SECOE
SUSTAINABLE ENERGY CENTER OF EXCELLENCE

"CONNECTING POLICY, TECHNOLOGY & FINANCE THROUGH KNOWLEDGE"

Energy for All Investor Forum

Room 4711, Level 4,
Sands Expo and Convention Centre, Singapore

Friday, 2 November 2018

Prepared by the Sustainable Energy Association of Singapore (SEAS)

Contents

Introduction

The Energy for All Investor Forum was held on 2 November 2018 and held in conjunction with the Asia Clean Energy Summit (ACES) 2018. The forum is an annual regional event organized by the Asian Development Bank (ADB) that highlights important trends and best practices in the energy access sector. At the centre of this event is an investor matching activity wherein bankable SMEs that serve the energy poor are promoted to impact funds, climate funds and other financing institutions. By facilitating private sector investment in this manner, ADB aims to broaden the impact of these SMEs in the Asia Pacific Region. This activity may also result in the adoption of the technologies developed by these SMEs in mini-grids, and other applications in the broader renewable energy and energy efficiency sectors.

A total of 61 participants were present for the workshop comprising of 48 delegates and 13 resource speakers from 23 countries.

Session 1: Achieving Universal Energy Access through Decentralized Electrification

Session one discusses the services the energy for all initiative offers to its developing member countries. The programme clarifies the local market potential for decentralised energy solutions and help their Governments enact enabling policies and regulations that encourage greater private sector participation in this domain.

Mr Charles Navarro shared that by 2015, USD27.4 billion of investment was made. There is still a need to accelerate efforts to enable private sector participation in this space, to close the investment gap for the increase in universal energy access, that is about USD 17.6 billion short.

The Asian Development Bank (ADB) in this essence has already been working with the internal operations department to embed energy access impacts in all their projects and has helped to mobilise around USD 8.3 billion dollars over the spread of 100 million population.

There is a need to focus on external works as it is beneficial for entrepreneurs and investors today. ADB provides technical assistance with their investment documents such as validating financial models and business plans, so they are in a better position to approach private investors. This is relatively achievable through these 4 steps methodology:

1. Selection of target countries; considering the scarcity of resources, regulatory policies and government support and capabilities of local entrepreneurs to monitor the energy systems and know how to increase revenue
2. Clarity of market size (demand); development of a JAS map for data driven information and analytics
3. Clarify of supply size; dependent on interest level of government and capabilities of entrepreneurs to identify viable sites and market opportunities
4. Entity to deliver propositions; emphasis on capabilities and available resources at each location

A successful mapping story in the three states in Myanmar and a fair share of challenges were shared by Ms Catherine Cader. One of the common changing factors is the base site selection to better understand markets for different electrification options as the cost depends on local resources and needs.

To overcome this problem, GIS planning tools are proven useful to overlay existing information for more insights on the demand for off grid energy systems, and how it is related to existing infrastructure to derive at the best option to undertake. However, findings also prompted some challenges such as grid infrastructure and collection of data. Mini grid developers need to consider the population demand and road infrastructure and if there is enough distance to the next grid before they embark on the projects.

There have been tremendous changes in the last 5 years attributed to geographical areas, investment growth and new business models proven profitable among others. Mr Carlos Sordo mentioned that their demand modelling is based on real community priority and bottom up analysis where affordability gap remains and evaluation of inclusive business models are required. Some of the considerations noted were demand analysis, availability of subsidies, public financing and market activation.

While it is possible for remote electrification to be cost effective, most face three primary reasons for failing; poor planning, no ability to collect payment to sustain revenue and no means to perform on operational management. According to Mr Halley Fitzpatrick, Electric Vine is developing tools and integrating to make processes more streamlined to improve accuracy of data collection at lower cost.

One of the tools was the phone survey app that uses GPS that tracks the population statistics and measures their typical usage. The maps are created by drones and bring the sites to engineers instead of deploying them in every site

Mr Christophe Compte, feels that it is important to co-innovate with partners when doing energy access as it is not that viable without close partnerships with small companies. He feels that energy access is not only about electricity, and that clean cooking is often overlooked.

Session 2: Overcoming Barriers to Scale-up Decentralized Electrification

While there are many successful and proven solutions for decentralised electrification for rural regions, however there are some perimeters that we need to consider about scaling up. There are already deployment of infrastructure but the key questions lies with the multiplication effect. For example, we need to do a lot more in terms of size and pace with a scale of 600 million population. What are the issues that need to address, barriers to be brought down or eliminated to ensure that scaling happens to reach out to people who do not have electrification?

