

Workshop Report

BEST PRACTICES IN DECENTRALISED RENEWABLE ENERGY ACCESS: SHARING KNOWLEDGE FOR RENEWABLE ENERGY ENTERPRISE DEVELOPMENT

Organized jointly by



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Rationale for the workshop

Energy access: the challenge

Energy poverty in many developing countries continues to be a major challenge as nearly 1.3 billion people, 19% of the global population lack access to electricity, and 2.7 billion, 39% still rely on traditional three stone fires for cooking¹ (IEA, 2011). Amongst these, over 95% live in rural areas of South Asia and Sub-Saharan Africa. What is more, 1 billion will likely remain without electricity access in 2030 unless there is a drastic shift in approach. While grid extension has been the preferred option for increasing electricity access, global statistics indicate this will not be sufficient to meet the goal of universal electrification by 2030.

About 60% of additional generation needed to achieve universal access to electricity by 2030 is estimated to come from decentralised off-grid installations, either mini-grids or stand-alone. Renewable energy (RE) technologies are providing promising economic options for off-grid electrification in most rural areas. This means decentralised off-grid RE has the potential to play a central role in extending both electricity and modern forms of energy access to the underserved, and additionally stimulate socio-economic development. In addition, there are numerous opportunities to use mobile (and where available, internet) connectivity to better manage RE technologies or systems in areas that are off-grid, connected to mini-grids, or those that do not receive a reliable power supply from the grid.

Significant investments from a broad range of sources, especially from private funding (notably business incubators, early stage investors and banks), will be required to realise this potential. To ensure investment is unlocked over the coming decades, the creation of an enabling environment is most important, particularly in the development of private enterprises which are key to reaching out to the underserved populations. In order to create an enabling environment, a range of factors are needed, including appropriate institutional and regulatory frameworks, enabling policies, sustainable financing and business models, capacity building, and technology adaptation. The creation of this enabling environment requires cooperation and dialogue between different stakeholders, in order to identify challenges and possible mitigating measures.

¹International Energy Agency, IEA, 2011 Key World Energy Statistics, Paris, 2011

The work of IRENA, ADB, CIIE & DfID in decentralised renewable energy

The workshop was jointly held by the International Renewable Energy Agency (IRENA), Asian Development Bank (ADB) and the Center for Innovation, Incubation and Entrepreneurship - Indian Institute of Management Ahmedabad (CIIE), and further supported by the Department for International Development (DFID) India.

International Renewable Energy Agency (IRENA)

IRENA is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA recognises that achieving universal access to modern energy services is a vital pre-requisite to advancing socio-economic development. Decreasing cost and improving reliability have led decentralised renewable energy technologies to become cost-effective options for the provision of modern energy services in most rural areas. IRENA has embedded in its Work Programme 2014-15 numerous activities related to off-grid renewable energy including hybrid mini-grids, off-grid solutions for productive applications and working with business incubation centres and entrepreneurs to build the necessary capacity to develop sustainable business models.

In 2012, IRENA organized the first International Off-Grid Renewable Energy Conference (IOREC) in Ghana which provided a strong platform to promote dialogue among stakeholders from across the rural electrification value chain, in particular between the public and private sector, with a focus on Africa. The conference was attended by over 350 delegates from 80 countries, including representatives from Rural Electrification Agencies and Ministries in charge of renewable energy development from around 30 African countries. The event convened speakers from 23 countries, from public and private sector, including the most successful stories worldwide in terms of off-grid rural electrification through renewables.

The IOREC 2014 was organized in Manila, Philippines on the sidelines of the Asia Clean Energy Forum organized by the Asian Development Bank, and in partnership with the Alliance for Rural Electrification (ARE). The Conference convened over 450 key stakeholders from across the off-grid renewable energy value chain, including representatives from rural electrification agencies, ministries in charge of renewable energy development, the private sector, academia, financing institutions and international organisations. The conference was a crucial opportunity to gain insights into the status of energy access in the Asia region in particular, discuss key barriers and identify solutions to overcome them; and importantly share best practices and lessons learnt about design and implementation of enabling policies, innovative financing solutions and tailor-made renewable energy systems.

IOREC is focused on policies, regulations, financing and technologies conducive to the scaling up of off-grid renewable energy-based rural electrification, in particular through the involvement of the private sector. The conference deliberations presented key outcomes such as off-grid solutions to be brought out into the mainstream electrification strategy; pragmatic targets aligned with socio-cultural and economic conditions

of local communities; build capacity of the private sector and financial institutions and across the value chain.

ADB's Energy for All Program

The Asian Development Bank (ADB) initiated the Energy for All Program in 2008 as a response to the growing plight of the energy poor in developing Asia. It brought together like-minded organizations across Asia and formed the Energy for All Partnership, which has the objective of providing modern energy to 100 million people by 2015.

To achieve its 2015 goal, Energy for All is working internally to support its Public Sector Operations Department to include energy access as a core output of its programs across Asia and the Pacific. Energy for All is also working closely with the Private Sector Operations Department to explore equity or debt investments to companies that have energy access as a primary output of their business model. As of 2013, Energy for All's internal initiatives has resulted in USD 4.8 billion of investments, alleviating 78 million people from energy poverty.

In parallel to Energy for All's internal initiatives, the program is also matching entrepreneurs with financing institutions to facilitate private sector investment in the energy access sector. To improve the quality of the companies in Energy for All's pipeline, ADB began organizing in-country forums to utilize the local knowledge of its consultant network. Since 2013, Energy for All conducted investor forums and business model workshops in Nepal, Indonesia, Philippines and Myanmar. These efforts have contributed significantly to Energy for All development pipeline, which lists more than 90 companies and projects across Asia and the Pacific.

