

## 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>Keynote speaker: To be confirmed</b>	

<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>	
17:15 17:35	<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>	

ENERGY ACCESS 17:35 17:50	<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>Global Online Knowledge Management on Energy Access via Energypedia</b> Johanna Hartmann, Energypedia, Germany</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>Electrification of Sub-Saharan Africa through PV/hybrid mini-grids: Reducing the gap between current business models and on-site experience</b> Magda Moner-Girona, European Commission Joint Research Centre (JRC), Institute for Energy and Transport, Italy</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>	
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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> 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>Rural Development Using Electric Hybrid Cogeneration and Application of Thermal Energy in Food Processing</b> Jose Maria Rincon Martinez, Universidad Nacional de Colombia, Colombia</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> Youness El Mgouchi, Moulay Ismail University, Morocco</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>	

...	<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  <b>Impact of desert dust on West African solar energy yields</b> Stefanie Meilinger, Internationales Zentrum für Nachhaltige Entwicklung, Germany  <b>Hybrid System for Community Waste Water Treatment Plant in Hammana, Lebanon</b> Carla Nassab, American University of Beirut, Lebanon	
<b>MINI-GRIDS</b>  <b>18:25</b> <b>18:30</b>	<b>Analysis of the Mini-grid Potential for the small Island Landscape of the Philippines</b> Dr. Philipp Blechinger, Reiner Lemoine Institut, Germany  <b>Development of Control Strategy for Distributed Off-grid Solar Photovoltaic Mini Grid Application</b> Dipta Majumder, Inensus GmbH, Germany  <b>Solar Project under Construction in Honduras (and a Mini-grid project in Congo)</b> Rosa Tarragó, RALOS new energy GmbH, Germany  <b>Prospects of Sustainable Development in land-locked Developing Countries via Renewable Energy Growth. The Sub-Saharan and Central Asia Region Case Study.</b> Panagiotis Karvounis, National Technical University of Athens, Greece  <b>Achieving Universal Electricity Access for Rural Communities in Sub Saharan Africa</b> Prof. AbuBakr Bahaj, University of Southampton, UK	
<b>18:30</b>	<b>Visit to the Trade and Poster Exhibition and</b>	
<b>19:15</b>	<b>Welcome reception</b>	
<b>20:00</b>	<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>	
<b>08:30</b>	<b>Are/Were Mini-grids Instrumental in Alleviating Energy Poverty in India?</b> Dr. Harald Richter, GIZ, Germany	

08:45	<b>Solar Water Pumping Market Transformation: An Assessment of Trends and Opportunities in Solar Water Pump Technology and Commercial Markets</b> Michael Spiak, CLASP, USA	
09:00	<b>How to Measure Employment Effects in Energy Access Programs?</b> Andreas Michel, GIZ, Germany	
09:15	<b>Discussion</b>	
09:25	<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	
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>Discussion</b>	
10:30 - 11:15	<b>Coffee Break and Visit to the Trade Exhibition</b>	

<b>Session 3 A Parallel Sessions:</b> <b>Solar Cooking (Exhibition Area)</b> 10:30 – 13:00		<b>IF CLOUDY, maybe on Wednesday or Friday</b>
<b>Convenor:</b>	<b>Prof. Celestino Ruivo</b> , ISE – University of Algarve, ADAI, Portugal	
<b>Heliac Solar Cooker - Efficient Solar Cooker at Lower Price</b> Akiko Ishibashi, Heliac, Denmark		
<b>On the Users Acceptance of Solar Cookers</b> Prof. Celestino Ruivo, ISE - University of Algarve, ADAI, Portugal		
<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		
13:00	<b>LUNCH and Visit to Trade and Poster Exhibition</b>	

