:25	Closing Remarks Dr. Carsten Hellpap , GIZ, Germany Xavier Vallvé , TramaTecnAmbiental, Spain
13:45	END OF THE CONFERENCE

SIDE EVENT: What will it take to build mini grids at scale?

Friday, October 19, 2018, 14:15 – 16:15 hrs (lunchtime workshop)



Hosted by The World Bank's Energy Sector Management Assistance Program (ESMAP)

Chairs: James Knuckles, Consultant, ESMAP Global Facility on Mini Grids, Tatia Lemondzhava, Energy Specialist, The World Bank and Pol Arranz, UPC Technical University of Catalonia

