Scaling-up energy investments in Africa for inclusive and sustainable growth

Report of the Africa–Europe High–Level Platform for Sustainable Energy Investments in Africa

Executive summary

Photo: Girmay Tilahun

HIGH LEVEL PLATFORM FOR SUSTAINABLE ENERGY INVESTMENTS

The **High Level Platform for Sustainable Energy Investments in Africa** (SEI Platform) was launched at the 2018 Africa Investment Forum following the European Commission's Communication for a new Africa-Europe Alliance for Sustainable Investments and Jobs.

Under the leadership and coordination of Mr. Kandeh Yumkella, former United Nations Undersecretary-General for Sustainable Energy, fifty organizations, representing the public and private sectors, financing institutions, international organisations, academia and the civil society from both continents, discussed business and finance models, policy and regulatory frameworks and initiatives to develop Africa-Europe partnerships on sustainable energy, including energy efficiency and the challenge of clean cooking solutions.

The participants to the working groups of the platform were:
African Development Bank (AfDB), Africa Europe Energy Partnership Secretariat (AEEP), Africa GreenCo, African Union Commission, Alliance for Rural Electrification, Bakulu Power, Conseil de Coopération Economique, ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), EDP Renewables, ENEL SpA, ENI SpA. Entsol Tz Ltd, Energy Charter Secretariat, European Bank for Reconstruction and Development (EBRD), European Commission (EC), European Investment Bank (EIB), Eurochambers, Florence School of Regulation, Fondazione Eni Enrico Mattei, French Environment and Energy Management Agency (ADEME), Giraffe BioEnergy, Global Off-Grid Lightning Association (GOGLA), Global Solar Private Limited, GIZ/ Get Invest, GVE Projects, Iberdrola Renewables, International Energy Agency (IEA), International Renewable Energy Agency (IRENA), Kreditanstalt für Wiederaufbau (KfW), Mediterranean Association of National Agencies for Energy Management (MEDENER), Moroccan Agency for Sustainable Energy (MASEN), Pan African University , Pan African Chamber of Commerce and Industry (PACCI, Politecnico Milano, Regional Centre for Renewable Energy and Energy Efficiency (RCREEE), Res4Africa Foundation, Renewable Energy and Energy Efficiency Partnership (REEEP), Siemens Gamesa, Solar Power Europe, Women's Entrepreneurship in Renewables (wPower Hub)

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African Association for Rural Electrification (Club-ER), Africa Finance Corporation (AFC), African Forum for Utility Regulators, Akuo Energy, Africa Renewable Energy Initiative (AREI) IDU, BASF New Business GmbH, Clean Cooking Alliance, ENTSO-E, Energy Commission of Nigeria (ECN), Hivos, International Solar Alliance, International Initiative for Sustainable Development (IISD) – GSI, Konexa, Ministry of Petroleum and Energy of Senegal (MPE), Ministry of Energy of The Gambia, Modern Energy Cooking Services (MECS), National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Nigerian Electricity Regulatory Commission (NERC), Tony Blair Institute (TBI), Universitad Politecnica de Madrid, World Bank, World Health organisation (WHO)

Additional information:
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Photo 1: Girmay Tilahun

Providing universal, reliable, affordable and sustainable energy access offers the opportunity to empower the people in Africa to decide the course of their lives through education, health and economic development. **Sustainable energy lies at the heart of both the UN 2030 Agenda for Sustainable Development and the UN Paris Agreement on Climate Change.** Advancing to achieve SDG 7 can spur progress across almost all other SDGs—including for poverty eradication, gender equality, climate change, food security, health, education, sustainable cities and communities, clean water and sanitation, environment, jobs, innovation, transport, and displaced people.

Africa is not on track to provide universal electricity access—to meet SDG 7—in the coming decade. Almost 600 million people will still lack access to electricity by 2030 in the absence of major changes (representing 90% of the total estimated population without access globally).[1] **Sub-Saharan Africa faces a set of challenges in the next decades**, especially related to accelerating population growth,[2] poverty eradication, climate change and environmental degradation. Moreover, the continent faces an urgent **social, economic and environmental crisis in the lack of access to clean cooking**. The clean cooking sector remains stunted, with 900 million people (over 80% of the population) lacking access to clean cooking solutions, including 70% in urban areas.[3] This causes nearly half a million premature deaths annually, especially among women and children. Fossil fuels and unsustainable biomass also cause major environmental and climate damage, with an annual deforestation rate of three percent annually, leading to total forest depletion in various zones in sub-Saharan Africa. Meanwhile, Africa has low adaptive capacities and is highly vulnerable to climate change. The negative consequences are impacting across all economic sectors.

Building a sustainable energy sector is fundamental for the African continent to power sustainable industrialisation and trade, which underpin the African Continental Free Trade Area (CFTA) plan. This converges with the African Union's Agenda 2063 goals in the aspiration for a Prosperous Africa, based on Inclusive Growth and Sustainable Development, in line with the 2030 Agenda and the Paris Agreement. As Africa's closest geographic neighbour, Europe is uniquely positioned to support the continent's plans to address its challenges.

