

INTERNATIONAL RENEWABLE ENERGY AGENCY

Fifth session of the Assembly

Abu Dhabi, 17 – 18 January 2015

Note of the Director-General
Off-grid renewable energy deployment**I. Introduction**

1. Access to modern energy services continues to gain prominence in the development agenda. There is growing recognition that energy is the central building block towards achieving broader developmental goals associated with poverty eradication. Access to electricity can have an immediate and transformative impact on the quality of life for millions of people. In particular, productive uses can improve agricultural yield, enhance rural healthcare facilities, stimulate socio-economic development, and promote sustainable livelihoods.

2. Nearly 1.3 billion people around the world live without electricity access and 2.4 billion rely on traditional fuels for cooking and heating. To promote sustainable development through improved access to modern energy services, the United Nations Secretary General launched the Sustainable Energy for All (SE4ALL) initiative. One of its objectives is to achieve universal access to modern energy services by 2030. To meet this goal, efforts need to be substantially accelerated and the rate of electricity access has to double. Under business as usual, over a billion people will continue to remain without electricity access by 2030.

3. Renewable energy technologies will have a crucial role to play in extending electricity access in a timely and affordable manner through both centralised and decentralised approaches. Their distributed, environmentally-sustainable and adaptable nature means that they are well suited to cater to the energy needs of rural communities while bringing about substantial socio-economic benefits. The dramatic decrease in technology costs makes them the most cost-competitive option for electrification in most rural areas. Off-grid renewable energy, in particular, offers the added benefit of leap-frogging traditional and centralised infrastructure development to deliver modern energy services that are reliable, secure and sustainable.

4. The private sector, in particular local entrepreneurs, will be a key stakeholder in promoting energy access. The challenge for governments is to formulate and implement strategies that engages the private sector and creates an enabling environment for its participation. IRENA provides a crucial platform for engagement between the public and private sector as well other key stakeholders such as financing institutions and NGOs. Through the International Off-grid Renewable Energy Conference (IOREC), IRENA sets out to identify key deployment barriers and collectively identify solutions that can support a rapid scale-up in off-grid renewable energy deployment. The second edition of IOREC, organised in

June 2014 in cooperation with the Asian Development Bank and the Alliance for Rural Electrification, highlighted the urgent need to change mindsets from off-grid renewable energy being a grant-driven enterprise, towards one that is market-based and for which there is a clear business case. In the absence of such a shift, private sector participation will continue to be limited and the level of investment insufficient. Practitioners, financiers and development agencies highlighted that governments have an important role to play in bringing about this paradigm shift.

5. Through its programmatic activities IRENA supports its Member States in establishing the appropriate environment for off-grid renewable energy development. This hinges upon effective policy and regulatory frameworks, access to financing, customised business models, technology solutions suited to local contexts, and sufficient capacity that needs to be built within the ecosystem – from public and private sector all the way through to local communities.

II. Strengthening the ecosystem to enhance sustainability of energy access efforts

6. Mainstreaming off-grid solutions as part of national electrification policies is a crucial first step to support the scaling up of rural electrification. This initially involves a careful assessment of areas to be electrified through centralised grid extension and those that require off-grid solutions, including stand-alone systems and mini-grids. Electrification policies need to specifically incorporate regulations for off-grid systems that incentivize the private sector to tap into the business opportunity in non-electrified areas. Also, appropriate financing schemes for households need to be promoted to overcome the initial capital cost barriers.

7. IRENA analyses best practices in design and implementation of innovative business and financing models that can enable households and enterprises to adopt off-grid solutions. For instance, IRENA, in partnership with UNEP and the private sector, is analysing the conditions under which hybridising diesel based mini-grids with renewable energy can reduce the levelised cost of electricity and what is needed to create a viable investment opportunity in this emerging sector. Isolated grids running on diesel are being identified to develop site specific business models. As such, there is no one size fits all solution with policies, regulations and financing models needing to be adapted to the local conditions. This requires close coordination between the public and private sector to maximise sustainability and impact.