Another dynamic to keep in mind is decentralised as we are talking about the infrastructure model between centralised and decentralised electrification in rural vs urban regions. How these dynamics fit together for energy access?

Technology and policies and regulations barriers are somehow not a cause for concern as there are experts today and most of the decentralisation systems are more straight forward in terms of technology ie investment returns or the type of digital technology being offered. People only question the way the rules are being executed and how the government is able to enforce regulations under different conditions.

Partnerships on the other hand is one of the tough challenges faced. There is a need to build the relationship between energy professionals and companies that do product development for renewable energy in remote locations in order to help with scaling. Entrepreneurs that are doing off grid rural electrification today are unable to build energy infrastructure with investment returns of 5-7 returns, hence financing is a larger problem. What has been suggested was to build a larger pool of available funding. Ms Katarina Hasbani feels that the reasons why bank refuse to loan is because there is no benchmark to compare projects and profitability.

Mr Peter Storey shared how Zambia became successful because of the great coordination in the taskforce consisting of Zambia government and agencies, rural electrification authorities and regulators, private investors, donors and relevant companies. They had identified the challenges and problems and address them in practical ways together. This further reiterated Katarina's point that partnership is an important component for scaling.

In the panel discussion the following were discussed:

1. While we recognise there are benevolent donors, government support and international aid, why aren't the banks finding these types of projects bankable like any other power plant? Banks tend to look at deal flows and size of funding but is the size of these projects too small for banks to get involved? What is the role of encumbrance today that banks already have finance, the big players vs the non-traditional energy space, the big players vs the non-traditional centralised space where assets are ready and being funded; which would be at risk if you start on a decentralised model? How are banks been influenced by the powerful influences to dictate where the money goes?

Due to insufficient credit history, investors do not know which business models to use; energy business model or equipment distribution model. Creating a banking credit history record of unknown population and its risk are thus likely to hold banks back. Instead companies should look for credit enhancement instruments which can then support local banks and providing local currency debt.

Another reason banks are not loaning is because there are no clear profitable model for minigrids so people perceived it as high risk, low to medium return and long payback compared to solar home systems model which are more established. For example, the banking sector in Myanmar do not have financing products and require high collaterals, very short tenure (1-2 years). Minigrid projects need to be treated as infrastructure projects in order for banks to be comfortable to lend, with the right operational numbers and level of public financing. Projects need to be seen as commercial investment with social impact ambition and by sharing country level projects and experiences, we can then expand regionally.

2. Policy makers are generally elected on a 5 year cycle and money evidently has a role to influence decision making. How do you see the role of utilities? How do you see the losers of this equation decentralised the electricity and influence the way policies are framed? Is this something we need to start addressing from advocacies and getting more people elected to be not influenced on this? What is your experience about the role of encumbrance?

Conflict of interest from the utilities and the government needed to be sort out and there need to be in place intelligent regulations to out utilities in a position able to compete and develop strategies given the demographic and geographical situations to create business plan forward.

Although it is an inevitable process and will take a long time to incorporate the two, there can be possible collaborations to work with the encumbrance for example to include microgrids as part of the business, to be service providers in some areas etc. Alliance for rural electrification has started to push for regulations and laws to identify the different options and to provide clear information to the utility's players over time.

3. By 2057, 9.6 billion people are not in the city. Are these 2 communities (city and non-city) interrelated? There will be no way that agriculture will be active; water and food constraints will arise therefore the need for decentralised energy enabler in the rural or non-city part of the society needs to be addressed. When we are talking about partnership, we are also encompassing healthcare and education infrastructure to the decentralised energy models for value proposition to increase – do you see these models or enablers to accelerate scale that goes beyond energy and integrate with health and improve food supplies situation in the future?

One way is the RE100 partnership where private sectors get involved and complement through procurement and supply chain rules and sustainability policies. There is also a need to merge with other forms of development such as better intersection of planning and budget.

Session 3: Investor Matching

In the last session, the 4 companies presented on their investment propositions to investors and finance institutions present in the room.

1. Mr Piyush Jaju, Punam Energy Pvt Ltd, India

Presented on ONergy Solar, who is provides solar energy solutions through three main product lines:

- Solar irrigation pumps for farmers and rural communities.
- Grid and rooftop systems for commercial institutions, and government agencies.
- Rural energy access consisting of solar lighting solutions to individuals & institutions

To further expand the business, ONergy is currently seeking a total investment INR 36 crores or USD 5 millions over the next 2 years, with a debt/equity of 40:60. The investment will assist in scale up of revenues from USD 4 mn in 2018 to USD to USD14.5 mn in 2020 (2 years)

2. Dr. Vibha Tripathi, Swajal Water Pvt Ltd, India

Dr Vibha presented on Swajal, Smart Solar Water, a point-of-use system that produces pure water locally that cuts down on two major costs to bring cheaper, assured clean drinking water. Swajal is looking for an investment of $3m to scale 12X in 36 months.

