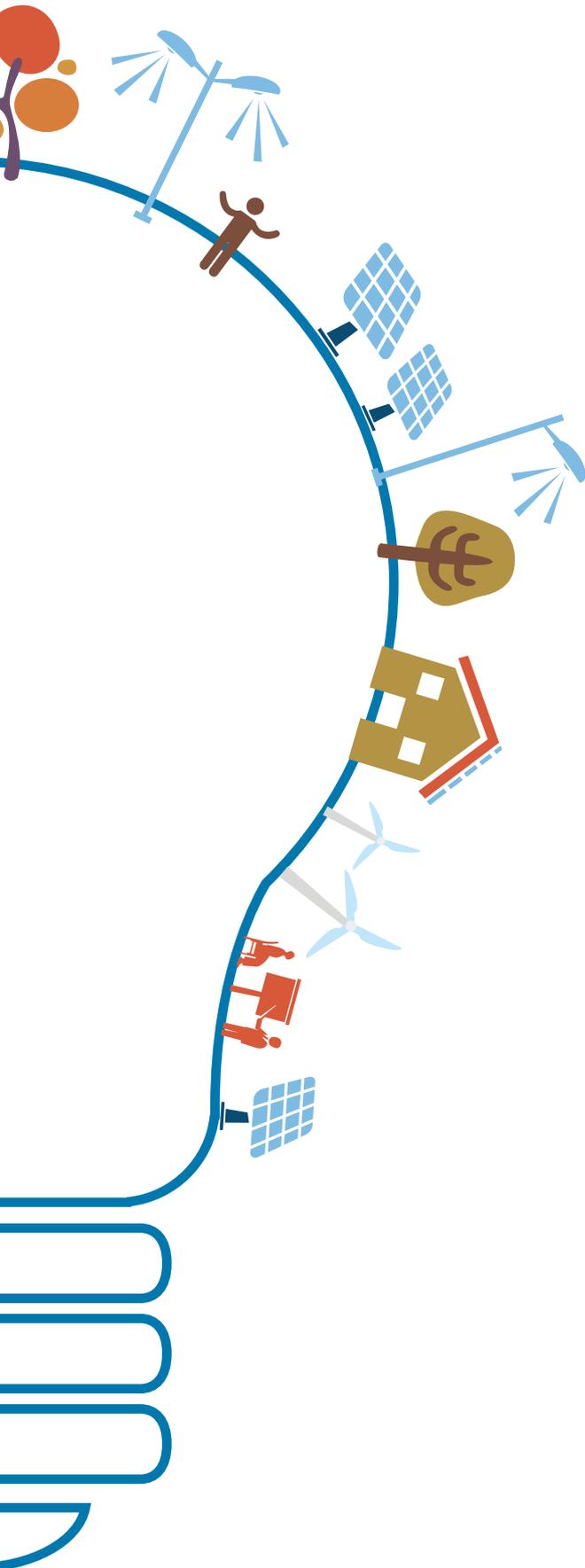




**IOREC**  
International Off-Grid Renewable  
Energy Conference & Exhibition



# Conference Programme

## **2<sup>nd</sup> INTERNATIONAL OFF-GRID RENEWABLE ENERGY CONFERENCE & EXHIBITION**

Manila - Philippines  
16-17 June 2014

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# 1. Introduction



Access to reliable and clean electricity supply is a development imperative and is increasingly being regarded as a basic need in global discussions. Expanding access to over 1.3 billion people will require a combination of centralised and decentralised approaches. Recent estimates conclude that majority of energy investments necessary to achieve universal access will be for off-grid solutions (45% on mini-grids and 25% on stand-alone systems) compared to grid-based approaches (30%)<sup>1</sup>. Renewable energy technologies will have a central role to play in this context as decreasing costs make them the most economic option for off-grid electrification in many areas. They can be significantly cheaper than fossil-fuel based generation, particularly diesel, in remote areas with poor, or even non-existent, infrastructure.<sup>2</sup>

Tapping into the vast potential offered by off-grid renewables requires the right environment that hinges upon effective policy and regulatory frameworks, tailored business and financing models and adapting technologies to the rural context. Such an environment is critical to enable the involvement of

the private sector and in fostering local entrepreneurs- both essential in providing customised and sustainable solutions. Building an enabling environment needs continued engagement between several stakeholders involved in a relatively fragmented off-grid sector. The International Off-grid Renewable Energy Conference and Exhibition (IOREC) provides such a platform that sets out to meet the following objectives:

- » Review the current status of energy access efforts in the region based on perspectives from different stakeholders working towards improving access to electricity;
- » Collectively identify solutions to address the key barriers to scaling up off-grid renewable energy by leveraging on the vast cross-regional experience of participants at the conference;
- » Share best practices and lessons learnt about design and implementation of enabling policies, innovative financing solutions and tailor-made renewable energy systems.

## INTERNATIONAL OFF-GRID RENEWABLE ENERGY CONFERENCE AND EXHIBITION 2012

### 1-2 NOVEMBER; ACCRA, GHANA

The first edition of the conference was held in Accra, Ghana in November 2012. The conference was organised by IRENA in collaboration with the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE). The conference brought together over 350 participants from 80 countries, including representatives from rural electrification agencies and ministries in charge of renewable energy development from around 30 countries. The event convened speakers from 23 countries, representing the public and private sector, including successful rural electrification initiatives from different regions worldwide. The outcomes from the conference were published in IRENA's 2012 publication- 'IOREC 2012: Key Findings and Recommendations' which can be downloaded from [www.irena.org/Publications](http://www.irena.org/Publications).



<sup>1</sup> SE4All Energy Access Committee Report based on IEA World Energy Outlook 2013

<sup>2</sup> IRENA's Renewable Power Generation Costs 2012 study

## 2. Conference agenda

DAY 1 – 16 <sup>TH</sup> JUNE 2014	
08:00-09:15	Registration
<b>OPENING CEREMONY</b> 09:15-10:00	<p><b>Welcome Remarks:</b></p> <ol style="list-style-type: none"> <li>1. Wencai Zhang, Vice President, Asian Development Bank</li> <li>2. Adnan Z. Amin, Director-General, IRENA</li> <li>3. Ernesto Macias, President, Alliance for Rural Electrification</li> </ol>
10:00-10:15	<i>MoU signing ceremony between IRENA and Asian Development Bank</i>
10:15-10:30	Key messages from IOREC 2012: Salvatore Vinci, Programme Officer- Policy Advice, IRENA
BRIDGING THE ELECTRICITY ACCESS GAP SUSTAINABLY AND RAPIDLY: THE ROLE OF STAND-ALONE RENEWABLE ENERGY SOLUTIONS	
<b>SESSION 1</b> 10:30-12:00	<p><i>Developing markets for stand-alone renewable energy systems: Insights into policy and regulatory aspects</i></p> <p><b>Moderator:</b> Kandeh K. Yumkella, Special Representative of the UN Secretary-General and Chief Executive for the Sustainable Energy for All Initiative</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Hardiv Harris Situmeang, Executive Director, ASEAN Centre for Energy</li> <li>2. Farzana Rahman, Unit Head (Investment), Renewable Energy, IDCOL, Bangladesh</li> <li>3. Marcus Wiemann, Secretary General, Alliance for Rural Electrification</li> <li>4. Jiwan Acharya, Senior Climate Change Specialist, Asian Development Bank</li> <li>5. Andy Schroeter, Director, Sunlabob Renewable Energies, Laos</li> </ol>
<p style="text-align: center;"><b>Lunch</b> <span style="float: right;"><b>Exhibition</b></span></p>	
<b>SESSION 2</b> 14:00-15:30	<p><i>Developing markets for stand-alone renewable energy systems: Insights into financing and business models</i></p> <p><b>Moderator:</b> Akanksha Chaurey, CEO, IT Power India</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Peter Ballinger, Director, U.S.-African Clean Energy Development and Finance Center, OPIC</li> <li>2. Dipal C. Barua, Managing Director, Bright Green Energy Foundation, Bangladesh</li> <li>3. Paul Needham, President and Co-founder, Simpa Networks, India</li> <li>4. Roderick De Castro, Executive Director, TeaM Energy Foundation Inc., Philippines</li> <li>5. Shrey Bairiganjan, Project Manager, Arc Finance</li> </ol>
<p style="text-align: center;"><b>Coffee Break</b> <span style="float: right;"><b>Exhibition</b></span></p>	
<b>SESSION 3</b> 16:00-17:30	<p><i>Socio-economic impact of off-grid renewable energy deployment: Meeting basic and productive needs</i></p> <p><b>Moderator:</b> Robert F. Ichord, Jr., Deputy Assistant Secretary, U.S. Department of State</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Aaron Leopold, Global Energy Advocate, Practical Action</li> <li>2. Laurie Navarro, President, CleanEnergy Solutions International, Philippines</li> <li>3. Soma Dutta, ENERGIA International Network on Gender and Sustainable Energy</li> <li>4. Iskandar B. Kuntoadji, Co-founder, IBEKA, Indonesia</li> <li>5. Dagmar Zwebbe, Sector Leader Renewable Energy- Vietnam, SNV Netherlands Development Organisation</li> <li>6. Divyam Nagpal, Junior Professional Associate, Knowledge, Policy and Finance Centre, IRENA</li> </ol>
Networking and Reception	

