



CLEAN TECHNOLOGY FUND

Africa Renewable Energy Fund II

USD 10 million

June 2020

TABLE OF CONTENTS

COVER PAGE	I
1. INTRODUCTION	1
2. PROJECT DESCRIPTION	2
3. CTF INVESTMENT CRITERIA	11
4. MONITORING & EVALUATION	14
5. CONCLUSIONS	14
ANNEX I: CTF INVESTMENT CRITERIA CALCULATIONS	I
ANNEX II: RISKS ASSESSMENT	II
ANNEX III: AREF II INDICATIVE PIPELINE AS OF MARCH 2020	IV

Cover Page			
CTF Project/Program Approval Request			
Dedicated Private Sector Programs (DPSP-III)			
1. Country/Region	Multinational	2. CIF Project ID#	[CIF AU will assign ID]
3. Public or Private	Public		
	Private		X
4. Project/Program Title	Africa Renewable Energy Fund II		
5. Is this a private sector program composed of sub-projects?	Yes		
	No		X
6. Financial Products, Terms and Amounts			
Financial Product		USD	EUR
Grant		0.00	
Fee on grant		0.00	
MPIS (for private sector only)		0.00	
Public sector loan	Harder terms	0.00	
	Softer terms	0.00	
Senior loan		0.00	
Senior loans in local currency hedged		0.00	
Subordinated debt / mezzanine instruments with income		0.00	
Second loss guarantees		0.00	
Equity		10.00	
Subordinated debt/mezzanine instruments with convertible		0.00	
Convertible grants and contingent recovery grants		0.00	
Contingent recovery loans		0.00	
First loss guarantees		0.00	
Other (please specify)		0.00	
Total		10.00	
7. Implementing MDB(s)	AfDB		
8. National Implementing Agency	NA		
9. MDB Focal Point	Leandro Azevedo (L.azevedo@afdb.org)		
10. Brief Description of Project/Program (including objectives and expected outcomes)			
<p>[Note: This project was not part of the latest DPSP III pipeline submitted to the CTF TFC. The inclusion of the project in the pipeline follows a review exercise undertaken by MDBs and the CIF AU in early 2020. It was agreed that the CTF TFC would be informed of the pipeline update at the time of submission of this proposal.]</p> <p>AREF II is a renewable energy private equity fund targeting an aggregate amount of investors' commitments of USD 300 million, with a first close target of around USD 150 million. The Fund will invest predominantly in small- medium sized renewable energy technologies including such as solar photovoltaic, wind, geothermal, run-off river hydro including energy storage and hybrid solutions. AREF II will explore emerging opportunities in Independent Power Producers (IPPs) and capitalization on the huge unmet power requirements for up to 573 million Africans without access to electricity with a focus on low cost renewable energy solutions as more cost-effective than the prevalent diesel/HFO power solutions.</p>			

While AREF II will be active in all AfDB’s regional member countries, its primary focus overlaps closely with the CIF pilot-countries. To ensure compliance with CIF exclusions, the AREF II will ensure (and commit in a Side Letter), that at all times its investments in CIF countries will exceed any CTF equity drawdowns and that CTF resources shall not be used in non-CIF countries.

AREF II will contribute to the installation of around 840 MW of renewable energy projects and lead to Greenhouse Gas (GHG) emissions’ savings of around 18,560,000 tons of CO₂ eq. over a period of 20 years.

11. Consistency with CTF investment criteria

(1) Potential GHG emissions savings	See page 11.
(2) Cost-effectiveness	See page 11.
(3) Demonstration potential at scale	See page 11.
(4) Development impact	See page 11 and 12.
(5) Implementation potential	See page 12.

Additional CTF investment criteria for private sector projects/ programs

(6) Financial sustainability	See page 13 and 14.
(7) Effective utilization of concessional	See page 12 and 13.
(8) Mitigation of market distortions	See page 12 and 13.
(9) Risks	See Annex II.

