



IDEV

Independent Development Evaluation
African Development Bank

Evaluation of the AfDB's Support for Renewable Energy (2012-2021)

Concept Note

March 2022



AFRICAN DEVELOPMENT BANK GROUP

1. Introduction and Context

As part of its 2021 work program, Independent Development Evaluation (IDEV) at the African Development Bank Group (AfDB or 'the Bank') is launching an evaluation of the Bank's assistance for Renewable Energy (2012-2021).

Adequate, reliable, and affordable energy supply is vital to attaining economic growth and improving living standards, and renewable energy (RE) is an important contributor to this goal. The Sustainable Development Goals (SDGs), adopted by the United Nations General Assembly (UNGA) in 2015, provide a powerful framework for international cooperation to achieve a sustainable future. The global goal on energy - SDG 7 - encompasses three key targets: ensure affordable, reliable and universal access to modern energy services; substantially increase the share of renewable energy in the global energy mix; and double the global rate of improvement in energy efficiency for the planet.

The International Renewable Energy Agency (IRENA) and International Energy Agency (IEA) have indicated that a global energy transition is urgently needed to meet the objective of limiting the average global surface temperature increase to less than 2° Celsius. The implications of the 2015 Paris Agreement for the energy sector will be profound to an extent that is not yet fully captured by existing energies scenarios. A transition away from fossil fuels to low-carbon solutions will play an essential role. A transition away from fossil fuels to low-carbon solutions will play an essential role. This energy transition will be enabled by technological innovation, notably in the field of renewable energy. However, this transition is to be achieved between 2050 and 2100, subject to availability of financing (>\$100 B/ year from 2023; technology transfer and TA to build RMC execution capacity. Therefore, there is a need to track how much is dedicated to, or absorbed, by Africa / RMCs. Establishment of PEVP, with Climate Change Department was proactive, with clear strategic framework and action plan.

Energy infrastructure development remains a core priority of the AfDB's assistance to RMCs. Between 1999 and 2018, the Bank devoted nearly UA 13 billion to support investment and non-investment interventions in the energy sector in RMCs. The sector's share of total Bank net approvals rose from a low of 5 percent in 1999 to a high of 39 percent in 2007, and then declined to approximately 18 percent in 2018. Over the 1999-2018 period, the sector accounted for about 19 percent of overall Bank Group commitments, ranking third in terms of total assistance after Multisector (22%) and Transport (19%).¹

There is a growing interest in clean electricity generation due to various reasons (cost reductions, easier deployment, diversification of mix, etc.). The Bank has been making inroads in renewable energy development in recent years. While conventional energy constituted the bulk (55.3%) of Bank-funded power generation investments over the 1999-2018 period, investments in renewable energy have substantially increased since the approval of the Bank's 2012 Energy Policy. The key drivers of the shift to renewables is the increasing cost competitiveness of renewable technologies, especially wind and solar and increased awareness of the correlation between thermal (fossil fuel) generation and global warming are really the key drivers of the shift to renewables. Climate Investment Funds²-supported projects driven largely by transactions in Morocco (Ouarzazate Solar Complex, the Wind &

¹ IDEV, 2020. [Evaluation of the AfDB's Assistance to the Energy Sector \(1999-2018\): Refocusing Support for Improved and Sustained Energy Access in Africa](#)

² Also referred to as CIF

Hydro Program, Midelt Solar Complex), South Africa (Sere Wind Farm, Xina CSP IPP), and Kenya (Menengai Geothermal Development and wind and geothermal IPPs). It is also important to mention SEFA as its evolution – from a simple trust fund providing grants to a special fund financing RE operations – is also an indicative of the shift that happened in the Bank's energy operations (strategy, upstream and funding) between 2012 and 2021. The share of conventional energy commitments in total Bank power generation assistance has seen a sharp decline, from nearly 99 percent over the 1999-2003 period to a low 5 percent over the 2016-2018 period. The Bank is supporting the transition towards a more decarbonized energy sector in its energy operations.

The Bank's commitment to leveraging Africa's abundant renewable energy resources is gaining traction. There has been a decisive shift towards renewables in the Bank's financing of power generation projects. In particular, the 2012-2015 period marked a break from the past, with renewable energy accounting for two-thirds of total power generation assistance. Over the 2016-2018 period, this grew to 95% of the UA 0.82 billion committed to power generation.³ This is reflective of the Bank's ambitious commitment to the implementation of the NDEA. For example, in 2017, 100% of the Bank's approved energy investments were in renewable energy, making up about 1,400 megawatts in total power.⁴ Also, the Desert-to-Power initiative (Box 1) is a demonstration of how the Bank intends to harness the solar potential in the Sahel/Sahara region.

Box 1: Desert to Power - Harnessing the Sun to Power in the Sahel Region

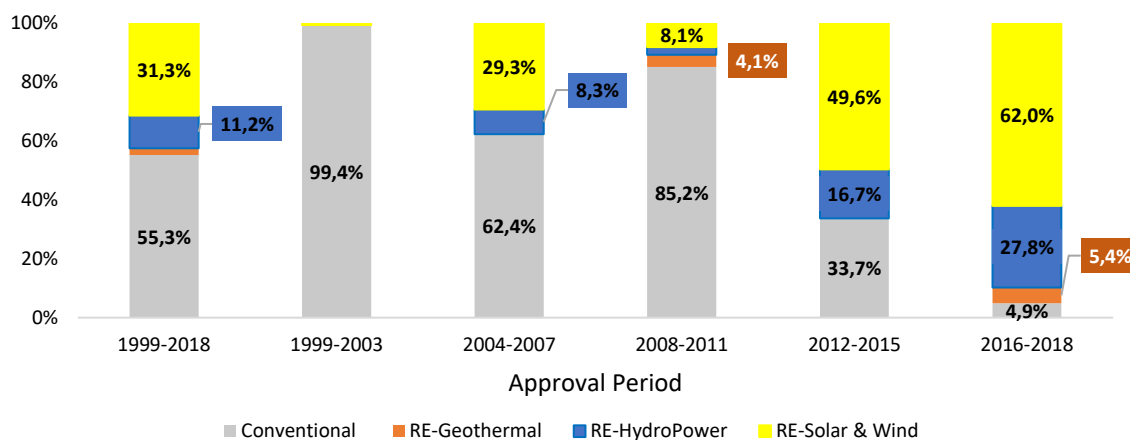
The Desert to Power initiative is set to stretch across the Sahel region and is expected to connect 250 million people to electricity by tapping into the region's abundant solar resources. It will make the Sahel the world's largest solar production zone with up to 10,000 MW of solar generation capacity and will speed up economic development through the deployment of solar technology. The eleven countries that will benefit from this initiative comprise Burkina Faso, Ethiopia, Eritrea, Djibouti, Mali, Mauritania, Niger, Nigeria, Senegal, Sudan, and Chad.

Solar and wind energy sources make up the bulk of the Bank's renewable energy investments.

As shown in Figure 1, solar and wind energy accounted for 62 percent of power generation sub-sector assistance between 2016 and 2018. This shows an increase of about 12 percentage points as compared to the 2012-2015 period and nearly 54 percentage points as compared to the 2008-2011 period. Collectively, this transition towards a more decarbonized energy sector in Bank-funded energy operations bears testament to power generation developments on-the-ground in RMCs.

³ <https://www.afdb.org/en/news-and-events/the-african-development-bank-pledges-us-25-billion-to-climate-finance-for-2020-2025-doubling-its-commitments-19090/>

⁴ See African Development Bank Group: Annual Report 2017, p. vi.

