SUMMARY

AREI

Africa Renewable Energy Initiative

Transforming Africa towards a renewable energy powered future with access for all

October 2015

SUMMARY OF THE AREI FRAMEWORK DOCUMENT AND ACTION PLAN

INTRODUCTION

The *Africa Renewable Energy Initiative (AREI)* is a transformative, Africa-owned and Africa-led inclusive effort to accelerate and scale up the harnessing of the continent's huge renewable energy potential. Under the mandate of the African Union and endorsed by African Heads of State and Government on Climate Change (CAHOSCC) the Initiative is set to achieve at least **10GW** of new and additional renewable energy generation capacity by 2020, and mobilize the African potential to generate at least **300 GW** by 2030.[1]

The AREI is firmly anchored in the context of sustainable development, climate change and how low to zero carbon development strategies can be achieved in African countries through climate finance and means of implementation according to the principles of the UN Framework Convention on Climate Change (UNFCCC). It also recognizes the critical importance of energy access for enhanced well-being, economic development and the fulfilment of Sustainable Development Goal 7 on energy access as well as all other Sustainable Development Goals.

The AREI is an overriding, continental-wide initiative with a long-term timeframe that builds on, strengthens and fills gaps in relation to other efforts. It primarily outlines various policy approaches and programmes of work that can serve all countries on the continent. Complementing this programmatic approach, the Initiative will also support the enabling of renewable energy (RE) projects in existing and future project pipelines that conform with the guiding principles of the AREI. The Initiative will build on, influence, and interact with the renewable energy components of other existing initiatives such as the Programme for Infrastructure Development for Africa (PIDA), Sustainable Energy for All (SE4ALL), Power Africa, the Africa-EU Energy Partnership, the Africa Clean Energy Corridor of the International Renewable Energy Agency (IRENA) and numerous bilateral, civil society and community efforts that have emerged to address Africa's energy challenges.

Meanwhile, the goals and objectives of the AREI are fully in line with the objectives of the African Regional Flagship Programme (ARFP) on Sustainable Energy, which aims at facilitating the provision of coordinated and consolidated support to African countries to develop their energy sector and achieve a sustainable energy mix. The AREI will, therefore, be implemented aligned with the ARFP.

1 See e.g. IRENA Africa REmap 2030 on Africa's RE potential.

CONTEXT OF ENERGY ACCESS AND CLIMATE CHANGE

The AREI focuses on building integrated solutions to the twin challenges of universal energy access and climate change. The Initiative is premised on the fact that all societies, including those in Africa, need to transition to low and zero carbon energy systems in order to avoid catastrophic climate change. In accordance with commitments and principles under the UNFCCC, these efforts by Africa need to be supported through international public climate finance, among other sources.

The AREI highlights the fact that as well as ensuring appropriate electricity access for households and families, access needs to be sufficient to also drive the productive sectors in both local and national contexts for job creation, thriving economic development and increased resilience. This includes addressing the needs of small-scale farming and micro-, small- and medium-scale enterprises in terms of both quantity and quality of access, and entails a vision of electricity access beyond the bare minimum requirements for households.

For poor people, increased access to energy means a potential for improved livelihoods. The Africa Renewable Energy Initiative will therefore promote unprecedented efforts to reach populations currently off national grids. It will plan for expanded access to electricity for social services as African societies develop social security provisions and other means of improving welfare for their populations over the coming decades.

The AREI envisions smart, distributed energy systems that can handle a mix of renewable energy generation. With a highly diversified ownership base compared to conventional, centralized energy systems a vast number of households, communities, cooperatives, micro, small and medium-scale enterprises (MSMEs), as well as larger companies, become both producers and consumers of electricity. Africa can leapfrog to the energy systems of the future.

GOALS

THE AFRICA RENEWABLE ENERGY INITIATIVE'S OVERALL GOALS ARE

1

TO HELP ACHIEVE SUSTAINABLE DEVELOPMENT, ENHANCED WELL-BEING AND SOUND ECONOMIC DEVELOPMENT BY ENSURING UNIVERSAL ACCESS TO SUFFICIENT AMOUNTS OF CLEAN, APPROPRIATE AND AFFORDABLE ENERGY

2

TO HELP AFRICAN COUNTRIES LEAPFROG TOWARDS RENEWABLE ENERGY SYSTEMS THAT SUPPORT THEIR LOW-CARBON DEVELOPMENT STRATEGIES WHILE ENHANCING ECONOMIC AND ENERGY SECURITY.