The **Africa-Europe Alliance for Sustainable Investment and Jobs**[4], launched in 2018, works to address key challenges in employment and inequality in Africa. A year after its launch, many of its work streams are in full implementation. The four Sectoral Task Forces on agriculture, energy, digital economy and transport, set up as thematic platforms for high-level policy dialogue, have brought together experts, politicians, academics and private sector from both continents. This report is a product of the Alliance's Energy Task Force, the **Africa-Europe High Level Platform for Sustainable Energy Investments** (SEI Platform).

This report **focuses on solutions to the climate and energy access crisis in sub-Saharan Africa (SSA)**, to achieve universal access to energy by 2030 and underpin an energy transition for sustainable development. It recommends **an integrated approach to distribution, enhancing regional electricity trade** and facilitating increased investment in **renewable energy, energy efficiency and clean cooking solutions**. A new distribution model that brings together on- and off-grid distribution services under an *integrated distribution framework* is proposed, to leave no one behind. Reinforcing transmission and power pools for greater regional integration are key elements of this transition.

The energy market landscape in Africa offers an array of opportunities for investments and partnerships in sustainable and renewable generation technologies, as well as in energy efficiency, transmission networks and various distribution models. Ramping up sustainable generation capacity by 2030 according to the African Development Bank (AfDB) New Deal on Energy for Africa requires from €39 to €62 billion of annual financing, mostly for renewable generation.[5] Strengthening grids and extending connections to new customers (both

1 IEA, IRENA, UNSD, WB & WHO, 2019. Tracking SDG 7: The Energy Progress Report.

2 The population is forecast to double by 2050.

3 IEA (International Energy Agency), 2019. *Africa Energy Outlook 2019*. IEA, Paris.

4 European Commission, "Africa-Europe Alliance: Boosting investment and trade for sustainable growth and jobs," accessed October 2019 at https://ec.europa.eu/commission/africaeuropealliance_en

5 IRENA, 2019. Scaling Up Renewable Energy Deployment in Africa - Impact of IRENA's engagement. www.irena.org/-/media/Files/IRENA/Agency/Regional-Group/Africa/IRENA_Africa_impact_2019.pdf?la=en&hash=EECD0F6E8195698842965E63841284997097D9AA; Sustainable Energy for All (SEforALL) and the Climate Policy Initiative (CPI), 2018. Understanding the Landscape – Tracking Finance for Electricity and Clean Cooking Access in High-Impact Countries. climatepolicyinitiative.org/publication/understanding-the-landscape-2018-tracking-finance-for-electricity-and-clean-cooking-access-in-high-impact-countries/; Multiconsult & AfDB, 2018. The AfDB New Deal on Energy for Africa : Optimal expansion and investment requirements. Report to African Development Bank.

through central grids and off-grid systems) offer additional areas of investment opportunities. The cooking sector needs to scale up investments to the tune of €1.8 billion a year to meet universal clean cooking access by 2030.[6] Such investments stand to benefit Africa and the entire world.

Several obstacles stand in the way of rapid electricity access expansion in sub-Saharan Africa. Power utilities face financial deficits across the continent. Investment levels in bulk (utility-scale) generation and transmission infrastructure remain lower than for any other region, especially due to higher risks and reliance on ad hoc, piecemeal interventions. This highlights the needs to reduce risks, to make sure existing project development methods are effective and efficient, and to create scale economies for electricity generation and transmission through power pools. **Investment is most sorely needed in the *last mile*** to serve remote, rural communities. Maintaining and extending the pace of progress will require strong political commitment and sound governance, long-term energy planning, adequate political and fiscal incentives as well as public and private financing.

The distribution segment of the power sector remains dysfunctional in most African countries. A framework for an *integrated distribution system* that takes an inclusive and permanent (long-term) approach to electricity supply offers a solution to distribution challenges. Such a framework would help in creating viable business models that can attract necessary investments through private participation in the distribution segment (such as with territorial concessions or other public-private partnerships). Integrated distribution presents a comprehensive, progressive approach to electrification combining various delivery modes, and harnessing digitalisation trends where appropriate. Complementing the deployment of new connections through the main grid, the off-grid sector can offer cost-effective models to roll out access, including through mini-grids as well as standalone and lighting-only systems.

Regional integration is a central pillar to solve Africa's energy and climate challenges. Power pools reduce electricity supply costs and improve reliability. They also offer generation companies access to larger and more diverse markets, facilitating the penetration of substantial amounts of variable renewable technologies like wind and solar, while allowing economies of scale that can help reduce costs. Regional power pools are at the core of the African Union's long-term strategy for universal access to electricity. The 2019 Egypt/Cairo Declaration and Action Plans for the Transport, Energy, and Tourism sectors call for African states and regional economic communities to strengthen inter-African and continental cooperation in sustainable infrastructure development.

Despite well-known challenges, energy efficiency offers vast potential to reduce stress on energy systems. A paradox of the African energy challenge means that the shortage and high cost of energy supply in many regions coincides with inefficient, wasteful energy use due to often outdated, inefficient machinery and equipment. Energy efficiency often lacks the attention it needs for channelling investments, while other investment needs take priority. Various investment barriers and adverse market characteristics—such as lack of awareness and market incentives—leave potential financially viable energy efficiency investments unexploited. The sectoral barriers are not specific to the African continent, but are often exacerbated by economic volatility and uncertainties, and limited access to financing.