12. For DPSP projects/programs in non-CTF countries, explain consistency with FIP, PPCR, or SREP Investment Criteria and/or national energy policy and strategy

AREF II seeks to maximize finance for the development of renewable energy installed capacity by crowding in private investments into deploying a set of renewable energy generation technologies. By seeking to address this issue, AREF II investments will contribute to enhance the resilience to climate change of the ultimate beneficiaries of the projects.

This proposal builds on the premise that access to affordable and reliable energy has huge benefits at various levels of a society. In fact, the majority of people lacking the most basic of electricity services count amongst the population most vulnerable to the disastrous consequences of climate change. The communities at risk often lack both the political and economic resources that are essential in maintaining stability through strengthening climate resilience and adaptive capacity. As a consequence, many African countries with significant energy poverty are bearing the worst effects of global warming despite having contributed very little to the historical build-up of greenhouse gas emissions. AREF II helps addressing this issue and will highly contribute to put targeted countries in the path for their energy transition.

More specifically, all funded projects will entail deployment of low-carbon technologies (in particular solar, wind, hydro, geothermal and energy storage) that will displace conventional fuels such as coal, diesel and kerosene. Furthermore, the fund will contribute to the establishment of new businesses and economic diversification, reduced reliance on fuels that rely on complex transport logistics, reduced deforestation and ecosystems degradation.

13. Stakeholder Engagement

AfDB undertook consultations with a range of stakeholders including the Fund Manager and a substantial amount of prospective investors in AREF II. AfDB is also closely engaging with the Fund Manager on a number of important matters such as environmental and social safeguards, investment strategy and pipelines. In addition, the Fund Manager has engaged in early discussions with project developers, public sector representatives on a number of targeted countries, utilities, financial institutions and private sector companies in order to secure a strong pipeline so that the timeline associated with the investment period of the Fund is secured.

14. Gender Considerations		
<p>Gender is a key aspect of AREF II and the projects in which it will invest. Lack of access to electricity services impacts men and women differently. Even in situations when hard infrastructure is available, women are often hindered in the access to energy due to lack of finance, appliances, information, education and training.</p> <p>By contributing to increase energy access in a sustainable manner, AREF II will directly contribute to poverty reduction and allow individuals, especially women and children, to save time in cases where manual labor is substituted as the need for fetching fuel wood and water is reduced.</p> <p>Within the AREF II portfolio women recruitment will be prioritized. Experience from BE other funds show that the Fund Manager was able to increase women representation in skilled positions within portfolio projects to 40%, an increase made possible through targeted recruitment and empowerment of women to take up management roles.</p> <p>Access to energy can also reduce indoor pollution levels and lead to health improvements while enabling children to study after sunset which may lead to better job opportunities in the future. Furthermore, AREF II will create new opportunities for income generating activities for small businesses, as products and services are improved, processes made more efficient, working conditions enhanced and operational costs reduced.</p> <p>The projects being targeted by AREF II have the potential to empower women and children in their communities and contribute to meet the economic, social and climate-related development targets of recipient countries.</p>		
15. Indicators and Targets		
Project/Program Timeline		
Expected start date of implementation		December 2020
Expected end date of implementation		September 2032
Expected investment lifetime in years (for estimating lifetime targets)		12
Core Indicators	Targets	
GHG emissions reduced or avoided over lifetime (tons of CO ₂ -eq)		18,560,000
Annual GHG emissions reduced or avoided (tons of CO ₂ -eq/year):		928,000
Installed Capacity of Renewable Energy (MW)		840
Identify relevant development impact indicator(s)	Targets	
Full-time equivalent jobs		1,000
Indirect Jobs		4,500
16. Co-financing		
	Please specify as appropriate	Amount (in million USD)
AfDB	Equity	18.0
Fund Manager	Equity	5.0
SEFA	Equity	10.0
SEFA	Grant	5.0
Other Investors ¹	Equity	257.0
Total		295.0
17. Expected Date of MDB Approval		
September 2020.		