Figure 1: Renewable energy sources gaining traction since the approval of the 2012 energy policy**Distribution of Net Power Generation Commitments by Main Energy Source**

Source: Calculated by IDEV, based on Bank internal databases.

2. Findings and Lessons from Previous Evaluations⁵

The proposed evaluation builds on a series of previous IDEV work that integrated RE (geothermal, hydro, solar, wind, etc.) into broader assessments of the AfDB's support to the energy sector, green growth, climate change mainstreaming, rural electrification, power interconnection, or other themes⁶. Although RE has been a component in several IDEV evaluations, this proposed assessment will be the first time that it is undertaking a sector evaluation focused exclusively on RE from an AfDB perspective.

Past IDEV evaluations that covered RE projects found that AfDB support has led to an increase in the supply of and access to electricity through boosting power generation and rural electrification, cross-border power exchange, and transmission infrastructure, in addition to increased use of conventional and renewable energy sources. Evidence related to the value of the Bank's interventions was found in (i) private sector participation, (ii) climate change, and (iii) regional cooperation⁷. The Bank's support to the energy sector was found relevant for the African continent to address energy sector challenges, although with shortcomings in some critical areas such as risk assessment (market risk and construction risk, capacity of the exporting countries to generate enough electricity to meet national demand as well as contractual obligations to international customers, the political tensions between

⁵ There are some independent evaluations done on SEFA contracted by donors. Those evaluations are not included here but will be considered to the extent possible in the portfolio review.

⁶ Those evaluations include: i) Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB's Interventions: Summary Report (2021); ii) Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB's Interventions - Energy and Transport Cluster (2021); iii) Evaluation of the AfDB's Assistance to the Energy Sector (1999-2018): Refocusing Support for Improved and Sustained Energy Access in Africa (2020); iv) Evaluation of the African Development Bank's Program Based Operations: Energy Governance Cluster (2019); v) Spurring Local Socio-Economic Development Through Rural Electrification (2018); vi) Powering Africa Through Interconnection: Cluster Evaluation Report (2018); vii) Synthesis of Renewable Energy Projects (2016); viii) Comprehensive Evaluation of the Development Results of the African Development Bank Group 2004-2013 (2016)

⁷ It's important to mention that Bank investments in regional interconnections and generation projects have been increasing (e.g., CLSG, OMVG, Ruzizi II & III).

the trading countries for power interconnection projects, and the limits on power purchasing agreements, etc.), long-term sector planning, regulatory environments in RMCs, and less focus on transmission and distribution. Overall, the effectiveness of the Bank's support to the energy sector was assessed as satisfactory, although progress has been slow on the high-level objectives that the Bank's support aims to contribute to. In general, access to energy in Africa remains low, and progress towards access-for-all is slow.

The Bank's support to the energy sector was generally found to have delivered the planned outputs, especially better access to electricity. Overall, the Bank's support to the energy sector achieved and sometimes exceeded the expected outputs (e.g., assets delivered, capacity developed, and policies implemented) to improve access coverage of electricity. However, challenges were found in the following areas: improving sector governance, RMCs' regulatory frameworks, increasing the affordability of RMCs' energy services to end-user beneficiaries, especially to the poor, and providing adequate non-lending policy and Technical Assistance (TA) support that could have contributed to the success of operations.⁸ Despite the progress made, challenges to reliability of electricity and regular power shortages continue to limit access and use of electricity, with electricity prices remaining high. This situation is due to several reasons including a heavy reliance on oil-based electricity generation and the financial gap to address an increasing demand due to population growth.

Recurring lessons from some of IDEV's past evaluations that covered the AfDB's RE portfolio highlighted the need to:

- Have well-designed projects and programs including rigorous assessment of risk during the design phase,
- Have sustained political commitment,
- Ensure strong institutional capacities prior to or as a result of the AfDB interventions to drive the energy sector reform implementation and coordinate measures across government and energy sector actors to formulate and implement comprehensive energy policies, which encompass long-term power development plans, energy security strategies, and energy efficiency /conservation plans,
- Pay attention to the environmental and social aspects of the project during the project cycle,
- Conduct extensive consultations with all stakeholders.
- Focus attention on country-specific contexts, in contrast to one-size-fits-all approaches, ensuring financial sustainability, and increasing funding to RMCs and the private sector for sustainable energy access in Africa, and
- ensure data collection during monitoring to make it easy to determine the impact on end-users.

⁸ Other challenges include unbankable off-takers, high system losses, security and tariffs are non-cost reflective are significant challenges

3. Evidence Gaps and Evaluation Rationale

Evidence Gaps: The evidence gap analysis undertaken during the conceptualization phase of this evaluation (Annex 2) highlighted the following:

- More evidence is needed on energy sector operations that focus on the enabling environment (e.g., PBOs, TA, Studies, etc.).⁹
- Most of the existing evaluations on renewable energy focus on hydropower operations/issues. Conversely, focus on geothermal, solar and wind remains low, while new marine-based technologies (wave¹⁰, tidal or offshore wind and symbiosis with hydrogen/marine storage technologies) that are being promoted under the Blue Economy are missing.¹¹ For instance, in case of the 2016 Renewable Energy synthesis (the only RE-focused evaluation background document), 3 out of 4 projects evaluated were hydropower. Only one was wind energy.
- Only one evaluation – the 2020 Energy Sector Evaluation – elaborately captures renewable energy portfolio data. That said, the extent of rigour is limited especially in relation to variables such as number of projects, performance etc.
- In terms of relevance, even though the 2020 Energy Sector Evaluation assessed nearly 62 projects on relevance, specific emphasis is not placed on RE, as the evaluation focused on the broader energy sector.
- Financing models for delivering RE projects remain to be explored in detail (eg. Public-private partnerships) and leveraging effects of catalytic funds such as SEFA. The available evidence on this is limited and if available, not directly tailored to RE.
- With regard to efficiency, as in the case of the relevance criterion, the extent to which timeliness and cost-benefit analysis were carried out in the 2020 Energy Sector Evaluation will not permit meaningful analysis in the case of RE.
- Outputs and outcomes presented in the 2020 Energy Sector Evaluation are limited due to the limited number of sampled completed RE projects. Focus should be placed on universal access rather than coverage access.¹²
- Even though maintenance issues are captured in the 2020 Energy Sector Evaluation, the manner in which they are presented does not allow for making useful deductions for RE operations. Those highlighted in the Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB's Interventions building blocks (Energy and Transport Cluster) for instance are only 4 projects.

⁹ Sector reform roadmaps are usually provided prior to Bank intervention, and disbursements linked to clear milestones (e.g., Tanzania; Egypt; Angola)

¹⁰ SEFA has some limited exposure for example through project preparation support for a project in Cabo Verde

¹¹ The potential reasons related to fact that: 1) In general these projects are not in the Bank's portfolio so that's the reason that it's missing, 2) these are all very expensive new technologies with limited application globally, 3) the stage of development of solar and wind, and the fact that geothermal plants are few.

¹² It should be noted that there is no universally adopted definition of what 'access to electricity' means. In their electrification policy statements and strategies, Governments apply two definitions of access to electricity; one based on "in-house access to modern forms of energy", and the other on geographical Coverage (that bring electricity closer to rural households but does not guarantee universal access). Definition of "access" needs to be harmonized: PESR started work with DFIs and AUC in 2018. Universal access is 100% coverage, noting that there will always be areas that cannot be connected to the grid economically.

The current evaluation will focus on filling these evidence gaps so as to draw meaningful conclusions specific to RE interventions.

