PWCET Series – 5th Event

Understanding the Clean Energy Transition with Community-Driven Decentralised Renewable Energy projects

Introduction

Under the new joint initiative '*Paving the way for Clean Energy Transition with Decentralised Renewable Energy (PWCET) Series*', the Alliance for Rural Electrification (ARE) and the Green People's Energy (GBE) organised the fifth event titled 'Understanding the Clean Energy Transition with Community-Driven Decentralised Renewable Energy projects'' on 27th April 2022, attracting **more than 200 attendees**, worldwide.

The webinar was a platform to launch a publication developed on this topic, comprising of 12 case studies on community-driven/community-supported DRE projects from Germany and GBE focused African countries.

Experts from **Abu Dhabi, Namibia, UK, and France** to discuss the necessity and impact of community-driven or community-supported DRE projects to scale up clean energy penetration to countries' energy mix and thereby achieve clean energy transition.

Event Summary

The webinar was opened by **Mr. David Lecoque, CEO of ARE**, who introduced the PWCET series to the audience, followed by a quick introduction to ARE.

Mr. Deepak Mohapatra, the Senior Officer of Policy & Business Development, ARE carried on with the proceedings of the session as the moderator.

Mrs. Bärbel Höhn, Special Representative for Energy in Africa, The Federal Ministry for Economic Cooperation & Development (BMZ) gave a keynote speech where she introduced the GBE initiative and officially launched the publication by touching on its objectives.

Mr. Mohapatra took over the floor as the moderator and presented the findings of the publication:

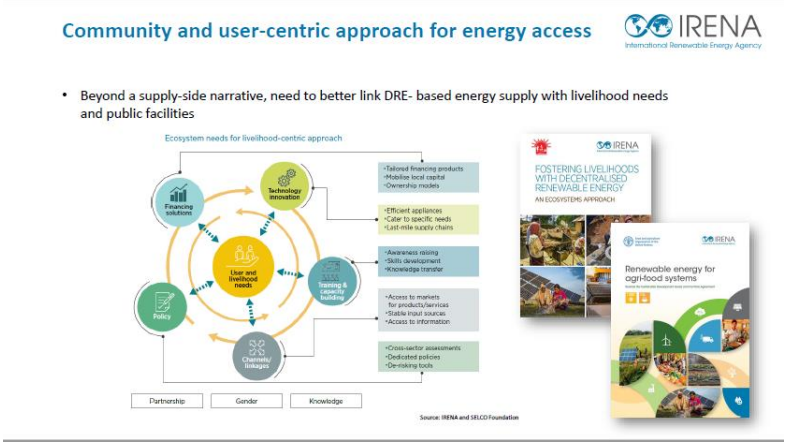
- **Major barriers identified**, from a social, financial and techinical context;
- **Benefits from community-driven DRE solutions** such as energy security, local investments, creation of local green and skilled jobs, project ownership and consciousness, energy efficiency and saving, and productive uses of renewable energy (PURE);
- **Key recommendations** to barriers from a social, financial and techinical context.

Mr. Divyam Nagpal, Programme Officer - Energy Access, Knowledge, Policy and Finance Centre (KPFC), IRENA was invited as the guest speaker for the webinar. Mr. Nagpal shared his insights on **the role of community energy in the energy transition.** According to the speaker, universal energy access remains elusive, with a large majority still without access to clean energy. Community energy can play an important role in accelerating renewables' deployment while generating local socio economic benefits and increasing public support for local energy transitions. To fully exploit the potential of DRE, Mr. Divyam Nagpal emphasised the need to embrace that ownership structures in the energy sector will change and new approaches with much wider enabling factors should be developed.

Community energy can enable just and inclusive energy transitions:

- Socio economic gain through investment, job creation and improved welfare
- Increased energy security through lower energy costs and greater price certainty
- Accelerated access to renewable energy through citizen driven innovation
- Broadened participation in the energy system and increasing public support for local energy transitions.

To address challenges faced when developing community-driven DRE projects, the IRENA recommends to ensure that energy needs be at the centre of the ecosystem as illustrated in the figure below.