This report makes recommendations in 11 categories, divided into two sets. The first set addresses transversal matters A to D, necessary to shape an enabling environment to drive the sustainable energy transition: A) policy and regulations, B) project implementation instruments, C) financing and fiscal measures, and D) capacity building. The second set addresses topics E to K, related to specific segments of the energy sector: E) traditional distribution, F) the off-grid sector, G) transmission, H) generation, I) regional integration through power pools, J) energy efficiency, and K) clean cooking.

A. Facilitating sustainable energy investments through policy and regulatory measures

Policy and regulatory frameworks need to be strengthened to facilitate sustainable energy investments. Technical assistance programmes are needed to support energy and related ministries in reviewing policies and legislation in line with climate policies and commitments, as well as long-term sustainable development objectives. Review processes can take guidance from international best practices to address the need for public-private partnerships, alongside other de-risking mechanisms to open up sustainable investment in the sector. New policies should pay attention to gender equality measures in energy. Applying a water-energy-food-climate approach in policy, with cross-sector planning provisions, will allow countries to take advantage of areas of convergence and tension between water, food, agriculture, climate and energy security and sector development. Reforming fossil fuel subsidies should be high on the list of policy reviews, alongside introducing decarbonisation policies, circular economy and strong environmental and social standards that align with energy efficiency, environmental protection or emissions performance standards. Technical assistance programmes should support regulatory authorities to conduct regulatory reviews to facilitate integrating new distribution models, improve regulatory independence and executive functions, and review tariff design and subsidisation schemes. Policy reforms should also consider revenue-generating programmes, alongside developing infrastructures that make up the enabling environment of economic empowerment.

B. Promoting best practices in project identification, preparation, and procurement

Improving project identification, preparation, and procurement will help attract financing into the sustainable energy sector. The complete chain of activities that are necessary to get sustainable energy projects done in Africa needs an in-depth review to simplify the processes, standardize procedures, minimize fragmentation of future instruments, and make the deployment of sustainable energy infrastructures more efficient and climate-compatible. The adoption of best practices and streamlined procedures will mitigate investment risk, reduce costs, and better attract financing. Technical assistance programmes and task forces are needed to promote best practices in procurement, especially to simplify and standardise procurement processes. These programmes should support governments and regulators to identify a pipeline of effective, impactful projects, such as for renewable energy generation or mini-grid projects to increase attractiveness to investors. They should support energy authorities to streamline project procurement and implementation, and design de-risking measures such as providing support to pre-feasibility studies. Africa-Europe support activities need to make special effort to unify their programmes and harness synergies for smooth project implementation.

C. Adapting financing and fiscal systems to meet potential investors' and projects' needs

Specific measures and financial instruments must be adopted to enhance projects' economic viability and their attractiveness to potential investors by mitigating project risk. Public financial institutions should boost cooperation with private lenders, to move from direct finance towards a wider risk mitigation strategy. This should include the use of concessional finance and grants to leverage private investment and address funding gaps. Innovative de-risking packages for tendered projects can be provided, via technical assistance in project preparation phases, such as by funding site identification and pre-feasibility studies. These efforts should favour scalable and sustainable solutions that create a pathway towards long-term financial independence from donors and host governments.

Local banks and local institutional investors must also be supported to invest in the sustainable energy transition. Capacity building programmes can give local commercial banks templates on due diligence and risk assessment methods for sustainable energy projects. Specified credit lines should be allocated to local banks for funding small and medium sustainable energy enterprises or projects. Current investors, notably development finance institutions, can accelerate these capacity building processes through co-investing alongside local institutions to transfer due diligence and risk assessment skills.

Fossil fuel subsidy reform presents part of the solution to correct distorted incentives and inequitable subsidies. This can bring associated benefits for energy efficiency, renewable energy, emissions reduction, and government balance sheets.

D. Launching a comprehensive capacity building programme

In general, sector-wide capacity building is essential for developing the sustainable energy sector. Africa needs to invest in its human resources through capacity building in particular for technicians, engineers, and regulators. Capacity building can be deployed to strengthen regional institutions for promoting integration through power pools, by transferring appropriate rule-setting skills and enforcement.

[6] IEA (2019).

Knowledge sharing platforms and capacity building programmes should be supported, making use of existing resources and expertise in Africa and Europe. **Exchanging knowledge and sharing experiences on energy access, management, climate change, renewable energy and energy efficiency creates an opportunity for creative problem solving in energy**. Interregional cooperation or twinning between European and African industry associations, as well as African intraregional cooperation initiatives should be promoted. Africa-Europe research and development programmes should support innovation through promising technologies such as storage, hydrogen fuel, and digitalisation.

E. Strengthening and expanding the distribution segment

A high-level multi-stakeholder dialogue should be established to elaborate on a framework for an integrated distribution system. Most new connections will occur via the main grid, but off-grid solutions will need to fulfil a significant share of access expansion. Technical assistance can be provided to assess and test its application in selected countries. Technical assistance can also support ministries or planning agencies to develop integrated GIS-based electrification plans. These need to weigh the costs and other resources needed for full electrification, while guiding mini-grid and standalone system developers in their rollout strategies. Performance-based incentive schemes could also be designed, both to guide distribution operators to reduce losses and to improve reliability and customer service.

