

Ministerial Roundtable
‘Catalysing off-grid renewable energy deployment -
Towards universal electricity access and the attainment of SDGs’
 Seventh session of the Assembly – 15 January 2017

1. Even as the modern energy sector continues to grow, nearly a quarter of the world’s population remains outside of its fold. Over a billion people in rural and peri-urban areas live without electricity access and around 2.9 billion rely on traditional fuels for cooking and heating. Gaining access to modern energy services would have an immediate and transformative impact on their livelihoods.

2. Access to modern energy is not an end in itself. It is an enabler of increasing productivity, rising incomes, improving food and water security, enhancing access to health and education, and of a wide range of development goals. Unless the issue of access to energy is adequately addressed, meeting many other Sustainable Development Goals will be almost impossible.



3. The pace of modern energy access expansion has been slow. Recent estimates suggest that the number of people without electricity access is declining by just 15 million per year. These trends signal an urgent need to rethink electrification plans and identify solutions that can complement traditional electrification options relying on grid extension.

Mainstreaming off-grid renewable energy as a key solution for expanding energy access

4. Cost reductions and technology advancements have enabled off-grid renewable energy solutions to become a mainstream option for expanding electricity access. These solutions, mini-grids and stand-alone systems, are cost-effective, modular and can be tailored to provide a wide range of electricity services. The track record of development continues to grow. Off-grid renewable energy solutions already provide electricity access to nearly 90 million people. As an example, in Nepal over 2000 micro-hydro mini-grids and more than 500,000 stand-alone solar systems are in place, providing electricity to around 15% of households. In Kenya, over 14% of the population uses off-grid solar as primary lighting and mobile charging source.

5. More than ever before, the private sector is increasingly engaged in the sector, driving business model and technology innovation to bring down costs and make off-grid solutions more accessible to rural communities. The rapid rise of pay-as-you-go solar home systems and integration with mobile payment technology is an example of the speed of innovation that is taking place. In East Africa alone, over 450,000 such systems have been deployed.

Creating an ecosystem to accelerate deployment

6. Off-grid renewable energy solutions are well-positioned to play a central role in countries' strategies to achieve universal access in a timely and sustainable manner. The development opportunity at hand is immense, but requires targeted efforts to create an enabling environment. Such an environment hinges on dedicated policy and regulations, customised business and financing models, adapted technology solutions, and capacity building.

- **Dedicated policies and regulations** are needed to promote off-grid renewable energy development, including tariff and incentive structures designed to attract private sector investments and to encourage the participation of local enterprises. Exchange of best practices and lessons learnt is valuable.
- **Tailored business and financing models** are key to accelerating the adoption of off-grid renewables. Business models need to be designed to reduce payment collection risk, ensure long-term system management, and operation and maintenance. Dedicated funding vehicles for off-grid projects will greatly facilitate financing. Risk mitigation tools and innovative deployment models can be used to attract private financing into the sector.
- **Technology innovation** needs to be fostered as it can help bring down costs, improve reliability of supply and provide a wider range of electricity services. In fact, IRENA's analysis finds that technology innovation, accompanied by innovation in business models and finance, will result in a 60% decrease in the cost of producing electricity from renewable mini-grids in the next 20 years.
- **Capacity building** efforts need to be integrated into off-grid renewable energy initiatives. Adequate technical and managerial capacity needs to be developed within financing institutions, communities, governments, utilities, regulators and enterprises.

Strengthening the sustainability of energy access efforts and maximising benefits

7. Decades of experience with off-grid projects has shown the importance of incorporating sustainability into project design and implementation that ensures reliable operation throughout system lifetime and maximises the socio-economic impact of access. To this end, a paradigm change is needed in the way off-grid solutions are deployed, with the focus shifting away from capacity or generation metrics (supply-side paradigm) towards livelihoods and services (demand-side paradigm). Such a shift would enable a customisation of energy solutions such that they are better able to provide opportunities for improving livelihoods, increasing productivity and generating income, thereby contributing to multiple SDGs.

Leveraging partnerships to catalyse investments and accelerate deployment

8. While the opportunity is known and solutions exist, the process of scaling-up off-grid solutions will require strong partnerships that transcend institutional and sectoral boundaries. As the global community convenes around the SDGs, it is vital that the implementation agenda at the national and regional-level captures the dynamism of the renewable energy sector and builds on the progress that has been made so far. To this end, IRENA's global platform – the International Off-grid Renewable Energy Conference (IOREC) – convenes key stakeholders to take stock of progress and recent developments, share knowledge and best practices, and identify measures needed to further accelerate deployment.

9. The third edition of IOREC was organised in Nairobi, Kenya, in partnership with the Kenyan Ministry of Energy and Petroleum, and the Alliance for Rural Electrification. IOREC 2016 brought together over 600 stakeholders from across the off-grid renewable energy value chain, including representatives from rural electrification agencies, ministries in charge of renewable energy

development, private sector, financing institutions and international organisations. Several institutions also utilised the IOREC platform to launch knowledge products and initiatives as well as to organise thematic events on the side-lines of the conference.

Meeting deployment and development goals through off-grid renewable energy

10. Renewable energy provides a unique opportunity to reconcile multiple sustainable development objectives while offering a viable solution for catalysing socio-economic development. Off-grid solutions can empower rural communities to catalyse local economies, increase incomes, escape the poverty trap, and contribute to the development of resilient and sustainable energy infrastructure.

Questions for discussion

- How can off-grid renewable energy stand-alone solar home systems and mini-grid solutions be best integrated into the national electrification strategy and into the wider development agenda?
- What measures are needed, and by whom, for an accelerated scale-up in off-grid renewable energy deployment to reach the target of universal electricity access before 2030?
- How can cross-sector development opportunities for off-grid renewable energy (in health, water, agriculture, education, etc.) be tapped to enable productive uses, maximise socio-economic benefits and ensure long term economic viability?