Center for Innovation Incubation and Entrepreneurship – IIM Ahmedabad (CIIE)

The Centre for Innovation Incubation and Entrepreneurship (CIIE) at the Indian Institute of Management Ahmedabad is one of India's leading technology business incubators. Set up with an aim to promote innovation and entrepreneurship in India, CIIE taps into the experience and expertise available at IIMA in the areas of management, innovation, technology networks and entrepreneurship.

- CIIE actively sources innovations from across the country through its “open innovation” programs and engages with industry experts to carry out evaluation of ideas as well as mentoring support.
- CIIE provides active mentoring, handholding, prototype development and financial support to innovators across technology sector.
- CIIE is actively involved in developing a strong support ecosystem for entrepreneurs in the cleantech and renewable energy sectors in India.

Over 100 new companies / projects have been supported by CIIE over the last few years, through various initiatives. Some of these include the Power of Ideas (India's largest startup scouting competition), iAccelerator (India's first accelerator for IT, web and mobile start-ups), Infuse Ventures (cleantech-focused VC fund) and MentorEdge (a nation-wide network of mentors and experts across sectors and functions).

One of its key ecosystem initiatives is Infuse Ventures. Infuse is short for the ‘Indian Fund for Sustainable Energy’, an early stage venture capital fund set up and managed by CIIE, with a mandate to develop,

promote and invest in early stage cleantech & sustainable energy ventures from India. The Infuse ecosystem was created through a unique public-private-academia collaboration between IIM Ahmedabad, Ministry of New and Renewable Energy (Govt. of India), Technology Development Board (Govt. of India), British Petroleum India and the International Financial Corporation. In addition to these, many other partners such as the Small Industries Development Bank of India (SIDBI), ICICI Bank, and Godrej Industries have come onboard the initiative. Infuse supports seed and early stage enterprises developing new business models across the renewable energy, resource efficiency, waste, water and other sustainability-related areas.

In 2013, CIIE partnered with the Asian Development Bank to launch the second edition of a unique accelerator programme for early stage cleantech entrepreneurs - PowerStart. Over the course of two editions, this initiative has supported 23 cleantech ventures, many of which are in the energy access space. CIIE is also one of the partners for Rockefeller Foundation's SPEED programme (Smart Power for Environmentally Sound Economic Development). As part of this programme, CIIE seeks to identify energy access entrepreneurs and facilitate seed financing to them, with an aim to help them prove their business models at an early stage.

Department for International Development – India

DfID's Knowledge Partnership Programme (KPP) in India supported the workshop as well as follow up activities to assist in the transfer of knowledge and experience from India to other regions. India has taken many steps to promote off-grid renewable energy solutions to address the issues of energy access and government agencies, NGO's, entrepreneurs and financing institutions have been successful in providing electricity through renewable sources across the country. A number of institutions have busted the myth that the rural people cannot afford and maintain technology and that it is not possible to run a commercial venture that fulfils a social objective. In addition, India has the presence of business incubation centers that are starting to be recognized globally in the supporting entrepreneurs. One of the incubation centers – the Centre for Innovation Incubation and Entrepreneurship (CIIE) based at IIM Ahmedabad will be supporting IRENA and ADB, in this process.

Nurturing enterprise development: sharing of expertise and building knowledge base

IRENA has a commitment to support entrepreneurs through its ongoing capacity building initiatives. The focus is to strengthen enterprise development and assist in the development of favorable environment to be successful through the improvement of regulations, access to finance, facilitation of technology and business model delivery on innovative approaches, and enhancing the skills and knowledge of energy access entrepreneurs. In 2013 IRENA, with the support of Germany, UAE and regional partner organisations, launched capacity-building activities in ECOWAS and Pacific SIDS. Drawing on the experience gained from these and other similar activities, the Agency aims to strengthen its approach to capacity building for entrepreneurs and to institutionalize its support to business incubation centres and other similar enabling institutions, such as renewable energy associations in various regions. The approach will link entrepreneurs across the value chain wherever possible, including financing.

ADB recognized that, apart from matching bankable energy access enterprises with investors, additional support needs to be provided to both parties during the conduct of due diligence to achieve financial closure. Energy for All launched the Project Development Facility in 2012 to create a platform where entrepreneurs and financing institutions can request for technical assistance from ADB and the Energy for All Partnership in the areas of business development, financial modelling and investment structuring. These services have been instrumental in securing financing for 4 energy access enterprises. With the launch of Energy for All's country-focused activities, the number of financial closures is expected to increase.

Experiences from India

India has taken many steps to promote off-grid renewable energy solutions to address the issues of energy access. Several Government agencies, NGO's, entrepreneurs and financing institutions have been successful in providing electricity through renewable sources across the country. A number of research institutions and centres of excellence created by the Ministry of New and Renewable Energy (MNRE), Government of India, have utilized their skills for improving technology for use in small businesses and several urban local issues have also been solved using renewable technology.

Many projects have benefitted from the several incentives provided by the government at both the central and state level. These projects have been largely commercially sustainable with an add-on package of improving the livelihoods and consequently the living conditions of the users. They offered employment opportunities, improved medical facilities and an opportunity for the villagers to broaden their horizon of working. Most importantly, a number of these projects have busted the myth that the rural people cannot afford and maintain technology and that it is not possible to run a commercial venture that fulfils a social objective. These renewable energy projects have reached out to both rural as well as the urban areas.