F. Boosting mini-grids and standalone systems

Institutional support from ministries, regulators, and rural electrification agencies can encourage mini-grid and standalone system deployment, to accelerate electricity expansion in rural areas. Technical assistance programmes should be rolled out to support energy ministries and rural electrification agencies to simplify administrative procedures and structure appropriate subsidy schemes. These programmes can also support regulators to review regulatory frameworks in order to establish the conditions under which mini-grids might eventually connect to the main grid. System planners, utilities or electrification agencies should be supported to structure portfolios of off-grid projects. These can facilitate financing by stimulating appetite among investors. This can be effectively accomplished within an integrated distribution framework.

G. Investing in the sustainable transmission network

Transmission investment and planning need attention as the backbone supporting the power system. These allow integrating higher shares of renewable energy, minimising losses, balancing generation surpluses or deficits between countries, and strengthening national and regional energy security and climate resilience. Well-designed transmission networks reduce supply costs through cross-border trade by facilitating economic dispatch of generation and by capturing economies of scale in generation. Technical assistance should be provided to support comprehensive regional planning to inform transmission investment needs and risks, including climate and environment, as well as devising opportunities for cross-border trade. A common approach to regional and continental transmission operation and planning would ensure that the transmission network uses its full potential. Transmission would benefit from increased private participation to a similar degree as now occurs in generation. Planners must be aware of the long lead times that occur for transmission line developments.

H. Investing in generation to boost renewable energy sources

New generation is needed to supply reliable and affordable power to consumers gaining access to the grid and to enable sustainable industrialisation, while underpinning the gradual decommissioning of obsolete generation plants. Investing in cost-competitive renewable energy generation represents a huge opportunity for African countries to "leapfrog" highly polluting generation technologies, such as coal and fuel oil. These must be complemented by low-carbon technologies when necessary for grid stability and to support the sustainable energy transition. The African Union and European Union need to maintain conversations at a high institutional level to define guidelines and instruments that can facilitate Africa's transition to a decarbonised and sustainable energy sector. Support instruments to diminish risks for medium and large-scale generation investments are also needed.

I. Advancing regional integration of national power sectors

Regional integration through regional power pools offers an attainable opportunity to support Africa's energy, climate and growth agenda in line with the African CFTA initiative. Regional institutions—the regulator and system operator—need to be strengthened to facilitate increased cross-border power trade, energy efficiency, and increased renewable energy production. **Technical assistance should be offered to share best international practice in power pools regulation and renewable energy integration, and to offer capacity building opportunities,** in particular in transmission cost allocation, congestion management, and efficient dispatch of bilateral contracts. Ample experience can be tapped into from the EU Internal Energy Market.

J. Improving energy efficiency

Energy efficiency can be a powerful pathway to ease the pressure from increasing energy demand in Africa, catalysed by growing populations and economies. Reducing primary energy consumption and decreasing the need for energy imports through energy efficiency can enhance energy security and decrease costs. It is also a cost-effective way to reduce greenhouse gas emissions and pollution, bringing associated benefits for climate change mitigation. Dedicated energy efficiency initiatives can help to unlock these potential benefits. The fragmented nature of energy efficiency measures, a lack of awareness and economic uncertainties continue to hinder medium to longer-term energy efficiency investments. Programmatic initiatives that combine technical assistance (to build awareness and showcase energy efficiency gains) with credit lines (to finance energy efficiency measures) and potentially financial incentives (to accelerate energy efficiency uptake), can produce significant improvements. It is also essential that new investments do not lock in inefficient energy consumption for years to come. **Tackling transmission and distribution losses will also be critical.**

K. Scaling up the clean cooking sector

Achieving universal access to clean cooking in Africa by 2030 is possible with financial commitments of €1.8 billion per year.[7] Taking a multi-sectoral, coordinated approach to regulations, manufacturing and distribution across value chains can support a shift in clean cooking fuels and technologies, including electricity. Capacity building programmes can help shape the regulatory and policy environment in African countries to support market development and deployment of clean fuels and efficient stoves as well as electric cooking. Clean cooking interventions need to take proactive gender mainstreaming approach through various channels, including by supporting female entrepreneurs, and outreach to female household decision-makers on adopting clean cooking technologies.

[7] IEA (2019)

ACTION AGENDA FOR SUSTAINABLE ENERGY INVESTMENTS

Achieving environmentally sustainable, reliable, affordable, and climate-resilient access to energy should be a priority in the short-term. This final chapter presents the SEI Platform's priority recommendations and practical actions for implementation.

This action agenda requires concerted political dialogue and the active participation of the private sector, civil society, academia, public and international institutions with a common interest in sustainable development to foster prosperity. In this context, it is recommended that the AU and the EU maintain this platform of cooperation and further expand it to more stakeholders, while following up with the implementation of these recommendations.

These recommendations contribute towards achieving African leaders' aspirations in the Agenda 2063, the New Deal on Energy for Africa, the Cairo Declaration and Action Plan, as well as the United Nations' 2030 Agenda and Paris Agreement.

Substantial investment in capacity building and technical assistance support is needed to carry out most of these recommendations. At the same time, realising the stated objectives requires that partner countries make strong political commitments through adopting appropriate policies and regulations.

