

INTERNATIONAL RENEWABLE ENERGY AGENCY

Eighth meeting of the Council

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Note of the Director-General

Scaling-up off-grid renewable energy deployment for rural electrification to address energy access

1. Access to modern energy services is increasingly at the forefront of 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 for productive applications. They can improve agricultural productivity to contribute to food security, enhance rural healthcare facilities, stimulate socio-economic development, and promoting sustainable livelihood.

2. Governments are now tasked with identifying reliable and cost-effective solutions through which modern energy services can be extended to those lacking access – collectively over 1.3 billion people globally. The distributed, environment-friendly and adaptable nature of renewable energy technologies means that they are best suited to cater to the energy needs of rural communities and to bring about substantial local socio-economic benefits. In fact, nearly 60% of additional generation to achieve universal electricity access by 2030 will need to come from off-grid solutions, both stand-alone and mini-grids. The dramatic decrease in the cost of renewable energy technologies makes them the most cost-competitive option for electrification in most rural areas. Realising this significant potential and accelerating the transformational impact of electricity access on rural development require an environment conducive to private sector participation that can complement public electrification efforts. This hinges upon effective policy and regulatory frameworks, access to financing across the different stages of enterprise development, customised business models and technology solutions suited to rural contexts, and designed to achieve maximum market penetration to secure ‘energy for all’. In addition, sufficient capacity needs to be built within the ecosystem – from public and private sector all the way through to local communities. These key aspects of the sector are addressed by IRENA’s programmatic activities.

3. The second International Off-Grid Renewable Energy Conference (IOREC), organized in June 2014 by IRENA in cooperation with Asian Development Bank and 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. In the absence of such a shift, private sector participation will continue to remain limited and investments necessary to achieve electricity access goals cannot be raised. Practitioners, financiers and development agencies highlighted that governments have an important role to play in bringing about this paradigm shift through policies, regulations, support and incentives.

I. Catalyzing public private partnerships for achieving scale

4. Expanding electricity access requires a combination of grid-based and off-grid approaches. The most suitable option for a village or cluster of villages will depend on local conditions such as demand, distance from national grid, availability of local resources and willingness-to-pay of communities. Based on comprehensive assessments that consider all these factors, national electrification strategies should mainstream both approaches and put in place mechanisms that allow adequate investments – public and private – to flow into infrastructure development. As such, the distributed nature of off-grid solutions means that the business and financing models governing the development of such infrastructure is different from that of large-scale, grid-connected projects. Although cost-competitive against grid extension and conventional fuels, such as diesel and kerosene, 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.

5. In addition, hybrid solutions are being increasingly developed. IRENA, in partnership with UNEP and SIEMENS, is currently analyzing the conditions under which hybridising a diesel based mini-grid with renewable energy can reduce the levelised cost of electricity and what is needed to create a viable investment opportunity for investors in this emerging sector. Isolated grids running on diesel are being identified to develop site specific business models.

II. Building capacity to enhance financial flows to private sector

6. Financing from traditional sources, such as commercial banks, remains limited and enterprises have to rely on financing from 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 channeled through to local enterprises. Also, the type and duration of financing that enterprises require at different stages of development need to be tailored to specific projects. Public financing will be needed either through direct financing for enterprises or by putting in place de-risking mechanisms that can leverage commercial financing. Also, it should be noted that debt-financing facilities are being increasingly considered as they allow energy access enterprises to acquire affordable debt to scale-up operations and attain long-term sustainability. Commercial banks in some developing countries have engaged in the financing of small scale renewable energy projects. However, more needs to be done in order to reduce the perceived risk by commercial banks and build their capacity on how to assess the actual risk-return balance of various renewable energy technologies.

7. 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 where leading commercial banks presented existing opportunities to support the renewable energy sector. In this context, it was agreed that a Renewable Energy Entrepreneurship Support Facility would 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. In particular, the facility will assist building up capacity of entrepreneurs to refine their project proposals to enhance their bankability.

III. Strengthening the ecosystem to enhance long term sustainability of energy access efforts

8. Introducing dedicated policies and putting in place appropriate financing mechanisms alone will not be sufficient. The discussions during IOREC laid special emphasis on leveling the playing field for renewables by ensuring that regulations surrounding pricing of electricity allow for sustainable commercial operations. At the same time, adequate support is required for aspects such as building

technical and managerial capacities within communities, governments, utilities, regulators and enterprises to ensure long-term sustainability of energy access efforts. In its *Renewable Energy 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 (UEMOA) to initiate similar programme in West Africa.

9. 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 on rural economies. IRENA is working together with business incubation centers, renewable energy associations, and entrepreneurs to enhance their capacities 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, incubation vehicles and renewable energy associations are critical intermediary in building a support structure for sustainable energy enterprises. IRENA is strengthening these intermediaries through a knowledge exchange and skill enhancement programme, initially targeting Africa and Asia, both regions faced with important energy access issues.

10. Creating an enabling environment for off-grid renewable energy deployment comprises of several key building blocks, including policies, regulations, financing, technology and capacity building. There is no one size fits all solution, but governments need to identify and implement the necessary measures required for accelerating energy access efforts.

11. This session on "scaling-up off-grid renewable energy deployment to meet the goal of universal energy access" during the IRENA Council Meeting will serve as an important opportunity for IRENA to highlight the key challenges that have emerged during engagements with different stakeholders and put forth recommendations from IRENA's ongoing work to address those challenges. Member States will also have the opportunity to provide valuable insights into specific efforts undertaken at the national-level to accelerate the deployment of renewable energy in rural and island contexts, and also highlight specific areas that require further analysis or support from IRENA.

IV. Guiding questions

12. The session will focus on the following guiding questions:

- What enabling measures are required to incentivize the private sector engagement in the deployment of off-grid renewable energy systems?
- How to replicate best practices from different regions where public funding has been used to leverage private capital?
- What role can IRENA play in supporting governments' efforts in setting up an enabling environment for off-grid renewable energy technologies?