Within the Indian context, various business models promoted by MNRE have demonstrated through practice how renewable energy can prove to be the most appropriate, scalable and optimal solution for providing power to thousands of remote villages and hamlets. These initiatives also show the way for the developing world that off-grid renewable can offer good solution to the issue of energy access. These projects are based on various renewable energy technologies and devices, such as improved cook stoves, biogas plants for various applications, biomass gasifiers using different feedstock's, solar photovoltaic lighting, solar thermal water heating systems and water mill from different parts of the country, appropriate to rural areas and capable of providing access to clean energy in rural areas in other parts of developing world as well. The innovativeness is not only in the technology application for various end uses but also in developing and implementing a sustainable delivery and revenue model.

In addition, India has also a well-known group of entrepreneurs and businesses who have created a name globally in the provision of off-grid services to the rural areas. Some of them are SELCO (solar), Husk Power (biomass), Mera Gao Power (solar), Abellon Clean Energy (biomass), ARTI (improved stoves for businesses), Prakti (Improved stoves) amongst others. Such a wide breadth of knowledge, experience and links to investment potential will be valuable for other Asian regions, as well as Africa.

Although several renewable energy technologies are currently available that generate electricity (solar PV, wind energy, etc.) or heat (solar thermal) or fuels that can be burned (biogas, liquid biofuels, etc.), the following are the most popular technologies within the context of energy access in India.

<p>Solar photovoltaic</p>	<p>Solar thermal / concentrated solar</p>	<p>Solar-powered pumping</p>	<p>Biomass (solid biofuels)</p>
<p>Converting solar irradiation to direct current (DC) electricity – may need storage Energy access: direct electricity generation, most commonly used for home lighting, cellphone charging,</p>	<p>Concentrating solar irradiation to produce heat (which can then be used to generate electricity) Energy access: primarily for water heating/cooling, cooking, drying, etc.</p>	<p>Pumping running on electricity generated by PV panels solar thermal Energy access: irrigation, water pumping applications</p>	<p>Biomass such as agri-waste - processed into pellets, briquettes, biochar, etc. Energy access: direct combustion (cooking, heating, boiling water, etc.)</p>
<p>Biogas</p>	<p>Biomass gasification</p>	<p>Biofuels</p>	<p>Micro wind</p>
<p>Anaerobic digestion of organic material - methane is primary gas Energy access: direct combustion (e.g. cooking, heating, boiling water, etc.)</p>	<p>Biomass into producer gas and syngas through 'gasification' - CO is primary gas Energy access: direct combustion (e.g. cooking, heating, boiling water, etc.)</p>	<p>Non-food biomass to bioethanol (fermentation), biodiesel (from organic oils, such as Jatropha, waste cooking oils, etc.) Energy access: substitute for diesel in generators, running engines, etc.</p>	<p>Small wind turbines - power range from 200 W to 50 kW – may require energy storage Energy access: generate electricity for lighting, charging, etc.</p>
<p>Smart microgrids</p>	<p>Small hydro</p>		<p>Clean cookstoves</p>
<p>Small-scale grids - integration with smart meters and remote monitoring systems - multiple RE tech. could be used for generation (hybrid systems) Energy access: commonly used to power remote villages</p>	<p>Small-scale hydro power projects – steep mountain rivers or rain water harvesting Energy access: direct electricity generation</p>		<p>Improved cookstoves that burn fuel and cook food more efficiently – usually paired with solid biofuels like briquettes and pellets Energy access: cooking</p>

The support ecosystem for energy access enterprises

There are numerous stakeholders that play significant roles in the support system for energy access entrepreneurs. These include:

- **Entrepreneurs**
 - Small-scale, village-level entrepreneurs (VLEs)
 - Entrepreneurs who own and run larger businesses spread across several regions
- **Governments**
 - Link various stakeholders and act as a facilitator and enabler through policies, regulation and incentives.
 - Local governments, state nodal agencies, panchayats and blocks
- **Financial Institutions**
 - Provide credit for both entrepreneurs and customers
 - Commercial banks, international financial or non-banking financial institutions, micro-credit organizations and individual or institutional investors.
- **R&D and technical organizations:**
 - Continuous involvement of R&D organizations.
 - So as to ensure that technologies require minimal operation & maintenance; and are adaptable to local conditions; cost-effective & reliable
- **Policy organizations, industry associations**
 - Facilitator by recommending policies and technologies and by lobbying for these with governments and other decision-making bodies
 - Links policy makers to various other stakeholders
 - Mobilize more accessible sources of funding
- **Suppliers, contractors**
 - Should be able to source materials, equipment and devices at minimal cost, and help achieve economies of scale by facilitating bulk buying by entrepreneurs
- **NGOs**
 - Could be sales and marketing channels; alternative model to VLE's
 - Capacity and capability building for implementation / monitoring / awareness generation activities for energy access projects
- **Community**
 - Targeted beneficiaries of the proposed energy access program
 - Need to be empowered to perceive the large future benefits of energy access
- **Incubators and business development organizations**
 - Comprehensive training (business development, operations, sales and marketing, etc.) – these are critical skills required by entrepreneurs
 - Assistance with raising funding from sources such as venture capital

Workshop objectives, agenda and participants

Objectives

Based on these learnings and background understanding, a full day closed event was jointly hosted by IRENA, ADB, DfID and CIIE, on the 15th of June 2014 in Manila, Philippines, as part of the International Off-grid Renewable Energy Conference 2014.