¹A detailed financing table can be found on page 7 of this funding request

1. INTRODUCTION

1.1 In recent years, the African Development Bank (AfDB) has made concerted efforts to develop sustainable financial solutions for small grid-connected, mini-grid, and off-grid renewable energy projects on the basis that they are underserved by traditional financiers such as commercial banks and other Development Finance Institutions (DFIs) due to, among others: (i) small project size and debt tickets, (ii) high risk perceptions and complex credit enhancements, (iii) rigid project financing models with high transaction costs, (iv) limited availability of competitive and long-tenured debt. These small-scale projects thus require a non-traditional finance approach – one that is able to meet the needs of the projects while reducing processing timelines and transaction costs. This approach has to enable a critical mass of private sector investors to deploy capital to help close the funding gap for providing universal energy access in Africa by 2030 as per Sustainable Development Goal 7.

1.2 In 2012, AfDB sponsored the establishment of a new investment fund – the Africa Renewable Energy Fund (AREF) - to provide risk capital and hands-on support to accelerate deployment of small to medium scale renewable energy projects in the African continent. This effort was co-led with the Sustainable Energy Fund for Africa (SEFA) – AfDB’s Multidonor Trust Fund for renewable energy - which provided a project preparation grant for market scoping, feasibility studies and fund structuring. As joint sponsors and anchor investors, AfDB and SEFA contributed each USD 25 million of equity to seed the fund, with SEFA additionally providing a USD 10 million reimbursable grant to fund a Project Support Facility (PSF) aimed at supporting early-stage project development activities. At that time, AfDB led an international competitive procurement process for selecting a Fund Manager (FM), resulting in retaining Berkeley Energy (BE), an experienced investor in the renewables space managing a similar initiative in Asia.

1.3 AREF started investment activities in March 2014 and achieved final close in September 2015 with a total capitalization of USD 205 million provided by a number of DFIs² and some commercial investors such as Calvert, Humming Bird, Sonen and Wallace. AREF was set-up to invest into small and medium renewable energy projects across Sub-Saharan Africa (SSA) and, as of January 2020, had fully committed its capital to 17 projects across a number of countries including Cameroon, Ethiopia, Ghana, Madagascar, Uganda, and Zambia totaling 564 MW of new and additional renewable installed capacity.

1.4 The proposed investment into the Africa Renewable Energy Fund II (AREF II or the Fund) presents an opportunity to build on the experience of AREF (the Predecessor Fund) and leverage BE team’s unique know-how and experience to deliver capital to a robust and diverse pipeline in high-risk and high-impact countries. AREF II is well positioned to capitalize on the increasing appetite for renewable energy infrastructure across SSA, driven by falling technology costs, policy incentives and reforms opening up the sector to private sector participation. However, SSA still represents less than 1% of total global clean energy investments coming online in 2018, with weak performance attributed to project development risks, challenges in accessing finance, unsustainable consumer tariffs, grid integration of intermittent renewables (solar and wind) and weak off-takers³. AREF II takes these challenges in its mandate through its hands-on support to developers, focus on projects that are least-cost for the country and technological solutions that stabilize the grid through a correct use of variable renewable energy sources and displacement of fossil fuels.

1.5 A Virtual Due diligence was conducted on AREF II in March/April 2020, in light of COVID-19 travel restrictions. The due diligence involved the review and assessment of various aspects of the Fund

² Including AfDB, SEFA, BIO, BOAD, CDC, EIB, FMO, GEEREF, GEF, IBID, IFC, and OeEB.

³ Bloomberg NEF, Climate Scope 2019

including, but not limited to, the following: (i) the FM's track record on previous funds and capacity to manage the Fund, (ii) the Fund's investment and country strategy, (iii) the Fund's investment process, (iv) the Fund's pipeline and deal sourcing ability, (v) financing plan in light of effects of COVID-19, (vi) the development outcomes to be generated by the Fund, (vii) the Fund's environmental, social and governance standards, and (viii) the fund's legal structure and proposed terms. Extensive discussions were held with the BE team to ensure alignment of interests with the AfDB. In addition, the investment team has had a number of bilateral and multilateral discussions with other DFIs and private investors to discuss commercial issues and to reach a joint position to launch the negotiation of AREF II financial terms. AfDB is currently the lead institution in coordinating the negotiation of commercial terms between the first close group of investors and the FM.

