

## Side Event:

### Energy Access Innovation Lab Session

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

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

Only for participants of the conference. When registering for the conference you can also register for this workshop. [www.energy-access-conferences.com](http://www.energy-access-conferences.com)

<b>2<sup>nd</sup> International Conference on Solar Technologies &amp; Hybrid Mini Grids to improve energy access</b> Palma de Mallorca, Spain October 17 – 19, 2018 <a href="http://www.energy-access-conferences.com">www.energy-access-conferences.com</a>		
<b>Wednesday, October 17, 2018</b>		
13:15	<b>REGISTRATION OPEN</b>	
14:00 14:20	<b>Opening Address</b> <b>14:00 - Xavier Vallvé</b> , TramaTecnoAmbiental, Spain <b>14:05 – Dr. Andreu Moià</b> , Universitat de les Illes Balears, Palma de Mallorca, Spain <b>14:15 - Dr. Llorenç Huguet</b> , Rector de la Universitat de les Illes Balears, Palma de Mallorca, Spain	
<b>OPENING SESSION:</b>		
<b>Chair:</b>	<b>Dr. Carsten Hellpap</b> , GIZ, Germany <b>Xavier Vallvé</b> , TramaTecnoAmbiental, Spain	
14:20	<b>Mini Grids for Timely and Low-Cost Electricity Access: Where We Are, Where We Need To Go, and How We Can Get There</b> Jon Exel, Senior Energy Specialist and Lead, ESMAP Global Facility on Mini Grids, World Bank, US	
14:45	<b>Impacts and Adoption of Decentralized Modern Energy – State of Knowledge in Academic Research</b> Prof. Jörg Peters, University of Passau/RWI-Research Institute, Germany	

<b>Session 1: Programs and Market Development</b>		
<b>Chair:</b>	<b>Kilian Reiche, iiDevelopment GmbH, Germany</b>	
15:10	<b>Cost-benefit Analyses Favour Solar Systems over Grid Electrification of Households in East Africa</b> Dr. Mirco Gaul, SiNERGi GmbH, Germany	
15:25	<b>Power to the Myanmar Village: are Mini- or Microgrids the (only) answer?</b> Jörund Buen, Differ Group, Norway	
15:40	<b>Towards Increased Electricity Access through Solar Mini-grids in African Countries: Barriers and Opportunities for better Regulations, Policies and Support Mechanisms</b> Dr. Kirsten Ulsrud, University of Oslo, Norway	
15:55	<b>Discussion</b>	
16:05	<b>Integrated Grid and Off-grid Energy Supply Models: Regulation, Planning, innovation and Governance for Universal Access to Energy</b> Andres Gonzalez Garcia, Universal Energy Access Lab MIT & IIT-Comillas at the Instituto de Investigación Tecnológica Universidad Pontificia Comillas and the Massachusetts Institute of Technology, US	
16.20	<b>Review of Mini-grid Policy and Development in East Africa</b> Dr. Mathilde Brix Pedersen, UNEP DTU Partnership, Technical University of Denmark, Denmark	
16:35	<b>Discussion</b>	
16:45 17:15	<b>Coffee Break</b>	
<b>Session: Industry Forum and Poster Session</b>		
<b>Chair:</b>	<b>Tobias Zwirner, Phaesun, Germany</b>	
<b>17:15 17:35</b>	<b>INDUSTRY FORUM</b> <ul style="list-style-type: none"> <li>- <b>acciona.org</b>, The Energy &amp; Water Foundation, Spain</li> <li>- <b>Bornay Aerogeneradores, S.L.U.</b>, Spain</li> <li>- <b>MuRata</b>, The Netherlands</li> <li>- <b>Solartys</b>, Spain</li> <li>- <b>Stäubli Electrical Connectors AG</b>, Switzerland</li> <li>- <b>Studer Innotec SA</b>, Switzerland</li> </ul> <b>POSTER SESSION</b>	