MINI-GRIDS: HARNESSING THE OPPORTUNITY FOR MEETING ELECTRICITY NEEDS AND STIMULATING SOCIO-ECONOMIC DEVELOPMENT

SESSION 4 09:00-10:30	<i>Developing markets for renewable energy-based mini-grids: Insights into policy and regulatory aspects</i>
	<p><b>Moderator:</b> Gauri Singh, Director-Country Support and Partnerships, IRENA</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Li Zhiwu, National Research Institute for Rural Electrification &amp; Division Chief, Hangzhou Regional (Asia &amp; Pacific) Center for Small Hydropower, China</li> <li>2. Nawaraj Dhakal, Assistant Director, Alternative Energy Promotion Centre, Nepal</li> <li>3. Brian Shaad, Co-founder/Director, Mera Gao Power, India</li> <li>4. Rana Adib, Policy Advisor, REN21 Secretariat</li> <li>5. Nico Peterschmidt, Managing Director, INENSUS</li> </ol>

Coffee Break Exhibition

SESSION 5 10:45-12:15	<i>Developing markets for renewable energy-based mini-grids: Insights into financing and business models</i>
	<p><b>Moderator:</b> Don Purka, Director, Infrastructure Finance Division 1, Private Sector Operations Department, ADB</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Anu Valli, Investment Manager, Bamboo Finance</li> <li>2. Sandeep Giri, CEO, Gham Power, Nepal</li> <li>3. Tripta Singh, Deputy Director, Energy Access Initiative, UN Foundation</li> <li>4. Santosh Kumar, Technical Expert, Indo-German Energy Programme, GIZ</li> </ol>

Lunch Exhibition

SESSION 6 13:15-14:45	<i>Financing energy access initiatives: Mobilising finance and establishing the right delivery mechanisms</i>
	<p><b>Moderator:</b> Susan McDade, Country Actions Team Leader, SE4ALL Initiative</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Loeung Keosela, Executive Director, Rural Electrification Fund, Cambodia</li> <li>2. Nafees Ahmed Khan, Advisor- International Cooperation, Alternative Energy Development Board, Pakistan</li> <li>3. Sarah Alexander, SELCO India</li> <li>4. Roberto Ridolfi, Director- Sustainable Growth and Development, Directorate-General for Development and Cooperation – EuropeAid, European Commission</li> <li>5. Chingiz Orujov, Senior Energy Economist, Infrastructure Department, Islamic Development Bank</li> </ol>

Coffee Break Exhibition

SESSION 7 15:15-17:00	<i>Off-grid renewable energy technology: Design, innovation and integration</i>
	<p><b>Moderator:</b> Dolf Gielen, Director, Innovation and Technology Centre, IRENA</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Matt Jordan, Senior Manager, CLASP</li> <li>2. Munawar Misbah Moin, Managing Director, Rahimafrooz Renewable Energy Ltd</li> <li>3. Dean Cooper, Energy Finance Programme Manager, UNEP</li> <li>4. Silvia Kreibiehl, Head, Frankfurt School- UNEP Centre</li> <li>5. Emanuele Taibi, Island Roadmap Analyst, IRENA</li> <li>6. Wilhelm van Butselaar, Sales Director Hybrid Energy Solutions, SMA Australia</li> </ol>

Closing Remarks

17:00-17:30	<ol style="list-style-type: none"> <li>1. Anthony Jude, Senior Advisor and Chair, Energy Community of Practice, ADB</li> <li>2. Ernesto Macias, President, Alliance for Rural Electrification</li> <li>3. Adnan Z. Amin, Director-General, IRENA</li> </ol>
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Exhibition

# 3. Session background



**DAY:** 16th June 2014

**TIME:** 10:30-12:00

## **Session 1:** Developing markets for stand-alone renewable energy systems: Insights into policy and regulatory aspects

**Moderator:** Kandeh K. Yumkella, Special Representative of the UN Secretary-General and Chief Executive for the Sustainable Energy for All Initiative

### **Panelists:**

1. Hardiv Harris Situmeang, Executive Director, ASEAN Centre for Energy
2. Farzana Rahman, Unit Head (Investment), Renewable Energy, IDCOL, Bangladesh
3. Marcus Wiemann, Secretary General, Alliance for Rural Electrification
4. Jiwan Acharya, Senior Climate Change Specialist, Asian Development Bank
5. Andy Schroeter, Director, Sunlabob Renewable Energies, Laos

Renewable energy-based stand-alone solutions, such as solar home systems, are fast emerging as a cost-effective option to meet basic electricity needs. On a life-cycle basis, they are now cost-competitive against conventional lighting options in most rural contexts. Their modular nature allows to customise them to suit consumer needs and affordability as well as to be deployed rapidly.

Despite the vast potential that stand-alone solutions present, large scale diffusion has been limited to specific projects or to specific markets. Their widespread deployment is known to benefit from: 1) robust distribution channels built on local enterprises and capacity to service off-grid customers; 2) customised financing schemes that are easy to access and are affordable for consumers; 3) market regulations, such as quality assurance and standards, that avoid a situation of 'market spoilage' and help create a level playing field for off-grid solutions; 4) awareness among communities on the opportunity and benefits presented by off-grid solutions; and 5) financial incentives that bring down initial cost barriers and stimulate market development. Collectively stand-alone solutions contribute to what can be defined as an *enabling environment* that is necessary to sustainably deploy stand-alone solutions to meet basic electricity needs.

This session will focus on the market-developing measures that the governments should introduce to support the development of an enabling environment for scaling-up renewable energy-based stand-alone solutions. The panel discussion will aim to identify the key measures that countries need to adopt to support the sector deriving from the diverse experience among the panelists and the audience.



**DAY:** 16th June 2014

**TIME:** 14:00-15:30

## **Session 2:** Developing markets for stand-alone renewable energy systems: Insights into financing and business models

**Moderator:** Akanksha Chaurey, CEO, IT Power India

### **Panelists:**

1. Peter Ballinger, Director, U.S.-African Clean Energy Development and Finance Center, OPIC
2. Dipal C. Barua, Managing Director, Bright Green Energy Foundation, Bangladesh
3. Paul Needham, President and Co-founder, Simpa Networks, India
4. Roderick De Castro, Executive Director, TeaM Energy Foundation Inc., Philippines
5. Shrey Bairiganjan, Project Manager, Arc Finance

A sustainable approach to the deployment of stand-alone solutions hinges on two interconnected pillars: the business model and the financing mechanism. Although cost-competitive on a life-cycle basis, a major hurdle for large scale diffusion of renewable energy-based stand-alone systems is in establishing the right processes for delivering energy services in a manner that is accessible and affordable for rural communities. In overcoming this hurdle, a variety of business and financing models have been adopted globally and a wealth of experience, through both successes and failures, has been gained.

Some of the factors influencing the viability of business models include the consumers' willingness to pay, estimated type and amount of demand, availability of local capacities for installation, operation and maintenance, community acceptance of new technologies, existing support policies in place, access to markets for equipment, etc. Innovation in business model design is afoot to reduce operational costs and improve profitability of energy service providers. For instance, several private initiatives are now integrating technology interventions into business models, such as mobile payment schemes or pay-as-go meters, that reduce resource-intensive fee collection activities.

Access to finance is among the most commonly cited challenges within the off-grid community. The challenge encompasses the two major segments: 'downstream' targeting end-users/consumers and 'upstream' targeting enterprises/rural electrification initiatives. Energy enterprises that will be required to cater to the vast majority of unelectrified households in remote rural areas will need to ensure that 1) households have access to financing either through financial institutions or as an offering of the energy enterprises themselves; and 2) the lending terms (type of financing and tenor) are affordable.