The priority recommendations are structured in the following 11 categories:

A. Adopting policy and regulatory measures to facilitate sustainable energy investments.

B. Promoting best practices in project identification, preparation, and procurement.

C. Adapting financial and fiscal systems to meet potential investors' and projects' needs for maximising benefits to African partners.

D. Launch of a comprehensive capacity building programme.

E. Investing in the distribution segment.

F. Expanding mini-grids and standalone systems.

G. Investing in the transmission network.

H. Investing in renewable generation.

I. Advancing regional integration of national power sectors.

J. Improving energy efficiency.

K. Encouraging market development, consumer demand, and investments in the clean cooking sector.

A. Adopt polcy and regulatory measures to facilitate sustainable energy investments	
Objective	Adopt policy and regulatory frameworks that ensure a level playing field, favourable to local and foreign private sustainable investment, including for the establishment of PPPs.
	Action
A.1 – Policies	Design and implement a technical assistance and capacity building programme to support energy and corresponding line ministries in the development of national policies and targets for all segments of the energy sector i) access to electricity and clean cooking, wider deployment of renewable energy and energy efficiency, ii) promotion and scale up of local and international private sector investments in sustainable energy, including through phasing out fossil fuel subsidies and decommissioning, and iii) integrate climate change and environmental considerations in the previous measures.
A.2 – Regulations	Design and implement a technical assistance and capacity building programme to support energy regulatory authorities in regulatory review processes, in drafting and promoting of the framework that will enable the implementation of the aforementioned policies, while addressing shortcomings (e.g. pertaining to regulatory independence, tariff design, operation of wholesale markets, etc.), with the aim to strengthen the regulatory framework for all segments of the energy sector (notably addressing weaknesses such as those identified in the Electricity Regulatory Index)[8] with a focus on access to electricity, off-grid/mini-grid systems, clean cooking, deployment of renewable energy, and energy efficiency.

B. Promote best practices in project identification, preparation, and procurement	
Objective	Get more sustainable energy projects done in Africa by enabling a favourable environment to renewable energy investments with simplified processes and standardised procedures, while minimising fragmentation of donors' instruments, and making the deployment of energy infrastructure more efficient and sustainable.
	Action
B.1 – Identify a pipeline of effective and impactful projects	Develop a technical assistance programme for specifying project pipelines, starting from the existing project pipelines of PIDA, AREI, SEforALL and other sources' investment prospectuses that have been identified based on agreed selection criteria for all energy projects.
B.2 – Streamline the process of implementation of sustainable energy projects	Develop a technical assistance and capacity building programme and reinforce political dialogue through an enhanced energy diplomacy aiming at the engagement of African governments to support public authorities (governmental entities, utility companies, rural electrification agencies and energy ministries, and regulatory authorities) in standardising: i) tendering, procurement and licensing processes, including environmental and social impact assessment procedures; ii) transaction documents (such as land and water permits, land rights documents, PPAs, and Environmental and Social Impact Assessments). Avoid retroactively and unilaterally changing the rules of procurement and compensation for IPPs, as such actions risk destroying market and investor confidence.
B.3 – Design de-risking measures in the process of project preparation	*Recommendations C (Financing and fiscal systems), F (Off-grid and mini-grids), and H (Generation) describe these de-risking measures in more detail.*
B.4 – Streamline Africa-Europe support activities and harness synergies for effective implementation procedures	Appoint a task force to review the current instruments and processes with the aim of i) reducing potential overlaps or duplications of instruments applied; ii) standardising the diverse procedures; iii) unifying potentially fragmented programmes under an operational one-stop-shop, iv) fine tuning coordination of the existing tools; v) reinforcing simultaneous support from the three aspects of finance – technical assistance/capacity building – policy dialogue and finally vi) ensure an effective follow-up, inter alia by adopting monitoring standards to increase the effectiveness of current and future actions within the purview of the SEI Platform.

[8] See the African Development Bank's Electricity Regulatory Index (ERI), https://www.afdb.org/en/news-and-events/african-development-bank-launches-first-electricity-regulatory-index-for-africa-18250 (accessed in Octboer 2019)