GUIDING PRINCIPLES

ACCORDING TO ITS GUIDING PRINCIPLES, THE AREI WILL:

- Contribute to achieving sustainable development in Africa by scaling up and accelerating the deployment and funding of renewable energy in Africa.
- Address the entire African continent and benefit all African countries.
- Boost intra-regional and international cooperation and promote and support only those activities and projects that are agreed by the countries concerned and impacted.
- Promote all kinds of renewable energy technologies – in particular solar; wind; pico-, micro-, small- and medium-scale hydro; modern biomass; geothermal; and marine – provided they are socially and environmentally appropriate, gender-sensitive and in line with these guiding principles.
- Promote the full range of renewable electricity applications, from grid-connected to mini-grids to small stand-alone systems, as well as other forms of energy, with particular consideration being paid to applications that meet the needs of poor people.

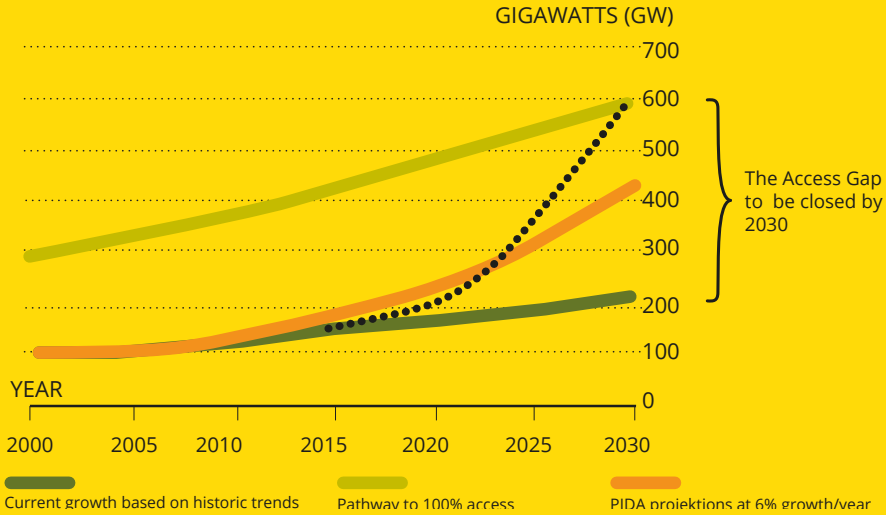
FURTHERMORE, THE AREI DESCRIBES ADDITIONAL KEY FEATURES THAT SHOULD GUIDE THE EFFORTS:

- Country ownership.
- Transformative, programmatic approaches.
- Leapfrogging to the best available, smart, modern distributed renewable energy systems that enable a transition towards low to zero carbon futures.
- Multi-stakeholder participation and social and environmental safeguards as essential elements of sustainable solutions.
- Strengthening conducive environments at all levels to enhance private and public sector engagement.

EXPECTED RESULTS

1. Deliver at least **10 GW** of new and additional electrical installed capacity by 2020.

2. Deliver at least, as an aspirational goal, **300 GW** of new and additional capacity by 2030.



ADDITIONAL RESULTS FOR COUNTRIES ENGAGED IN THE INITIATIVE WOULD INCLUDE:

>> A quantitative and relative increase in the number of MSMEs or other users connected to national grids or new mini-grids.

>> A quantitative and relative increase in the renewable energy share of overall energy consumption, particularly in agriculture, industry, and the service sectors.

>> A quantitative and relative increase in the share of African firms providing renewable energy equipment, supplies and services to national and African markets.

IMPLEMENTATION PHASES

The Action Plan outlines activities for three distinct phases:

The immediate establishment phase (2015 to mid-2016): Formal initiation of the AREI activities, including resource mobilisation, establishment of the governance and management structure and identification of Phase I projects that will be included in the pipeline by mid-2016.

Phase I (2016-2020): Assessments, preparations and critical enabling activities at the continental African level as well as in a number of pioneering countries, setting the basis for enhanced acceleration in Phase II. In cooperation with bilateral and global partners, support for preparatory activities for the renewable energy projects that will be included in the pipeline by mid-2016. Achievement of at least 10 GW new and additional generation capacity.

Phase II (2020-2030): Ambitious, full-scale roll-out of nationally determined policies, programmes and incentives as initiated under Phase I. Continuous project identifications, assessments and revisions for further scaling-up across all RE applications. Mobilizing the potential of delivering at least 300 GW new and additional generation capacity.