1.6 The Dedicated Private Sector Program (DPSP), established under the Clean Technology Fund (CTF) in 2013, was designed to finance programs or operations that can deliver scale (in terms of development results and impact, private sector leverage and investment from CTF financing) and speed (faster deployment of CTF resources, more efficient processing procedures), while at the same time maintaining a strong link to country priorities and CTF program objectives. This funding request is being submitted as part of DPSP III.

2. PROJECT DESCRIPTION

2.1 AREF II is a renewable energy private equity fund targeting an aggregate amount of investors' commitments of USD 300 million, with a first close target of USD 150-200 million. The Fund will invest predominantly in small-medium renewable energy technologies including solar PV, wind, geothermal, biomass and run-off river hydropower projects with a focus on hybridization and energy storage solutions. Noteworthy that run-off river hydro technologies yield significantly smaller environmental and social impact as compared to traditional hydro power plants that require water reservoirs and can play a critical role in contributing to the wide power system's efficiency. The variability and seasonality of hydro resources can be optimized with the integration of solar PV systems to reduce volatility in power production. This, coupled with energy storage solutions and hence contribute to a sustained energy transition in the targeted countries.

2.2 AREF II will explore emerging opportunities in Independent Power Producers (IPPs) and seek to capitalize on the huge unmet power requirements for up to 573 million Africans without access to electricity with a focus on low cost renewable energy solutions that are more cost-effective than the prevalent fossil-fuel power solutions.

2.3 AREF II will have a 10-year term with the possibility of up to two one-year extensions by special investor consent, in accordance with industry standards. The Fund will seek to build a diversified portfolio across development, construction and operational stages in Sub-Saharan Africa (excluding South Africa), with an indicative pipeline comprising 19 investments in renewable energy in Angola (2), Cameroon (3), Kenya (3), Madagascar (6), Uganda (2) and Zambia (3). AfDB will ensure in the legal documentation that any CTF resources deployed in the Fund will only be used in CIF pilot-countries. Once the underlying Power Purchase Agreements (PPAs) of the generation assets it will invest in come to an end, these assets will be transferred to the governments which presents a win-win situation as these same government will not borne any capital expenditures associated with the targeted projects. Annex III includes a number of pipeline opportunities for the Fund.

2.4 AfDB is considering an investment into the Fund in the amount of USD 18 million. In addition, AfDB is considering to deploy an additional USD 15 million in SEFA concessional equity resources to

complement those being requested to the CTF plus an amount of USD 5 million to fund a technical assistance facility to de-risk projects during the development stage.

The Fund Manager

2.5 The General Partner of AREF II will be a limited partnership incorporated under the Mauritius Limited Partnerships Act 2011 and will be controlled by the FM, Berkeley Energy Africa Limited (BE Africa), an affiliate of BE. BE has been granted a Collective Investment Schemes Manager License in Mauritius. Through AREF I, the FM team has built a strong track record in Africa in originating proprietary transactions and deploying capital to energy companies and projects across multiple renewable technologies including energy storage on a few locations.

2.6 BE was established in 2007 with the objective of developing renewable energy projects throughout the different stages of their life cycle and target geographies while providing an overall understanding of the challenges to overcome in delivering infrastructure assets in emerging markets. BE has offices in London, Singapore, Nairobi, Mauritius, Delhi and Manila and has a track record of deploying up to USD 550 million through four investment vehicles, namely the Renewable Energy Asia Fund (REAF), REAF II, AREF and Berkeley Energy Commercial and Industrial Solutions (BECIS), an investment vehicle focused on renewables for Commercial and Industrial customers.

Investment Strategy

2.7 AREF II will acquire mostly controlling stakes in projects deploying proven and mature renewable energy technologies, building on the strong track record achieved through the Predecessor Fund as well as through REAF I and II in Asia. More specifically, AREF II will focus on technologies that are both priced competitively and provide benefits in terms of stability and flexibility in the grid, in particular with a focus on (i) solar PV, for frequently being, along with onshore wind, less expensive than any fossil-fuel options and the most abundant resource in SSA, and (ii) run-off river hydro power, a technology that typically offers high load factors and competitive pricing and can play a key role in enhancing the viability of the targeted countries' energy systems by allowing for better integration of other renewable energy technologies and facilitating the energy transition of targeted countries. Other energy technologies such as wind, biomass, geothermal and energy storage as well as hybrid solutions are being considered.

