International Conference

Solar Technologies & Hybrid Mini Grids to improve energy access

Stadthalle Bad Hersfeld,
Metropolitan area Frankfurt, Germany
September 21–23, 2016

Unter der Schirmherrschaft des

Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

OTTI

www.energy-access.eu

www.otti.eu

Conference Venue

Bad Hersfeld is located in the heart of Germany, close to the airport Frankfurt.

Stadthalle Bad Hersfeld
Wittastraße 5
36251 Bad Hersfeld
Germany

stadthalle@bad-hersfeld.de
www.stadthalle.bad-hersfeld.de
Phone: +49 6621/ 508 9016

Please book your accommodation as soon as possible by yourself.
Further information under:
http://www.energy-access.eu/info/accommodation.html

Travel Information

Plane

Airport Frankfurt (150 km)

http://www.frankfurt-airport.com/content/frankfurt_airport/en.html

Phone: +49 180 6 3724636

Train

Bad Hersfeld has its own ICE train station with direct connection to Frankfurt Airport

https://www.bahn.de/p_en/view/index.shtml

You will meet

- Scientists, engineers, consultants, students
- Research institutes
- Implementation institutes
- Threshold countries: manufacturers, suppliers and installers
- Donors: programme planners, financiers from banks and foundations
- Politicians

Conference Chairmen

Xavier Vallvé
Trama TecnoAmbiental S.L., Barcelona, Spain

Werner Weiss
AEE-Institue for Sustainable Technologies, Gleisdorf, Austria

Programme Committee

Prof. Peter Adelmann
University of Applied Sciences Ulm, Germany

Dr. Henrik Bindner
Risø National Laboratory, Denmark

Georg Bopp
Fraunhofer ISE, Germany

Dr. Izael Da Silva
Strathmore University Research Centre, Kenia

Dr.-Ing. Elimar Frank
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Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ) GmbH, Germany

Dr.-Ing. Joachim Koschikowski
Fraunhofer ISE, Germany

Dr. Jens Merten
INES-CEA, Le Bourget du Lac, France

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Dr. Christos Protogeropoulos
Phoenix Solar EPE, Greece

Kilian Reiche
ii Development GmbH, Germany

Joscha Rosenbusch
GIZ Mexico City, Mexico

Reto Thönen
Direktion für Entwicklung und Zusammenarbeit (DEZA), Switzerland

Michael Wollny
Alliance for Rural Electrification, Belgium

General Scientific Committee

Includes all members of the Programme Committee as well as the following persons:

John Chadjivassiliadis
Chairman of IENE, Greece

Prof. Dr. Walter Commerell
University of Applied Sciences Ulm, Germany

Prof. Boaventura Cuamba
Eduardo Mondlane University, Mozambique

Dr. Hansjörg Gabler
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Fraunhofer-IWES, Germany

Dr. Stathis Tselepis
CRES - Centre for Renewable Energy Sources, Greece

Prof. Dr. Roberto Zilles
Institute of Energy and Environment, Brazil

Chairmen's Message

Dear Colleagues,

We are pleased to announce that we are joining forces for the new international conference "Solar Technologies and Hybrid Mini Grids to improve Energy Access".

In an effort to create a more comprehensive, higher impact conference we have merged the following three very successful conferences into one:

- PV-Hybrids and Mini-Grids (7 editions)
- Small PV Applications (4 editions)
- Solar Energy Technology in Development Cooperation (one edition)

The challenge of energy access for all is of enormous magnitude and we have reached a point where joining forces will make a difference in the upcoming years. We recognize that the general international agreements that are focusing on pursuing sustainable energy for all have to be enforced by actions on the ground. If we are not able to implement renewable energy technologies in combination with energy efficiency measures these international agreements are not going to achieve their potential.

Future energy supply will be based on a smart mix of different technologies in order to cater to people's needs. Solar radiation is the most abundant source of energy that can be converted into electricity and heat. It is a widely distributed resource that can be harvested and consumed near to where the needs are. Solar thermal systems are able to meet not only the heat demand for all domestic needs like hot water and space heating, but it can also fulfill the heating needs of hotels, hospitals and industrial processes. Photovoltaics, and other renewable technologies such as small wind turbines, mini-hydro, biomass or their hybridization can provide quality electricity to those who do not have access to reliable modern energy services. This helps to significantly improve lives in terms of comfort, communication, health, education and income generating activities. It also opens up new opportunities for businesses and services.