To conclude, Mr. Nagpal speaks on the importance to provide the space and the patient capital for the ground work that goes into community engagement and working with the community to support the success of the project. Furthermore, there is no one-size-fits-all solution, but there are tools that can be deployed during the project to better understand the energy needs of the community.

The speaker interventions began after the guest speech featuring the case study contributors from the publication.

The first speaker, Ms. Helvi Ileka, Acting Director Center Head: Center for Renewable Energy and Energy Efficiency, Namibia Energy Institute **introduced the Tsumkwe Energy Project (TEP)** that was developed under the Pathway to Renewable Off-Grid Community Energy for Development (PROCEED) Project and installed in 2011. The overall objective of the project are as follows:

- **Interdisciplinary analysis** of existing RE-based mini-grids in remote rural areas of Namibia
- **Identify suitable designs / models** for PV-based mini-grids in underserved regions that are technically up-to-date, economically viable, easy to operate / maintain and appropriate for the local needs and social context.
- **Implementing a holistic strategy** to ensure the sustainability of these systems and to make rural people “first class citizens”
- **Develop recommendations for action** for the acceptance and promotion of off-grid power supply systems (at user and decision-maker level)

Ms. Ileka also provided some challenges incurred during the project implemented:

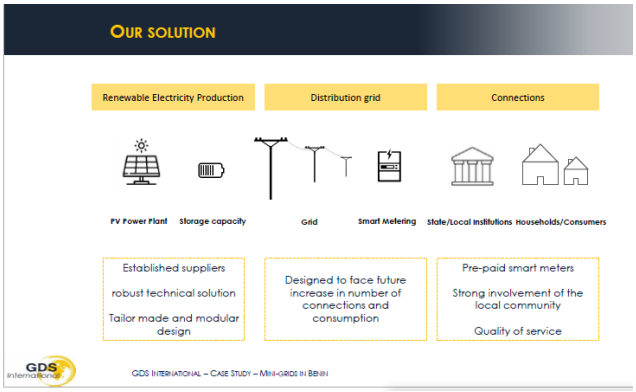
- **Inadequate funds** to cover repair costs and expansion of the mini-grid as the tariffs only covered operational costs only.
- **Low renewable energy awareness** and understanding by the local community, thereby impeding effective use of the mini-grid.

To address these challenges, community-driven DRE projects must go beyond local community consultation and information. They should include energy educational schemes to train both the local technicians and the community and to develop productive use cases within the community to increase income for better cost-recovery tariff systems, etc.

Speaker 2, Prof. AbuBakr Bahaj, Professor, Head of Energy & Climate Change Division, Faculty of Engineering & Applied Sciences, University of Southampton introduced **Community driven decentralised renewable projects in Uganda.** The project uses an implementation approach that looks at communities as drivers of DRE intervention with government support. The two mini grids are situated in Kanyegaramire and Kyamugarura , Kyenjono district, Uganda and were installed in support of REA Installed in 2015 as jointly supported by REA, Uganda and the e4D programme. The two energy systems identical solar PV arrays installed on the top of two 20 foot containers, with a designed capacity of Designed Capacity: 28kWh/day. For the community aspect, the projects are operated and managed by local cooperatives. For future outlooks, there are plans to connect the two villages in a cluster to allow them to work collaboratively.

Mr. Ruben Morgado, Executive Director, Carlos Morgado Foundation introduced the **Solar Giraffe project in Gaza, Mozambique** as the forth speaker. The project is a community space, cellphone charging and information hub, which was birthed to address two questions: how to charge cellphones in rural areas and how much it costs? The Solar Giraffe structure includes solar PV panels to power a technical closet with 10 mobile charging portals, a radio player and a public illumination at night, and a roof for community gatherings. The community was involved in the planning and construction of the project. By doing so, they were able to get crucial feedback on their first design such as increasing the height solar PV panel to avoid vandalism. The future outlooks for the structure include water pumping, commercial space, refridgeration and improve irrigation with the energy produced.