The overall aim of the workshop was to provide an opportunity to initiate and facilitate knowledge transfer between various stakeholders in the energy access enterprise development ecosystem (as mentioned in the section above) in South Asia and Africa. In addition, the focus was to identify opportunities to strengthen enterprise development and, through a collaborative programme, assist in the improvement of regulations, access to finance, facilitation of technology, business model delivery on innovative approaches, and enhancement of skills of energy access entrepreneurs.

Experiences were shared from a high participation from India, where a number of research institutions and centres of excellence have been created by the Ministry of New and Renewable Energy (MNRE) to improve the use of renewable energy technology by small businesses and their business models. In particular, India also has a well-known group of entrepreneurs and businesses who have created a name globally in the provision of off-grid energy access services to rural areas. For example, the reach of SELCO has been widely acknowledged globally and the SELCO Incubation Centre has been established to transfer the knowledge locally to other entrepreneurs. Similarly, other incubation centres such as the Centre for Innovation Incubation and Entrepreneurship (CIIE) based at IIM Ahmedabad are initiating innovative approaches to support clean technology businesses, such as, through an accelerator programme for cleantech startups and through the setting up of a US\$25 million cleantech-focused venture fund. Both SELCO and CIIE discussed their business incubation models, in addition to the Kenya Climate Innovation Centre (CIC), the Unreasonable Institute East Africa, and 2iE Technopole from Burkina Faso.

The **key objectives** of the day-long workshop were to:

- Support knowledge exchange between entrepreneurs and incubation centres working in the energy access space in Asia/Africa.
- Identify critical gaps in knowledge, skills and resources that prevent the creation and growth of enterprises in the energy access sector.
- Outline skill enhancement and resources needed to support energy access entrepreneurs.
- Form a network of incubation centres, entrepreneurs and renewable energy associations to further develop a model for a sustainable ecosystem.

Agenda

08:30 – 09:00 *Registration*

Session 1: Welcome and Introductions

Moderator: Kavita Rai, International Renewable Energy Agency

09:00 – 09:30 **Welcome remarks from ADB, IRENA and DfID**

- Gauri Singh, Director – Country Support and Partnerships, IRENA
- Anthony Jude, Senior Advisor and Chair – Energy Committee, ADB
- Alope Barnwal, Climate and Environment Adviser - Energy, Climate and Growth Unit, DFID India

09:30 – 11:00 **Introductions**

All participants were given 1 minute to introduce themselves briefly

11:00 – 11:20 *Break*

Session 2: Role of incubation centres as vehicles for knowledge transfer and enterprise development across regions

Moderator: Ashok Das, Founder-CEO – SunMoksha

11:20 – 12:00 **Building cleantech and renewable energy businesses – experiences:**

- Mohsin Bin Latheef, Centre for Innovation Incubation and Entrepreneurship, India
- Joachim Ewechu, Unreasonable Institute East Africa
- Sarah Alexander, SELCO Incubation Centre, India
- Serah Nderitu, Climate Innovation Centre, Kenya

12:00 – 12:15 **Intervention – 2iE, West Africa – on knowledge/skills transfer across regions**

12:15 – 13:00 **Panel discussion on “role of incubation centres in building energy access enterprises”**

Moderator posed questions to the panellists, and invited audience questions

13:00 – 14:00 *Lunch*

Session 3: Optimizing collaboration within the Energy for All Partnership

Moderator: Jiwan Acharya, Asian Development Bank

14:00 – 14:15 **Energy for All - A programmatic approach to mitigate energy poverty**

- Elmar Elbling – Energy for All, ADB

Energy for All presented its approach and methodology to mitigate energy poverty and the tools available to overcome barriers to energy access

14:15 - 15:15 **Rationalizing the supporting infrastructure for the energy access space**

- Coy Navarro – Energy for All, ADB

The session helped define how services offered by each participant is situated in the broader scheme of facilitating private sector investment for the energy access sector.

Gaps that persist in the investment facilitation process on a country level were also identified.

15:15 - 15:30 *Break*

Session 4: Pathway to future – developing an action plan for knowledge sharing and enterprise development in energy access

Moderators: IRENA, CIIE, ADB

15:30 - 16:30 **Developing an action plan (group discussions)**

- **Group 1 - Knowledge and skills sharing amongst incubation centres** – key areas for support, partnerships
- **Group 2 – Entrepreneurs and Investors** – needs, areas of support, regional experience sharing (technology development, business development and investment-readiness)
- **Group 3 – RE Industry Associations** – role of RE associations to catalyse enterprise development, partnerships
- **Group 4 - Building a framework for collaboration between energy access practitioners**

There were four groups, each led by a moderator discussing a set of specific points in relation to knowledge sharing and enterprise development in energy access – focus was on what opportunities existed and how these can be tackled through partnerships.

16:30 – 17:30 **Presentation of discussion points and panel discussion on action plan (Moderated by Gauri Singh, IRENA)**

Group leaders from previous session shared their key learnings and suggestions; interactive discussion with audience on key action going forward.

17:30 – 18:00 **Closing notes – Gauri Singh, IRENA and Jiwan Acharya, ADB**

Participants

The workshop had in attendance, 43 participants from 35 organizations in South Asia and Africa, representing a diverse spectrum of functions, sectors and capacities. These included:

- Incubation centres from India and Africa – in order to understand the different incubator models that are in use, and where the gaps/opportunities are, in terms of sharing the knowledge.
- Renewable energy associations from Asia and Africa – in order to understand the kind of support they provided in their respective regions, and to figure out if there are opportunities for collaboration between associations from different regions.
- Support organizations – non-governmental organizations, international organizations, consulting firms, development banks, multilateral donors, etc.
- Entrepreneurs and investors from India, South Asia and Africa

The full list of participants can be found below.