2.8 Unique to the strategy of AREF II is the focus on:

- i. Establishing investment platforms at country level: around selected technologies and expert teams on the ground. This approach capitalizes on synergies in development, construction and operations of small/medium sized assets, and allows to reach critical mass (>100MW) and economies of scale over the investment period of 5 years. More specifically, this platform approach pools technical capabilities and operational functions, enabling cost savings and more efficient project management and financing structures at the fund level, ultimately resulting in strengthened operational performance and ability to secure and deliver additional projects.
- ii. Investing throughout the different stages of the project life cycle: such as: (a) greenfield / development, with a focus on high quality unexploited resources for development, possibly co-located with existing projects, and exploring markets with favorable environments for IPPs; (b) construction, entering well developed projects prior to or during construction and leveraging existing legacy hydro opportunities that could be taken into construction; and (c) brownfield, acquiring a limited number of stand-alone operating assets that could be enhanced and refurbished through further investment and/or benefit from cost and operational synergies with adjacent projects. This will provide additional diversification opportunities, reducing exposure

to pure greenfield projects with long and uncertain lead times, and enabling cash inflows from already operating assets.

- iii. Countries with favorable enabling environments: AREF II will target broader geographic diversification taking into consideration the marked improvements in the regulatory and operating environment of several countries. The targeted countries more specifically are characterized by: (a) liberalized markets favorable to private investment, (b) political stability; (c) established regulatory frameworks, (d) low electrification rates presenting significant upside, (e) strong government commitment and initiatives, and (f) significant untapped resources. In line with the broader country focus, a single country limit of 35% of total commitment has been set.

2.9 Compliance with CTF target countries and exclusions: While AREF II may be active in all SSA countries with the exception of South Africa, its primary focus overlaps closely with CIF target countries with the exception of Angola. To ensure compliance with CIF exclusions, the Fund will ensure (and commit in a Side Letter), that at all times its investments in CIF countries will exceed any CTF equity drawdown. Furthermore, CTF equity contributions will only be drawn in relation to investments made in CIF target countries. As a result, AREF II will always be able to match CTF capital allocations with investments in CIF target countries.

Cost Structure and Financing Plan

2.15 AREF II is seeking to raise USD 300 million at final closing with a minimum commitment of USD 5 million per investor. The first close target is USD 150-200 million with the minimum currently set in light of current market conditions and is expected to be achieved in December 2020. Advanced target investors for first and final close are captured in Table 2 below.

Table 2: Financing Plan (in USD million)⁴

Name	Type	Amount (1 st close)	Amount (2 nd close)	Status
EIB	DFI	30.0 / 50.0	30.0 / 50.0	Approval in September 2020
FMO	DFI	20.0		Approval in July 2020
SwedFund	DFI	15.0 / 20.0		Approval in July 2020
CDC	DFI	25.0 / 30.0	25.0 / 30.0	TBD
OeEB	DFI		5.0 / 10.0	Pre-approval
Proparco	DFI	15.0 / 20.0		Approval in July 2020
AfDB	DFI	15.0		Approval in September 2020
SEFA	DFI	15.0		Approval in September 2020
CTF	DFI	10.0		Ongoing
CDP	DFI	20.0 / 40.0		Final approval by end June 2020
APRICORP	Commercial		30.0 / 50.0	Pre-approval
BIO	DFI		10.0	Advanced discussions
Obviam	Commercial		10.0	Advanced discussions
AP2	Commercial		20.0 / 40.0	Pre-approval
Allianz	Commercial		50.0 / 75.0	Pre-approval
Mercy Investments	Commercial		5.0	Advanced discussions
DFC	Commercial		20.0 / 50.0	Pre-approval
General Partner	General Partner		2.0	

⁴ This only includes potential equity contributions into the Fund.

2.16 AfDB is considering to participate in the first close with an investment of up to USD 18 million. SEFA will be considering a contribution of up to USD 10 million plus an additional USD 5 million to capitalize a Project Support Facility to finance project preparation and early-stage de-risking activities.