<p>ENERGY ACCESS 17:35 17:50</p>	<p><b>Policy Options, Perceptions and Interests a big Obstacle to Massive Adoption of Renewable Energy. The Peruvian case.</b> Valentin Bartra, Consejo Peruano de Energia Solar Fotovoltaica, Peru</p> <p><b>Off-Grid Hybrid Renewable Electricity System; Techno-economic Assessment, System Size Optimization and Design Aspects (for comparative case-studies in Uganda and Canada)</b> Mohamed Mamdouh Elkadragy, KIT, Germany</p> <p><b>Impact Improvement of Public Subventions in Rural Electrification. NESAP case.</b> Isahac Esteve, ANPER, Niger</p> <p><b>Can Solar Energy Address Nigeria's Households Energy Poverty?</b> Sule Zubairu, Lancaster University, UK</p> <p><b>Study of Photovoltaic Energy for Reduce the Energy Poverty in the Spanish Household</b> Andreu Moià, Universitat de les Illes Balears, Palma de Mallorca, Spain</p> <p><b>Renewable Energy Resource Development and Procedural Application of Environmental and Social Impact Assessment Tool: Lessons from Kenya</b> Philip Manyi Omenge, Egerton University, Kenya</p> <p><b>Optimal Site Selection of PV Plants for Rural Mining area in North Korea using GIS Analysis</b> Prof. Hyeong-Dong Park, Seoul National University, South Korea</p> <p><b>Master Plan for the Deployment of Renewable Energy in Chad</b> Abderamane Choua, Ministry of Energy, Tchad</p> <p><b>Renewable Energy Based Electricity at UNICEF's Compound in Kabul</b> Khader Kamal, UNICEF. UNOCA Compound, Afghanistan</p>	
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<p><b>SOLAR HOME SYSTEMS AND SOLAR PLANTS</b></p> <p>17:50 18:05</p>	<p><b>How have Subsidies Impacted the Market for Commercial Solar Home Systems Providers in Rural Myanmar?</b> Jörund Buen, Differ, Norway</p> <p><b>The Typical Myanmar Rural Off-grid Electricity Consumer is more Advanced than you think</b> Jörund Buen, Differ Group, Norway</p> <p><b>Pre-feasibility Study of a Solar PV-Hybrid Plant in Bahia Negra, Paraguay</b> Marilena Lazopoulou, Trama TecnoAmbiental, Spain</p> <p><b>Prospective Analysis of Solar-powered Sesame Oil Production system in Burkina Faso</b> Dr. Victor Torres Toledo, University of Hohenheim, Germany</p> <p><b>A Partnership Model for Innovative Solar Technology in Emerging Markets</b> Greg Nau, MPower Ventures AG, Switzerland</p> <p><b>Optimization of Rooftop Solar Installations for Industrial Buildings for Demand Side Management - A Case Study</b> Prof. Manoj Kumar Soni, Birla Institute of Technology and Science, India</p> <p><b>Linking Energy Access to Sustainable Rural Village Livelihoods in Botswana</b> Cheddi Kiravu, University of Botswana, Botswana</p>	
<p><b>TECHNOLOGY</b></p> <p>18:05 18:25</p>	<p><b>BOSS Milk cooling Kit – Increasing Milk Production and Economical Success in Rural Areas</b> Tobias Zwirner, Phaesun, Germany</p> <p><b>Optimized Fuzzy Energy Management for Autonomous PV-Hybrid Systems with Battery and Hydrogen Storage Path</b> Lisa Gerlach, Technical University Dresden, Germany</p> <p><b>Potential use of the blockchain technology in decentralized energy systems</b> Caspar Priesemann, GIZ, Germany</p> <p><b>Daily Global Solar Radiation Prediction using Artificial Neural Networks: a New Approach</b> Dr. Youness El Mgouchi, Moulay Ismail University, Marocco</p> <p><b>Wind Turbine Emulator with Real Time Monitoring of the State of the Turbine</b> Juande Bornay, Bornay, Spain</p> <p><b>Study of Energy and Block Chain in Spain</b> Dr. Andreu Moià, Universitat de les Illes Balears, Palma de Mallorca, Spain</p>	