<i>S. No.</i>	<i>Name of participant</i>	<i>Institution</i>	<i>Country</i>
1	Dipal Baruah	Bright Green Energy Association	Bangladesh
2	S. M. Zafar Sadeque	Bangladesh Rural Electrification Board	Bangladesh
3	Elodie Hanff	2iE Technopole, Burkina Faso	Burkina Faso
4	Ashok Das	SunMoksha	India
5	Hemant Lamba	Ashden India Renewable Energy Collective	India
6	Rashi Verma	Development Alternatives	India
7	Mohsin Bin Latheef	Centre for Innovation Incubation & Entrepreneurship	India
8	Vibhor Dhanuka	Infuse Ventures, India	India
9	Deepak Punwani	Nuru Energy	India
10	Srey Bairiganjan	Arc Finance	India
11	Samkit Shah	Centre for Innovation Incubation & Entrepreneurship	India
12	Aloke Barnwal	Department for International Development (India)	India
13	Brian Shaad	Mera Gaon Power	India
14	Sarah Alexander	SELCO Incubation Centre, India	India
15	Pallassana Krishnan	The Climate Group	India
16	Jarnail Singh	The Climate Group	India
17	Santosh Kumar Singh	GIZ India	India
18	Upendra Bhatt	cKinetics	India
19	Aisha Abdulaziz	Kenya Renewable Energy Association	Kenya
20	George Kosimbei	Chandaria Business Incubation Centre, Kenyatta University	Kenya
21	Serah Nderitu	Climate Innovation Centre, Kenya	Kenya
22	Lok Nath Ghimire	Nepal Biogas Promotion Association	Nepal
23	Dipak Bahadur Shahi	Solar Electric Manufacturers Association Nepal	Nepal
24	Dilli Ghimire	National Association of Community Electricity Users, Nepal	Nepal
25	Nawa Raj Dhakal	Alternative Energy Promotion Centre, Nepal	Nepal
26	Shahid Bokhari	Renewable & Alternative Energy Association of Pakistan	Pakistan

<i>S. No.</i>	<i>Name of participant</i>	<i>Institution</i>	<i>Country</i>
27	Anthony Jude	Asian Development Bank	Philippines
28	Jiwan Acharya	Asian Development Bank	Philippines
29	Elmar Elbling	Asian Development Bank	Philippines
30	Coy Navarro	Asian Development Bank	Philippines
31	Mila Jude	SEEDlinks Philippines Inc.	Philippines
32	Daniel Hersson	Asian Development Bank / Infuse Ventures	Singapore
33	Robert Kraybill	Impact Investment Exchange	Singapore
34	Godwin Msigwa	Tanzania Renewable Energy Association	Tanzania
35	Donath Raphael Olomi	Institute of Management and Entrepreneurship Development, Tanzania	Tanzania
36	Omar Bakari	Small Industries Development Organization	Tanzania
37	Kavita Rai	IRENA	UAE
38	Gauri Singh	IRENA	UAE
39	Joachim Ewechu	Unreasonable Institute East Africa, Uganda	Uganda
40	Emmy Kimbowa	Renewable Energy Association of Uganda	Uganda
41	Subaskar Sitsabeshan	The Climate Group	UK
42	Caroline Narich	Accenture	UK
43	Tripta Singh	UN Foundation	USA

Workshop sessions

Session 1: Introductions

Introductory remarks were made by Gauri Singh (Director – Country Support and Partnerships, IRENA), Anthony Jude (Senior Advisor and Chair – Energy Committee, ADB) and Alope Barnwal (Climate and Environment Adviser - Energy, Climate and Growth Unit, DFID India).

Anthony Jude, in his remarks, highlighted that almost US\$30 billion a year in annual investment needs to be raised from now until 2030 to provide universal energy access to all. Alope Barnwal, spoke about two of DfID’s programmes that support off-grid energy deployment: the Multi Country Mini Grid Program in Energy & Climate and the Knowledge Partnership Programme. The DfID presentation clearly outlined that to achieve universal electricity access by 2030, a combination of grid extension, mini-grids and standalone household systems will be required. It was also emphasized that one of the key expected outcomes of the workshop would be to share knowledge through partnerships.

Each participant then shared a brief profile of their work and background. Many participants felt that this enabled them to get a glimpse of each other’s work and made them think of potential opportunities.



Picture 1: Kavita Rai (IRENA) introducing the workshop



Picture 2: Gauri Singh (IRENA) giving the introductory remarks.



Picture 3: Aloke Barnwal talks about DFID's support programmes for energy access

Session 2: Role of incubation centres as vehicles for knowledge transfer and enterprise development across regions

Following the introductory session, there was a panel on “role of incubation centers as vehicles for knowledge transfer and enterprise development across regions.” The panel had representation from five incubators from India and Africa, each with a unique model and approach towards business incubation. The panel was moderated by Ashok Das (CEO – SunMoksha and active mentor to cleantech entrepreneurs). Panelists included Serah Nderitu (CIC, Kenya), Mohsin Bin Latheef (CIIE / Infuse Ventures, India), Sarah Alexander (SELCO Incubation Centre, India), Joachim Ewechu (Unreasonable Institute Uganda) and Elodie Hanff (2iE, Burkina Faso). There was a lively panel discussion and Question & Answer session with the participants following the presentations.