C. Adapt financing and fiscal systems to meet potential investors' and projects' needs, for maximising benefits to African partners	
Objective	Enhance the economic viability of energy projects and their attractiveness to potential investors, along the entire projects' chain with the aim of maximising benefits for the African partners. Risk mitigation is critical in this respect.
	Action
C.1 – Enhance the cooperation among DFIs and between DFIs and commercial lenders	Encourage DFIs to attract local commercial lenders by co-investing, sharing risk and leveraging DFIs' ability to provide longer tenors and lower interest rates.
	Encourage IFIs to support the implementation of wider risk mitigation strategies, including packages of de-risking tools (e.g. political risk insurance, off-taker guarantees and currency risk hedging mechanisms, in addition to advisory services and TA). These strategies should be designed in collaboration with the private sector.
	Support the scale-up and replication of funding structures with a track-record of delivery, and develop new funding structures to address market gaps not covered with existing instruments.
	Set up a standardised monitoring and evaluation framework to evaluate the effectiveness of existing financing and de-risking tools through an enhanced multi-stakeholder dialogue. Improve coordination among IFIs on existing instruments. Promote a multi-stakeholder dialogue aimed at sharing best practices for addressing key bottlenecks to private investments in the sector of sustainable energy (e.g. capitalising on platforms such as the Africa Energy Market Place).
C.2 – Design de-risking packages for tendered projects	Provide technical assistance for appropriately solicited project preparation prior to tender launch.
	Whenever a bunch of projects is tendered support the tender with linked services of available instruments and tools (e.g. GetInvest, GMG Helpdesk) aimed at reinforcing early stage support/ handholding for project developers along with de-risking financing in renewable investments enabled environments or environments under policy dialogue for the creation of a renewable investments friendly market.
	Provide capacity building/training to local commercial banks to undertake due diligence and risk assessment on clean sustainable energy projects.
	Encourage local commercial banks by providing incentives for lending women entrepreneurs (special lending programmes to women entrepreneurs).
C.3 – Empower local banks and local institutional investors to invest in the sustainable energy transition	Encourage DFIs to attract local commercial lenders by co-investing and sharing risk of sustainable energy projects.
	Provide credit lines, including supportive funding and de-risking instruments, to local banks to lend to clean sustainable energy projects or of SMEs, this further supporting the growth of local SMEs in the energy sector, in particular for women entrepreneurs.
	Encourage local institutional investors and pension funds to shift their portfolios in support of clean sustainable energy projects.
C.4 – Fossil fuel subsidy reforms to correct distorted incentives and inequitable subsidies towards a just transition	Support the development of appropriate fiscal policies and measures, including to capacity building programmes, to unlocking investments in sustainable energy, including assessing its socio-economic impacts and benefits
	Encourage energy subsidy swaps (using some of the savings from subsidy reform to support energy efficiency or renewable energy)

See chapters 1 to 4 for recommendations specific to each segment of the power sector segment, clean cooking and energy efficiency.

D. Launch a comprehensive capacity building programme	
Objective	Investment in human resources, particularly technicians, engineers, sector managers, and regulation professionals, to support the sustainability of the sector. Capacity building is urgently needed in a wide range of fields across sustainable energy for electricity and heating or clean cooking.
	Action
D.1 – Create knowledge sharing platforms and capacity building programmes	Launch an ambitious capacity building programme spanning a portfolio of topics and professional levels, and for all energy sector stakeholders building on the previous successful experiences and the existing centres of excellence in Africa (e.g. African Network of Centres of Excellence in Electricity, ANCEE) and Europe for Africa (e.g. Florence School of Regulation at the European University Institute).
	Foster cooperation between European regional institutions and counterparts in Africa (such as through twinning) for exchange of knowledge and capacity building on energy access and clean cooking, energy management, sustainable energy and energy efficiency.
D.2 – Promote Africa-Europe joint innovation, research and development	Support and strengthen initiatives, like Pre-LEAP-RE, that support long-term collaborative AU/EU joint research and innovation activities in renewable energy and energy efficiency.
	Support the creation of and provision of technical assistance to digital and energy start-ups to facilitate the entry of innovative technologies on the African market. *This can be achieved through partnerships with EU start-ups.*
D.3 – Promote B2B partnerships and networking between companies, industries and associations across sectors	Organise forums to convene international and local stakeholders in the energy sector, including public and private sector, technology suppliers, and civil society organisations to enable synergies and fast-track off-grid and on-grid projects on the ground.
	Organise and/or facilitate B2B partnerships, matchmaking and networking through African energy associations and African countries' EU Delegates, which can serve as information desks on specific or targeted business opportunities (e.g. under EU supported investment programmes).

E. Invest in the distribution segment	
Objective	Transform the presently dysfunctional distribution segment of the power sector into a viable business model capable of attracting the required substantial investment, to ensure reliable, affordable, and sustainable electricity access for consumers.
	Action
E.1 – Develop national integrated GIS-based electrification plans	Provide technical assistance to the Ministry of Energy, incumbent utilities or rural electrification agencies to develop new and/or review existing electrification plans and investment criteria, alongside beneficiaries, project developers, industry and investors. Learn from those countries that have already developed and are implementing National Electrification Programmes.
	Provide technical assistance to elaborate investment programs or prospectuses consistent with electrification plan.
	Strengthen and capacitate national rural electrification agencies through training, network building and knowledge/experience exchange.
E.2 – Promote the adoption of the integrated distribution framework (IDF) adapted to countries' specific conditions	Convene a high-level multi-stakeholder dialogue to promote the IDF for grid and off-grid electrification.
	Provide technical assistance to perform an-depth analysis of the potential application of the IDF to a small group of countries based on a transparent call for proposal, and subsequent implementation.
	Provide technical assistance to support integrating electricity supply through a range of electricity services, emphasising productive uses and promoting women's participation.
E.3 – Review / develop / improve regulations for the specific activity	Provide technical assistance to design performance-based incentives for distribution operators to improve reliability and customer commercial service, augment connections, roll-out advanced metering systems, and reduce technical and commercial losses.
E.4 – Create loss-reduction programmes	Support utilities to elaborate a network losses reduction programme to reduce network losses with a well-defined action plan and investment strategy.