Evaluation Rationale: While various evaluations were undertaken on the energy sector, the findings and lessons presented were linked with the overall Bank's portfolio dominated by conventional energy. The need for specific evaluation evidence on renewable energy is critical to support the Climate Resilience and a Just Energy Transition for Africa that is gaining momentum within the Bank. Renewable Energy. The evaluation period overlaps with a Bank energy policy and two climate change action plans that called for, among things, "exploring viable sources of renewable energy including hydropower, bioenergy, wind, solar, ocean and geothermal resources" for "scaling investment in renewable resources". Moreover, not all past lessons will be applicable going forward in a sector that is rapidly changing.

To foster the add-value of this evaluation, it will use a utilization-focused approach, with extensive consultation with stakeholders including Board, Management, RMCs, etc. To increase the insights to better inform the operations of the Bank, the countries case studies for instance will consider each selected country context, and the evaluation will build around a validated theory of change. More specifically:

- On renewable energy, technology matters. Therefore, the evaluation includes thematic/cluster evaluations that represents variables technologies (VRE). It presents a unique opportunity to delve deeper and assess the extent to which the Bank is taking into consideration the technology-specific requirements for supporting RMCs deployment of investments within each cluster. For example, VRE technologies are rapidly increasing but at higher levels of system penetration they can be challenging to integrate into power grids. Hydropower has the capability to provide flexible dispatchable power but mostly when it is developed with storage
- reservoirs. Geothermal is typically a base-load technology that does not follow the load. These technology contextual features and the approaches (i.e., business models) used for deployment determine the relevance of supporting the development of these renewable energy sources, the effectiveness of the results they achieve, and the efficiency with which they are developed. Each of these technology clusters also have unique risk profiles that are inherent to the technology and can be a risk to their sustainability if not adequately addressed.
- Finally, the evaluation will broadly assess the extent to which the AfDB's interventions in renewable energy have met its development objectives; and, how well the institution is positioned to help RMCs meet future development needs in a rapidly and dynamically evolving market. In other words, while it is essential to evaluate the past performance of the Bank's support to renewable energy for accountability purposes, it also needs to be acknowledged that not all past lessons will be applicable going forward in a sector that is rapidly changing. Therefore, it will be critically important to objectively establish the key challenges facing the expansion of renewable energy in Africa, against which the Bank's readiness to support RMCs going forward can be assessed.

4. Evaluation Purpose and Scope

Evaluation purpose and objectives: The goal of the evaluation is to inform the Bank's strategies and operational approach to renewable energy supply sector assistance, by identifying emerging trends in the sector, assessing how the Bank has responded to these trends, taking stock of the results of the Bank's assistance, and drawing lessons for future work. The evaluation combines two objectives of (1) accountability, through determining the extent the Bank has contributed to the development of renewable energy in RMCs and (2) learning, by identifying the lessons on how the Bank can contribute most effectively to improving the renewable energy supply of its RMCs. The evaluation will address some of the evidence gaps identified.

Evaluation scope. The concept of renewable energy within this independent evaluation includes geothermal, hydro, solar, and wind. The evaluation will cover the interventions approved and implemented during the period 2012-2021. The interventions include both investment projects, enabling environment-related interventions including institutional strengthening, technical assistance, and project preparation. Finally, the evaluation will on both utility-grid scale renewable energy and the decentralized energy access solutions.

5. Evaluation Framework and Questions

Analytical Framework. The generic results chain and mechanisms for the Bank's support for renewable energy derived as part of the conceptualization phase and illustrated below (Figure-2) are the basis for the analytical framework of this evaluation. The Figure explains the multidimensional causal links that go beyond provision of physical infrastructure to encompass the broader outcomes occasioned by the Bank's assistance, including the change process. The generic theory of change is presented in Box 2. Based on the literature and policy review, the generic theory of change may be refined during the evaluation process. Information from the portfolio and country case studies will allow a mapping of the Bank's strategic approaches and results in renewable energy with the theory of change.

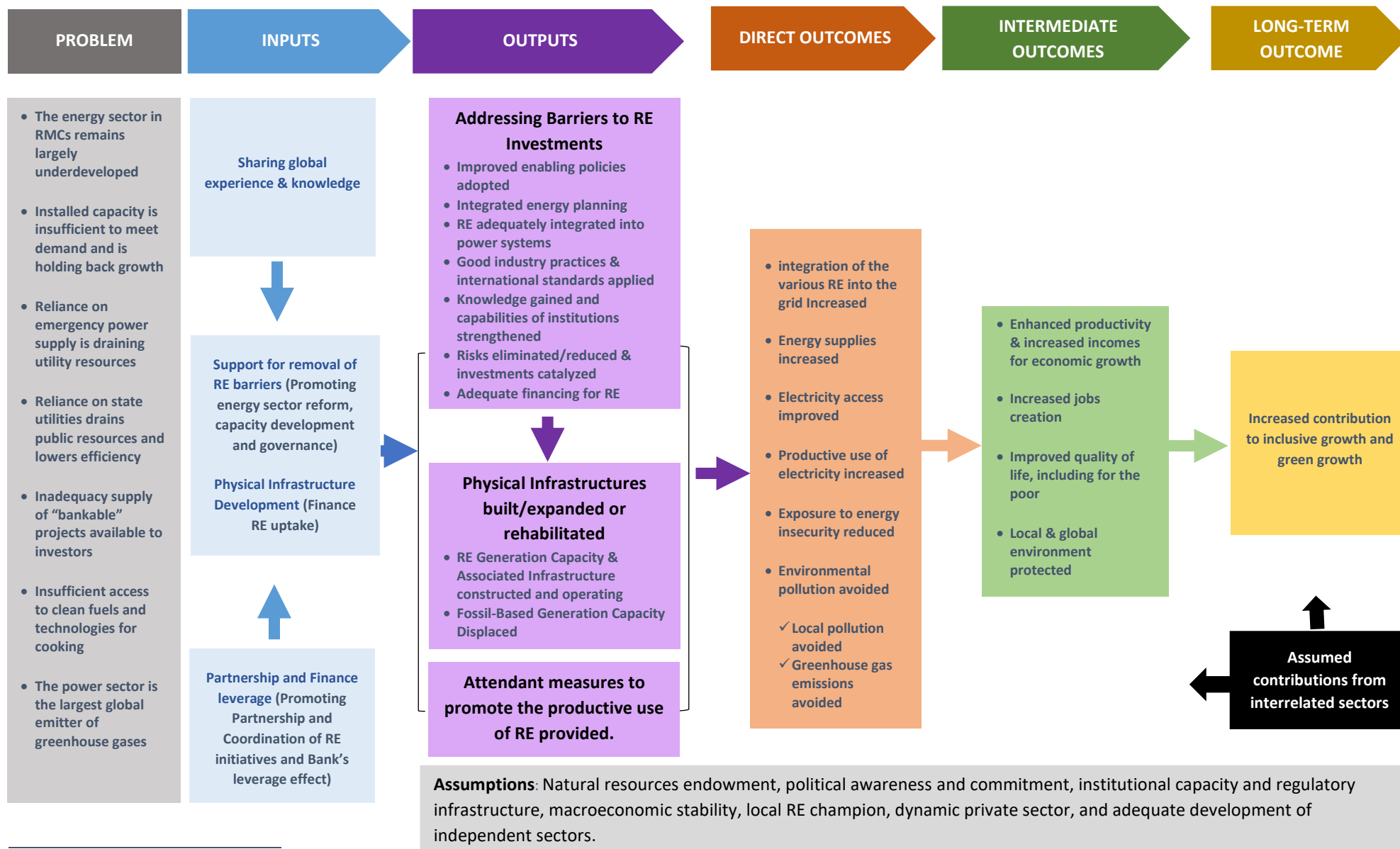
Box 2: Renewable Energy Theory of Change

The Theory of Change (ToC) of the RE Evaluation considers that the AfDB lending and non-lending interventions in RE mobilize global knowledge and leverage additional finance and partnerships to address key barriers to investments in RE and associated infrastructure. The resulting increase in generation capacity displaces fossil-based capacity, facilitating the energy and environmental outcomes needed to achieve sustainable development impacts.