...	<p><b>Smart Grids in the European Union: Assessing Energy Security, Regulation &amp; Social and Ethical Considerations</b> Prof. Dr. Leal-Arcas, Queen Mary University of London, UK</p> <p><b>Impact of desert dust on West African solar energy yields</b> Stefanie Meilinger, Internationales Zentrum für Nachhaltige Entwicklung, Germany</p> <p><b>Hybrid System for Community Waste Water Treatment Plant in Hammana, Lebanon</b> Carla Nassab, American University of Beirut, Lebanon</p>	
<p><b>MINI-GRIDS</b></p> <p>18:25</p> <p>18:30</p>	<p><b>Analysis of the Mini-grid Potential for the small Island Landscape of the Philippines</b> Dr. Philipp Blechinger, Reiner Lemoine Institut, Germany</p> <p><b>Development of Control Strategy for Distributed Off-grid Solar Photovoltaic Mini Grid Application</b> Dipta Majumder, Inensus GmbH, Germany</p>	
18:30	<b>Visit to the Trade and Poster Exhibition and</b>	
19:15	<b>Welcome reception</b>	
20:00	<b>End of the First Conference Day</b>	

<b>Thursday, October 18, 2018</b>		
<b>Session 2: Energy for Local Development and Sustainability</b>		
<b>Chair:</b>	<b>Dr. Andreu Moià, Universitat de les Illes Balears, Palma de Mallorca, Spain</b>	
08:30	<p><b>Are/Were Mini-grids Instrumental in Alleviating Energy Poverty in India?</b> Dr. Harald Richter, GIZ, Germany</p>	
08:45	<p><b>Solar Water Pumping Market Transformation: An Assessment of Trends and Opportunities in Solar Water Pump Technology and Commercial Markets</b> Makena Ileri, CLASP, USA</p>	
09:00	<p><b>How to Measure Employment Effects in Energy Access Programs?</b> Andreas Michel, GIZ, Germany</p>	
09:15	<b>Discussion</b>	
09:25	<p><b>Energy &amp; Water 4.0: Combined Off-Grid Water &amp; Energy production in the Digital World and its Business Models</b> Oliver Kopsch, MFT, Germany</p>	

09:40	<b>Project Gumbi: Integrating Energy, Enterprise &amp; Safe Water in East Zambia</b> Dr. Stephanie Terreni Brown, Clean Water Wave, UK	
10:55	<b>How to Promote Productive Use of Solar Power in Rural Africa?</b> Dr. Carsten Hellpap, GIZ, Germany	
10:10	<b><i>Discussion</i></b>	
10:30 - 11:15	<b><i>Coffee Break and Visit to the Trade Exhibition</i></b> <b><u>Solar Cooking in Action Starts</u></b>	

<b>Session 3 A - Parallel Sessions: Solar Cooking (Exhibition Area)</b>		<b>IF CLOUDY, maybe on Wednesday or Friday</b>
<b>Convenor:</b>	<b>Prof. Celestino Ruivo, ISE – Universtiy of Algarve, ADAI, Portugal</b>	
11:15	<b>Heliac Solar Cooker - Efficient Solar Cooker at Lower Price</b> Akiko Ishibashi, Heliac, Denmark	
11:25	<b>On the Users Acceptance of Solar Cookers</b> Prof. Celestino Ruivo, ISE - University of Algarve, ADAI, Portugal	
11:35	<b>Design and testing of a solar box cooker with thermal storage unit based on phase change materials</b> Giovanni Di Nicola, Università Politecnica delle Marche, Italy	
11:45	<b>Electric solar cooking (PV-eCook) - what are the differences and synergies with solar thermal cooking?</b> Simon Batchelor, Loughborough University, Gamos Ltd, UK	
12:30	<b>Discussion and Solar Cooking in Action</b>	
13:00	<b>LUNCH and Visit to Trade and Poster Exhibition</b>	
<b>Session 3 B - Parallel Sessions: Design and Technology</b> Room 1		
<b>Chair:</b>	<b>Prof. Peter Adelmann, University of Applied Sciences Ulm, Germany</b>	
11:15	<b>Solar Electricity &amp; Hot Water for Dispersed Off-grid Households in Botswana: Demand-based Sizing and Initial Results from Tests on Prototypes</b> Dr. Adrian Pugsley, Ulster University, Northern Ireland	