STRATEGIC FOCUS AND WORK AREAS

The AREI Action Plan identifies specific activities[2] under five Core Work Areas and four Cross-cutting Work Areas (see Action Plan for detailed account), building on work by all other relevant stakeholders.

CORE WORK AREAS

1

WORK AREA 1: MAPPING OF EXPERIENCES AND ACTIVITIES FOR ENHANCED COORDINATION OF EXISTING AND FUTURE RE INITIATIVES

This work area seeks to establish what renewable energy efforts exists on the continent and to enhance coordination. Actions involve mapping of all existing initiatives and systematization of experiences and lessons learned that are of relevance to all other work areas. This work area should be part of the immediate Establishment Phase.

Outcome | Better understanding of ongoing activities and gaps, with better coordinated initiatives.

2

WORK AREA 2: STRENGTHENING POLICY, REGULATORY, SUPPORT AND INCENTIVES FRAMEWORKS

Strengthening of policy, regulatory, support and incentives frameworks to (a) provide long-term investment security, (b) drive upgrades of existing national grids and accelerate mini-grid rollout, (c) address needs for non-electrical energy forms in productive sectors, (d) improve energy efficiency and e) to enhance domestic renewable energy technology manufacturing, assembly, deployment and operations capacity.

Outcome (a) | Strengthening regulatory and policy frameworks to enable investments in renewable energy generation in Africa by public institutions, households, communities, private investors (in particular micro, small- and medium-scale enterprises) with a vastly expanded and diversified ownership base.

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2 The AREI Initiative activities may be categorised as:

– '**Supportive activities**', such as studies, assessments, policy guidance, capacity-building, funding proposal support for the preparation of project proposals, international coordination, evaluation of potential applications and market studies, and multi-stakeholder participatory processes that require relatively modest funding, as well as monitoring and evaluation of projects and work plan implementation.

– '**Incentives and investments**', including incentives instruments such as feed-in tariff support, investments in grid upgrades, payment guarantees, de-risking measures, concessional credit, and various forms of investment that require much more substantial funding.

Outcome (b)	African countries planning for best available and most appropriate smart grid technologies while extending grids and boosting minigrid rollout.
Outcome (c)	New legislation and investment incentives enhancing energy access to both electrical and non-electrical renewable energy services and products.
Outcome (d)	Energy efficiency measures integrated with deployed renewable energy efforts and increased awareness of importance of energy efficiency among general populations.
Outcome (e)	Increased development, manufacturing and deployment of renewable energy technologies in Africa and establishment of robust and effective innovation systems with long-term planning horizons.

3 WORK AREA 3: CAPACITY BUILDING, MOBILIZATION AND PARTNERSHIP FOSTERING ACROSS STAKEHOLDERS AT ALL LEVELS

Early activities include capacity-building programmes with the establishment of international cooperative agreements including exchanges, training and financial support.

Outcome	Critical capacities and skills at all levels and aspects are mobilized, developed or strengthened.

4 WORK AREA 4: FINANCING AND FUNDING

Activities include securing of funding so as to operationalize the Africa Renewable Energy Initiative as a coordinating and facilitating entity, including supportive activities, as well as securing funding for direct project support and incentives for renewable energy investments at country levels.

Outcome	Adequate public and private funding mobilized to meet AREI investment needs as identified in Work Areas and enhanced access to credit for both public and private investors and RE developers

5 WORK AREA 5: PROJECT DEVELOPMENT AND SUPPORT

Sets out criteria and procedures for appropriate project identification through direct requests to African countries for project proposals, reviewing adherence to the AREI guiding principles, identifying means of addressing bottlenecks for public and private investments, and ensuring release of funding support either through the AREI Trustee fund or other existing channels with full transparency.

Outcome	Pipeline of projects More and higher-quality renewable energy projects proposed, financed and implemented with improved understanding of results, including unanticipated effects

CROSS-CUTTING ACTIVITIES

6 WORK AREA 6: SOCIO-ECONOMIC AND ENVIRONMENTAL ASSESSMENTS OF RENEWABLE ENERGY TECHNOLOGIES

Inclusion of safeguards, participation, and equity principles from the outset. Ensuring that environmental and social safeguards, and local social and environmental impact assessments at the individual project levels, are supported, and that procedures/systems for systematic assessment of RE technologies as such, both in terms of environmental and social implications, are implemented.