** See chapter 3 of the complete report for a more detailed description of the integrated distribution framework.*

F. Expand mini-grids and standalone systems	
Objective	Mini-grids and standalone systems form part of the distribution segment, and the prior recommendations for distribution also apply to off-grid solutions. Off-grid solutions are being deployed with novel business models and largely without being subject to conventional regulation. Regulation must protect consumers and developers, establish conditions for the interaction among the different electrification modes and create a level playing field for all of them. In general, they require appropriate subsidies.
	Action
F.1 – Support the deployment of mini-grids and standalone systems through sensible administrative procedures, regulations, subsidies, and risk-mitigation	Launch a technical assistance programme to simplify and standardise the administrative processes to identify, fund and implement mini-grid projects, eliminating the current fragmentation and gaps in funding cycles.
	Create portfolios of projects to attract and facilitate financing (including for standalone systems, in some cases).
	Launch a programme to explore support for a standardized, multinational (even Pan-African) subsidy programme to facilitate mini-grid deployment at scale. In principle, this could be based on RBF.
	Support initiatives to develop electricity demand, such as through productive uses, alongside new supply systems. Including women's work and employment opportunities is essential in this sphere.
F.2 – Develop standards and inspection procedures for mini-grid and standalone system components	Provide technical assistance to design and/or review the regulatory framework for mini-grids performance standards, capitalising on existing quality assurance frameworks.[9]
F.3 – Support consumer finance for rural electrification using standalone systems	Cooperate with microfinance institutions in funding, de-risking, and technical assistance, notably to design new lines of credit or dedicated funds and/or scale up existing initiatives to facilitate access to finance by rural households.
F.4 – Adopt the Integrated Distribution Framework as a medium and long-term guide to develop the distribution segment for inclusive and sustainable electricity access	*See recommendations and actions in E (Distribution segment). Mini-grids and standalone systems must play a key role in the deployment of the IDF, adapted to the situation of each country.*

G. Invest in generation, with a focus on renewables	
Objective	Close the deficit in generation to supply the large, still unelectrified population, and to underpin sustainable industrialisation. Africa needs to harness a broad mix of low-carbon technologies in its transition to decarbonise the energy system, to deliver least-cost affordable energy and protect economies from vulnerability, including for coping with the variability of solar and wind.
	Action
G.1 – Define actionable guidelines and instruments to facilitate the African transition to decarbonize the power sector	Enhance dialogues at high institutional level (e.g. in the context of PIDA) to define guidelines and instruments for sustainable generation investments.
	Explore instruments that support African countries to expand the use of renewables for addressing baseload requirements, such as by offering technical assistance to national power system planning and optimization for increasing the share of variable renewable energy in the power system and deploying energy storage solutions.

[9] See https://www.nrel.gov/docs/fy17osti/67374.pdf

G. Invest in generation, with a focus on renewables	
G.2 – Support instruments and approaches for reducing risks in generation investments, especially for renewable projects, including by improving the creditworthiness of off-takers	Provide technical assistance to assess the market potential for introducing creditworthy intermediaries in specific countries/regions, based on defined criteria and in different electricity market configurations; design and/or adapt the regulatory framework to allow the introduction of intermediaries; consider combining the following measures: increase the liquidity of national markets or power pools; strengthen the guarantees associated to the supply contracts; allow the introduction of creditworthy intermediaries to diversify risk.
	Transform the presently dysfunctional distribution segment into a viable business model to make a creditworthy off-taker, (see the proposed integrated distribution framework, IDF in section E (distribution)).
	Reduce transmission and distribution losses (technical and commercial), through I) technical assistance support for an enhanced regulatory framework, for example that links electricity tariffs with performance on energy efficiency;[10] II) designing smarter distribution grids with effective monitoring, advanced metering, fault rectification, and supply improvement; and III) capacity building for utility companies or distribution entities in using smart meters to improve collection rates.
G.3 – Design de-risking packages for tendered generation projects	Plan generation projects in harmony with necessary development and expansion of transmission and distribution networks. Procurement procedures and technical specifications should align with country regulations where they will be deployed, as well as the power pool rules if the project has an impact at regional level
	Create regulations to facilitate extending connection lines between new generation plants and appropriate substations, with the aim of accelerating the deployment of renewable energy into the grid. The grid code must clearly define the conditions and the process of connection of third parties to the existing grid.

See recommendations ***C*** *(Financing and fiscal systems) for general purpose recommendations on de-risking packages.*

H. Advance regional integration of national power sectors and strengthening transmission	
Objective	Integrate regional power systems and build up transmission investments to support the continent's growth agenda, in line with the AfCFTA initiative. Despite its many potential benefits, regional integration is hampered by the absence of strong regional institutions and frequently inadequate enabling regulations. In addition, existing power pools lack sufficient executive powers. The transmission segment, a backbone of regional integration, continues to face a critical investment gap: a major bottleneck for further system integration.
	Action
H.1 – Strengthen the regional institutions: regulator and system operator	Prepare a draft protocol agreement with options to strengthen the functions of the regional and system operators of power pools; discuss successful international experiences in the context of a high-level AU conference, including African energy ministries, regional institutions and relevant EU organisations.
	Support initiatives like the Africa Clean Energy Corridor (ACEC) that aims to provide support to indigenous and cost-effective renewable power options, selecting suitable deployment areas where adequate transmission capacity could be efficiently provided, and meaningful trade could happen.
H.2 – Adapt and adopt international best practices in market rules	Launch a technical assistance programme to share best international practices in power pools regulation, including efficient economic dispatch in the presence of bilateral contracts, open cross-border access, open and transparent membership, and transmission cost allocation. The experience gained in the implementation of the EU Internal Electricity Market will be valuable. Include specific capacity building activities at political, executive, and technical levels.
H.3 – Support comprehensive planning of regional scope to inform transmission investments	Provide technical assistance for transmission regulation and planning issues, in particular those with high potential for meaningful cross-border trade, such as cost/benefit analysis of transmission network infrastructure, transmission cost allocation, and congestion management approaches.