Serah Nderitu gave a brief description of the Climate Innovation Center – CIC Kenya (a World Bank-infoDev initiative, funded by UK Aid) and highlighted CIC’s flagship programme of providing ‘Proof of Concept’ grants for prototyping technologies and piloting business models. Mohsin Bin Latheef, gave an overview of CIIE, focusing on their cleantech activities, particularly the setting up of Infuse Ventures – India’s first sustainable energy fund and ecosystem focused on early stage cleantech enterprises. Sarah Alexander shared the ecosystem approach of the SELCO Incubation Centre and laid emphasis on replicating SELCO’s successful business models and process. Elodie Hanff described the role and objectives of 2iE which is an international institute for higher education and research in energy, based in Burkina Faso. She mainly spoke about 2iE’s education and research programmes. Finally, Joachim Ewechu spoke about the work of Unreasonable East Africa in the recent past and shared some of his institutes key learning’s with the audience.

All presentations are attached with this report.



Picture 4: Panel discussion on business incubator models

The presentations were followed by a lively panel discussion and Q&A session. Some of the prominent questions raised and discussed are as follows:

- What are the key challenges faced by energy access entrepreneurs?**

Suppliers and working capital: Getting the right kind suppliers/vendors and negotiating long term credit terms were found to be a major hindrance. Many suppliers would usually want 50% payment upfront and remaining when the systems are delivered. Finding working capital is another well-known challenge faced by energy access entrepreneurs.

Preparing entrepreneurs for business operations: helping create strategies, processes and financial discipline in enterprises is important, especially if they’re seeking financing from banks. Balancing this with the requirements of the banks is a challenge, and is a critical value add provided by incubators.
- What kind of additional support from an incubator is required for an enterprise to succeed?**

Sarah Alexander (SELCO Incubation Centre) remarked that Incubators need to think beyond business and financial planning as support provided to entrepreneurs. This may be driven by the fact that

many incubators in India are located inside academic institutions, and there is a strong academic mindset. However, technology development, financial linkages, policymaking, etc., are other activities that incubators can engage in, to support entrepreneurs further. Longer term financial linkages (beyond the initial seed funding) is important too, as grant funding to entrepreneurs may not be a very sustainable option in the long run.

- **Is your incubator financially sustainable?**

Serah Nderitu (Kenya CIC) mentioned that the CIC realizes the need to be financially sustainable, and is considering charging for some of the business advisory services, technical services for product testing, office space, policy and legal services that they provide. A seed fund that provides support beyond the proof-of-concept stage is currently being established. Some of the other panelists agreed that financial sustainability of incubators is a critical issues, and that currently most incubators in developing countries are operationally financed through grants.

- **Do the enterprises/entrepreneurs pay back?**

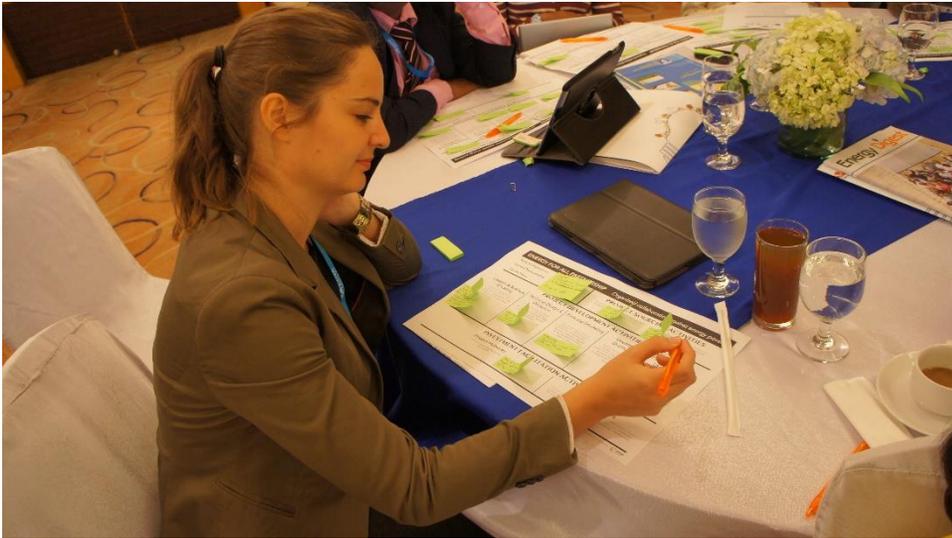
Sarah Alexander of SELCO Incubation Centre responded by saying that the Centre is currently soft-funded through grants from donors and these donors are patient and understand that it takes time to build enabling ecosystems, and identify the right entrepreneurs. The latter is very critical to the Centre's objectives, and is a very difficult task, considering that the Centre has a focus on supporting non-English speaking entrepreneurs from rural areas without access to avenues such as business plan competitions or networks.

Session 3: Optimizing collaboration within the Energy for All Partnership

This session was organized by ADB's Energy for All team. Participants were grouped based on their regions, into 4 groups. Coy Navarro and Elmar Elbling of the ADB team utilized a special canvas designed by their team to map out services offered by the participants within a region.



Picture 5: Elmar Elbling (ADB) introduces the E4All partnership



Picture 6: Elodie Hanff (2iE) working on her canvas

The canvas included three main sections:

- Project sourcing activities: this section identifies the different events and activities for attracting clients (forums, workshops, etc.).
- Project development activities: this section maps out various services, activities or programs offered by the different stakeholders in a region that help entrepreneurs with ideation & business modeling, technical design & validation, financial modeling, investment structuring and policy, regulation & legal advisory services.
- Investment facilitation activities: this section shares different programs and activities that facilitate matching of entrepreneurs with investors and building stronger investor networks.