Speaker 5, Mr. Alexis Rehbinder, Business Development Manager MEA, GDS International presented the **12 off-grid mini-grids project in Benin.** The project is developed as part of the MCA-Benin II compact through the Off-Grid Clean Energy Facility (OCEF), an organisation that provided a subsidy for the project and also supported Bennin build its legal framework for rural electrification. Currently, the first mini-grid is being built with a 20-year concession agreement and has a total capacity of 1.7 MWp/3.2 MWh, with a target of more than 6000 connections. A key success factor of the project was working with a strong local partner with strong technical skills, knowledge of the local context and the capacity to provide energy services nation-wide. Mr. Alexis Rehbinder further emphasises the importance of partnering with established suppliers with robust and well known energy solutions and to build customised and modular designs for target communities to cater for future energy demands.



Mr Mohapatra thanked the speakers for their presentations and facilitated the panel discussion with questions from the audience.

Q1: **In the context of African Sub-Saharan countries with low financial capacities of population in rural and remote area and where the gvt support are limited, how can the community be involved in DRE driven by the communities?** **Mr. Divyam Nagpal**

"When communities are interested in embarking in such projects, funding and other support mechanisms required for project preparation are dedicated. Another aspect is developing programmes that support community-driven DRE projects. They should ensure an active engagement with communities that is not just limited to creating local ownership of assets but address the development of productive use of energy etc. Hence, there are a number of ways to develop new funding channels to address the gap and use of existing channels to encourage community participation."

Q2: **Has the project achieved its target in terms of the community accessing energy and are these communities able to pay for the energy services provided?** **Ms. Helvi Ileka**

"Yes, the communities now have a 24 hour energy access, however, the tariffs only cover the operational costs and not maintenance and repair. Therefore, there is a strong need for subsidies to cover maintenance and repair costs, and thus lower the price paid by local energy consumers."

Q3: **In your projects, how far are the mini-grids from the national grid and what are your plans in case of extension of national grid to these communities?** **Prof. AbuBakr Bahaj**

We selected a region that is approximately 200km from the national grid, but, this is not a guarantee that the national grid will not reach the community. To elaborate, one project developed in 2006 in Kenya, we were certain that the national grid wouldn't reach the community within a span of 20 years, especially after consulting the national electricity authorities. New president, electrify all schools in Kenya. To avoid this in Uganda, we selected a remote region that is solely for mini-grids.

Q4: **How are you currently handling the maintenance and repairs of the Solar Giraffe project, if any? Are these activities paid for and how do you cover these?** **Ruben Morgado**

"The project is free to use because the project financier requested it. So, we had a budget for the maintenance and operation to pay the project manager. Since the project has been commissioned, we are in discussion with the local community to develop an affordable energy tarrif. Currently, charging a phone costs USD 0,15 and we plan to reduce this tremendously."

Q5: **Is your tarrif reflective of the national energy cost? What subsidies are provided to the rural households connected to the mini-grid?** **Mr. Alexis Rehbinder**

"We received a subsidy to conduct the project, however, we are still working towards reaching the same energy tarrif as the national grid. We are close but not exactly aligned to it. Typically, it is difficult to have a low tarrif when investing in solar PV projects that also cover the investment of the distribution grid and operation. Thus, to lower energy tariffs, there is need to increase energy consumption by unlocking more local business models."

Q5: **Based on your experience, do you think it possible for the local communities in Africa to actively get involved in DRE projects?** **Mrs. Bärbel Höhn**

"When looking at community-driven DRE projects, there is a need for enabling factors such as a strong political will and development of capacity building initiatives that aim to enhance project ownership and unlocking more income generating activities for the local community."

To conclude the webinar, **Mrs. Dorothea Otremba, Senior Advisor, GIZ** thanked the panellists for their contributions and the audience for their active participation. She also called for the audience to get in touch with ARE and GBE to learn more about the publication and potential engagement opportunities.