[10] For example, by refusing a tariff increase to the distribution utility if losses are not reduced by a certain degree

I. Improve energy efficiency	
Objective	Strengthen the ability of African countries to implement energy efficiency policies and investments to bolster economic growth and industrialisation decoupled from growing energy use.
	Action
I.1 – Formulate, review and strengthen energy efficiency regulations	Provide technical assistance to support regulatory authorities and/or energy ministries to review existing energy efficiency regulations, and to propose new/improved regulations.
I.2 – Identify and assess energy efficiency savings potential across selected African countries	Provide technical assistance to energy ministries or dedicated institutions to design and launch studies analysing energy savings potential, including in cogeneration, industrial, buildings, electricity, and transport sectors.
I.3 – Design regional and national EE action plans and programmes	Support regional organisations and national public sector authorities to design energy efficiency action plans and programmes in buildings, industrial, and transport sectors.
J.4 – Improve the institutional framework for energy efficiency	Begin dialogue among EU and African energy ministries and/or regulatory authorities to set up or strengthen dedicated energy efficiency and energy conservation institutions, as implementing agencies for energy efficiency policies, programmes and action plans.
	Provide technical assistance to set up the legal and regulatory framework for EE institutions and train staff.
I.5 – Provide capacity building to public institutions to implement EE policies, programmes and action plans, and to support EE investments, respectively	Design and/or build on existing capacity building programmes to support regulators with design, implementation and monitoring of energy efficiency measures.
	Provide support to enhance technical expertise of institutions and local private sector companies for installation, maintenance and control of EE products and services.
	Provide Technical Assistance and capacity building to utility companies to design and implement maintenance programmes for improved EE in power systems.
	Provide technical assistance to establish Super ESCOs for government facilities and to assist in putting in place all required components for operation, financing, capacity buildings and private ESCO market development.
	Provide technical assistance to develop and replicate an on-bill financing scheme, notably for the residential sector.
I.6 – Create information sharing platforms and awareness raising campaigns to promote the benefits of energy efficiency	Provide technical assistance to design communication strategies across all sectors and involving key stakeholders – policy makers, businesses, finance, consumers – to highlight the importance and potential and benefits of EE products and services, notably in terms of cost, environment, health, and job creation.

J. Encourage market development, consumer demand, and investments in the clean cooking sector	
Objective	Shape a policy, regulatory and business climate with supportive social drivers that can expand access to clean cooking solutions across the continent.
	Action
J.1 – Prioritise access to integrated clean cooking solutions in national development plans and policy documents	Launch an integrated multi-year clean cooking technical assistance and awareness programme supporting a coordinated approach to regulations, social drivers, finance, manufacturing and distribution of cookstoves and efficient appliances, and addressing firewood and charcoal, biofuels, gas and electricity (for electric cooking) value chains. This could be led by multi-sectorial taskforces (such as energy, health, gender, finance).
	EU and AU leaders to jointly call on governments to prioritize access to clean cooking solutions in national development plans and climate action programs.
J.2 – Create regulatory and policy environment to support market development and rapid deployment of technology for delivering clean cooking solutions	Enhance political and technical cooperation between the health and energy sectors through a multi-stakeholder platform of action (governments, civil society, UN, private sector), such as the new Health and Energy Platform of Action (HEPA) launched at the 2019 UN Climate Summit.
	Support African countries to adopt appropriate policies and laws to support and incentivize investments in the clean cooking solutions value-chain, treating the clean cooking sector as an integral part of the wider energy system.
	Provide capacity building and business advisory support to key value chain actors to scale-up production and build out fuel, stove and appliance distribution.
J.3 – Support research and data collection at country level	Support analysis and data collection to identify proven policies, and regulatory and business models that encourage market development, paying attention to safety practices, consumer acceptance, health, gender and economic viability.
	Support research to adopt a synergistic approach to electricity and clean cooking access, to analyse co-benefits in planning, cost of energy, electricity delivery business models, and the role of utilities.
J.4 – Support innovative financing to attract public and private investment into clean cooking solutions	Introduce results-based financing to use public resources to incentivize market development in a set of pilot countries.
	Facilitate up-front financing needed by clean cooking supply-side entrepreneurs, especially for women entrepreneurs.
	Facilitate financing to establish and stimulate the demand side affordability challenges including by expanding pay-as-you-go models.
	Leverage funding from multilateral development banks (MDB) and institutions to attract private sector investments in the clean cooking sector including through supporting dedicated fund structures such as Spark+.
	Provide targeted subsidies linked to health and climate impacts particularly for very poor communities and low population density areas.
J.5 – Creating consumer demand for clean cooking	Fund national social campaigns to raise awareness on clean cooking, and gender norms, and facilitate behavioural change interventions to support the adoption and uptake of clean cooking technologies through working with relevant line ministries.