Due to the intermittency of solar radiation, solar energy technologies include storage functionalities in order to make energy available for 24 hours a day. There are a number of new developments in the pipeline and components on the market for storing solar thermal heat and renewable electricity. Control and monitoring technologies and high efficiency appliances are also important enabling technologies where innovation is moving fast.

Whereas solar heating is usually consumed where it is produced, autonomous solar electricity increasingly tends to be integrated as well into mini grids (also called micro grids). Hybrid PV Mini Grids are a cost-effective and a quicker alternative to grid extension or to unreliable grids for many villages.

Therefore, an intelligent mix of the above technologies and micro grids is capable of providing electricity and thermal comfort not only at household level, but also to entire villages, institutions, hotels, and businesses. This also opens the door to bottom up approaches to energy planning and development.

The international character of this conference and exhibition will bring together academia, practitioners, industry and development institutions with the aim of sharing experiences and the latest technology developments, learning from each other and networking.

The objective of the event, and the challenge that we, as participants are facing, is:

- to consolidate the knowledge around solutions that have proven to work and their enabling factors,
- to present different models of financing, business models and technologies that enable the fast uptake of such solutions and
- to provide new roads for research and innovation;

All of it, ensuring the aspects of sustainability of such energy services, and demonstrating the feasibility of such endeavors in different scales of intervention.

The conference advisory board, the OTTI organizing team and we as chairmen are pleased to welcome you to the conference and to encourage you to actively contribute to a successful event.

Xavier Vallvé, Trama TecnoAmbiental S.L., Barcelona, Spain

Werner Weiss, AEE-Institue for Sustainable Technologies, Gleisdorf, Austria

Sponsors:

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giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

REHVA Federation of European Heating, Ventilation and Air Conditioning Associations

ISES International Solar Energy Society

NEED Network of Energy Excellence for Development

Technische Hochschule Ingolstadt Institute of new Energy Systems

Alliance for Rural Electrification Shining a Light for Progress

gtm:

GOGLA Global Off-Grid Lighting Association

REPIC Renewable Energy & Energy Efficiency Promotion in International Cooperation

energypedia

enerope

Photon

photovoltaik

Solarthemen Energiekommune

SONNENENERGIE

SUN-CONNECT Off-Grid News

SONNE WIND & WÄRME

SIDE EVENT:
Making Universal Access Work!
New Village Power Planning Tools

A pre-conference event by practitioners for practitioners

Stadthalle Bad Hersfeld, Germany
Wednesday 21st,2016, 10.00 – 12.00 hrs

Session Chairs:
Kilian Reiche, iiDevelopment GmbH, Frankfurt, Germany and Dr. Roland Roesch, IRENA, Bonn, Germany

The joint GIZ/IRENA side event will provide our Sep 21- 23 conference participants with an early opportunity to learn about some of the latest universal access planning tools, by practitioners for practitioners.

10.00 Opening

10.05 IRENA Project Navigator incl Q&A
Dr. Roland, Roesch, Irena

10.30 KENYA Village Power Planning Tools
Jasmin Fraatz, GIZ

10.55 HERA-EnDev Planning Tools and review of toolkits
Caspar Priesemann, GIZ

11.20 Trying the Tools on 5 laptop stations

12.00 End of the pre-conference

To register for this side event, please send an email to:
Michael Bauer, pr3-energie@otti.de
Only for participants of the International Conference on Solar Technologies & Hybrid Mini Grids to imrprove energy access (free of charge)

International Conference on Solar Technologies & Hybrid Mini Grids to improve energy access

Wednesday, September 21st, 2016

14.00 **Opening Address**
Gabriele Struthoff-Müller, OTTI, Regensburg, Germany
Xavier Vallvé, TramaTecno Ambiental, Barcelona, Spain
Werner Weiss, AEE-Institute for Sustainable Technologies, Gleisdorf, Austria

OPENING SESSION

Chair: Xavier Vallvé, TramaTecno Ambiental, Barcelona, Spain
Werner Weiss, AEE-Institute for Sustainable Technologies, Gleisdorf, Austria