3. Mr Sudeep Tuladharr, Gham Power Nepal Pvt Ltd, Nepal

Mr Sudeep presented on helping farming communities earn more with solar-powered irrigation and microgrids and is looking for an investment of $2million in 2 years

4. Mr Erel Narida, One Renewable Energy Enterprises, Inc

Mr Erel presented on One Renewable energy eneterprises that focuses on solar pumping solutions and solar roodtop design and installatons. They are looking for $5M funds infusion in the form of $2M in working capital loan and $3M in equity to fuel our growth.

Annex 1: Programme

TIME	PROGRAMME
08:30 – 09:00	**Registration**
09:00 – 09:30	**Opening Remarks** Mr. Robert Guild, Asian Development Bank
09:30 – 10:30	**SESSION 1 | Achieving Universal Energy Access through Decentralized Electrification** **Moderator:** • Mr. Charles Navarro, Energy for All Initiative **Speakers:** • Ms. Catherina Cader, Reiner Lemoine Institut gGmbH • Mr. Carlos Sordo, Practical Action • Mr. Halley Fitzpatrick, Electric Vine • Mr. Christophe Compte, Engie Asia Pacific Co Ltd
10:30 – 11:00	**Coffee Break**
11:00 – 12:30	**SESSION 2 | Overcoming Barriers to Scale-up Decentralized Electrification** **Moderator:** • Dr. Sanjay Kuttan, Singapore Maritime Institute **Speakers:** • Ms. Katerina Hasbani, Alliance for Rural Electrification • Mr. Peter Storey, PFAN / Beyond the Grid Fund for Zambia • Mr. Pariphan Uawithya, Rockefeller Foundation • Mr. Susumu Yuzurio, JICA
12:30 – 13:30	**Lunch**
13:30 – 15:00	**SESSION 3 | Investor Matching** **Moderator:** • Mr. Charles Navarro, Energy for All Initiative **Speakers:** • Mr. Piyush Jaju, Punam Energy Pvt. Ltd., India • Dr. Vibha Tripathi, Swajal Water Pvt. Ltd., India • Mr. Sudeep Tuladharr, Gham Power Nepal Pvt. Ltd., Nepal • Mr. Erel Narida, One Renewable Energy Enterprises, Inc.
15:00 – 16:00	**Facilitated Networking with Snacks**

Annex 2 – Participant List

No.	Title	Full Name	Job Title	Name of Institution/ Organisation	Country
1	Ms	Malavika Jan Bambawale	Partner	Darlberg Global Development Advisors Limited	Singapore
2	Mr	Adhikari Narayan	Director	Alternative Energy Promotion Center (AEPC)	Nepal
3	Mr	Mark Fogarty	Director	First Energy Asia Pacific	Australia
4	Mr	Santosh Rai	Engineer, Project Manager	Alternative Energy Promotion Center (AEPC)	Nepal
5	Ms	Ute Collier	Senior Programme Leader	International Energy Agency	France
6	Mr	Itty Varugis	Director	IWA Environment	India
7	Mr	Win Kyaw Myo	Director	Ministry of Agriculture, Livestock and Irrigation	Myanmar
8	Mr	Permana Adi	Junior Risk Analyst	Ministry of Finance	Indonesia
9	Mr	Ernesto Silvano, Jr	Head, Office for Renewable Energy Development	National Electrification Administration	Philippines
10	Ms	Lillian Rose Magnolia Narida	VP-Finance	One Renewable Energy Enterprises, Inc.	Philippines
11	Mr	Willem Brent	Director	Power for All	Spain
12	Mr	Peter Du Pont	Managing Partner	Private Financing Advisory Network	Thailand
13	Mr	Nagaraja Rao	Head Investment Facilitation	Private Financing Advisory Network	India
14	Mr	Jonathan B. Teodosio	Senior Science Research Specialist	Department of Energy	Philippines
15	Ms	Grace Perkins	Commercial Operations Associate	SparkMeter	United States
16	Mr	Pariphan Uawithya	Associate Director	The Rockefeller Foundation	Thailand