Annex: Webinar Programme

PWCET Series – Fifth Event	
Date/Time	24th May 2022, 14:00 CEST
Title	Understanding the Clean Energy Transition with Community-Driven Decentralised Renewable Energy projects
Description	With the goals of the Paris Agreement seemingly challenging to achieve by 2030, new approaches to the clean energy transition are required. To achieve wide scale decarbonisation, there is a strong need to look beyond economic and technical aspects and consider the social dimension of renewable electrification. It is in other words essential that decarbonisation also stems from local initiatives undertaken or supported by communities. **Community-driven energy projects, particularly in the decentralised renewable energy (DRE) sector thus have a critical role to play in driving the global transition to cleaner energy systems**. The **GBE-ARE latest publication sheds light on 12 community-driven or supported projects from Germany and selected countries from Africa** notably Ivory Coast, Benin, Mozambique, Ethiopia, Ghana, Namibia, Senegal, Uganda, and Zambia. Experiences based on the case studies from selected African countries in this publication show that communities, especially when provided with the right financial and technical support, can effectively participate in the development and management of small-scale energy infrastructure to deliver essential energy services in partnership with the private sector, local and national governments, as well as international partners and other institutions.[1] Similarly, the case studies in this publication from German community-run renewable energy projects show that the factors that drive citizens to contribute are their individual values, participatory motives, favourable policies and commitment towards the environment and the development of the surrounding locality (regional value creation). **The major barriers and the key recommendations based on the findings from the case studies are segmented across three pillars namely social, financial, and technical barriers**. The recommendations are targeted towards stakeholders from the public sector, private sector, civil societies and communities. In conclusion, there is a huge potential to be explored when it comes to community-driven DRE projects and with the right mix of ingredients such as strong political goodwill, investment, innovation, and participatory approach from the local communities, these community-driven DRE projects can be

[1] Clean Energy Wire, Germany's greenhouse gas emissions and energy transition targets, Germany's greenhouse gas emissions and climate targets, 2020, (online)

	successfully scaled up. Such projects can massively contribute to the goals of universal energy access and the clean energy transition.
	Programme
90 Minutes	**Welcome remarks** Mr. David Lecoque, CEO, ARE
	Keynote speech Mrs. Bärbel Höhn, BMZ Special Representative for Energy in Africa
	Guest Speech Mr. Divyam Nagpal, Programme Officer - Energy Access, Knowledge, Policy and Finance Centre (KPFC), IRENA **Moderator:** Mr. Deepak, Senior Officer of Business & Market Development, ARE **Speaker Intervention:** • Ms. Helvi Ileka, Acting Director Center Head: Center for Renewable Energy and Energy Efficiency, Namibia Energy Institute • Prof. AbuBakr Bahaj, Professor, Head of Energy & Climate Change Division, Faculty of Engineering & Applied Sciences, University of Southampton • Mr. Ruben Morgado, Executive Director, Carlos Morgado Foundation • Mr. Alexis Rehbinder, Business Development Manager MEA, GDS International
	Moderated discussion and audience Q&A
	Closing remarks Mrs. Dorothea Otremba, Senior Advisor, GIZ

Partners:

About GBE

Dr. Gerd Müller, the Federal Minister for Economic Cooperation and Development, announced a new initiative, named Green People's Energy for Africa (GBE) in June 2017. This initiative aims to enable, expand and secure the supply of sustainable energy in rural Africa. It is part of the Marshall Plan with Africa and relies on the broad participation of small and medium-sized enterprises, municipalities, cooperatives, public associations and citizens.

Contact: Dorothea Otremba (dorothea.otremba@giz.de), Senior Advisor, GIZ

About ARE

Established in 2006, the Alliance for Rural Electrification (ARE) is the global business association representing the whole decentralised renewable energy sector for rural electrification in developing and emerging countries.

With more than 185 Members, ARE aims to promote a sustainable decentralised renewable energy industry for the 21st century, activating markets for affordable energy services, and creating local jobs and inclusive green economies. ARE enables improved energy access through advocacy and business development support for its Membership comprising the whole value chain of off-grid technologies.

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