14:15 **Welcoming Speech**
Alexander Karner, Austrian Development Agency, Vienna, Austria

14:20 **Welcoming Speech**
Roland Rösch, IRENA, Bonn

14:25 **Key note speech**
Multi-Tier Framework (MTF) and Sustainable Development Goals (SDG) – Implications for Energy Access Practitioners
Dana Rysankova, The World Bank, Wahsington, DC

SESSION 1: INTERNATIONAL PROGRAMS AND MARKET DEVELOPMENT

Chair: Gonzalo Piernavieja Izquierdo, Technological Institute of Canary Islands, Spain
Roberto Zilles, Institute of Energy and Environment, Brazil

15:00 **The Global Microgrid Market: International Hotspots and Growth Markets**
Ross Bruton, Frost & Sullivan, London, Great Britain

15:15 **Deploying PV Services for Regional Development, Products and Future Activities of the IEA Working Group**
Hedi Feibel, Skat Consulting Ltd., St. Gallen, Switzerland

15:30 **Market and Technical Trends in Off-Grid Household Electrification with Pico PV and Solar Home Systems**
Hans-Peter Birkhofer, GOGLA, Ebersberg, Germany

15:45 **Innovative Renewable Solutions for Off-Grid Electrification in Namibia**
Helvi Ileka, Namibia University of Science and Technology, Windhoek, Namibia

16.00 **SOLTRAIN - Southern African Solar Thermal Training and Demonstration Initiative**
Werner Weiss, AEE-Institute for Sustainable Technologies, Gleisdorf, Austria

16:15 Discussion

16:35 Coffee Break

SESSION:
INDUSTRY FORUM AND POSTER SESSION

Chair: Joscha Rosenbusch, GIZ, Mexico City, Mexico
Boaventura Cuamba, Eduardo Mondlane University, Maputo, Mozambique
Michael Müller, Steca, Germany

17:20 **SMA Sunbelt Energy GmbH.** Niestetal, Germany
Studer Innotec SA, Sion, Switzerland

A1 **A Framework for Analysis of Village-Level Power Supply in Context**
Kirsten Ulsrud, University of Oslo, Oslo, Norway

A2 **A Monitoring System Based on Arduino for Remote PV-Diesel Hybrid Mini Grids and System Performance**
Jorge Solórzano, Madrid, Spain

A3 **Decentralized Electrification with Productive Use along Rivers. Hybrid Systems with Hydrokinetic Turbines are Proved to be Efficient and Economical Solutions**
Marius Weckel, Smart Hydro Power, Garatshausen, Germany

A4 **Geospatial Modelling and Implementation Plan for Electrification Strategies – The Case of Nigeria**
Catherina Cader, Reiner Lemoine GmbH, Berlin, Germany

A5 **Reducing the Cost of Solar Home System**
Asif Rabbani, Bangladesh University of Engineering & Technology, Dhaka, Bangladesh

A6 **Back to the Envelope: A Growing Set of Simple, Spreadsheet-Based "MiniXLS" Tools Helps Practitioners Improve the Planning and Implementation of Integrated (Village Grid and Stand-alone Solar) National Electrification Programmes, on the Way to Universal Access**
Kilian Reiche, iiDevelopment, Frankfurt am Main, Germany

A7 **Design and Operational Control of the Agios Efstratios Island Mini Grid**
Stathis Tselepis, CRES - Centre for Renewable, Athens, Greece

A8 **Case Studies of Mobile and Stationary Hybrid Generators for Industrial and Community Mini Grid Applications**
Matt Anderson, Studer Innotec, Sion, Switzerland

A9 **PV Based Mini Grids Simulation for Communities and Critical Infrastructure in Polish Pomerania**
Edyta Witka-Jezewska, Electrotechnical Institute Gdansk Branch, Gdansk, Poland

A10 **The Internet of Things (IoT) Revolution and its Impact on the Off-Grid Sector**
Roy Emmerich, Infinite Fingers, Kassel, Germany

A11 **A Proto-type Turret Design for Solar Gain through Azimuth Tracking**
Ivan Yaholnitsky, Bethel Business and Community Development Centre, Mt. Moorosi, Lesotho