Outcome Renewable energy technologies deployed in ways that benefit local communities and do not harm the environment, while promoting technology innovation and precauionary needs assessments

7 WORK AREA 7: MULTI-STAKEHOLDER ENGAGEMENT

The AREI recognizes that the implementation strategy must be multi-faceted, and involve and mobilize all types of stakeholders. Genuine community/civil society participation will be integral parts of the multi-stakeholder engagement components of the Initiative, as will participation by the private sector, academia and other stakeholders.

Outcome Broad set of stakeholders actively involved in shaping the AREI, ensuring broad ownership, sustainability and continuous improvement of the AREI's work

8 WORK AREA 8: WIDER CONTEXT MONITORING AND ASSESSMENT OBSERVATORY

This Work Area highlights the need for the AREI to ensure capacity to monitor and assess – on a continuous basis - changing realities and contexts that may impact on the Initiative, both in terms of opportunities and threats.

Outcome Enhanced capacity of the AREI governance and management system for early detection of and effective responses to emerging opportunities for accelerated deployment of RE in Africa – including new funding and investment flows – as well as early detection of new risks, threats and challenges

9 WORK AREA 9: COMMUNICATIONS AND OUTREACH

The AREI is designed to make a positive impact on various stakeholders ranging from local communities to bilateral and multilateral agencies. As implementation of the Initiative gets underway, it will be crucial to communicate and reach out to all stakeholders, both internally and externally.

Outcome Enhanced and sustainable multi-stakeholder support for the AREI expressed in sustained flows of funding, political and civil society endorsements. Resources and services of the AREI easily identified and used by various stakeholders.

GOVERNANCE AND MANAGEMENT

The AREI Initiative will be led by Africans and strongly anchored in existing African political and decision-making processes. The Initiative will establish clear governing rules fully in line with the guiding principles and operations, monitoring and evaluation procedures. These need to ensure that the Initiative remains fully Africa-led, and that all activities contributing to it – whether pursued through the Executive Implementation Agency and Trustee facility or directly through countries or other institutions – adhere to the AREI guiding principles. Monitoring and evaluation procedures must be established that correspond to the principle of African ownership, recognize the need for flexibility, and ensure efficient and transparent use of resources.

GOVERNING BOARD

The Board will be chaired by the Committee of African Heads of State and Government on Climate Change (CAHOSCC) Coordinator and consist of the African Union Commission (AUC) Chairperson, President of the African Ministerial Conference on the Environment (AMCEN), President of the Conference of Energy Ministers of Africa (CEMA), President of the African Development Bank (AfDB), and Chair of the African Group of Negotiators to the UNFCCC (AGN).

The main role of the Governing Board is to mobilize political support, provide strategic oversight and vision, ensure African leadership and ownership of the Initiative, foster resource mobilization, and oversee the implementation of the project pipeline and the annual work plan.

STEERING COMMITTEE

The Steering Committee will be chaired by the Presidents of AMCEN and CEMA, with members representing AUC, the New Partnership for Africa's Development (NEPAD), AMCEN, AfDB, CEMA, AGN and other committed institutions such as related African initiatives, African civil society and private sector, UNEP, IRENA, and other international institutions (such as the World Bank) and partners.

The main role of the Steering Committee is to set priorities, objectives and milestones; review and approve project pipelines, the annual work plan and budget; oversee resource mobilization activities; approve the inception and annual report; ensure coherence with other initiatives; and endorse funding for supportive activities, incentives and investments.

BOARD SECRETARIAT/DELIVERY UNIT

The Board Secretariat and the independent Delivery Unit will be fully accountable to the Governing Board through the Steering Committee and report to both. The Delivery Unit will be hosted an by the AfDB and defined by specific arrangements between the hosting institution and the Governing Board that will provide for its independence and ensure African leadership. It will coordinate and prepare annual work plans, coordinate and conduct supporting activities across all clusters; coordinate and facilitate support and finance to accelerate implementation, design and manage grant application and assessment procedures in consultation with the Trustee; and communicate with stakeholders on behalf of the Initiative.

TRUSTEE (AFDB)

The main role of the Trustee – accountable to the Board – is to manage funds and investments; design and manage grant application and assessment procedures with the technical secretariat/delivery unit; ensure adherence with risk management and compliance procedures.

Detailed Terms of Reference for each of the above bodies will need to be further developed and elaborated.