Evaluation questions. The evaluation's overarching question is: **"In what ways and how well has the AfDB contributed to addressing the evolving RE needs of its RMCs within the context of their overall energy sector development objectives."** To address this subject, the evaluation is divided into four questions and seventeen sub-questions. The evaluation questions concern the issues of relevance, coherence, effectiveness, efficiency, and sustainability of the Bank's interventions in renewable energy. The inception report will fine-tune the set of evaluation questions, further develop these evaluation questions and better articulate the data collection and analysis design.

For each sampled project, these questions are treated taking into account the specific goal and objective of the project. The questions will be further narrowed down and specified following the portfolio review and the literature/policy review , and they will provide a framework for the country case studies as well as special thematic studies (cluster evaluations). This will allow the evaluation to conduct a more in-depth assessment of a range of limited issues that are essential to identify lessons for the Bank's operational effectiveness in renewable energy.

Figure 2: Renewable Energy Results Chain¹³



¹³ Adapted from World Bank/IEG, “Evaluation of the World Bank Group’s Support for Electricity Supply from Renewable Energy Resources, 2000–2017”

The first evaluation question asks: **“To what extent are the Bank's interventions aligned with the clients' priority RE needs as they navigate changing RE markets and expanding global initiatives?”**

This question focuses on the Relevance and Coherence of the Bank Assistance to renewable energy. The question is divided into four sub-questions:

- a. How adequate is the Bank's strategic focus on renewable energy to assist RMCs achieve the SDGs and the Climate change agenda?
- b. To what extent were the Bank's activities in renewable energy aligned with the priorities of RMCs, end beneficiaries' needs and international goals (SDGs, and the Climate Change Agenda)?
- c. To what extent were the Bank's interventions adapted over time, taking into account RMCs' implementation performance and emerging challenges (including risks related to climate change)?
- d. To what extent are the Bank's interventions (i) coordinated with those of governments and other development organizations and (ii) complementary to these interventions?

The second evaluation question asks: **“To what extent has the Bank's support for renewable energy been effective in addressing barriers, mobilizing finance, leveraging experience and partnerships, and achieving the expected results for advancing RE development in meeting clients' energy and environment needs?”** This question focuses on the Effectiveness of the Bank Assistance for renewable energy and will allow the evaluation to assess how the Bank's interventions in renewable energy achieved their planned and unintended outputs and outcomes. The question is divided into five sub-questions broken into two groups: intervention level and organizational level.

At Intervention Level, with two sub-questions:

- a. To what extent have the Bank's renewable energy interventions achieved their expected direct and indirect outcomes?
- b. What are the factors that enable or hinder the achievement of the RE interventions expected direct and intermediate outcomes?

At Organizational Level, with three sub-questions:

- a. How effective has the Bank been in engaging in productive partnerships in renewable energy?
- b. How well has the Bank leveraged resources¹⁴?
- c. Has the Bank fulfilled its role as knowledge broker, advisor and convener?

The third evaluation question asks: **“To what extent has the Bank's assistance to renewable energy been delivered efficiently?”** This question focuses on the Efficiency of the Bank Assistance in delivering renewable energy outcomes. The question is divided into three sub-questions:

- a. To what extent did the Bank's identification, design, and approval mechanisms and human

¹⁴ This will include the blended finance approaches and resource mobilization track record for renewables (e.g., from climate funds such as the GCF and new donors in SEFA).

resources contribute to ensure an efficient implementation of renewable energy projects (Optimize Cost-benefit ratio, Cost-effectiveness)?

- b. To what extent has the Bank's renewable energy portfolio delivered expected outputs in a timely manner and within the planned cost?
- c. To what extent has the Bank's supervision been supportive to achieving the expected outputs (Compliance with Bank's project implementation principles)?

The fourth evaluation question asks: **"To what extent are the results of the Bank's assistance to renewable energy sustainable?"** This question focuses on the sustainability of the outputs and outcomes delivered through Bank assistance to renewable energy. The question will seek how likely the results are achieved by the Bank assistance to renewable energy interventions to continue in terms of technical soundness, economic and financial viability, environmental and social viability, capacities developed, political and governance environment, and resilience to exogenous factors and risk management. This question is divided into five sub-questions:

- a. To what extent do renewable energy projects' achievements rely on sound technologies?
- b. To what extent has the Bank contributed to RMCs securing financial resources, to ensuring the continued flow of benefits associated with renewable energy projects?
- c. To what extent has the Bank contributed to strengthening institutional capacities to facilitate the continued flow of benefits associated with renewable energy projects?
- d. To what extent has the Bank effectively assisted RMCs by involving relevant stakeholders, promoting a sense of ownership amongst the beneficiaries, and putting in place effective partnerships with relevant stakeholders (e.g., local authorities, civil society organizations, private sector, donors) through its interventions in renewable energy in RMCs?
- e. To what extent has the Bank assisted RMCs to appropriately assess and implement environmental and social mitigation/enhancement as well as climate change mitigation and adaptation measures through renewable energy interventions?

The evaluation design matrix is attached as Annex-1, with sub-questions, judgment criteria, source of information and methodology to be applied, for each criterion.

6. Evaluation Approach and Methodology

6.1 Evaluation Approach

The evaluation would need to draw on significant building blocks including: (1) Project Results Assessment; (2) Portfolio Review; (3) Literature and Policy Review; (4) Knowledge Products and Impact Evaluations; (5) Country case studies; and (6) Thematic Cluster Evaluations (Geothermal, Hydro, Solar and Wind)

The evaluation has been designed to use triangulation: each evaluative question will be answered by three or more methods or data sources (See Evaluation Matrix in annex 1). The main building blocks (components) of the evaluation are described below

Project Results Assessment (PRA). The main objective of the project results assessment is to assess the development results of the selected Bank-funded projects as well as their sustainability, in order

to provide credible background reports for the thematic cluster evaluations and other building blocks of the sector evaluation. PRAs will contribute to better understanding the positive/negative results (intended and unintended) of the African Development Bank Assistance on the ground, as well as its sustainability. The PRA will specifically: (i) assess the extent to which the project performed. The assessment will be based on four main criteria namely: relevance, effectiveness, efficiency and sustainability; (ii) identify the factors that facilitated/constrained the project performance; and (iii) identify and record, from the above, the key lessons and recommendations for portfolio improvement.

The evaluation will consider and assess all activities that have been implemented under the selected project. It should examine the performance of the project in accordance with its logic model and by including unintended results. The approach through which the project performance will be assessed is the contribution analysis that aims to demonstrate whether or not the evaluated intervention is one of the causes of observed change. It may also rank the evaluated intervention among the various causes explaining the observed change in the project intervention areas. It will be based on a set of logical arguments that are verified through careful confirmatory analysis.

To be able to assess the performance of a project, sector-specific indicators (See annex 1) will be used to provide a common understanding of the success or failure of a project. This set of potential indicators will facilitate the synthesis analyses even if each project will be treated as a specific case according to its implementation socio-economic and political context. The set of common indicators will include infrastructure development indicators, capacity building indicators as well as awareness indicators. The soft programs can generally be easily included in capacity building and/or awareness creation and reforms set of indicators.