The session will focus on the lessons learned from design and implementation of business and financing models to scale-up deployment of stand-alone solutions. Given the challenges in accessing finance and diversity of business models adopted, the session aims to highlight best practices that are replicable across countries and programmes to scale-up deployment, and the role of governments in this context.



**DAY:** 16th June 2014

**TIME:** 16:00-17:30

### **Session 3: Socio-economic impact of off-grid renewable energy deployment: Meeting basic and productive needs**

**Moderator:** Robert F. Ichord, Jr., Deputy Assistant Secretary, U.S. Department of State

#### **Panelists:**

1. Aaron Leopold, Global Energy Advocate, Practical Action
2. Laurie Navarro, President, CleanEnergy Solutions International, Philippines
3. Soma Dutta, ENERGIA International Network on Gender and Sustainable Energy
4. Iskandar B. Kuntoadji, Co-Founder, IBEKA, Indonesia
5. Dagmar Zwebe, Sector Leader Renewable Energy- Vietnam, SNV Netherlands Development Organisation
6. Divyam Nagpal, Junior Professional Associate, Knowledge, Policy and Finance Centre, IRENA

Achieving universal access to modern energy services is a vital pre-requisite to advancing socio-economic development. There are striking synergies between off-grid renewable energy technologies and sectors critical to human development such as water, education, healthcare, and telecommunication. These synergies offer tremendous opportunity to multiply the socio-economic benefits arising from off-grid renewable energy deployment- both upstream (in delivering energy services) and downstream (activities enabled by access to energy). Maximising benefits requires an integrated approach to designing and implementing energy access initiatives that considers the entire spectrum of development opportunities that can be unlocked through off-grid renewables. This forms an integral part of efforts to support households and enterprises in their progressive journey upwards on the energy ladder.

17% of global population without electricity access

One billion served by health facilities without electricity

More than 50% of all children in the developing world go to schools with no electricity

Source: Poor Peoples Energy Outlook (2014)

There is also growing evidence that decentralised renewable energy solutions can create value locally in terms of both employment and economic growth. The value is created both in the renewable energy supply chain and in downstream activities enabled and/or further enhanced by improved access. IRENA estimates that reaching the objective of universal access to modern energy services by 2030 could create 4.5 million jobs in the off-grid renewables-based electricity sector alone<sup>3</sup>.

The session will closely examine the socio-economic dimension of off-grid renewable energy deployment and will discuss specific country experiences in designing policies that help maximizing the broader benefits to local communities and the synergies between providing electricity access and other basic needs and services.

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<sup>3</sup> IRENA's 2013 report on *Renewable Energy and Jobs*



**DAY:** 17th June 2014

**TIME:** 09:00-10:30

## **Session 4:** Developing markets for renewable energy-based mini-grids: Insights into policy and regulatory aspects

**Moderator:** Gauri Singh, Director- Country Support and Partnerships, IRENA

### **Panelists:**

1. Li Zhiwu, National Research Institute for Rural Electrification & Division Chief, Hangzhou Regional (Asia & Pacific) Center for Small Hydropower, China
2. Nawaraj Dhakal, Assistant Director, Alternate Energy Promotion Centre, Nepal
3. Brian Shaad, Co-founder, Mera Gao Power, India
4. Rana Adib, Policy Advisor, REN21 Secretariat
5. Nico Peterschmidt, Managing Director, INENSUS

Mini-grids deployment is essential to extend electricity access and stimulate socio-economic development in rural areas. Mini-grids can cater to diverse loads, integrate multiple sources of generation and support productive uses. Falling costs and increasing technology maturity make renewables the most suitable option in several cases for both new mini-grids and for existing diesel-based mini-grids that can be replaced by hybrid or entirely renewable energy-based generation. Policy and regulatory frameworks influence significantly the viability and sustainability of mini-grids. Clarity in rural electrification strategies, long-term political commitment, dedicated policies and enabling regulations for a sector that considers the diverse deployment approaches have often come across as factors that contribute to supporting development of mini-grids.

The call for a long-term and clear rural electrification strategy has grown stronger with time in several countries. Demarcating areas that will be reached by grid extension within a reasonable time frame and those areas that are suitable for mini-grid installation provides clarity to both developers and rural communities. The risk associated with slow uptake among communities and the absence of regulatory frameworks to avoid stranded investments due to grid arrival has often hampered private sector participation.

It is equally important for policy and regulatory frameworks to consider the broad range of mini-grids that are being deployed. They differ in the renewable resource they utilise, services they provide and ownership/financing structures adopted. While for the purposes of policy-making these can be classified into a single definition of mini-grids, the risk profiles of these diverse approaches often differ significantly. The challenge for policy makers is to devise policies that cut across these differences and provide a support framework that addresses the specific deployment and operational challenges faced by developers. Some of these include high transaction costs, incompatibility of tariff regulations with commercial viability of projects, unavailability of technical skills for operating and maintaining installations, etc.

The session will focus on identifying the key policy and regulatory measures that have enabled a scale-up in mini-grid deployment and that can have a replication potential. The session will also identify the main public support measures that governments should put in place to facilitate the deployment of RE-based mini-grids and the



**DAY:** 17th June 2014

**TIME:** 10:45-12:15

involvement of the private sector.

## **Session 5:** Developing markets for renewable energy-based mini-grids: Insights into financing and business models

**Moderator:** Don Purka, Director, Infrastructure Finance Division 1, Private Sector Operations Department, Asian Development Bank

### **Panelists:**

1. Anu Valli, Investment Manager, Bamboo Finance
2. Sandeep Giri, CEO, Gham Power, Nepal
3. Tripta Singh, Deputy Director, Energy Access Initiative, UN Foundation
4. Santosh Kumar, Technical Expert, Indo-German Energy Programme, GIZ

There are several cases of successful mini-grid deployment (involving utilities, private sector, communities, etc.) but the possibility of scaling up is still a missing feature in most cases. The barriers to such development are often associated with flexibility and innovation constraints in designing business models (ownership, billing and customer management) and financing models (securing the capital along different stages of project/enterprise development).

The development of mini-grids are characterized by diverse business and financing models, but also the technologies deployed and services provided. The different deployment approaches have varying risk profiles with implications for the ability to access finance. Traditional forms of commercial financing are not easily accessible and unlocking them often require developers to demonstrate the viability of their business model over a minimum scale and over a sufficient period of time. Conventional barriers to financing include insufficient market capital, perceived high risk and relatively low return on investment, high transaction costs for financing small projects, high interest rates and short tenors, high cost of equity finance, insufficient net worth and limited experience of firms (which makes debt financing difficult), low liquidity and power sector exposure constraints of local commercial banks, and difficulty in channeling MDB funds through local financial institutions<sup>4</sup>.

As funding for energy access is mobilised, ensuring that the right amount and type of financing is easily accessible to developers is a crucial challenge. Beyond the tenor of the financing schemes, the development of a broader environment that allows for a scale-up in mini-grid deployment needs to be supported. In addition, encouraging innovation is seen to be essential in the design of business models to ensure long-term sustainability in terms of lower operating costs, robust supply chains and access to resources and skills to operate and maintain installations.

The session will focus on the business models and financing frameworks for enterprises and programmes focussed on renewable energy-based mini-grid development. The discussion will identify, analyse and explore

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<sup>4</sup> ADB CTF Proposal "Renewable Energy Mini-grids and Distributed Power Generation" 2014



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**TIME:** 13:15-14:45

solutions to address the financing challenges faced by developers and will focus on how they can be addressed.

## **Session 6:** Financing energy access initiatives:

### Mobilising finance and establishing the right delivery mechanisms

**Moderator:** Susan McDade, Country Actions Team Leader, SE4ALL Initiative

#### **Panelists:**

1. Nafees Ahmad Khan, Advisor- International Cooperation, Alternative Energy Development Board, Pakistan
2. Loeung Keosela, Executive Director, Rural Electrification Fund, Cambodia
3. Sarah Alexander, SELCO India
4. Roberto Ridolfi, Director- Sustainable Growth and Development, Directorate-General for Development and Cooperation – EuropeAid, European Commission
5. Chingiz Orujov, Senior Energy Economist, Infrastructure Department, Islamic Development Bank

An estimated USD 45 billion is required annually to achieve universal electricity access. In comparison, current spending is around USD 9 billion<sup>5</sup>. This financing will come from a variety of sources, including multi-lateral institutions, development agencies, governments, and the practitioners. While mobilizing financing is one part of the equation, identifying the mechanisms through which this financing can be made accessible to, and suitable for, end-users, entrepreneurs and developers in an effective and efficient manner is yet another.