11:25	<b>Electric and Thermal Power Supply in Off-grid and On-grid Systems are Merging</b> Hubert Deubler, Planungsbüro Deubler, Germany	
11:35	<b>Battery Selection for PV-Hybrid and Mini-Grid Criteria and Assessments</b> Claude Campion, 3C Projects, France	
11:45	<b>Mini-grids with Distributed Energy Generation and Frequency Control. Return of Experience after 6 Years of Operation of a Pilot Project in Switzerland.</b> Victor Penas, Studer Innotec, Switzerland	
11:55	<b>Discussion</b>	
12:15	<b>Flexible Mini-Grids based on a Swarm Algorithm</b> Alessandro Medici, Power Blox, Switzerland	
12:25	<b>Potential of Transactional-based Control in the Optimization of Microgrid operation</b> Prof. Dr. Antonio Notholt, Reutlingen University, Germany	
12:35	<b>Tools for Remote Operation and Maintenance of Off-Grid and Hybrid Power Systems'</b> Patrick Cousins, Infinite Fingers GmbH, Germany	
12:45	<b>Discussion</b>	
13:00	<b>LUNCH and Visit to Trade and Poster Exhibition</b>	
<b>Session 3 C - Parallel Sessions: Training and Knowledge Transfer</b> Room 2		
<b>Chair:</b>	<b>Dr. Hedi Feibel, Skat Consulting Ltd., Switzerland</b>	
11:15	<b>Human Resources and Energy Assets Performance Management System for Solar Organizations in Developing Countries</b> Govinda Upadhyay, LEDsafari, Switzerland	
11:25	<b>The AIR Project: Strengthening Higher Education in Renewable Energies in Southern Africa</b> Prof. Dr.-Ing. Wilfried Zörner, University of Ingolstadt, Germany	
11:35	<b>PV Off-Grid activities of the IEA PVPS Programme</b> Georg Bopp, IEA PVPS, Switzerland	
11:45	<b>Discussion</b>	
11:55	<b>Global Online Knowledge Management on Energy Access via Energypedia</b> Johanna Hartmann, Energypedia, Germany	
12:05	Ren21? tbc	

12:15	<b>Discussion</b>	
12:25	<b>Visit to Session 3 A or 3 B or Trade and Poster Exhibition</b>	
13:00	<b>LUNCH</b>	
<b>Session 4: Practitioners Round tables – different rooms</b> 14:15 – 15:20		
Session organizer:	<b>Nigel Moore, (WISE), Canada</b>	
1.	<b>Topic: Use of Blockchain in Renewable Energy delivery models</b> Moderator: TBC Rapporteur: TBC	
2.	<b>Topic: Which electric storage technology to choose?</b> Moderator: Georg Bopp, Fraunhofer ISE, Germany Rapporteur: TBC	
3.	<b>Topic: Subsidies, Public Investment and Market Development</b> Moderator: TBC Rapporteur: TBC	
4.	<b>Topic: Islands Electrification with Renewable Energy</b> Moderator: TBC Rapporteur: TBC	
5.	<b>Topic: How to make Mini-grids more sustainable?</b> Moderator: James Knuckles, The World Bank, US Rapporteur: TBC	
6.	<b>Topic: Integrated Decentralised Electrification in Africa (IDEA)</b> Moderator: Dean Cooper, SNV, The Netherlands Rapporteur: TBC	
7.	<b>Attendants Suggest a Topic of their Interest during Registration</b> Moderator: n.n. Rapporteur: n.n.	
<b>Session 5: Business Models / Delivery Models</b>		
Chair:	<b>Dean Cooper – Netherlands Development Organisation (SNV), The Netherlands</b>	
15:25	<b>Social Enterprises for Energy Access: a Review of Ashden Awards</b> Daniel del Barrio Alvarez, The Policy Alternatives Research Institute, Japan	
15:40	<b>Solar-battery Micro-grids vs. Solar Home Systems for Rural Electrification – Benefits+Drawbacks, Economics, and Opportunities</b> Arnaud Henin, RENEMIG energy, Switzerland	
15:55	<b>Discussion</b>	