B1 **Optimal Sizing, Performance Prediction and Economic Analysis of Solar Hot Water Systems for Three Hotels in Zimbabwe**
Tawanda Hove, University of Zimbabwe, Harare, Zimbabwe

B2 **The State of Solar Water Heating Research in South Africa - A Review**
Angela Karen Surridge-Talbot, SANEDI, Johannesburg, South Africa

B3 **Geographic Information System (GIS) Mapping, Monitoring and Verification of Solar Water Heating Installations in South Africa**
Angela Karen Surridge-Talbot, SANEDI, Johannesburg, South Africa

B4 **Design, Construction and Testing of a Low-Cost Flat Plate Solar Energy Collector**
Molibeli Taele, National University of Lesotho, Roma, Lesotho

B5 **Solar Water Heater Micro Systems**
Robert Buchinger, Sunlumo Technology GmbH, Perg, Austria

B6 **Large-Scale Solar Thermal Systems for Mozambique**
Fabiao Manuel Cumbe, ENPCT, Maputo, Mozambique

B7 **Expansion of Two Existing Solar Thermal Pump Systems (STPS) in Harare and Bulawayo for Demonstration, Performance Monitoring and Teaching Purposes**
Charles Murove, Hermit Sustainability Advisory, Harare, Zimbabwe

B8 **Prototype Development of a Solar Dryer for Biomass for Developing Countries**
Jan Schalk, Bielefeld, Germany

B9 **Solar-Thermal Coffee and Cocoa Beans Drying Systems Incorporating a Heat Storage Method Using Ground as Heat Reservoir and Complemented with Residual Biomass Energy**
Anja Lippkau de Pozo, Corporación para la Investigación Energética (CIE), Quito, Ecuador

B10 **Simulation of Solar Water Desalination System Coupled to a Compression Heat Pump**
Akrout Hiba, GABES, Tunisia

C1 **Risk Management for Mini-Grid Deployment in Rural Areas**
David Manetsgruber, Hochschule Neu-Ulm, Neu-Ulm, Germany

C2 **The NEED Project: Strengthen the Implementation of Renewable Energy Resources in the Southern African Region**
Stefan Schneider, Technische Hochschule Ingolstadt, Institute of new Energy Systems, Ingolstadt, Germany

C3 **Innovating for Energy Access "Inclusive Engagement - Exploring Multiple Alternative Distribution & Network Channels to Stimulate Off-Grid Electrification" - Experience from Pakistan**
Hira Wajahat Malik, Stimulus Private Limited, Karachi, Pakistan

C4 **A framework for Analyzing Energy Needs of Rural Households to Improve Energy Access in Developing Countries: Implications for Solar Energy Based Development Cooperation**
Chian-Woei Shyu, National Chung-Cheng University, Min-Hsiung, Chia-Yi, Taiwan

C5 **Electrical, Mechanical and Optical Analysis of Pico PV Systems after Use in Rural Areas of Peru**
Samuel Jorge Goda Asebey, PPRE University of Oldenburg, Germany

C6 **Vanuatu Rural Electrification Program- Pico Solar Home Systems Project**
Geoffrey Stapleton, Global Sustainable Energy Solutions Pty Ltd, Botany, Australia

C7 **Lake Victoria Islands Minigrid Project - The Challenges of Installing Minigrid in a Remote Rural Island Community**
Sayan Chakraborti, MRIGlobal, Kansas City, United States of America

C8 **Distributed Solar PV System for Industrial Application**
Bin-Juine Huang, National Taiwan University, Taipei, Taiwan

C9 **MASLOWATEN: The H2020 Project for the Market Uptake of Large Power PV Irrigation Systems**
Luis Narvarte, Universidad Politecnica de Madrid Instituto de Energía Solar, Madrid, Spain

C10 **A 360 kWp PV Irrigation System to a Water Pool in Spain**
Luis Narvarte, Universidad Politecnica de Madrid Instituto de Energía Solar, Madrid, Spain

18:45 Drinks and Visit to the Trade and Poster Exhibition

20:00 End of the First Conference Day

Thursday, September 22th, 2016

SESSION 2: SOLAR TECHNOLOGIES OVERVIEWS

Chair: Hansjörg Gabler, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Germany
Stathis Tselepis, CRES – Centre for Renewable Energy Sources, Greece