No.	Title	Full Name	Job Title	Name of Institution/ Organisation	Country
17	Mr	Jan Jaeger	ARE Policy & Business Development Officer	The Alliance for Rural Electrification	Belgium
18	Mr	Simon Rolle	Advisor	Rolle Associates	Austria
19	Ms	Diandra Phua	Senior Public Relations Executive	IN.FOM	Singapore
20	Ms	Anastasia	Executive	IN.FOM	Singapore
21	Mr	Chan Ho	Consultant	IN.FOM	Singapore
22	Mr	Jeremiah Phoon	Analyst	Finergreen	Singapore
23	Mr	Dominik Dieckmann	Senior Manager Sales and Marketing Energy	BASF	Germany
24	Ms	Rachel Teo Mui Ling	Senior Vice President	GIC	Singapore
25	Mr	Ting Kui Lun	Solar PV Design Engineer	Greentech Pte Ltd	Singapore
26	Mr	Bakram Ismail	Asst Project Manager	Greentech Pte Ltd	Singapore
27	Dr	Peter Lilienthal	Founder and CEO	Holmer Energy	USA
28	Mr	Sagar Gubbi	Managing Partner	Ecoforge Advisors Pvt Ltd	India
29	Mr	Adrian		Smart Power	Germany
30	Ms	Christina		SP Group	Singapore
31	Mr	Irfan Pawennei	Director	PT Asia Carbon Indonesia	Indonesia
32	Ms	Amy Zhang	Director	Ginga Environment	Singapore
33	Ms	Nora Tan	Business Development Manager	Climate Resources Exchange International Pte Ltd	Singapore
34	Mr	Anthony Tan	Blog Editor	TV Asia Broadband	Singapore

No.	Title	Full Name	Job Title	Name of Institution/ Organisation	Country
35	Mr	Jorund Buen	Co-Founder	DIFFER	Norway
36	Mr	Roshni Dave	Partnership Development Advisor	Partnership Development Advisor	Switzerland
37	Mr	Md Abu Bakr Khan	Head of Export	Rahimafrooz Renewable Energy Ltd	Bangladesh
38	Mr	Miguel Laburu	Business Development Director	IBC Solar Energy Pte Ltd	Singapore
39	Mr	Arun Sen	Managing Director	Coromandel Advisors Pte Ltd	Singapore
40	Ms	Rachel Lai	Business Manager	Growers Rural	Singapore
41	Prof	Abu Bakr S Bahaj	Head of Division, Chief Scientific Advisor to Southampton City	University of Southampton	United Kingdom
42	Ms	Sue Lim	CEO	Green Ventures Pte Ltd	Singapore
43	Dr	Jia Junbo	Section Head	Temasek Polytechnic	Singapore
44	Mr	Raaja		Raaja Ventures	Singapore
45	Mr	Bamapada Ghatak	Engineering Manager	Juwi Renewables Energies Private Limited	Singapore
46	Ms	Anna Ria Manahan	Program Manager for Capacity Building	Microfinance Council of the Philippines INC	Philippines
47	Er	Tan Hak Khoon	Senior Specialist	Energy Market Authority	Singapore
48	Mr	Damian Delev	Regional Representative	Sirea Group	France

Annex 3: Resource Person List

No.	Title	Full Name	Job Title/ Position	Name of Institution/ Organisation	Country
1	Ms	Katarina Hasbani	Founder	Alliance for Rural Electrification/The August Company	Singapore
2	Mr	Halley Fitzpatrick	Director	Electric Vine Industries	Indonesia
3	Mr	Christophe Comte	Senior Vice President	Engie Asia Pacific Co Ltd	Indonesia
4	Mr	Sudeep Tuladhar	Operations Director	Gham Power Nepal Pvt. Ltd.	Nepal
5	Mr	Erel Narida	President / CEO	One Renewable Energy Enterprises, Inc.	Philippines
6	Mr	Carlos Sordo	Energy Access Partnership & Innovation Manager	Practical Action	United Kingdom
7	Mr	Peter Storey	Global Coordinator	Private Financing Advisory Network (PFAN)	Finland
8	Mr	Piyush Jaju	CEO	Punam Energy Pvt. Ltd.	India
9	Ms	Catherina Cader	Geographer	Reiner Lemoine Institute gGmbH	Germany
10	Dr	Sanjay C Kuttan	Executive Director	Singapore Maritime Institute	Singapore
11	Dr	Vibha Tripathi	Managing Director	Swajal Water Pvt. Ltd	India
12	Mr	Susumu Yuzurio	Director, Energy and Mining Division	The Japan International Cooperation Agency	Japan
13	Mr	Pariphan Uawithya	Associate Director	The Rockefeller Foundation, Asia Office	Thailand