Primary sources of information have been identified and include the approval reports, the supervision reports and the completion reports. Bank staff interviews at headquarters will assist to collect primary and Meta-information for portfolio review and policy/literature review. Focus group discussions, key informant interviews and data collection, including mini survey, will be conducted to collect primary and secondary information for the field case studies. For the projects co-funded by the Bank in partnership with other MDBs or other development agencies, the partner's reports will also serve as reliable primary information sources. These sources will serve as the first instruments to assess the projects' evaluability. Some indicators treated in these primary data sources will communicate the first idea on the project's performance before validation by the PRAs' conclusions.

Portfolio Review. Portfolio analysis will be conducted to identify and categorize the main characteristics, objectives, and components of the Bank's overall activities in the renewable energy sector and analyze their results. This will include the assessment of the results of various financial intermediaries that the Bank incubated (Africa Renewable Energy Fund or the Facility for Energy Inclusion). The overarching question of the portfolio review is whether the Bank delivers on its Renewable energy strategies (Alignment with the strategies). Therefore, the portfolio review will assess the *composition* of the AfDB's renewable energy sector portfolio and projects/programs *performance* throughout the portfolio.

The portfolio review will examine project documents and evaluations (i.e., PCRs, PCR Reviews, XSRs, XSRs Review, PRAs, and PPERs). This will include information about project design from Project Appraisal Documents (PARs) as well as information about project execution and results from PCRs, PCR

Reviews, PRAs, PPERs and Impact Evaluations, interviews with Co-Task Managers and secondary data on socio-economic and physical indicators of the respective countries in which the projects were undertaken.

In this regard, the review will cover the following.

- To overview the trends of the Bank's renewable energy sector lending and approvals, and to assess the results achieved by projects and the external and internal factors of success. The review will include an analysis of the portfolio according to region, country, sub-sector, type of loan, project cost, loan amount, windows, (loans, grant, etc.), etc. It will include an assessment of the share of the renewable energy sector in the Bank's portfolio, the use of instruments (investment programs, sector budget support, TA and capacity-building) and the share of co-financing in Bank's programs. In addition, the review will identify the results achieved by completed projects and the lessons learned for increased effectiveness, efficiency and sustainability.
- To compare the results achieved with the general theory of change in the renewable energy sector, and to refine the evaluation questions. The specific type of the Bank's renewable energy sector intervention will be identified. The Bank's "input", "output" and "outcome" (consisting of short-term, medium and long-term ones, as shown in the draft renewable energy sector results chain presented in the figure 1) in the WSS projects/programs will be identified, so that the Bank's actual results can be mapped to the general theory of change. A comparison of the two diagrams, the general theory of change and the Bank's actual results, will elucidate the intervention approaches of the Bank over the evaluation period.
- To provide and synthesize the necessary evidence for answering at this stage the evaluation questions set for relevance, efficiency, effectiveness and sustainability. The results of analysis obtained through the above tasks will be incorporated as evidence to answer each evaluation question.

Literature and Policy Review. Literature and policy review will focus on: 1) highlighting the emerging Trends and Lessons in the renewable energy sector and the Evolution of the Bank's Policy Framework. This will update the work already done during the broader energy sector evaluation, with a focus on renewable energy.

Emerging Trends and Lessons in the renewable energy sector: The main objective of the literature review is to guide the refinement of the theory of change in the renewable energy sector, identify the main developments that have influenced the sector in Africa, and refine the evaluation questions. It will include:

- A review of the relevant literature to identify the developments that have influenced the renewable energy sector in Africa and other developing countries from 2005 and examine how these concepts have influenced the development community.
- A review of the evaluations/research produced by the MDBs and other institutions with regard to the successes and failures of renewable energy sector assistance in Africa.

Evolution of the Bank's Policy Framework on RE: A policy review will compare the Bank's renewable energy sector strategic principles with the renewable energy sector strategic principles of other development agencies especially the World Bank, the Asian Development Bank and the European Community (EBRD, EIB) as well as selected bilateral agencies (e.g., JICA, Nordic countries, ...) that play a key role in the building renewable energy infrastructure in Africa. The review will also assess the value added of the Bank's approach to renewable energy in comparison to those of other development partners.

The literature and policy reviews will be conducted through document reviews including the Bank's non-lending operations. The methodologies used for the policy review will also include semi-structured interviews and focus groups.

Country Case Studies. The focus of case studies is to have in-depth discussion on policy and strategic issues with the main renewable energy sector stakeholders. The country case studies will aim at better understanding the role of internal and external factors – including systemic factors - contributing to the success or failure of AfDB's interventions as well as complementarities, sequencing, and synergies of interventions. These country case studies will among other things assess the comprehensiveness of the Bank's approach in addressing renewable energy sector issues in RMCs. The selection criteria of countries for case studies may include the following criteria: (1) relevance of agriculture - either mainly rain-fed or irrigated (agriculture - either mainly rain-fed or irrigated)¹⁵; (2) potential for improving or expanding RE; (3) existence of strategies and plans/ level of political will for improved RE; (4) number and size of AfDB projects in the country during the evaluation period, (5) The Africa Energy Market Place (AEMP) countries: Ethiopia, Cote d'Ivoire, Zambia, Egypt and Nigeria, Tanzania, South Africa, Angola, Botswana, the Democratic Republic of Congo, Ghana and Madagascar.

The evaluation will firstly investigate how the Bank's activities are implemented in line with the countries' priorities and the Bank's policy framework. In addition, the evaluation will assess to what extent the Bank adopted an integrated approach in the renewable energy sector at country level, by referring to the Bank's overall policy framework, by assessing the use of different instruments and the synergies between lending and non-lending activities. A review of the CSPs of the selected countries will assess to what extent this integrated approach is discussed at a strategic level. Finally, the appropriateness of the project design at approval will be assessed, particularly the extent to which the Bank has integrated emerging trends¹⁶ in the design of its projects.

The case studies will include: (1) semi-structured interviews with stakeholders including executing agencies, Bank's field office, Development partners involve in renewable energy sector, Independent renewable energy Suppliers, Regulators, utilities/off takers, and related private sector institutions, (2) site visits to investigate selected completed and ongoing projects, iii) in-depth interview with direct beneficiaries.

Review of Bank Group Knowledge Work. The literature review and country case studies will include the review of the Bank Group's knowledge products, including non-lending technical assistance,

¹⁵ In context of solar-powered water pumping

¹⁶ These trends will be elaborated through literature and policy reviews, as mentioned.

economic and sector work, sector analyses, advisory services, economic analysis, as well as policy dialogue that supports renewable energy sector.

Special Thematic Studies. The above case studies will be further supported by special thematic studies. Cluster evaluations will be designed to provide insight into the following specific themes: (1) Geothermal; (2) Hydro; and (3) Solar and wind.

The services of a consulting firm are required for the following building blocks and synthesis report:

- Literature and Policy Review
- Selected Project Results Assessment (PRA)
- Country case studies focused on policy and strategic issues
- Thematic Cluster Evaluations Synthesis
- Technical Evaluation Report

For the synthesis, IDEV will provide to the consulting firms the following products: portfolio review report, project-level evaluation reports (including, PPER, PRA prepared during previous evaluations), and available renewable energy sector evaluation knowledge products.

Each evaluation building block will include the following four phases:

- *Inception Phase* – The objective of the Inception Phase will be to assess available background information, identify available data, assess data quality, identify information gaps and finalize a suitable methodology for the evaluation. The evaluation team will fine-tune and prioritize the evaluation questions, further develop the evaluation design and finalize the issues-indicator matrix, prepare and test data collection tools, identify required resources, and agree on the roles and responsibilities.
- *Data Collection and Analysis Phase* – The objective of the Data Collection and Analysis Phase will be to implement the approved inception report and collect primary data to complement the review of project documents and fill identified data gaps. Subsequently, all available data will be triangulated against the approved evaluation matrix to identify evaluation findings and conclusions.
- *Reporting Phase* – The reporting phase will proceed in three stages with the objective of: (1) consulting key stakeholders on the preliminary evaluation findings; (2) validating the preliminary findings and identifying evaluation recommendations; and (3) preparing the draft and final evaluation report. The final summary report will be drafted at this stage (by IDEV) and shared with internal and external peer-reviewers, the Reference Group, and IDEV management for clearance, and then presented to CODE.