2.17 SEFA and CTF contributions will be structured with the ultimate goal of improving the attractiveness of AREF II for commercial investors while at the same time providing support (in the case of SEFA) to early stage development of bankable investment opportunities by taking some of the associated development risks. Ongoing market sounding with a number of potential private investors show a preference to commit to the Fund once first financial close is achieved. These investors recognize the valuable experience that DFIs have in emerging markets and take significant comfort from their earlier vetting of the fund's strategy.

2.18 The General Partner will make a capital commitment to the Fund in an amount equal to 2% of the aggregate amount of total commitments up to USD 200 million and then 1% of any amount above that.

2.19 It is proposed that the CTF equity contribution to AREF II is structured to catalyze commercial investors by putting in place either (i) a first-loss tranche to provide downside protection, (ii) a capped-return tranche to provide return enhancement, or (iii) a combination of both. This will be decided during the negotiations phase and subsequent to further feedback from the commercial investor community on what would be minimum acceptable terms for high risk investment in power infrastructure Africa. In determining the final form of the CTF contribution (and SEFA), the objective will always be to minimize concessionality while maximizing the participation of private investors in the Fund, something that requires de-risking its capital structure so as to reach its overarching goal of demonstrating renewable energy infrastructure as a commercially viable asset class in the African context, paving the way for higher volumes of private capital.

2.20 **Management Fee.** The management fee to be charged to the Fund's limited partners will be 2% of the total commitments during the investment period up to USD 200 million in commitments. Once total commitments exceed USD 200 million, the management fee shall be reduced to 1.75% of the total commitments in excess of USD 200 million. After the end of the investment period, the management fee shall be based on total drawn down amounts and applied towards the acquisition cost of investments, less the acquisition cost of investments realized or written off. AfDB investment team is leading the commercial discussion within the investor group and looking to negotiate these further on a best efforts basis and in joint concertation with fellow investors. The FM will bear its own operating expenses, including but not limited to administration costs, legal and audit fees, the fees and expenses of other professional advisors, custodians, meetings of the Investor Advisory Committee (IAC), insurance and litigation costs and any taxes or other government charges levied against the Fund and fees and expenses incurred in relation to pipeline transactions prior to first closing date.

2.21 The FM proposes a 7% hurdle rate which is currently under negotiations. AfDB has a preference for 8% with distributions from investments to be shared between Limited Partners and the General Partner applying an 80/20 split after the hurdle return has been achieved. The carried interest (or performance fee) for the General Partner of 20% is market standard and incentivizes the partner to seek high performance investments. As per the Fund's financial model, AREF II is expected to generate a net Internal Rate of Return of 13.2% which is in line with return expectations for investments in the sector in the African context.

The Role of AfDB

2.22 The FM considers AfDB as a key institution for the establishment of AREF II, both as a first close investor, and a catalyst for triggering investments in the second close of the Fund, in particular those from the private sector. As such, AfDB was requested to lead discussions on the commercial alignment with fellow investors. As an equity investor in the Fund with an overall contribution of USD 25 million at final close, AfDB will seek a seat on the IAC. In its capacity as a member of the IAC, AfDB will be expected to actively participate in its role of approving methods for valuations, potential conflict of interest resolution and such other matters as the FM and the GP may request. The Fund is expected to generate co-investment opportunities for AfDB including some promising energy storage assets.

Implementation Arrangements

2.23 AREF II will be established legally as a limited partnership registered under the Mauritius Limited Partnerships Act 2011 and will be licensed according to Mauritius law. BE Africa has been granted a Collective Investment Schemes Manager License in Mauritius, which is compliant with the AfDB's policy requirements for these kind of financial vehicles.

2.24 **Investment Process.** The FM has designed a decision-making process for investment which has been followed in investing across all its projects in previous businesses. This process follows several steps which include: (i) initial screening by the Investment Committee where the investment team analyses all key aspects of the investment opportunity and determine if the project fits with the investment strategy, (ii) site visits and development of full documentation including a term sheet reviewed by the Investment Committee to ensure a detailed assessment of the investment opportunity and identification of key potential issues prior, and (iii) final approval by the Investment Committee following the drafting of technical and legal reports to ensure that full due diligence is carried out and legal documentation is prepared.