They then used it to identify gaps and opportunities for collaboration between the participants in the same region.

Session 4: Pathway to future – developing an action plan for knowledge sharing and enterprise development in energy access

The final session had participants regrouped into 4 new groups based on their areas of expertise or function. Each group then brainstormed on “challenges” and “opportunities” to arrive at collaborative specific “action points” for potential partnerships between institutions and experts working in energy access. The action points arrived at by the groups are as follows:

Group 1: Business incubators

1	George Kosimbei	Chandaria Business Incubation Centre, Kenyatta University	Kenya
2	Serah Nderitu	Climate Innovation Centre	Kenya

3	Donath Olomi	Institute of Management and Entrepreneurship Development (IMED)	Tanzania
4	Omar Bakari	Small Industries Development Organisation	Tanzania
5	Joachim Ewechu	Unreasonable Institute East Africa	Uganda
6	Elodie Hanff	2iE Technopole	Burkina Faso
8	Rashi Verma	TARA - Development Alternatives Group	India
9	Sarah Alexander	SELCO Incubation Centre	India
7	Mohsin Bin Latheef*	Centre for Innovation Incubation and Entrepreneurship	India

*Moderator/group representative

Key questions for discussion:

- What are the key challenges that each incubator has in his/her own country to overcome?
- How can incubators support more energy access entrepreneurs in their own country/region and what is the current status?
- What support is provided to the incubation centers? What is needed?
- How are the incubation centers funded and what are is the long term vision for each? Many incubators are grant-funded; is this sustainable? How can incubators become more financially sustainable?
- What are the key topics for training requirements?
- Are the incubation centers willing to partner with another one to mentor each other?
- Would incubators be open to the idea of cross-incubation of startups from one region to another?

Key action points arrived at:

- Creating a knowledge sharing platform and sharing each other's experiences and tools. All incubators have significant amount of experience in their regions, and a pulling together of expertise to provide better advisory support was recognized by all.
- Twinning of incubation centers between Asia and Africa, whereby each could learn from the other, arrange for exchange visits for staff, and 'shadow' entrepreneurs as they grow in their businesses. This can be an important step forward towards partnerships.
- Sharing deal flows between and amongst incubators, across regions.
- Showcasing collaborative angel investment for enterprises and angel investors from both regions.
- Organising an annual review meeting amongst incubators to share experiences and knowledge.
- Building linkages between regional accelerator programmes for knowledge sharing.

Group 2: Supporting institutions

1	Aloke Barnwal	DFID	India
2	Santosh Kumar Singh	GIZ India	India
3	Krishnan Pallassana	The Climate Group	India
4	Nawa Raj Dhakal*	Alternative Energy Promotion Centre, Nepal	Nepal
5	Gauri Singh	IRENA	UAE
6	Jiwan Acharya	Asian Development Bank	Philippines
7	Carolyne Narich	Accenture	U.K.
8	Samkit Shah	Centre for Innovation Incubation and Entrepreneurship	India

*Moderator/group representative

Key questions for discussion:

- What are the current programmes that are being supported by the organisations present to support enterprise development? In which regions?
- What are the levels of funding that exists and for which aspects of support?
- What are the partnership structures that could potentially emerge to provide further support or to collaborate in the delivery of programmes?
- If so, what are the types of support that can be provided? In which areas of building up capacities – technical trainings, business trainings, investment support, seed fund, etc.

Key action points arrived at:

- Holding coordination meetings, arranged by national governments, for support organizations.
- Supporting more knowledge sharing platforms/forums and assisting in the creation of awareness to scale up the reach of enterprises both at the institutional and consumer level.
- Increasing collaboration among like-minded agencies to support knowledge and skills enhancement especially focused on enterprise development.

Group 3: Industry associations and related organizations

1	Aisha Abdulaziz	Kenya Renewable Energy Association	Kenya
2	Godwin Msigwa	Tanzania Renewable Energy Association	Tanzania
3	Emmy Kimbowa	Uganda National Renewable Energy Association	Uganda
4	Lok Nath Ghimire	Nepal Biogas Promotion Centre	Nepal
5	Dipak Bahadur Shahi	Solar Electric Manufacturers Association Nepal (SEMAN)	Nepal
6	Shahid Bokhari*	Islamabad Chapter, Renewable & Alternative Energy Association of Pakistan	Pakistan

7	Dipal Baruah	Bright Green Energy Association	Bangladesh
8	Upendra Bhatt	cKinetics	India
9	Subaskar Sitsabeshan	The Climate Group	India
10	Kavita Rai	IRENA	UAE

*Moderator/group representative

Key questions for discussion:

- What are the business model/s that have been successful with industry associations?
- What is the role of industry associations in the support towards strengthening the entrepreneurs or their own membership?
- What support is needed from policy makers to accelerate momentum in the implementation of energy access projects?
- What partnerships structures are required within the region or between regions? In which areas?
- What can each association provide in terms of partnerships?