The present day landscape is characterized by increasing commitment of capital on the upstream side by multi-lateral development banks, development agencies and governments, among others. However, further downstream challenges associated with accessing much of that capital continue. This is mostly due to the mismatches in scale (investment size on offer compared to financing needs of off-grid projects) and terms of financing being offered and needed. A contributing factor is also how capital has traditionally been delivered to those who need it. As more capital is mobilised upstream, a key consideration would be whether existing mechanisms are able to absorb and deliver it efficiently to a largely fragmented set of actors with diverse financing needs.

This session brings together diverse perspectives to discuss the way forward in establishing an efficient and effective 'source to end-use' financing mechanism and the role that governments and other major stakeholders will play in this regard.

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<sup>5</sup> SE4ALL Global Tracking Framework



**DAY:** 17th June 2014

**TIME:** 15:15-17:00

## **Session 7:** Off-grid renewable energy technology: Design, innovation and integration

**Moderator:** Dolf Gielen, Director, Innovation and Technology Centre, IRENA

**Panelists:**

1. Matt Jordan, Senior Manager, CLASP
2. Munawar Misbah Moin, Managing Director, Rahimafrooz Renewable Energy Ltd
3. Dean Cooper, Energy Finance Programme Manager, UNEP
4. Silvia Kreibiehl, Head, Frankfurt School- UNEP Centre
5. Emanuele Taibi, Island Roadmap Analyst, IRENA
6. Wilhelm van Butselaar, Sales Director Hybrid Energy Solutions, SMA Australia

Technology has a crucial role to play in the success of off-grid solutions for expanding electricity access in rural areas. Rapid technology improvement and large scale deployment have been driving the cost of renewable energy technologies down, to a level where they are competitive and often more affordable than fossil fuels for rural electrification. Technology solutions to serve off-grid communities have been constantly evolving to offer customised, reliable and cost-effective solutions. This is true not just from the generating asset perspective (e.g. solar modules, small wind small-hydro turbines), but also for other components (e.g. inverters, batteries, charge controllers, etc.) and appliances (e.g. lighting devices). It is a combination of these measures that allows optimum performance of an installation throughout its lifetime.

The scalability of off-grid renewable energy solutions- ranging from small solar home systems to kW-scale and MW-scale mini-grids- is crucial to adapting to the local contexts. This makes them highly compatible with the off-grid market, which is constituted by a diverse demand, varying resources and limited infrastructure. This is amply demonstrated by the case of solar PV, where a vast portfolio of technology solutions exists. Small portable solar lighting systems, for instance, are made possible by LED lights and lithium batteries, making them substantially smaller, lighter and long-lasting than just a few years ago.

Once deployed, managing generation from off-grid solutions, in particular for mini-grids, is a field that is increasingly gaining prominence in the sector. In the context of islands, technology options such as smart-grids and advanced power electronics are increasingly being seen as measures to integrate growing shares of variable generation with little to no storage. A bridge solution has been hybridizing existing mini-grid installations which are based on diesel or tapping into multiple renewable resources that feed into the same grid to balance out variability. In fact, for many remote locations, the cost of delivering diesel fuel for power generation is high enough to make a hybrid system comprising of solar, battery storage and a limited amount of diesel, as the most affordable solution. Increasingly, experience is being gathered from mini-grid deployment globally that are adopting innovative technological solutions to maximise the share of renewable energy, minimize operational costs and improve the long-term sustainability of projects.

The panelists will explore the impact of technology improvement in accelerating the deployment of renewable energy in off-grid areas, discussing the state of the art in lighting, solar home systems, and hybrid mini-grid technologies.

## 4. Biographies (in alphabetical order)

### **Aaron Leopold, Practical Action**

Global Energy Advocate



Aaron Leopold is Practical Action's Global Energy Advocate, responsible for leading strategic engagement with key global processes, organisations and partners, and for designing and coordinating advocacy work across Practical Action's country and regional offices. Prior to coming to Practical Action, he was Director for Environment and Sustainable Development at the Global Governance Institute, which he co-founded. He also served as Team Leader and Editor for Sustainable Energy at the International Institute for Sustainable Development for four years. Aaron has published on renewable energy in a variety of academic contexts, and has a Masters in Global Political Economy from the University of Kassel in Germany.

### **Adnan Z. Amin, International Renewable Energy Agency**

Director-General



Adnan Z. Amin was elected as the Director-General of the International Renewable Energy Agency in April 2011. In his capacity he is charged with the responsibility of establishing a sound institutional management structure and clear strategic vision for the implementation of the agency's mandate to promote the adoption and use of renewable energy worldwide. Mr. Amin brings to this position over 25 years of experience in the fields of international environment and sustainable development policy, as well as in the political, management, and interagency coordination functions of the United Nations (UN) work. Mr. Amin served as Head of the UN System Chief Executives Board for Coordination (CEB) Secretariat. Mr. Amin also served as the Executive Director of the Secretariat of the Secretary-General's High Level Panel, co-chaired by the Prime Ministers of Mozambique, Norway and Pakistan, on UN System-wide Coherence. The Panel undertook an ambitious and unprecedented level of consultation on development, environment, and humanitarian aspects of the work of the UN System and proposed an ambitious reform programme that still continues in the UN General Assembly under the framework of the "One UN".

### **Akanksha Chaurey, IT Power India**

CEO



Dr. Akanksha Chaurey is an expert on renewable energy technologies and markets and has led several projects dealing with technology assessment, market analysis, development of business models, capacity building, etc. She has 26 years of experience in renewable energy sector with specialization in decentralised and distributed generation and has worked in more than 20 countries. She is currently the Chief Executive Officer of IT Power Consulting Private Limited (Indian entity of IT Power Group). Before joining ITP in March 2012, she was working with TERI, India in the capacity of Director for Decentralised Electricity Solutions Division where she has led many programs focusing on rural electrification, off-grid energy solutions, sustainable development and related policy & regulatory aspects.

### **Andy Schroeter, Sunlabob Renewable Energy, Ltd.**

Co-founder and CEO



Andy Schroeter is co-founder and CEO of Sunlabob Renewable Energy, Ltd., a Laos-based company that specializes in renewable energy and clean water projects in developing regions of the world. Mr. Schroeter has more than 17 years of experience undertaking sustainable energy development initiatives in remote, off-grid areas. He has experience with a variety of energy and infrastructure solutions and technologies including solar PV, water purification and pumping, small-hydro-power and energy efficiency. Schroeter has experience in rural areas throughout the Asia-Pacific region, Africa, Afghanistan and India.

### **Anthony Jude, Asian Development Bank**

Senior Advisor and Chair, Energy Community of Practice



Anthony J. Jude is a Senior Advisor in the Office of the Director General of the Regional and Sustainable Development Department, and concurrently Practice Leader (Energy) at Asian Development Bank (ADB). His task is to track global and regional developments, and identify issues that may have bearing on ADB's energy policy and operations. He provides leadership and guidance to staff in ensuring a continuous learning environment; encourages innovations and facilitates change for addressing issues and barriers, generating options, strengthening energy security in developing member countries (DMCs), and pursuing environmentally sustainable and inclusive economic growth. He coordinates with other sector and thematic Communities of Practices (CoPs) to seek more effective and sustainable solutions. He has over 29 years of work experience in the energy sector.

### **Anu Valli, Bamboo Finance**

Investment Manager



Anu Valli is an Investment Manager with Bamboo Finance. She is responsible for covering investments in Asia. Previously, she led the Rural Energy Network Enterprise (RENE), an incubator of IFMR Trust focused on bridging supply chain gaps in rural India's access to affordable energy. As part of this, she established a last-mile distribution channel for energy products in Southern India and developed a web portal to verify product quality. Prior to this, she was with Citigroup's investment banking business in Mumbai and Hong Kong.

### **Brian Shaad, Mera Gao Power**

Co-founder/Director



Brian Shaad is an experienced entrepreneur and development advocate, in 2010 he co-founded Mera Gao Power (MGP) to demonstrate an affordable solution for tackling rural India's energy poverty. Brian's expertise lies in developing processes which make self-managed business units efficient and replaceable, this has been demonstrated by MGP's rapid scaling up from one village system in 2011 to over 1,200 today. His driving motivation is scalability which he believes can only be reached when rural business units do not require outside micro-management. Brian is responsible for designing MGP's field-level operations and new business development. Prior to India Brian work in Nigeria where his focus was rural energy access and agricultural development.