III. Catalysing public private partnerships for achieving scale

8. Business and financing models governing the development of off-grid renewable energy solutions are very specific. Although in many rural areas they are cost-competitive against grid extension and conventional fuels, such as diesel, off-grid renewable energy solutions have a high capital to operational cost ratio, making private sector (or any other commercial development entity) participation particularly sensitive to the availability of affordable financing.

9. Financing from traditional sources, such as commercial banks, remains limited and enterprises often rely on public funds, impact investors and development banks. Greater efforts to mobilize further funding is required to achieve global access as well as ensuring that funding is efficiently channelled through to local enterprises. The type and duration of financing needs to be tailored to the needs of enterprises along different stages of development. Public financing will be needed either through direct financing for enterprises or by putting in place de-risking mechanisms that can leverage commercial financing. Commercial banks in some developing countries have engaged in the financing of small scale renewable energy projects. However, more needs to be done to mitigate perceived risks and build capacities within financing institutions to assess the actual risk-return balance of renewable energy.

IV. Building capacity across the off-grid sector

10. Introducing dedicated policies and putting in place appropriate financing mechanisms alone will not be sufficient. Adequate support is also required for aspects such as building technical and managerial capacities within financing institutions, communities, governments, utilities, regulators and enterprises. In 2014, IRENA launched its support to financing institutions in Sub-Saharan Africa with focus on the Economic Community of West African States (ECOWAS) region. In this context, a Renewable Energy Entrepreneurship Support Facility would also be launched by IRENA for ECOWAS in partnership with 2iE Incubation Centre in Ouagadougou, Burkina Faso. The facility will assist entrepreneurs to improve their business operations as well as provide mentorship, technical support and advisory services. IRENA is also working together with business incubation centres, renewable energy associations, and entrepreneurs in South Asia and East Africa with a focus on local enterprise development for energy access. With a continuing need to upgrade technical information on markets, technology and associated enabling environment, IRENA aims to spur additional support for entrepreneurship development. In this regard, IRENA is strengthening critical intermediaries, such as incubation vehicles and renewable energy associations, through a knowledge exchange and skill enhancement programme, initially targeting Africa and Asia.

11. Local energy enterprises will be the cornerstone of any effort to expand electricity access to off-grid areas. Fostering such enterprises promotes long-term sustainability of the sector by retaining knowledge, skills and value created within local communities, thus further compounding the transformative impact of electricity access. In its *Renewable Energy Jobs and Access* report, IRENA estimated that meeting the target of universal access to modern energy services can create nearly 4.5 million jobs in the off-grid electricity sector alone by 2030. Many of these jobs, including entrepreneurs, technicians, installers, distributors, will be located in rural communities being electrified, and will require building capacity. IRENA has successfully supported local capacity building with the certification programme for installers in the Pacific Islands, and is currently working with the West African Economic and Monetary Union to initiate a similar programme in West Africa.

12. In 2015, IRENA will continue its cross-cutting activities on policy, business and financing model, technology and capacity building in the off-grid sector. It will analyse best practices in policy and regulations to support mini-grid development, and will develop specific country case studies to assess the suitability of different business models for varying contexts. IRENA's work will also focus on productive uses of off-grid renewable energy applications and technology aspects, specifically on mini-grid technology outlook, storage and grid stability studies in island contexts.

13. The Assembly will serve as an important opportunity for IRENA to highlight the key challenges that have emerged in discussions with different stakeholders and present recommendations to address those challenges. Members will have the opportunity to provide feedback on IRENA's planned activities in the field, bring valuable insights from efforts undertaken at the national-level and also highlight specific areas that require further analysis or support from IRENA.

V. Guiding questions

- How can Governments support private sector engagement in the deployment of off-grid renewable energy systems?
- What role can the international community play, including international financing institutions and development agencies, in supporting governments in their endeavour to achieve universal electricity access
- What are the thematic areas that IRENA should address to support governments' efforts in setting up an enabling environment for off-grid renewable energy technologies?