6.2 Evaluation Methodology

The overall sector evaluation will use a wide range of methods for gathering, analyzing and presenting data. Data collection methodologies will involve a mix of recognized evaluation techniques including but not limited to:

Desk-based research: to review existing reports and background material to better understand the assessment exercise especially for projects' relevance matters. It will especially provide information concerning the project objective, components, results chains elements and review of the assumptions. This review will also help understand the degree of complementarity of the Bank's various projects to achieve its strategic goals. Other secondary sources of data and information include government statistics, project records, studies conducted by development partners, and data published by the service providers or available in their monitoring and evaluation system. The review will finally provide a results data assessment by identifying the available data and information at central level institutions and stakeholders allow the evaluation of the projects and identify the data gap.

Key informants Interviews: Throughout the course of the study open-ended interviews will be conducted within the Bank Group and with key informants on the outside. Evaluative evidence will be obtained through in-depth interviews, which is often the source of innovative ideas for forward-looking and strategic recommendations.

Focus-Group Interviews: This tool will be used to collect data from target communities with the view to triangulate with data to be obtained from household interviews.

Direct observation: Direct observation will be part of the field work.

Stakeholders Validation Workshop with the aim of developing high-quality recommendations based on the key findings and conclusions of the evaluation while engaging the potential users of the evaluation results.

7. The Audience of the Evaluation

The primary audience of the evaluation is Senior Management, Regional Hubs and Country Offices and all Bank Departments for which energy is critical to achieve their goals. Other key audiences include the Board of Directors through the Committee for Operations and Development Effectiveness (CODE). The evaluation findings and lessons will also be of interest to stakeholders in RMCs and development partners that the Bank partners within the energy sector in general including private sector, think tanks/centers of expertise (IRENA, the Global Center on Adaptation, Energy for Growth Hub, CGD, Brookings, Rockefeller Foundation, etc.) and NGOs, as well as the evaluation community (ECG, OECD/DAC EvalNet, etc.)

8. Team and Timeline

Joseph Mouanda (Chief Evaluation Officer) will lead the evaluation, supported by a team comprising: Mabarakissa Diomandé (Principal Evaluation Officer) and Clement Mensah (Consultant). The internal peer-reviewers include Andrew Anguko (Chief Quality & Methods Officer), Mohammed Jalaludeen Issahaq (Principal Evaluation Officer) and Andson Nsune (Principal Evaluation Officer). Ms. Henda Ayari, Team Assistant, will provide administrative support.

Under the overall guidance of Karen Rot-Munstermann, acting Evaluator General of IDEV, and Rufael Fassil (Division Manager, IDEV 1), the Task Manager will lead the work of the consultants and other team members and provide timely and quality inputs.

The responsibilities of the task manager include organizing communication and feedback mechanisms and processes with stakeholders within and outside the Bank. To maximize evaluation utility, a detailed knowledge management and communication plan will be designed and implemented, ensuring that findings and lessons from the evaluation are appropriately packaged for optimal use by stakeholders. This effort will be led by the Knowledge Management Division (IDEV3) team, comprising Jacqueline Nyagahima (Principal Knowledge Management Officer), Najade Lindsay (Knowledge Management Officer) and Kate Stoney (Senior Communications Officer).

The evaluation is expected to commence in December 2021 and is expected to be delivered for management response by August 2022. The indicative timelines and milestones are as follows.

Table 1: Indicative Timeline

Indicative Timeline and Milestones	
Description of Tasks / Key Deliverables	Tentative Timeline
Concept Note	December 2021
Inception Report	End-March 2022
Portfolio Review	End-April 2022
Policy / Literature Review	End -April 2022
Project Results Assessment	End April 2022
Special Thematic Studies –Cluster Evaluations (3)	End May 2022
Country Case Studies (10)	End May 2022
Evaluation Technical Report	End June 2022
Final Summary Report to CODE	End August 2022

Annex 1: Evaluation Design Matrix

1. Relevance and Coherence: To what extent are the Bank's interventions aligned with the clients' priority RE needs as they navigate changing RE markets and expanding global initiatives?

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ¹⁷								
		L&PR	PRA	PEVAL	CLUSTER	KNOWL	IMPACT	INTV	PORTF	CASE
How adequate is the Bank’s strategic focus on renewable energy to assist RMCs achieve the SDGs, and the Climate Change Agenda?	• Extent to which the Bank’s renewable energy “strategy” focus (including work areas prioritized and weight given to each area) are coherent to key renewable energy development challenges in RMCs	x	x	x		x		x	x	x
	• Evidence of considerations of MDGs, SDGs, AU Agenda 2063 and the Climate Change Agenda target in Bank’s renewable energy interventions design	x	x	x		x		x		x
	• Extent to which renewable energy issues are effectively reflected in country strategies and programs	x	x	x		x		x	x	x
	• Extent to which the Bank’s interventions in renewable energy identified major risks to long term sustainability	x	x	x		x		x	x	x
To what extent were the Bank’s activities in renewable energy aligned with the priorities of RMCs and end beneficiaries’ needs and international goals (SDGs, and the Climate Change Agenda)?	• The extent to which renewable energy strategies set in Bank’s CSPs and RISPs are aligned with RMCs own strategic priority.	x	x	x				x		x
	• Extent to which Bank’s renewable energy interventions leveraged innovations, science and technology in RMCs renewable energy sector	x	x	x	x	x		x		x
	• Level of emphasis on renewable energy, energy security issues, climate change adaptation/resilience and energy mix in Banks strategies and interventions	x	x	x	x	x		x		x
	• Extent to which soft components (capacity development - including reforms - and awareness) are taken into account in Bank’s renewable energy “strategies” and interventions	x	x	x	x	x		x	x	x

¹⁷ L&PR : Literature and Policy Review ; PRA : Project Results Assessment ; PEVAL : Past Evaluation ; CLUSTER: Cluster Evaluation; KNOWL: Evaluation Knowledge Product; INTV: Interview; PORTF: Portfolio Review; CASE: Country Case Study

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ¹⁷								
		L&PR	PRA	PEVAL	CLUSTER	KNOWL	IMPACT	INTV	PORTF	CASE
	<ul style="list-style-type: none"> Evidence of the Bank’s interventions response to final beneficiaries’ needs and response to National Strategies 	x	x	x		x		x	x	x
To what extent were the Bank’s interventions adapted over time, taking into account RMCs’ implementation performances and emerging challenges (including risk related to climate change)?	<ul style="list-style-type: none"> Extent to which Bank Group’s renewable energy policies and strategies have been informed by country and regional experiences Evolution of the Bank’s portfolio structure (lending and non-lending operations) 							x	x	x
	<ul style="list-style-type: none"> Evidence of integration and quality assessment of drivers and obstacles for change in the Bank renewable energy strategic response (in CSPs). 							x	x	x
	<ul style="list-style-type: none"> Extent to which the Bank secured RMCs’ commitments to renewable energy reform, in line with the Bank’s sectoral theory of change and strategy (for example institutional restructuring, commercialization, cost recovery from infrastructure users and environmental sustainability). 	x	x	x	x	x		x	x	x
To what extent are the Bank’s interventions (i) coordinated with those of governments and other development organizations’ interventions and (ii) are they complementary to these interventions?	<ul style="list-style-type: none"> Degree of coordination with interventions of others development partners 		x	x	x			x	x	x
	<ul style="list-style-type: none"> Degree of complementarity of Bank’s renewable energy interventions with those of others development partner 		x	x	x			x	x	x

2. Effectiveness: To what extent has the Bank’s support in renewable energy been effective in addressing barriers, mobilizing finance, leveraging experience and partnerships, and achieving the expected results for advancing RE development in meeting client’s energy and environment needs?