## Chingiz Orujov, Islamic Development Bank

Senior Energy Economist



With over ten years of experience in energy sector Chingiz Orujov brings diverse experience earned both in private and public sector. Based in Jeddah he has been serving IDB for 3 years as Senior Energy Economist with major focus on developing programs and policies in energy sector. He was engaged in designing the IDB energy policy and Renewable Energy for Poverty Reduction program at the bank.

Prior to joining the Bank he served as Economist at EU/TACIS program and British Petroleum in Azerbaijan. He also worked for consultancy in developing CDM projects.

Chingiz Orujov holds Master Degree in Environmental Economics from University of York, UK.

## Dagmar Zwebe, SNV Netherlands Development Organisation

Sector Leader Renewable Energy - Vietnam



Dagmar is an Engineer specializing in Renewable Energy and Sustainable Development with over 10 years relevant work experience, spanning among others Vietnam, the Netherlands, Chile, South Africa and Bangladesh. Dagmar has a large number of international assignments to her name; both in the commercial playing field as well as a donor funded projects (Energy and Environment Partnership (EEP) Mekong, The Dutch Government, EU, USAID, EnDev, BMF). She holds a Masters of Industrial Engineering and Management and Diplomas in Sustainable Development and one in International Management. She has demonstrated experience in project (proposal) development and project (financial) management, biogas, biomass, biofuels, bio-energy and other Renewable Energy sources and had authored several publications in relation to these fields. Since about 3.5 years Dagmar has been working for SNV Vietnam as the Sector Leader for the Renewable Energy portfolio, this covers –among others- the award winning domestic biogas program of Vietnam, a Medium Scale biogas program, the development of Renewable Energy solutions for the rice sector of Vietnam (including dryers, briquette making, gasification), cookstove development and more.

## Dean Cooper, United Nations Environmental Programme

Energy Finance Programme Manager



Mr. Dean Cooper is Energy Finance Programme Manager within the Division of Technology, Industry & Economics (DTIE) at the United National Environment Programme (UNEP), based in Paris. Dean works with the public and private sectors to build sustainable clean technology markets, using public sector funds to attract private finance and thereby scale up investment in low-carbon applications, particularly in developing countries. For 7 years prior to joining UNEP, Dean headed Parallax, a small development business based in South Africa and the UK, which worked to bring sustainable clean-energy solutions to remote communities in Southern Africa. Before Parallax, Dean worked at the UK Energy Agency to help manage the UK's Best Practice Programme and was then appointed Head of Co-operation with Developing Countries within the European Commission's Energy Directorate. He has a 1st Class degree from the University of York and an MBA (distinction) from Warwick Business School.

## **Dipal Chandra Barua, Bright Green Energy Foundation**

Founder and Chairman



Dipal Chandra Barua is the Founder & Chairman of the Bright Green Energy Foundation, President of the Bangladesh Solar and Renewable Energy Association, Founding Managing Director of Grameen Shakti and Co-Founder of Grameen Bank. Mr. Barua started his creative work as a founding member of Grameen Bank, which won the Nobel Peace Prize in 2006 for its revolutionary work in micro-financing for the poor, and continued as its Deputy Managing Director until December 2009. He is also the founding Managing Director of Grameen Shakti. He set up Bright Green Energy Foundation in January 2010, to realize the vision of Bangladesh as the First Solar Nation in the world by reaching 75 million energy starved people with renewable energy by 2020. Mr. Barua was also awarded the First Zayed Future Energy Prize 2009 from the government of Abu Dhabi, UAE.

## **Divyam Nagpal, International Renewable Energy Agency**

Junior Professional Associate, Knowledge, Policy and Finance Centre



Divyam is a Junior Professional Associate in IRENA's Knowledge, Policy and Finance Centre. He works on a diverse range of topics, including renewable energy policy assessment, off-grid renewables for energy access and the role of renewables in the water, energy and food nexus. He will bring the nexus-perspective into the session he will be participating in. Prior to joining IRENA, he has worked specifically on techno-economic assessments of off-grid solar PV and sector-level energy efficiency benchmarking. He is a mechanical engineer by training and has an MSc in Sustainable Energy Futures from Imperial College London.

## **Dolf Gielen, International Renewable Energy Agency**

Director- Innovation and Technology Centre



Before joining IRENA, Dolf Gielen was Chief of the Energy Efficiency and Policy Unit at the United Nations Industrial Development Organization (UNIDO), Vienna. In that capacity, he managed a number of large projects involving energy efficiency and renewable energy (including those in Sri Lanka, Ukraine and India). Previously, he was a Senior Energy Analyst in the Energy Technology Policy Division of the International Energy Agency, Paris. Dolf Gielen has a PhD in Energy and Materials Modelling from the Technical University of Delft. He graduated with an MA in Environmental Sciences at the University of Utrecht, the Netherlands.

## **Don Purka, Asian Development Bank**

Director, Infrastructure Finance Division 1, Private Sector Operations Department



Don Purka is the Director, Private Sector Infrastructure Finance Division 1 at Asian Development Bank based in Manila, the Philippines. He has been with ADB for over 10 years working exclusively in the infrastructure sectors. He has 15 years experience in emerging market project finance, with most of his experience concentrated in South and Southeast Asia, namely India, Indonesia, Vietnam, Laos and Cambodia. Mr. Purka holds a M.A. in International Affairs (finance, development economics) from the George Washington University and a B.A. from the College of William and Mary.

## **Emanuele Taibi, International Renewable Energy Agency**

Island Roadmap Analyst



Emanuele Taibi joined IRENA in September 2013 as Island Roadmaps Analyst. He is based with the IRENA Innovation and Technology Center in Bonn, Germany. His role is to assist islands in the transition to renewable energy, focusing on energy planning and tourism applications. Prior to joining IRENA, he was an Energy Specialist with the Secretariat of the Pacific Community (SPC) in the Federated States of Micronesia. He has over 10 years of experience in the energy sector, with a focus on renewable energy, and has been working for the United Nations (UNIDO), for large private energy companies and for public and private research institutions. He has a M.Sc. in Management Engineering (laude) and is a chartered industrial engineer from Italy.

## **Ernesto Macias, Alliance for Rural Electrification**

President



Ernesto Macias is a qualified expert in the field of rural electrification with over 11 years specific experience. As President of the Alliance for Rural Electrification for the last seven years, he has been instrumental in promoting electrification projects for remote communities.

He has experience in the management and implementation of over 30 electrification projects around the world including remote islands. He is also one of the partners of the Spanish consultancy firm Wonderenergy, focused on the market development of RE technologies; Bureau Member of REN21; UNEF Committee Member; International Relationships Responsible of Spanish Renewable Foundation. Former President of EPIA, European Photovoltaic Industry Association (2003-2008). Mr. Macias has held key positions in both industry (Marketing and Commercial Director of Isofoton, leading PV manufacturer up to 2009 and Electria Wind, medium size wind generators designer up to 2011) and international organisations.

## **Farzana Rahman, IDCOL, Bangladesh**

Unit Head (Investment), Renewable Energy



Ms. Farzana Rahman has been working with Infrastructure Development Company Limited (IDCOL), the largest renewable energy and infrastructure financing company in Bangladesh since 2006. During her tenure with IDCOL, Ms. Rahman was involved in structuring and financing of renewable energy as well as large infrastructure projects in sectors like power, telecom, ICT etc. Many of these projects were first of its kind in Bangladesh. Ms. Rahman is also involved with IDCOL solar home system program, one of the largest off-grid renewable energy programs in the world. It is the largest solar home system program in the world and more than 3 million households have been connected to solar energy till April 2014. Ms. Rahman is currently working with development and financing of renewable energy projects like solar irrigation, solar mini-grid, biogas and biomass based electricity projects. Ms. Farzana Rahman completed her graduation in Finance and International Business from North South University, Dhaka, Bangladesh.

## **Gauri Singh, International Renewable Energy Agency**

Director- Country Support and Partnerships



Since 2007, Gauri Singh has been Joint Secretary in India's Ministry of New and Renewable Energy. Her responsibilities include all policy formulation and international cooperation. Gauri Singh developed the policy framework of the National Solar Mission to generate 20,000 MW of solar power by 2022. She created a level playing field for foreign direct investment companies and independent producers to double the annual installed wind capacity. She initiated a shift in the off-grid policy paradigm to upscale renewable energy systems. She was also in charge of designing the framework for renewable energy certificates. She holds a Bachelor of Economics from Delhi University and an MBA in Marketing and Finance from the Podar Institute of Management, Rajasthan University.