16:05	<b>Off-Grid Practitioners' Views: Customer Service Challenges in Rural Off-Grid Solar PV Markets</b> Hira Wajahat, Stimulus, Pakistan	
16:20	<b>Energy Access after a Natural Disaster: Evidence from Higashi-Matsushima, Japan</b> Hiroshi Komikado, University of Tokyo, Japan	
16:35	<b>Discussion</b>	
16:45 17:15	<b>Coffee Break</b>	
<b>Session 6A: Parallel Session: Technical Innovations</b>		
<b>Chair:</b>	<b>Georg Bopp, Fraunhofer ISE, Germany</b>	
17:15	<b>Cost-effective Concentrated Solar System for High-temperature &amp; High-efficiency Thermal Energy Production</b> Rafael Anson, AnsonLab, Spain	
17:25	<b>Nexol Photovolthermic Water Heating</b> Daniel Goldbach, Nexol Photovolthermic Ag, Germany	
17:35	<b>Concentrated Solar Heat at Costs Below Natural Gas</b> Jakob Jensen, Heliac, Denmark	
17:45	<b>Discussion</b>	
17:55	<b>Energy Storage based on Hydrated Quick Lime</b> Dr. Marc Linder, German Aerospace Center (DLR), Germany	
18:05	<b>Evolution of Storage</b> Prof. Peter Adelman, University of Applied Sciences Ulm, Germany	
18:15	<b>Experimental Investigation of Heat Retention of a Novel Asymmetric Formed Reflector with Integrated Collector and Storage (AFRICaS) System</b> Ronald Muhumuza, Ulster University, Northern Ireland, UK	
18:25	<b>Discussion</b>	
18:35	<b>End of the Conference Day</b>  <b>Buses to the dinner restaurant are leaving in front of the University</b>	
20:00	<b>Conference Dinner with Poster Award Ceremony</b> <b>Award Committee:</b> <b>Kilian Reiche</b> , iiDevelopment GmbH, Germany <b>Prof. Jatin Nathwani</b> , WISE, Canada <b>Georg Bopp</b> , Fraunhofer ISE, Germany	

<b>Session 6B: Parallel Sessions: Solar for Productive and Institutional Uses (Room 2)</b>		
<b>Chair:</b>	<b>Tatia Lemondzhava, The World Bank, US</b>	
17:15	<b>Barrier Analysis for the Deployment of Renewable Energy Based Mini-grids in Myanmar</b> Masako Numata, University of Tokyo, Japan	
17:25	<b>Low cost solar application in laundry and solar drying for Indian villages</b> Prof. Manoj Kumar Soni, Birla Institute of Technology and Science, India	
17:35	MicroEnergy International (ME), Germany, tbc	
17:45	<b>Discussion</b>	
17:55	<b>3 Years on-Field Experience in Implementing a Small-Scale Solar Milk Cooling Solution in Kenya, Colombia and Tunisia</b> Dr. Victor Torres-Toledo, University of Hohenheim, Germany	
18:05	<b>Aysén Region, Patagonia, Chile: A Territory with Multi-Experiences of Decentralized Electrification for Local Entrepreneurship</b> Juan Carlos Osorio-Aravena, Campus Patagonia, Universidad Austral de Chile	
18:15	<b>Tanzanian Minigrids Improve Standard of Living &amp; Economy</b> Stefan Trittler, Eon OffGrid Solutions GmbH / Rafiki Power, Germany	
18:25	<b>Discussion</b>	
18:35	<b>End of the Conference Day Buses to the dinner restaurant are leaving in front of the University</b>	
20:00	<b>Conference Dinner with Poster Award Ceremony Award Committee: Kilian Reiche, iiDevelopment GmbH, Germany Prof. Jatin Nathwani, WISE, Canada Georg Bopp, Fraunhofer ISE, Germany</b>	