APPENDIX: THE ECONOMICS OF RENEWABLE ENERGY IN AFRICA

There is a strong development and business/economics case for increasing access to renewable energy in Africa. Below are several of the reasons why a leapfrogging of the continent, before other regions, towards renewable sources is needed and possible.

DEVELOPMENT CASE

On the demand side, sub-Saharan Africa has the world's lowest electricity access rate, at only 32 per cent. Large parts of rural Africa remain non-electrified and current generation capacity is often unable to meet demand in rapidly growing urban centres and peri-urban areas. Countries in North Africa having higher levels of energy access also need to make significant changes in their energy systems to meet future demands while transitioning to a low-to-zero carbon future. The recent high economic growth rates experienced across the continent are likely to drop if the existing situation is not ameliorated.

Access to adequate energy services is directly correlated with quality of life and well-being, and thus an imperative. Yet energy is very unevenly distributed, and even more so access to electricity. In some African countries, per capita electricity use is more than a hundred times smaller than that in industrialized countries. The International Energy Agency estimates that, on average, electricity consumption per capita in Africa was 590 kWh in 2012, compared to the world average of 2970 kWh/capita.

The Africa Progress Panel draws attention to the human face and socio-economic consequences of this gap, noting that "Sub-Saharan Africa is the only region in which the absolute number of people without access to modern energy is set to rise, by 45 million for electricity and 184 million for clean cooking stoves." Currently, over 600,000 women and children die annually from indoor air pollution associated with the use of firewood for cooking. With other regions on a far more positive trajectory, by 2030 Africa's share of the world's population without electricity will rise from under half to over two thirds, and the share without clean cooking facilities will rise from one quarter to over a third. For poor people, increased access to energy means a potential for vastly improved lives.

Agriculture contributes significantly to the economic and social makeup of the majority of African countries and plays a substantially larger relative role in Africa than in other regions. The average value added from agriculture in sub-Saharan Africa, for example, was 19 per cent in 2008, compared to 2 per cent in Europe and 7 per cent in Latin America. This sector thus makes a significant contribution to the GDP of African countries, about 14 per cent on average in 2014, and nearly half in some countries. Still, African agriculture lags behind all other developing regions when weighed by indicators of agricultural productivity. Improved agricultural practices are consequently a priority for reducing poverty in Africa. Greater agricultural productivity and improved climate resilience can be realized through improvements in agricultural production such as irrigation, improved agro-processing, more and better post-harvest and storage facilities, and stronger distribution and retail chains, all of which require energy. African farmers need more and better-quality energy and access to a wider range of energy services if they are to increase their productivity and realize higher incomes.

After agriculture, the bulk of Africa's people earn their living in the micro, small and medium-scale enterprise (MSME) sector, which includes artisans, cooperatives and non-profit-oriented community associations among others. In addition to being active in small-scale farming many African women own and run a wide variety of informal enterprises. Providing adequate and affordable energy services to this sector brings economy-wide benefits. Growth in per capita electricity generation has been stagnant in sub-Saharan Africa while increasing in all other regions in the world. Thus building a strong foundation for expanding electricity access to MSMEs makes sense from the economic growth and sustainable development perspectives. Dependable, reasonably priced energy services enable MSMEs, cooperatives, and community associations to strengthen their market position, enhance their product and service base, increase business opportunities, and augment income flows.

Industrial demand for energy in Africa will also increase markedly over the coming decades. As the least industrialized continent, Africa has the latecomer advantage of avoiding many of the problems that bedevilled countries that industrialized rapidly. African countries have the opportunity to adopt industrial strategies that reduce pollution and excessive demands for energy, as well as to leapfrog to modern and diversified renewable energy systems. Renewable energy is the answer – over time – for even the most energy-intensive demands. By enabling the use of the best available technologies Africa has the opportunity to use renewable energy sources and build energy systems of the future, where relatively smaller-scale distributed RE generation provides most of the energy, complemented by larger-scale RE generation as appropriate.

For the majority of Africans, who lack sufficient access to energy services, the provision of energy for essential social services at the community level is a high priority. Energy and electricity supply to schools, health clinics

and other public institutions that serve the common good are of enormous value. Similarly, with electricity community associations can provide a range of services, improve local participatory decision-making processes, and undertake other efforts that support local development.