## **Hardiv Harris Situmeang, ASEAN Clean Energy Centre**

Executive Director



Dr. Situmeang is currently Executive Director of ASEAN Centre for Energy. He has been active in the World Energy Council (KNI-WEC) as Chairman of Indonesian National Committee as well as Advisor to the Indonesian National Development Planning Agency on Climate Change Sectoral Roadmap and Advisor to the Indonesian National Council on Climate Change, since he retired from service at the Indonesia State Electricity Corporation - PT PLN, which he served as Senior Advisor to its Board of Directors.

## **Iskandar B. Kuntoadji, IBEKA**

Co-Founder



Iskandar Kuntoadji founded the IBEKA Foundation in 1992. The NGO has installed 2,260 kW of micro hydropower presently meeting the electricity needs of 54,000 people in Indonesia, where over a third of the population lack access to grid electricity. While building a grassroots movement to support off-grid communities to own and operate their own renewable energy utilities, IBEKA founders were largely responsible for lobbying government to introduce a feed-in tariff in Indonesia, changing the game for decentralised energy generation. He has a profound understanding of energy and community development. He is trained as a geological engineer.

## **Jiwan Acharya, Asian Development Bank (ADB)**

Senior Climate Change Specialist (Energy)



Jiwan Acharya is working in Sustainable Infrastructure Division in the Regional and Sustainable Development Department of ADB since 1 October 2006 and currently in the position of Senior Climate Change Specialist. He is a key member of ADB's Climate Change and Clean Energy Team and is responsible for overseeing ADB's several key initiatives including Energy for All, Low Carbon Technology Transfer. The Energy for All program aims to increase ADB's own investment on access to energy and assist the partners in promoting energy access projects in the region. He also spearheads the Energy for All Partnership which has a target of providing energy access to 100 million people by 2015. Mr. Acharya serves as ADB's focal point for Clean Technical Fund and Scaling Up Renewable Energy for Low Income Countries under the Climate Investment Funds. Prior to joining ADB, Mr. Acharya was Senior Research Officer in Winrock International in Kathmandu, Nepal covering climate change, CDM, energy access and broader clean energy areas. Mr. Acharya has a Master of Arts in Economics, Master of Science in Energy Systems and Management and a Bachelor of Science in Electrical Engineering.

## **Kandeh K. Yumkella, Sustainable Energy for All initiative**

Special Representative of the UN Secretary-General and Chief Executive for the SE4ALL Initiative



Kandeh K. Yumkella is Special Representative of the UN Secretary-General and Chief Executive for the Sustainable Energy for All Initiative (SE4All). In this position, he will mobilize action toward a sustainable energy future and accelerate the implementation of the Secretary-General's initiative as well as engaging with the leadership of relevant stakeholders in government, businesses, academia and civil society at the highest level to advocate for and promote sustainable energy for all.

From 2005 to 2013 he was the Director-General of the United Nations Industrial Development Organization (UNIDO). Prior to assuming the mantle of leadership at UNIDO, he worked in different high-level policy positions, including as Special Adviser to two previous Director-Generals and as Representative and Director of the UNIDO Regional Office in Nigeria. From 1994 to 1995 he was Minister for Trade, Industry and State Enterprises of Sierra Leone. He holds a Ph.D. in Agricultural Economics from the University of Illinois, a M.Sc. Agricultural Economics, Cornell University; and a B.Sc. in General Agriculture, from Njala University College, Sierra Leone.

## **Laurie Navarro, CleanEnergy Solutions International, Philippines**

President



Ms. Navarro has over 30 years experience in technical, financial and market delivery of renewable energy systems in the Philippines. She was the Chief-of-Party of the AMORE 3 Program, a USAID-funded program aimed to provide access to electricity thru Renewable Energy technologies like solar PV and micro-hydro to remote rural off-grid communities in Mindanao, Southern Philippines. She was the Philippine Country Representative of USAID's ECO-Asia Clean Development and Climate Program and was concurrently the Philippines Country Manager of its Private Financing Advisory Network (PFAN) component. As the PFAN Country Manager, she was responsible for identifying promising clean energy businesses and providing them with appropriate technical and business advice to secure funding. She is currently assisting their company CSi in implementing PFAN Philippines which was the result of a successful implementation of the earlier phase of PFAN under the ECO-Asia program.

## **Li Zhiwu, Hangzhou Regional (Asia & Pacific) Center for Small Hydropower, China**

Division Chief



Mr. Li Zhiwu is from Hangzhou Regional Center for Small Hydro Power (HRC) which was established in 1981 by the United Nations Development Program and the Chinese government. He has considerable experience in research work for policy making, management and regulatory and private & public participating in small hydropower in China. He has engaged in international training workshop on small hydro and rural electrification since 1993. He is a deputy chief engineer in HRC and a professor.

## **Loeung Keosela, Rural Electrification Fund, Cambodia**

Executive Director



Loeung Keosela is the Executive Director of the Rural Electrification Fund, leading programs promoting rural electrification, solar home systems and other forms of renewable energy since 2006. Prior to this role, he worked as a manager under the Electricity Authority of Cambodia from 2001 to 2006 regulating generation licensees and as Officer of Independent Power Producers (IPP) from 1998 to 2001 handling IPPs. He holds a master's degree in Electric Power System Management from Asian Institute of Technology.

## **Marcus Wiemann, Alliance for Rural Electrification**

Secretary General



Marcus Wiemann is Secretary General of the Alliance for Rural Electrification (ARE). With a background in International Economics as well as in Political and Environmental Sciences, he works closely together with ARE partners and international organisations on numerous advocacy and policy actions. ARE has become a pioneering actor in the field of sustainable development, supporting and bringing together renewable energy companies who are passionate about rural electrification through decentralised renewable energy solutions. The Alliance for Rural Electrification is the international business association focusing on the promotion and development of off-grid renewable energy solutions in developing countries and emerging markets.

## **Matt Jordan, Senior Manager,**

CLASP



Matt Jordan is a Senior Manager at CLASP, a leading international energy efficiency NGO, where he is responsible for the organization's clean energy access and BOP-focused programs. He has over 10 years of diverse and high impact experience in energy efficiency, program management, and stakeholder relations, and has researched, consulted on, and written about a wide variety of energy-related issues. Most recently, Matt was responsible for the inaugural Global LEAP Awards competition, a Clean Energy Ministerial effort to support clean energy access markets by identifying and promoting the world's best, most energy-efficient off-grid appliances.

## **Munawar Misbah Moin, Rahimafrooz Renewable Energy Limited**

Managing Director



Mr. Munawar Misbah Moin is the Managing Director of Rahimafrooz Renewable Energy Limited. He leads the Solar PV and Energy Services Business including Carbon Trading. Mr. Munawar Moin on behalf of the board lead the V2015 program to transform Rahimafrooz into one of the most admired and trusted enterprises with global operations. He completed his undergraduate studies in Business from St John's University, Minnesota, USA.

## **Nawaraj Dhakal, Alternate Energy Promotion Centre, Nepal**

Assistant Director



Mr. Dhakal, an Assistant Director at Alternative Energy Promotion Centre (AEPC), Nepal, works as the Manager for Biomass Energy Sub-Component of National Rural and Renewable Energy Programme executed by AEPC and supported by various external development partners. He also coordinates Energy Efficiency activities at AEPC. He has over 11 years of experience in implementation of renewable energy programmes/projects in Nepal. He has previously coordinated capacity building activities and served as the AEPC Counterpart for Biomass Energy Component of Energy Sector Assistance Programme as well as the Focal Person for Rural Energy Development Programme. He also worked as the Coordinator for the Biofuel Programme and Focal Person for Biogas Support Programme of AEPC at various times. Mr. Dhakal holds Master of Science in Renewable Energy degree from the Naresuan University, Phitsanulok, Thailand, and Master of Science in Microbiology degree with specialization in Environmental Microbiology from the Tribhuvan University, Kathmandu, Nepal.

## **Nafees Ahmad Khan, Alternative Energy Development Board, Pakistan**

Advisor- International Cooperation



Mr. Nafees Ahmad Khan has vast experience in renewable energy and environment related projects, institutional capacity building, planning, management, monitoring, evaluation and development of energy, environmental and water resource projects in Pakistan, Middle East, and the Europe. His demonstrated abilities and experience include planning, development, and management of projects relating to poverty reduction, infrastructure project development, energy and environment including zero-emission power generation technologies, CO<sub>2</sub> and GHG sequestration projects, renewable energy projects, rural electrification projects for socio-economic uplift of underdeveloped and isolated communities. At present Mr. Khan is working as Advisor-International Cooperation, Alternative Energy Development Board (AEDB), Govt. of Pakistan.