2.25 **Legal Agreements.** AfDB's legal team is in the process of reviewing the key documents of AREF II, including the Limited Partnership Agreement, the Investment Management Agreement, the Subscription Agreement and any other agreements deemed necessary. The majority of Limited Partners, including AfDB and CTF, will benefit from joint independent legal counsel to negotiate the mentioned agreements. Key Fund policies and provisions including Anti-Money Laundering and Combating the Financing of Terrorism as well as Environmental and Social Safeguards are currently being reviewed by various teams at AfDB to ensure they meet our requirements.

2.26 **Governance and Management Team.** The FM has a full-fledged team dedicated to the management of AREF II which is led by Luka Buljan, a professional with 17 years of experience in Africa's renewable energy sector both as an operator and an investor. The Fund will draw on a highly experienced management team with a track-record of investments in the energy sector in Sub-Sahara Africa. The team's ability to deliver value addition to investments is proven through the results obtained with the Predecessor Fund. In addition, through the strong relationship with the AfDB, the team has proven its transparent management approach and its willingness to closely consult with investors. AfDB will be represented in the IAC.

2.27 **Investment Committee.** The Investment Committee will comprise: (i) TC Kundi, BE Managing Partner and Co-founder, (ii) Luka Buljan, Managing Director for BE's AREF I, (iii) Michael Brown, Managing Director for BE's Asia funds, (iv) Alastair Vere Nicoll, co-founder of BE and ex-Managing Partner, (v) Gordon Power, a professional with 30 years of experience in private equity, and (vi) Andrew Reicher, an angel investor and former head of CDC's Infra Fund and Globeleq. Members (iv) to (vi) will

be non-executive members of the Investment Committee. Quorum will only be secured if at least one non-executive member participates in the meetings.

2.28 **Exit Strategies.** The divestment decision-making for AREF II will be subjected to the same process used for new investments and will be based on a detailed analysis of the alternative exit routes, historical performance, potential for further growth based on the investee company's objectives and market drivers, local macroeconomic outlook, alignment with the management team and majority shareholder. Principal exit routes identified assume the sale of operating asset clusters to investors such as pension funds, other private equity firms and institutional investors looking for stable long-term yields from operating and de-risked energy assets.

2.29 There is a well-established exit market for renewable energy projects, with active strategic and financial buyers who have a preference for mature de-risked opportunities. European and Africa-based strategic buyers such as Enel, Engie, AP Moller, EDF Globeleq and SN Power continue identify aggregated/platform assets for acquisition. Financial buyers such as Actis and InfraCo have been active in the market for mature renewable energy projects. Public listings are not a likely exit option in the near term. Over the life of the Fund the market may evolve and mature enough to facilitate a sale in the public market. The Fund will prioritize the sale of assets once construction is completed and power plants operational.

2.20 Exits will be pursued through the sale of individual assets, asset clusters based on geography or technology, or the entire Africa portfolio. The highest likelihood are sales of country platforms comprising 3-5 power plants with an overall capacity of around 100 MW or sales of 2-3 regional/technological clusters. This could also entail joint exits of AREF I and AREF II projects, if timing allows. A conflict of interest resolution mechanism will be diligently applied to ensure protection of investors' interests. This provides AREF II with a comprehensive set of bankable power projects ready for construction, meaning considerable time savings for the investment team. The exit strategy also involves continuing to mature projects in order to enhance valuations, in particular to reach operational stages with potentially 1-2 years of operating track record with stable payments demonstrated.

2.10 **Environmental and Social Safeguards.** The E&S risk profile of AREF II can be characterized as low to medium risk. Investments will focus on projects whose likely impacts, if any, will be few in number, site specific, largely reversible and readily minimized by applying appropriate management and mitigation measures or incorporating internationally recognized design criteria and standards. The FM will apply international standards on environmental, social and governance requirements to the borrowers so that each of the fund's investment is fully compliant with the AfDB's Integrated Safeguards Standards and the International Finance Corporation's Performance Standards operationalizing the Equator Principles. The FM, following the guidance of AfDB's Social & Environmental Safeguarding principles, has developed an extensive Environmental & Social policy which has been reviewed by the AfDB's E&S safeguards team as well as other investors.