08:30 **Renewable Desalination: Technology Options for Islands**
Joachim Went, Fraunhofer-ISE, Freiburg, Germany

08:45 **Market Trends in the Pico PV Sector and the Role of Development Cooperation**
Carsten Hellpap, GIZ, Eschborn, Germany

09:00 **Survey Results on PV Hybrid Trends in the 5 Coming Years**
Jean-Christian Marcel, MJC PV Consulting, Grézieu-la-Varenne, France

09:15 **5 Years BOSS Concept (Business Opportunities with Solar Systems) Lessons Learned from Implementing BOSS-Solutions in Africa**
Tobias Zwirner, Phaesun GmbH, Memmingen, Germany

09:30 Discussion

09:50 Coffee Break and Visit to the Trade Exhibition

SESSION 3A: PARALLEL SESSIONS: HYBRID RE POWER PLANT TECHNOLOGY

Chair: Henrik Bindner, Risø National Laboratory, Denmark
Christos Protogeropoulos,Phoenix Solar EPE, Greece

10:30 **PV Integration in Diesel Grids – Fuel Saving Technologies**
Alexander Schies, Fraunhofer Institut für Solare Energiesysteme ISE, Freiburg, Germany

10:45 **Benefits from Short-Term Photovoltaic Power Forecasts for Microgrid Operation**
Franck Bourry, CEA, Le Bourget-du-Lac, France

11:00 **Potential, Limitation and Field Experiences of Lithium Ion Storage Systems LiFePo in Combination with Energy Management System Smart1 Applied in Off-Grid Power Supply Systems**
Hubert Deubler, Elektro-Mechanik Meisl GmbH, Berchtesgaden, Germany

11:15 **First Experience with Li-ion Batteries in Solar-Diesel-Hybrid-Power-Systems on Larger Scale**
Stefan Oexle-Ewert, Enerquinn GmbH, Weingarten, Germany

11.30 **Dynamic Programming Optimization of Ressource Management in Hybrid PV Microgrids**
Eiko Kruger, Commissariat aux Energies Alternatives et à l'Ener, Le Bourget-du-Lac, France

11:45 Discussion

12:10 Lunch and Visit to Trade and Poster Exhibition

SESSION 3B: PARALLEL SESSIONS: SOLAR COOKING, DESALINATION, WATER PUMPING (ROOM 2)

Chair: Angela Karen Surridge-Talbort, SANEDI, Johannesburg, South Africa
Joachim Koschikowski, Fraunhofer ISE, Germany

10:30 **DASTPVPS Reloaded - a User Optimized, Matlab Based Sizing Program for Solar Photovoltaic Pumping System (PVPS)**
Rakibul Hasan, University of Applied Sciences Rosenheim, Germany

10:45 **A 140 kW Hybrid PV-Diesel Pumping System for Constant-Pressure Irrigation**
Luis Narvarte, Universidad Politecnica de Madrid Instituto de Energía Solar, Madrid, Spain

11:00 **Design and Construction of a Solar Thermal System with Heat Storage**
Amos Veremachi, Eduardo Mondlane University, Maputo, Mozambique

11:15 **Field Testing of an Innovative Solar Powered Milk Cooling Solution for the Higher Efficiency of the Dairy Subsector in Tunisia**
Victor Torres Toledo, Universität Hohenheim, Stuttgart, Germany

11.30 **Design of a Low Cost Mobile Solar Powered Desalination Unit for Rural Areas Saline Groundwater (Bringing Back the Smile to Gwanda)**
Samson Mhlanga, National University of Science and Technology, Bulawayo, Zimbabwe