## **Nico Peterschmidt, INENSUS**

Managing Director



Mr. Peterschmidt is co-founder and Managing Director of INENSUS, which is a one-stop-shop for mini-grid operators, related business models and an engineering company for hybrid-power systems with high renewable penetration. He is a consultant to the Asian Development Bank on mini-grid related issues in Asia and Chair of the World Wind Energy Association's Small Wind Section. INENSUS's Joint Venture ENERSA is the first fully licensed mini-grid company in Senegal. Mr. Peterschmidt is a Graduate Engineer of Power Systems Engineering at Clausthal University of Technology (Germany) with more than 10 years of experience in the African and Asian mini-grid sector.

## **Peter Ballinger, Overseas Private Investment Corporation**

Director, U.S.-African Clean Energy Development and Finance Center



The Overseas Private Investment Corporation (OPIC) is the U.S. Government's development finance institution. Peter Ballinger is OPIC's managing director for business development and is based in OPIC's only overseas office, the Clean Energy Development and Finance Center in Johannesburg, South Africa, having previously managed OPIC's Asia operations out of New Delhi as part of the Partnership to Advance Clean Energy (PACE).

In his current role he is responsible for new business in the Africa/Middle East/Indian Ocean region for OPIC's two main product lines, project finance and political risk insurance as well as promoting OPIC's Africa Clean Energy Finance (ACEF) facility. ACEF provides late-stage grant funding to help clean-energy projects, including off-grid solutions, reach the bankability stage. Mr. Ballinger is a graduate of the American University in Washington, D.C. (MSc) and of the Johns Hopkins University (MBA) in Baltimore, Maryland.

## **Paul Needham, Simpa Networks, India**

President and Co-founder



Paul co-founded Simpa Networks with the bold mission to make clean energy simple, affordable and investible. Simpa sells solar-as-a-service to energy-poor households and micro-enterprises in rural India. Mr. Needham is a seasoned Infotech entrepreneur, having started several companies and sold two. Paul has 14 years in senior leadership roles in Infotech and energy access sectors having held CEO, VP and Director level roles at private and public companies including Microsoft. Paul holds a masters degree in Development Economics from Cambridge University and now lives with his family in Bangalore, India.

## **Rana Adib, REN21**

Policy Advisor



Since 2009, Rana Adib, works as a Research Coordinator at REN21, the Renewable Energy Policy Network for the 21st Century, based in Paris. Among others, she is coordinating the work on the REN21 Renewables Global Status Report. She has worked previously for 12 years for private industry and applied research in the field of energy access, renewable energy, and waste management. She holds a German Master Degree in industrial engineering from the University of Wedel in Germany.

## **Roberto Ridolfi, Directorate-General for Development and Cooperation – EuropeAid**

Director- Sustainable Growth and Development



Roberto Ridolfi is Director for Sustainable Growth and Development at DG Development and Cooperation – EuropeAid. Twice Ambassador/ Head of delegation to the European Union, Mr Ridolfi was first in Suva where he served from 2005 to 2007. There he was in charge of all the relations of the European Union with 15 countries and territories as well as with the Pacific Forum. Later, in 2011 he was appointed in Uganda by HRVP C. Ashton where he served till September 2013. In between, during his duty as head of unit of Europe Aid F3, he managed programmes dealing with Environment, Food security, migration and asylum as well as the One-Billion-Euro Food Facility in 50 countries. Mr Ridolfi joined the European Commission in 1994 and took up duty in the European Delegation to Malawi as infrastructure and development advisor dealing with infrastructure, transport and health.

## **Roderick de Castro, TEAM Energy Foundation Inc., Philippines**

Executive Director



Roderick de Castro has been working for social development for over 15 years. As Program Manager for Team Energy Foundation, Inc. (TEFI), a private corporate foundation, he managed the biggest private sector undertaking on missionary electrification, Project BEACON or the Barangay Electrification Assistance for Countryside Development Program. This program brought electricity to over 300,000 households at a cost of over US\$30M, many of which through Solar-PV systems. He is currently the Executive Director of Team Energy Foundation, Inc. overseeing programs on Sustainable Energy, Environment Conservation, Education and Disaster Resiliency. He has been making presentations around the globe in the topics of sustainable energy and corporate social responsibility. Mr. de Castro is a graduate of Far Eastern University with a Marketing Degree and took up his Master in Business Management studies at the Asian Institute of Management.

## Robert F. Ichord, Jr., U.S. State Department

Deputy Assistant Secretary



Dr. Robert F. Ichord, Jr. serves as Deputy Assistant Secretary in the Department of State Bureau of Energy Resources. He is responsible for promoting the transformation of energy systems to achieve greater efficiency and cleaner performance through use of market forces and innovative financing approaches. He leads the Bureau's efforts to reform electricity and power systems and develop more efficient and reliable national and regional electricity markets. Dr. Ichord has a long-history of U.S. Government service in the energy field, having worked for the Energy Research and Development Agency, the US Department of Energy, and the US Agency for International Development

He is recipient of the USAID George Marshall and Science and Technology Awards and the Superior Honor Award from the Department of State for his role in achieving the Athens Energy Community Treaty. He is also the recipient of the prestigious International Energy Efficiency award from the USEA-Johnson Controls Energy Efficiency Forum for his ground-breaking energy efficiency programs in Eastern Europe and the former Soviet Union.

## Salvatore Vinci, International Renewable Energy Agency

Programme Officer- Policy Advice



Salvatore Vinci is serving as Programme Officer- Policy Advice in the Knowledge, Policy and Finance Centre at the International Renewable Energy Agency. He is presently the Programme Officer in charge of the Policy Unit, overseeing projects related to renewable energy policy design, implementation and assessment. In his capacity, he is the project manager for the International Off-grid Renewable Energy Conference (IOREC) and other activities aiming at promoting rural electrification through off-grid renewable energy systems. He is also the chair of the IOREC Expert Group. He has over 15 years of experience in the energy field and holds a degree cum laude in Environmental Engineering.

## Sandeep Giri, Gham Power

President



Sandeep is the CEO of Gham Power – a solar microgrid company that focuses on powering income-generating activities. After launching multiple technology companies in San Francisco bay area, Sandeep started Gham Power in his native country Nepal, inspired by the challenge of tackling 16+ hours of daily power-cuts. Today, Gham Power has installed over 400 projects to provide reliable and scalable solar systems that also cost less than diesel, and it is now developing a strong pipeline of microgrid projects. Sandeep has a master's in computer science, and a renewable energy degree from UC Berkeley.

### **Santosh Kumar Singh, GIZ**

Technical Expert



Santosh works for GIZ India as a Technical Expert under the Indo-German Energy Program. His work focuses on developing markets for off-grid renewable energy solutions such as improved cookstoves, solar water pumps, etc. In the current profile, he is coordinating GIZ activities in clean cooking and financing for MSMEs in the renewable energy sector in India. He has more than 10 years of work experience in providing market-based solutions for low-income households. He has also authored a number of publications on energy access and on Base of the Pyramid (BoP) markets. He is a Mathematics graduate and has a post-graduate degree from Indian Institute of Forest Management, Bhopal.

### **Sarah Alexander, SELCO India**



Sarah Alexander has worked at SELCO for over six years, on program conceptualization, project management, communications and fundraising. She currently looks at sustaining enabling conditions for social energy enterprises through a policy lens. She has a Master's in Conservation Biology from The State University of New York College of Environmental Science and Forestry, Syracuse.

### **Srey Bairiganjan, Arc Finance**

Project Manager



Srey serves as Arc's Project Manager for India and brings extensive experience in the social and cleantech enterprise engagement space with a special focus on Base of the Pyramid markets. Srey leads some of Arc's energy finance partnerships in India. Before joining Arc Finance, Srey was the Head of Enterprise Engagement and Research at New Ventures India founded by the World Resources Institute. His work experience has been in mentoring and facilitating investments in small scale enterprises with a triple bottom line approach across Asia, Africa and South America. He has authored multiple reports on emerging markets, inclusive growth and entrepreneurship. He has participated as an expert at various global fora including the G20 – Inclusive Business Forum in Germany, Rio +20 Corporate Sustainability Forum in Brazil, the International Business Forum in South Africa and the UNDP SE4All workshop in Thailand. Srey has presented his research at a range of universities including John Hopkins University, New York University, Duke University, Columbia University and University of North Carolina in the USA. He has a MBA from the Indian Institute of Forest Management (India) and a diploma in Investment Management from the ANDE Program of the Aspen Institute (USA).