Key action points arrived at:

- Networking and sharing of best practices with cross-border industry associations – signing of MoUs amongst regional renewable energy associations to share capacities and best practices.
- Setting up of a regional industry association in East Africa; and similarly in South Asia. Most RE Associations know how to work in their own countries, and this knowledge sharing within regions would be a key first step as it would be efficient.
- Establishing a lobby group for favorable renewable energy regulations and financing.
- Industry associations have valuable information on financing of projects; and can be a good source of information. In addition, they also have good information and are often vehicles for putting standards into practice. Utilising these strengths of the industry associations are yet to be capitalized fully. Any knowledge sharing platform can be enriched with these experience sharing.
- Associations can be also utilized for awareness building, marketing campaigns through their annual exhibitions (ex, Pakistan, Tanzania), international or regional conferences etc.
- In addition, industry associations also expressed that there are challenges related to access of finance, especially instruments such as soft guarantee. Thus, innovative mechanisms for financing is highly needed. Along with this is the need to build capacities as many renewable energy associations face challenges with high outflow of trained staff and personnel. Issues such as ‘product credibility’ in the market also is of high relevance to industry associations. The role of Governments to support the industry association both in Asia and Africa was high on the expectation list of the industry associations. It was felt that campaign to overcome regulatory barriers could be a key action.

Group 4: entrepreneurs, investors and related organizations

1	Vibhor Dhanuka	Infuse Ventures	India
2	Sreyamsa Bairiganjan	Arc Finance	India
3	Hemant Lamba	Ashden India Renewable Energy Collective	India
4	Brian Shaad	Mera Gaon Power	India
5	Ashok Das	SunMoksha	India
6	Deepak Punwani	Nuru Energy	India
7	Dilli Ghimire	NACEUN	Nepal
8	Robert Kraybill	Impact Investment Exchange Asia (IIX)	Singapore
9	Elmar Elbling	Asian Development Bank	Philippines
10	Jarnail Singh	The Climate Group	India
11	Daniel Heresson	Infuse Ventures	Singapore
12	Upendra Bhatt*	cKinetics	India

*Moderator/group representative



Picture 7: Investors/entrepreneurs group in discussion

Key questions for discussion:

- What are the key challenges that entrepreneurs and investors face in their country/region?
- What do investors look for in energy access enterprises? How can these be augmented/supported by others stakeholders (like incubators, support organizations, etc.)

- Are the participants willing to partner with another one from a different region to provide mentorship, visit opportunities etc.?
- What types of support is needed for the advancement of the enterprises?
- How can enterprises providing similar products/services but in different regions, collaborate with each other?

Key action points arrived at:

- Developing new models for financial innovation, such as exploring blended capital funds, tapping into corporate social responsibility funds, and setting up crowd funding platforms. In addition, many energy access entrepreneurs also need guarantee structures to support the initial entry into the rural market space.
- Creating a group to advocate policy reform to governments, to address the disparity between support provided to on-grid power producers and off-grid operators. It is important for both the entrepreneurs and financing community that regulatory frameworks and governance support is absolutely necessary and in almost all countries, there was a clear need for more.
- Advocating the promotion of priority sector lending to energy access entrepreneurs.
- Creating a platform to share knowledge to replicate proven business and financial models. Even in India, many businesses are still on the learning curve, and the lessons learnt can be valuable for neighboring countries and other regions.



Picture 8: Final panel with representatives from various groups discussing their action points



Picture 9: Group photograph of workshop participants

Post-workshop and beyond

Incubators forging partnerships:

- Post the workshop, the incubators group met together on the sidelines of IOREC to discuss how to move forward on the action points. They have decided to form a knowledge sharing group, including a web platform to share tools and ideas, plans etc. An initial Google Group named IndiAfrica_Incubators has been set up, and this will be followed up with additional tools such as Dropbox, LinkedIn, etc.
- They are also getting into “twinning” arrangements (such as between CIIE, CIC and CBIC) which will include knowledge sharing, process sharing, and additionally deal flows, at a later stage. Interestingly even within Africa, CIC and Unreasonable Institute has already agreed to share deal flows. It is planned that a formal MoU may be arrived at during the next workshop planned in September in Bangalore, India.
- Entrepreneurs working in similar/related sectors will also be introduced/paired with each other by the incubators, whereby one can ‘shadow’ the other in their business and growth, and share experiences and ideas.

South Asia Network for Clean Energy

- The Climate Group’s (TCG) India team has initiated steps to co-ordinate the setting up of the South Asia Network for Clean Energy (StANCE). Once this is set up, it will also be used as a vehicle to share knowledge with other regions. We will include the newly formed associations from India. It is currently proposed that this network be based in Nepal considering the neutrality of the location.
- A concept note will be circulated by TCG with thoughts on logical framework, activities, secretariat and the same will be finalized by mid-August 2014.

- This is to be followed by regional consultation in Kathmandu for agreeing on Plans of Actions, Responsibilities, Charter Signing etc. by around mid-October 2014.
- The initiative is set for a tentative launch date during TCG's Bijli event in December 2014

Workshop for business incubators in Bangalore

- SELCO Incubation Center has come onboard to co-host the next workshop in Bangalore, along with CIIE. The workshop scheduled tentatively for mid-September, and is expected to be a 5-6 day event.
- After some deliberations, it has been decided to focus only on business incubators from Africa and South Asia, the Africa ones being those that were present at the Manila workshop.
- Each incubator has been asked to nominate one entrepreneur who will accompany them for the workshop.
- The primary objective for the workshop will be to share experiences, and also those of other experts and entrepreneurs from India, who are active in the energy access space. The workshop will involve knowledge sharing on various incubator models, energy entrepreneurship in India, as well as field visits to micro and small energy entrepreneurs in Bangalore. A more detailed agenda is to be ready by late-July.
- The workshop is being planned tentatively for 25-30 participants.

Other partnerships/initiatives:

- Africa industry associations are proposing to form a formal group, with a link in to, possibly through the South Asia Alliance once set up. It was proposed to keep them separate from the incubators group, but there will be cross-linkages.