11:45 Discussion

12:15 Lunch and Visit to Trade and Poster Exhibition

SESSION 4: PRACTITIONERS ROUND TABLES – DIFFERENT ROOMS

13:45 – 14:30

1. **Quality, Cost and Capacity in light of massive scale up**
   Moderators: Xavier Vallvé, TTA., Barcelona, Spain and n.n.
2. **Customer Management Systems for Mini-Grid, pay-as-you-go, SHS and Lanterns**
   Moderators: Carsten Hellpap, GIZ, Eschborn, Germany and n.n.
3. **Simulation Tools and Sizing**
   Moderators: Kilian Reiche, iiDevelopment GmbH, Frankfurt, Germany and Ian Baring Gould, NREL, Golden, USA (tbc)
4. **The underestimated role of heat in developing countries**
   Moderators: Eugene Joubert, Stellenbosch University, South Africa and n.n.
5. **Which electric storage technology to choose?**
   Moderators: Georg Bopp, Fraunhofer ISE, Freiburg, Germany and Luis Arribas, CIEMAT, Madrid, Spain
6. **PV Diesel Retrofit**
   Moderators: Alexander Schies, Fraunhofer ISE, Freiburg, Germany and n.n.
7. **Capacity Building in the Field**
   Moderators: Geoffrey Stapleton, GSES, Botany, Australia and n.n.
8. **Attendants suggest a topic of their interest during registration**
   Moderators: n.n. and n.n.

SESSION 5: RURAL ELECTRICITY PART 1

Chair: Michael Wollny, Alliance for Rural Electrification, Belgium
John Chadjivassiliadis, Chairman of IENE, Greece

14:45 **Promoting Energy Access through Sustainable Mini-Grids - The Development of a Quality Assurance Framework for Mini-Grids**
Ian Baring-Gould, National Renewable Energy Laboratory, Golden, United States of America

15:00 **Learning from Brazil Village Minigrid Implementation: Lessons for other Emerging Markets**
Kilian Reiche, iiDevelopment GmbH, Frankfurt am Main, Germany

15:15 **Meshed PV Systems**
Walter Commerell, Hochschule Ulm, Ulm, Germany

15:30 **Energy Access for Sub-Saharan Africa with Focus on PV Hybrid Mini-Grids**
Philipp Blechinger, Reiner Lemoine Institut GmbH, Berlin, Germany

15:45 **Technical and Social Innovation through Electrification Small Communities in Palestine by Multi-User Solar PV Mini Grids – Case Study – Birin Community**
Imad Ibrik, Energy Research Centre -An-Najah National University, Nablus, Palestine

16:00 Discussion

16:25 Coffee Break

SESSION 6A: PARALLEL SESSIONS: RURAL ELECTRICITY PART 2

Chair: Walter Commerell, University of Applied Sciences Ulm, Germany
Bin-Juine Huang, National Taiwan University, Taiwan

17:00 **Implementing a Solar Lantern Rental Model for Low Income Consumers**
Charles Muchunku, Nairobi, Kenya

17:15 **Solar PV-Biogas Hybrid Mini-grid, Rural Power with Integrated Farming**
Syed Ishtiaque Ahmed, Rahimafrooz Renewable Energy Ltd., Dhaka, Bangladesh

17:30 **Photovoltaic Lighting Kits: Financially Viable or Grant-Tied Technology? The case of Lebanon**
Hassan Harajli, United Nations Development Program, Beirut, Lebanon

17:45 **Modelling and Analysing the Success of Solar Home Systems**
Hans-Gerhard Holtorf, University of Oldenburg, Oldenburg, Germany

18.00 **Solar Energy Systems for Off-Grid Rural Electrification in Sub-Saharan Africa**
Fabian Junker, Technische Hochschule Ingolstadt, Institute of new Energy Systems, Ingolstadt, Germany

18:15 Discussion

18:45 End of the conference day

19:30 Conference Dinner

SESSION 6B: PARALLEL SESSIONS: SOLAR IN INDUSTRIAL APPLICATIONS (ROOM 2)

Chair: Klemens Schwarzer, Solar Global e.V./Solarinstitut Jülich, Germany
Fabio Manuel Cumbe, ENPCT, Maputo, Mozambique

17:00 **Elgin Valley Potential for Industrial Application of Photovoltaic (PV) Systems**
Angelo Buckley, The Centre for Renewable and Sustainable Energy St Stellenbosch University, Stellenbosch, South Africa

17:15 **Large-Scale Solar Thermal in South Africa: Status, Barriers and Recommendations**
Eugene Joubert, Stellenbosch University, Stellenbosch, South Africa

17:30 **The Potential Use of Solar Heat in Jordanian Dairy Industry**
Ashraf Samarah, Zarqa Energy Research Center, Zarqa, Jordan

17:45 **Financial Innovation – Using crowdfunding to finance energy projects**
Marilyn Heib, bettervest GmbH, Frankfurt am Main, Germany