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ¹⁸								
		L&PR	PRA	PEVAL	CLUSTE	KNOWL	IMPACT	INTV	PORTF	CASE
AT PROJECT LEVEL										
To what extent have the Bank’s renewable energy interventions achieved their expected direct and indirect outcomes?	• Evidence of progress towards renewable energy related MDGs/SDGs, Agenda 2063 and beyond in the country covered by the Bank’s renewable energy interventions		x	x	x		x	x	x	
	• Information on the direct and intermediate outcomes of evaluated RE projects as per each project design (results-based logical framework).		x	x	x		x	x	x	
	• Categorization of RE interventions according to the type of key barriers and risks being addressed,		x	x	x		x	x	x	
	• Information on the AfDB instruments and approaches used to address key barriers and risks		x	x	x		x	x	x	
	• Evidence of unintended consequences (positive or negative) different from the above recorded after the Bank’s projects completion.		x	x	x		x	x	x	
	• Extent to which the Bank’s non-lending activities contributed to major changes in RMCs renewable energy policy and institutional framework					x		x	x	x
	• Perceived leadership role of the Bank in RE sector over the past decade.		x	x		x		x		x
What are the factors that enable or hinder the achievement of the expected	• Factors that enable the achievement of the expected RE interventions’ direct and intermediates outcomes		x	x		x		x	x	
	• Factors that hinder the achievement of the expected RE interventions’ direct and intermediates outcomes.		x	x				x		

¹⁸ L&PR : Literature and Policy Review ; PRA : Project Results Assessment ; PEVAL : Past Evaluation ; CLUSTER: Cluster Evaluation; KNOWL: Evaluation Knowledge Product; INTV: Interview; PORTF: Portfolio Review; CASE: Country Case Study

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ¹⁸								
		L&PR	PRA	PEVAL	CLUSTE	KNOWL	IMPACT	INTV	PORTF	CASE
RE interventions’ direct and intermediates outcomes?										
AT ORGANIZATIONAL LEVEL										
How effective has the Bank been in engaging in productive partnerships in the renewable energy sector?	<ul style="list-style-type: none"> Extent to which the Bank has established effective partnership arrangements and frameworks in the renewable energy sector, including the role of AfDB in building partnerships. 		x	x				x		x
	<ul style="list-style-type: none"> Extent to which partners were involved in the Bank’s renewable energy interventions (and, if possible, were these partners appropriate) – Information on additionality of partnership interventions in the Bank’s RE projects. 		x	x				x	x	x
	<ul style="list-style-type: none"> Information on the effectiveness of AfDB projects supported by partnership programs. 									
How well has the Bank leveraged resources?	<ul style="list-style-type: none"> Extent to which the Bank’s renewable energy interventions have had a catalytic effect in renewable energy sector 		x	x				x	x	x
	<ul style="list-style-type: none"> Evidence of the Bank’s leveraging activities in renewable energy sector 			x				x	x	x
	<ul style="list-style-type: none"> Strengths and weaknesses in maximizing leveraging in renewable energy sector 			x				x	x	x
	<ul style="list-style-type: none"> Synergy between and among Bank sector departments/units, e.g energy, climate change, water resources etc. 			x				x	x	x
Has the Bank fulfilled its role as knowledge broker, advisor and convener?	<ul style="list-style-type: none"> Extent to which clients report that Bank support (e.g. policy guidance, technical expertise, training, etc.) is available and useful 		x					x		x
	<ul style="list-style-type: none"> Information on the AfDB’s role and where it has played a leading role at the global level and country level 							x		x

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ¹⁸								
		L&PR	PRA	PEVAL	CLUSTE	KNOWL	IMPACT	INTV	PORTF	CASE
	<ul style="list-style-type: none"> Information on the areas where the AfDB has been a leader (e.g., cutting-edge solutions, etc.) 							x		x
	<ul style="list-style-type: none"> Appropriateness of the Bank’s organizational capacity in delivering renewable energy results 	x	x					x		x

3. Efficiency: To what extent has the Banks assistance to renewable energy results been delivered efficiently?

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ¹⁹								
		L&PR	PRA	PEVAL	CLUSTE	KNOW	IMPACT	INTV	PORTF	CASE
To what extent did the Bank’s identification, design, and approval mechanisms and human resources contribute to ensure an efficient implementation of renewable energy projects (Optimize	<ul style="list-style-type: none"> Extent to which the Bank’s renewable energy projects appraisal included a comprehensive range of assessments (engineering design, sector political economy, institutional governance and performances, PFM, corruption...) to optimize costs. 		x	x	x	x		x	x	
	<ul style="list-style-type: none"> Extent to which the Bank made a consistent use of economic and financial analysis (IRRs) at appraisal stages, including systematic testing of alternative designs. 		x	x	x	x		x	x	
	<ul style="list-style-type: none"> Extent to which the Bank implemented internally a specific and reliable quality control mechanism prior to approval for avoiding overambitious, overoptimistic designing or budget underestimation by task teams. 		x	x	x	x		x	x	

¹⁹ L&PR : Literature and Policy Review ; PRA : Project Results Assessment ; PEVAL : Past Evaluation ; CLUSTER: Cluster Evaluation; KNOWL: Evaluation Knowledge Product; INTV: Interview; PORTF: Portfolio Review; CASE: Country Case Study

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ¹⁹								
		L&PR	PRA	PEVAL	CLUSTE	KNOW	IMPACT	INTV	PORTF	CASE
Cost-benefit ratio, Cost-effectiveness)?	<ul style="list-style-type: none"> Extent to which the assumptions and risks identified by each project are closely monitored afterwards. 		x	x	x	x		x	x	
To what extent has the Bank’s renewable energy portfolio delivered expected outputs in a timely manner and within the planned cost?	<ul style="list-style-type: none"> Extent to which the Bank’s renewable energy portfolio faced delays and cost overruns 		x	x	x	x		x	x	
	<ul style="list-style-type: none"> Extent to which procurement of Bank financed projects were conducted in a timely manner. 		x	x	x	x		x	x	
To what extent has the Bank’s supervision been supportive to achieving the expected outputs (Compliance with Bank’s project implementation principles)?	<ul style="list-style-type: none"> Extent to which the Bank’s staff was in a position to diligent sufficient supervision missions, with the required mix of expertise. 		x	x	x	x		x	x	
	<ul style="list-style-type: none"> Extent to which the Bank’s supervision reports provided a balanced and realistic view of the implementation prospects (ownership, reform undertaking, timeliness, cost, and setting of a reliable monitoring system). 		x	x	x	x		x	x	