As a consequence, the seventh Sustainable Development Goal (SDG) on energy aims to "ensure access to affordable, reliable, sustainable and modern energy for all" through a combination of national action and international cooperation. In the current formulation, this would require increasing the share of renewable energy in the national and global energy mix and doubling the annual rate of improvement of energy efficiency. These energy ambitions are compatible with SDG 13 on climate change.

BUSINESS AND ECONOMICS CASE

On the supply side, Africa has abundant resources that could be mobilized to meet development needs. And the recent trends indicate that in most cases modern renewables such as solar, wind, hydro and geothermal can be the least costly solutions in sub-Saharan Africa, compared to oil-based fuels which are substantially more expensive.

According to a recent study by Mckinsey,[3] solar could potentially provide more than 10,000 GW of new capacity; wind 109 GW; hydro 350 GW; and geothermal could add about 15 GW of capacity.

IRENA, in "Africa 2030: roadmap for a future renewable energy future",[4] estimates that the electricity demand will increase more than threefold by 2030 and how RE projects are rapidly expanding. By 2030, total installed capacity could be 610 GW, with 330 GW renewables – more than an eightfold increase, with hydro contributing for 100 GW, wind 100 GW, solar PV and CSP 93 GW, biomass 32 GW and geothermal 4 GW. The report also shows that recent project RE deals in Africa are among the most competitive in the world, for instance solar PV in South Africa (7.5 US cents per kWh – which can be compared with the cost of new coal in South Africa of 7-8 cents per kWh), CSP in South Africa (12.4 cents per kWh) or wind in Egypt (4.1 cents per kWh).

The Mckinsey study also projects how cost of solar installation, even after including the higher transaction cost of project delivery in Africa, will reduce from USD2,500/kW in 2011 to USD870/kW in 2040 – translating to a 20 per cent decline in the levelized cost of electricity. In the Mckinsey model 30 per cent in each market comes from solar or wind by 2040. The effects will be felt in a decline of carbon emissions of up to 27 per cent and reduced fuel cost for relying on solar and wind in place of coal and gas. In the IRENA study carbon emissions saving amount to 310 million tons or a 32 per cent reduction compared to reference.

However, as Africa's energy resources are unevenly distributed each country and each sub-region must determine how to supply its energy needs efficiently, using its internal resources and harnessing regional opportunities that optimize the use of regional resources. To that end, renewable energies can positively contribute to enlarging domestic and regional endowments with a consequential impact on security of supply and energy mix diversification, irrespective of whether a country is currently an importer or exporter of fossil fuels.

Another major challenge for sub-Saharan Africa is that the cost of supply and installation is generally higher than elsewhere and need large amounts of capital. Therefore, substantial efforts are required in access to finance and creation of bankable projects if sub-Saharan Africa wants to gear up for a substantial ramp-up of renewable energy, as local banking sectors and domestic capital markets lack the necessary depth to meet the investment needs. Furthermore, the local banking sector in sub-Saharan Africa is already exposed to financially fragile national utilities, which limits new lending to the sector. The availability of low-cost funding from international organizations, governments and institutional investors – such as green bonds, green asset-backed securities and clean energy project bonds – largely depends on the ability to secure long-term revenues and limited project and country risks.

The scale-up of renewable energy will require the public and private sectors to come together with resources and expertise. In fact, there will be a snowballing effect as more renewable energy resources are installed, with further lowering of costs, understanding of risks, and implementation of appropriate risk-mitigation instruments customized for sub-Saharan Africa.

The proper financial incentive mechanisms have to be in place. Although there is often already a clear business case for renewable energy based on lifetime costs, efforts to accelerate renewable energy deployment must address the difference in cost structure between fossil fuels and renewable energy sources. That the cost of renewable energy projects is dominated by the upfront capital costs of the equipment rather than fuel and other operating costs presents a risk to investors. Investors and developers – whether households, communities, cooperatives, public institutions, SMEs or larger companies – need both certainty of off-take (that is, that the energy produced can be sold) and certainty about the tariff, the price at which the energy can be sold. This de-risking can be addressed by a variety of approaches such as government procurement, competitive bidding (see for instance South Africa's REIPPP) and price incentives such as feed-in-tariffs (see for instance Uganda's GET-FiT). Other incentives include direct and indirect support such as tax rebates and incentives, low-cost loans, insurance, guarantees or other concessionary financing. Addressing the access-to-credit bottleneck experienced by RE investors across the continent is of paramount importance for the scaling-up of renewable energy in Africa.

3 http://www.mckinsey.com/insights/energy_resources_materials/powering_africa

4 http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=641


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