**Friday, October 19, 2018**

**Session 7: Market Outlook and Planning**

**Chair:** Prof. Jatin Nathwani, WISE, Canada

09:00 **Potential for Integration of Small Wind Turbines in Mini-grids in East Africa**  
Ivan Nygaard, UNEP DTU Partnership, Technical University of Denmark, Denmark

09:15 **From a Satellite Picture to an Optimized Mini-grid: the TAOS.ai Modelling Tool**  
Dr. Ibrahim Abada, ENGIE – Tractebel, Belgium

09:30 **Discussion**

09:40 **Mini-Grid Project Development – Reducing Transaction Costs using Remote Data and GIS**  
Dr. Philipp Blechinger, Reiner Lemoine Institut, Germany

09:55 **Renewable Energy-Based Mini-Grids for Electrification of Rural Settlements within Southern Africa – A Simulation-Based Analysis**  
Fabian Junker, University of Ingolstadt, Germany

10.10 **Discussion**

10:20 **Round Table’s Conclusions**  
Nigel Moore, WISE, Canada

10:35 - 11:30 **Coffee Break**

**Session 8: Field Experience**

**Chair:** Cyprien Hauser, REPIC Plattform, Switzerland

11:30 **Quality Assurance of Photovoltaic and Solar Thermal Systems: Lessons Learned in PTB’s International Cooperation**  
Niels Ferdinand, Physikalisch-Technische Bundesanstalt, Germany

11:45 **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

12:00 **Discussion**

12:10	<b>Innovative Electricity Delivery Models to Electrify Remote and Dispersed Households with Third Generation Solar Home Systems</b> Jose Gabriel Martin, acciona.org, The Energy & Water Foundation, Spain	
12:25	<b>Solar Systems in the Canadian Arctic - Diesel Replacement in Micro-Grids</b> Klaus Dohring, Green Sun Rising Inc., Canada	
12:40	<b>PV-Diesel MiniGrids Solution in Rural Communities – the Case of Community led Virtual Net-Metering in Qabrikha South Lebanon</b> Carla Nassab, UNDP, Lebanon	
12:55	<b>Mini-grid Sustainability Factors – the Case of Indonesia</b> Dr. Hedi Feibel, Skat Consulting Ltd., Switzerland	
13:10	<b>Discussion</b>	
13:25	<b>Closing Remarks</b> <b>Dr. Carsten Hellpap</b> , GIZ, Germany <b>Xavier Vallvé</b> , TramaTecnoAmbiental, Spain	
13:45	<b>End of the Conference</b>	

<p><b>Side Event:</b></p> <p><b>Friday, October 19, 2018, 14:15 – 16:15 hrs (lunchtime workshop)</b></p> <p><b>What will it take to build mini grids at scale?</b></p> <p>Hosted by <b>The World Bank’s</b> <b>Energy Sector Management Assistance Program (ESMAP)</b> James Knuckles, Consultant, ESMAP Global Facility on Mini Grids, World Bank</p> <p>Only for participants of the conference. When registering for the conference you can also register for this workshop. <a href="http://www.energy-access-conferences.com">www.energy-access-conferences.com</a></p>	
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