4. Sustainability: To what extent are the results of the Bank’s assistance to renewable energy sustainable?

Sub-Questions	Judgment Criteria or Performance Indicators (Tentative)	Source of Evidence ²⁰									
		L&PR	PRA	PEVAL	CLUSTER	KNOW	IMPACT	INTV	PORTF	CASE	
To what extent do renewable energy projects’ achievements rely on sound technologies?	<ul style="list-style-type: none"> Extent to which the Bank’s interventions selected the right technology, which is perfectly installed to meet each need, when addressing renewable energy infrastructure 		x	x	x	x			x	x	
	<ul style="list-style-type: none"> Extent to which the Bank Group supported RMCs for getting the required technical skills for all maintenance processes. 		x	x	x	x			x	x	
	<ul style="list-style-type: none"> Extent to which the Bank Group supported RMCs for getting the equipment and spare parts for capital assets (pumps, motors, pipes, etc.) maintenance. 		x	x	x	x			x	x	
To what extent has the Bank contributed to RMCs securing financial resources, to ensuring the continued flow of benefits associated with renewable energy projects?	<ul style="list-style-type: none"> Extent to which the Bank Group supported RMCs for securing the financial viability of renewable energy (e.g. utilities, municipal, community-based Renewable energy services). 		x	x	x	x			x	x	
To what extent has the Bank contributed to strengthening institutional capacities to facilitate the continued flow of benefits associated with renewable energy projects?	<ul style="list-style-type: none"> Extent to which the Bank contributed to have RMCs better managing renewable energy demand (e.g., appropriate tariff structure and subsidies, building awareness and changing consumer behaviors, regulatory enforcement and modernizing agriculture) 		x	x	x	x			x	x	
	<ul style="list-style-type: none"> Extent to which the Bank contributed to have RMCs better managing renewable energy offer (e.g., collecting more renewable energy, improving the allocation of renewable energy, stemming renewable energy loss, and effective renewable energy utility and renewable energy users’ associations management) 		x	x	x	x			x	x	

²⁰ L&PR : Literature and Policy Review ; PRA : Project Results Assessment ; PEVAL : Past Evaluation ; CLUSTER: Cluster Evaluation; KNOWL: Evaluation Knowledge Product; INTV: Interview; PORTF: Portfolio Review; CASE: Country Case Study

Annex 2: Renewable Energy Evidence and Knowledge Gap Analysis

- **Planned Evaluation Title:** Bank’s support for Renewable Energy (Geothermal, Hydro, Solar, Wind, etc.)
- **Focus:** The evaluation will focus on the relevance, coherence, efficiency, effectiveness, impact and sustainability of the Bank’s support to renewable energy interventions, including geothermal, hydro, solar and wind energy.
- **Evaluative information:** To provide lessons that will guide the implementation and effectiveness of the AfDB Energy Strategy 2016–2025, and the Energy Sector Policy of the African Development Bank Group (2012). High 5s: Light up and Power Africa

Evaluation Titles	Evaluation of the AfDB’s Assistance to the Energy Sector (1999-2018): Refocusing Support for Improved and Sustained Energy Access in Africa - Summary Report	Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB’s Interventions: Summary Report	Post Project Evaluation: Synthesis of Renewable Energy Projects	Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB’s Interventions: Energy and Transport Cluster	Comprehensive Evaluation of the Development Results of the African Development Bank Group 2004-2013 — Synthesis Report	Evaluation of the African Development Bank’s Based Operations: Energy Governance Cluster	Spurring Local Socio-Economic Development Through Rural Electrification	Powering Africa Through Interconnection: Cluster Evaluation Report	EVIDENCE AND KNOWLEDGE GAP
Covered areas									
Portfolio-related									
Project status	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	
Publication year	2020	2021	2016 ²¹	2021	2016	2019	2018	2018	
Energy sub-sector covered	Power Generation, National Grid Ext. or Upgrade, Enabling Environment (PBOs, TA, Studies etc)	Power Generation & Enabling Environment (PBOs)	Power Generation	Power Generation & Enabling Environment (PBOs)	Power Generation, National Grid Ext. or Upgrade, Enabling Environment	Enabling Environment (PBOs)	National Grid Ext. or Upgrade	National Grid Ext. or Upgrade	While 5 out of the 8 studies already deal with the enabling environment, more evidence is needed on energy sector operations that focus on the enabling environment (eg. PBOs, TA, Studies etc) for renewable energy..
Renewable energy type	Hydropower, geothermal, solar & wind	Hydropower & solar	Hydropower & wind	Hydropower & solar	Hydropower, geothermal, solar & wind	None	None	Hydropower	<ul style="list-style-type: none"> • Of the RE, most of the evaluations focus on hydropower operations/issues. Conversely, focus on geothermal, solar and wind remains low. For instance, in the case of the 2016 Renewable Energy synthesis (the only RE focused evaluation), 3 out of 4 projects

²¹ Background document

									evaluated were hydropower. Only one was wind energy.
Renewable energy portfolio data	√								<ul style="list-style-type: none"> Only one evaluation – the 2020 Energy Sector Evaluation – elaborately captures renewable energy portfolio data. That said, the extent of rigour is limited especially in relation to variables such as number of projects, performance etc.
Development Outcomes									
Relevance									
Alignment									
Bank relevant policies		√	√	√					<ul style="list-style-type: none"> Even though the 2020 Energy Sector Evaluation assessed nearly 62 projects on relevance, specific emphasis is not placed on RE. Even for the <i>Post Project Evaluation: Synthesis: Synthesis of Renewable Energy Projects and Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB's Interventions: Energy and Transport Cluster</i> which includes RE projects and contains information on relevance of projects, the sample is quite limited, 8 in total. Financing models for delivering such projects should be explored in detail (eg. Public-private partnerships) and leveraging effects of catalytic funds such as SEFA etc. The available evidence on this is limited and if available, not directly tailored to RE. The Partnerships Evaluation conducted by IDEV may help to answer this.
RMC Government policies/strategies		√	√	√					
Design									
Environmental & Social safeguards	√	√	√	√	√				
Targeting									
Financing models			√						
Efficiency									
Timeliness		√	√	√	√				<ul style="list-style-type: none"> As in the case of the Relevance criteria, the extent to which they are analysed in the 2020 Energy Sector Evaluation will not permit for useful analysis in the case of RE.
Cost benefit analysis		√	√	√	√				

Effectiveness									
Outputs									
Total RE Capacity installed added (in MW)	√	√	√	√					<ul style="list-style-type: none"> With regards to output indicators, the 2020 Energy Sector Evaluation presents evidence for only Total RE Capacity installed added. The rest are presented but not sensitive to RE.
Production in GWh			√						

Regional interconnection									<ul style="list-style-type: none"> In the case of outcome variables, except the <i>Post Project Evaluation: Synthesis of Renewable Energy Projects</i>, outcome variables are largely not sensitive to RE.
Outcomes									
New RE connections			√						
Reduced RE electric energy cost									
CO2 emissions avoided (tons per year)			√						
Sustainability									<ul style="list-style-type: none"> Even though maintenance issues are captured in the case of the 2020 Energy Sector Evaluation, the manner in which they are presented does not allow for making useful deductions for RE operations. Those highlighted in the <i>Evaluation of Mainstreaming Green Growth and Climate Change into the AfDB's Interventions: Energy and Transport Cluster</i> for instance are only 4 projects.
Maintenance	√	√	√	√					
Economic and financial viability		√	√	√					
Impact									<ul style="list-style-type: none"> Generally, evidence for impact-level indicators are scanty. Even with indicators such as reduction in power outages, their reporting is largely unstandardized. This is also due to the limited number of Impact Evaluations conducted on the sector by IDEV. As would be noticed, the <i>1998 Egypt, Morocco and Tunisia Energy Sector Impact Study</i> was excluded from this assessment because it was carried out over two decades ago. Also, the <i>Impact Evaluation of the AfDB-supported Kenya Last Mile Connectivity Project (Phase 1)</i> is not relevant to the planned RE evaluation. The literature review will consider impact evaluations conducted by others Development Partners, 3ie, JPAL, etc.
Reduced power outages									