<b>Session 3 B Parallel Sessions:</b> <b>Design and Technology</b> Room 1		
<b>Chair:</b>	<b>Georg Bopp, Fraunhofer ISE, 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:</b> <b>Training and Knowledge Transfer</b> Room 2		
<b>Chair:</b>	<b>Dr. Rebekah Shirley, Power for All, Strathmore University, Kenia</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 Programm</b> Michael Mueller, IEA PVPS, Switzerland	
11:45	<b>Discussion</b>	
11:55	<b>Integrating Solar Education in Vocational Schools to Train and Empower Rural Woman in the Community: A Sustainable Approach towards Rural Electrification</b> Ruma Akhter, PPPE 2017-18, University of Oldenburg, Germany	
12:05	<b>Mini-grids for Communities and Productive Use: Six-month Solar Training Program Exclusively for Ladies</b> Barefoot college Tilonia, India	
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</b> , (WISE), Canada	
1.	<b>Topic: Use of Blockchain in Renewable Energy delivery models</b> <b>Moderator:</b> TBC <b>Rapporteur:</b> TBC	
2.	<b>Topic: Which electric storage technology to choose?</b> <b>Moderator:</b> Georg Bopp, Fraunhofer ISE, Germany <b>Rapporteur:</b> TBC	
3.	<b>Topic: Subsidies, Public Investment and Market Development</b> <b>Moderator:</b> TBC <b>Rapporteur:</b> TBC	
4.	<b>Topic: Islands Electrification with Renewable Energy</b> <b>Moderator:</b> TBC <b>Rapporteur:</b> TBC	
5.	<b>Topic: How to make Mini-grids more sustainable?</b> <b>Moderator:</b> TBC <b>Rapporteur:</b> TBC	
6.	<b>Topic: Integrated Decentralised Electrification in Africa (IDEA)</b> <b>Moderator:</b> Dean Cooper, SNV, The Netherlands <b>Rapporteur:</b> TBC	
7.	<b>Attendants Suggest a Topic of their Interest during Registration</b> <b>Moderator:</b> n.n. <b>Rapporteur:</b> n.n.	



<b>Session 5: Business Models / Delivery Models</b>		
<b>Chair:</b>	<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> 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>Prof. Peter Adelmann, University of Applied Sciences Ulm, 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 Photovoltaic Water Heating</b> Daniel Goldbach, Nexol Photovoltaic 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), Stuttgart, Germany	
18:05	<b>Evolution of Storage</b> Prof. Peter Adelmann, 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>Session 6B: Parallel Sessions: Solar for Productive and Institutional Uses (Room 2)</b>		
<b>Chair:</b>	<b>TBC</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>Performance of Desalination Systems in the Coastal Region of Kenya</b> Ignatius Waikwa Maranga, Strathmore University, Kenya	
17:35		
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>Renewable Energy Based Electricity at UNICEF's Compound in Kabul</b> Khader Kamal, UNICEF. UNOCA Compound, Afghanistan	
18:15	<b>Hybrid Off-grid Renewable Power System for Sustainable Rural Electrification in Benin.</b> Odou Oluwarotimi, Abdou Moumouni University of Niamey, Niger	
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>Friday, October 19, 2018</b>		
<b>Session 7: Market Outlook and Planning</b>		
<b>Chair:</b>	<b>Prof. Jatin Nathwani, WISE, Canada</b>	
09:00	<b>Potential for Integration of Small Wind Turbines in Mini-grids in East Africa</b> Ivan Nygaard, UNEP DTU Partnership, Technical University of Denmark, Denmark	
09:15	<b>From a Satellite Picture to an Optimized Mini-grid: the TAOS.ai Modeling Tool</b> Dr. Ibrahim Abada, ENGIE – Tractebel, Belgium	
09:30	<b>Discussion</b>	
09:40	<b>Mini-Grid Project Development – Reducing Transaction Costs using Remote Data and GIS</b> Dr. Philipp Blechinger, Reiner Lemoine Institut, Germany	
09:55	<b>Renewable Energy-Based Mini-Grids for Electrification of Rural Settlements within Southern Africa – A Simulation-Based Analysis</b> Fabian Junker, University of Ingolstadt, Germany	
10.10	<b>Discussion</b>	
10:20	<b>Round Table's Conclusions</b> <b>Nigel Moore, WISE, Canada</b>	
10:35 - 11:15	<b>Coffee Break</b>	
<b>Session 8: Field Experience</b>		
<b>Chair:</b>	<b>Cyprien Hauser, REPIC Plattform, Switzerland</b>	
11:15	<b>Quality Assurance of Photovoltaic and Solar Thermal Systems: Lessons Learned in PTB's International Cooperation</b> Niels Ferdinand, Physikalisch-Technische Bundesanstalt, Germany	
11:30	<b>Renewable Energy-based Mini-grids for Electrification in Island Communities - the State of Pilot Projects in Ghana</b> Seth Mahu, Ministry of Energy & Petroleum, Republic of Ghana, Ghana	
11:45	<b>Scaling Sustainable Energy for All: EarthSpark International and the Case of Micro-grid Infrastructure</b> Julia Nueno Guitart EarthSpark International, USA	
12:00	<b>Discussion</b>	

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> 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 style="text-align: center;"><b>Side Event:</b></p> <p><b>Friday, October 19, 2018, 14:15 – 16:15 hrs (lunchtime workshop)</b></p> <p style="text-align: center;"><b>What will it take to build mini grids at scale?</b></p> <p style="text-align: center;">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 style="text-align: center;">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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