18:00 Discussion

18:30 End of the conference day

19:30 Conference Dinner

Friday, September 23rd, 2016

SESSION 7: CAPACITY BUILDING

Chair: Stefan Nowak, NET Nowak Energie & Technologie AG, St. Ursen, Switzerland
Jens Merten, INES-CEA, Le Bourget du Lac, France

08:30 **Capacity Building for Solar Craft and Trade in Haiti**
Willi Ernst, BIOHAUS-Stiftung, Paderborn, Germany

08:45 **Solar Thermal Energy and SADC**
Wolfgang Moser, SADC, Gaborone, Botswana

09:00 **Solar PV in Rural Electrification**
Karl Mikl, Strathmore Energy Research Center, Nairobi, Kenya

09:15 **A Blueprint for Effective Action on Energy Access - Conclusions from the Waterloo Global Science Initiative's OpenAccess Energy Summit**
Nigel Moore, Waterloo Global Science Initiative, Waterloo, Canada

09:30 Discussion

09:50 **Poster Award Ceremony – 3 winners**
Award Committee:
Chair : Joscha Rosenbusch, GIZ, Mexico City, Mexico
Boaventura Cuamba, Eduardo Mondlane University, Maputo, Mozambique
Michael Müller, Steca, Germany

10:05 Coffee Break and Visit to the Trade and Poster Exhibition

SESSION 8: FIELD EXPERIENCE

Chair: Peter Adelmann, University of Applied Sciences Ulm, Germany
Izael Da Silva, Strathmore University Research Centre, Kenya

10:45 **Lessons Learned after Four Years of Operation of the PV Rural Mini Grid in the Island of Santo Antão (Cape Verde)**
Maria Anzizu, Trama TecnoAmbiental, Barcelona, Spain

11:00 **1st Year Field Experience of a 5 MW Solar PV-15 MW Diesel in Bolivia**
Luis Arribas, CIEMAT, Madrid, Spain

11:15 **Does Access to Energy Lead to Sustainable Development? - Evidence from Small Community-Based Projects**
Willington Ortiz, Wuppertal Institute for Climate, Environment and Energy, Wuppertal, Germany

11:30 **Solar PV for Productive Uses in Small and Medium Enterprises**
Monika Rammelt, GIZ GmbH, Eschborn, Germany

11:45 **Monitoring of Domestic Solar Water Heating Systems in the National Mass Housing Project of Namibia**
Zivayi Chiguare, Namibia Energy Institute, Namibia University of Science, Windhoek, Namibia

12:00 **Solar Systems into the Canadian Arctic**
Klaus Doehring, Green Sun Rising Inc, Windsor ON, Canada

12.15 Discussion

12:45 **Closing Remarks**
Xavier Vallvé, TramaTecnoAmbiental, Barcelona, Spain
Werner Weiss, AEE-Institute for Sustainable Technologies, Gleisdorf, Austria

13:00 End of the Conference

Organisation Committee

Gabriele Struthoff-Müller and Bernd Porzelius

OTTI, Renewable Energies
Wernerwerkstr. 4
93049 Regensburg, Germany
www.otti.eu
www.energy-access.eu

Phone +49 941 29688-29/58
Fax +49 941 29688-54
gabriele.struthoff-mueller@otti.de

Language of the conference will be English.

Conference Fee

If registered until August 15th, 2016

Per Person: . . . . . € 570,00
Member of OTTI/Supporting Organisation: . . . . . .€ 470,00

If registered after August 15th, 2016

Per Person: . . . . . € 670,00
Member of OTTI/Supporting Organisation: . . . . . .€ 540,00

If 3 or more delegates of a company are registered **at the same time**, each will enjoy **10% discount** of the registration fee.

Fees cover admission to all sessions, invitation to all coffee breaks, light lunch, get together, dinner and and the conference proceedings (book and online version).

Registration fees of OTTI e.V. events are exempt from VAT as per § 4 Absatz 22 UStG. Please find conditions of participation and cancellation as well as data protection guidelines at:
www.otti.de/service/datenschutz.html

Registration

Only online registration available.
To register for the conference please visit:
www.otti.eu/registration/STH-5078

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Zur Online-anmeldung

V-J-2016-05-12

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