## Silvia Kreibiehl, Frankfurt School-UNEP Centre

Head



Silvia Kreibiehl is Head of the Frankfurt School - UNEP Collaborating Centre for Climate & Sustainable Energy Finance (the Centre) at Frankfurt School of Finance & Management. In her role as Head of the Centre Ms. Kreibiehl has overall responsibility for all international Frankfurt School consultancy projects in the area of climate and sustainable energy finance. Ms. Kreibiehl is project leader for the REPP project on behalf of EIB focusing on financing gap assessments as well as the design of new and the modification of existing guarantee instruments.

She is also leading applied research efforts particularly with regard to the role of local investors in climate finance. Ms. Kreibiehl is also a co-author of the Fifth Assessment Report (AR5) currently being prepared by the Intergovernmental Panel on Climate Change (IPCC). Before joining the Centre Ms. Kreibiehl worked for Deutsche Bank for 17 years, thereof 10 years in corporate finance (Equity Capital Markets and Mergers & Acquisitions), in particular in the RE sector. She also worked four years on double bottom line investment opportunities and respective transaction structures in developing countries.

## Soma Dutta, ENERGIA International Network on Gender and Sustainable Energy

Senior Technical Advisor



Soma Dutta is a Senior Technical Advisor with ENERGIA, the International network on Gender and Sustainable Energy. She works on cross cutting issues of gender, poverty and development in the context of energy access and on efforts that contribute to women economic empowerment through energy access. Within ENERGIA, she works with a multi-country and multi-partner programme portfolio focused on providing technical and financial support to energy programmes, gender and energy research and evidence based advocacy. In the area of energy access, Soma has supported policy makers, practitioners, governments, NGOs and international organizations in project planning; socio-economic, institutional and policy analysis; and capacity building. Soma is an Indian with degrees in Economics and Rural Management.

## Susan McDade, SE4All Initiative

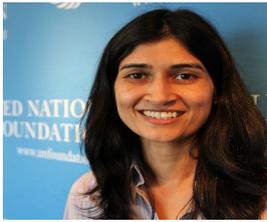
Country Actions Team Leader



Susan McDade is the Country Action Team Leader in the Sustainable Energy for All (SE4All) initiative established by UN Secretary General Ban Ki Moon. Based in the Global Facilitation Team in Vienna, she works with the Dr. Kandeh Yumkella, SRSG and CEO of the Initiative and through the partner institutions of SE4All promotes energy activities in developing countries aimed at increasing access to energy services, increased use of renewable energy and enhanced energy efficiency. Ms. McDade is a Development Economist with an MA in Economic Policy and Planning and has worked for the United Nations Development Programme (UNDP) for 23 years in the field of energy and development. Prior to joining the SE4All initiative in Vienna she was United Nations Resident Coordinator in Uruguay (2010-2013) and Cuba (2006-2009) and the Manager of UNDPs Sustainable Energy Programme in the Bureau for Development Policy (2001-2005). She has had long term assignments with UNDP in Guatemala and China and prior to joining the United Nations lectured in development economics at the Institute of Social Studies in the Hague. She is a Canadian citizen.

## **Tripta Singh, Energy Access Initiative**

Deputy Director



Tripta Singh is the Deputy Director for Energy Access at the UN Foundation. In her current role, Tripta focuses on strategy and partnership-building for the Energy Access Practitioner Network – a growing 1600 member global network of private companies and public sector organizations launched to catalyze market-led solutions for energy access in developing countries – created under the Sustainable Energy for All initiative led in partnership by the United Nations and the World Bank. Tripta has over 12 years of experience working on climate change and renewable energy issues with a focus on decentralized energy solutions for poor communities and is passionate about the right of poor communities to have access to basic energy services. Tripta has an M.Phil. degree in geography from the Delhi School of Economics and a dual Master's in international development and geography from Ohio University.

## **Wencai Zhang, Asian Development Bank**

Vice President



Mr. Wencai Zhang is the Vice-President (Operations 1) of the Asian Development Bank (ADB). He joined ADB in December 2013.

Mr. Zhang is responsible for operations in the South Asia Department and the Central and West Asia Department. Prior to joining ADB, Mr. Zhang was the Director General of the Department of External Economic Cooperation at the Ministry of Finance (MOF) of the People's Republic of China (PRC). He served as the Deputy Director General for the International Department of MOF from July 2004 to July 2012, where he worked with various multilateral initiatives, including the Group of 20 (G20), Association of Southeast Asian Nations+3 (ASEAN+3), and Asia Pacific Economic Cooperation.

From April 2007 to September 2009, Mr. Zhang was the Executive Director for the PRC at ADB, where he was the Chairman of the Budget Review Committee and a member of the Development Effectiveness Committee and the Ethics Committee of the Board of Directors. From December 1993 to May 1996, he was the Advisor to the Executive Director of China at the World Bank in Washington, D.C.

Mr. Zhang holds a PhD in Finance from the Chinese Academy of Social Sciences. He earned his Master's Degree and Bachelor's Degree in International Economics from Nan Kai University in Tianjin, PRC.

## **Wilhelm van Butselaar, SMA Australia**

Sales Director Hybrid Energy Solutions



Wilhelm van Butselaar has worked with SMA for ten years. Previous roles with SMA included Product Manager, installer and trainer for remote electricity supply systems in the USA, Spain, Turkey and Germany. Past experience includes work at an institute for renewable energy in Spain and three years in the wind turbine sector prior to joining SMA. Wilhelm also has five years experience in the areas of high voltage and high power in railway applications, residential and public buildings. He studied power electronics with an emphasis on wind turbines and obtained a masters degree in electronics based on renewable energies and solar hybrid systems. Wilhelm is currently the Sales Director for Hybrid Energy Solutions at SMA Australia, developing applications in the mining sector, remote communities, tourism and agricultural sectors in Australia, New Zealand and the Pacific Region and carries out regular trainings based on this expertise.

# 5. Asia Clean Energy Forum 2014: Programme overview



**ASIA CLEAN ENERGY FORUM 2014**  
CONNECTING THE POLICY, TECHNOLOGY, AND FINANCE COMMUNITIES  
Manila, 16-20 June 2014

**Partners**




























	June 16 Monday	June 17 Tuesday	June 18 Wednesday	June 19 Thursday	June 20 Friday
	<b>Pre-Forum Event</b>	<b>Pre-Forum Events</b>			<b>Parallel Sessions</b>
9:00-10:30	International Off-Grid Renewable Energy Conference	International Off-Grid Renewable Energy Conference	Asia Clean Energy Forum Opening Plenary and Ministerial Dialogue	Renewable Energy Grid Integration and Storage	Comparing Treatment of Clean Energy in National Energy Policies
10:30-11:00	Break	Break	1. Welcome Remarks 2. Keynote Address 3. Launch of Sustainable Energy for All Initiative's Asia-Pacific Hub 4. High Level Ministerial Dialogue	Building Codes and Appliance Standards: Policies and Enforcement	International Collaboration on Energy Technology Development and Deployment - Case Studies and Best Practices
11:00-12:30	International Off-Grid Renewable Energy Conference	International Off-Grid Renewable Energy Conference		Energy Efficient Air Conditioning (CLASP)	Future Energy Scenarios: Perspectives on the Future Trajectory of Clean Energy
12:30-2:00	Lunch	Lunch		Finance for Early-Stage SMEs (PFAN Asia)	Perspectives from the Financial and Development Communities on Clean Energy Finance
2:00-3:30	International Off-Grid Renewable Energy Conference	International Off-Grid Renewable Energy Conference		Clean Energy Solutions for Industry (Carbon War Room, AMP)	Barriers to Reforming Fossil Fuel Subsidies: Lessons Learned from ASEAN
3:30-4:00	Break	Break		Energy Efficient Air Conditioning (CLASP)	Difficult Challenges: Financing Off-Grid Energy Projects
4:00-5:30	International Off-Grid Renewable Energy Conference	International Off-Grid Renewable Energy Conference		Clean Energy Solutions for Industry (Carbon War Room, AMP)	Review of Track Discussions
5:00-5:00	Reception	Reception		Finance for Early-Stage SMEs (PFAN Asia)	Ending, Keynote 3. Raffle 4. Closing Remarks

**COLOR CODING KEY TRACK**

- Accelerating Energy Efficiency
- Promoting Renewable Energy
- Maximizing Energy Access
- Policy and Regulation
- Finance
- Technology

Preliminary Week at a Glance: 10 June



IRENA Headquarters  
CI Tower, Khalidiyah  
P.O. Box 236, Abu Dhabi  
United Arab Emirates

[www.irena.org](http://www.irena.org)