2.1 **COVID19.** The FM is sending out monthly updates to keep investors informed of the dynamic situation that companies and projects are facing during the current COVID-19 pandemic. As of today, all countries in which the FM operates have some form of local restrictions and all portfolio investment companies are affected to a greater or lesser extent, with medium-term financial and operational consequences that cannot yet be accurately predicted at this time, while government conditions, restrictions, impacts and forecasts change daily in all geographies.

2.2 According to the latest update of April 2020, the most significant impacts occur on construction projects (i.e. delays associated with logistics and supply chains). To date, the focus has been mainly placed on short-term measures to ensure the health and safety of all staff working for the FM (i.e. operating sites of ongoing projects have implemented measures to seek both to limit risk of infection and also to provide

planning and responses in the case infection takes place. All office-based staff is under working-from-home arrangements while scenarios are being prepared to deal with any problems on an ongoing basis.

2.3 According to recent data from the World Health Organization, the number of COVID19 cases in Africa are well below those in other regions of the World. While there is a still a risk that infections may increase, the fact that authorities have generally acted fast and decisively is an important factor in explaining these relatively low numbers.

2.4 For the proposed fund, the main risk associated with COVID19 is a decision by non-regional investors to delay or even scrap their financial commitments as a result of new priorities. Recent discussions with those investors suggest otherwise as climate change and Africa continue to be on top of their agendas. Finally, as the fund does not rely on any government's financial contribution to reach financial close and to start investing and constructing assets, the risk that governments in Africa may be forced to channel as many funds as possible to the health sector and social sectors will not impact the Fund.

The Market

2.30 **Supply.** It is estimated that a minimum of USD 32 billion per year must be invested on average up and until 2030 to realize the universal energy access goals of the New Deal on Energy for Africa. In 2018, private sector investments in the sector amounted to around USD 6.3 billion constituting roughly 20% of the investment needs in the region. In an attempt to plug the existing funding gap, several vehicles across different DFIs and energy sector stakeholders have been set up to increase the flow of capital into power project development.

2.31 Traditionally, the burden of financing power projects has fallen on governments although the trend is now changing with an increasing number of private investors mobilizing funds to deploy in energy projects. The opportunities presented by these are widely recognized. However, SSA continues to suffer from under-investments in the sector and infrastructure development has been constrained by a lack of equity or quasi-equity financing sources, the investment instruments that are the riskiest and hardest to source by project promoters. AREF II will contribute to address this deficit by providing equity and construction financing for renewable energy projects. With regards to the supply of electricity on the continent, low access to power has been identified as one of the main constraints to Africa's economic development and has hampered significantly economic productivity, leaving the continent with a high cost of doing business and non-competitive when compared with other regions. In Africa, access to electricity is estimated at 44% with over 573 million people lacking connectivity to a power source.

2.32 **Demand.** There is a huge demand for funding targeting the Africa's power sector. Public finances have become strained in African countries that recourse to the private sector through privatization or various forms of Public and Private Partnerships arrangements which appear the only realistic solution. Given the limitations of traditional funding in the infrastructure sector, access to new financing sources, such as private equity funds, is necessary and must increase in the future. Rapid urbanization is leading to an increase in demand for power in Sub-Sahara Africa which currently has an urbanization growth rate of around 4.1% well above the average global rate of 2%. Power demand is severely constrained due to supply limitations which greatly hampers Africa's economic growth.

2.33 **Competition.** The African renewable energy market is stratified with a limited number of parties playing across the entire project life cycle, from the development of new and early-stage projects and the sponsoring of design and construction up to the beginning of operations until the asset is de-risked. There is increasing activity by developers across technologies and markets, however most have insufficient capital and/or capability which results in projects not advancing to the point of being bankable. Only a handful of

developers, owners and operators span the entire project life cycle up to operations, largely grouped by technology and location. BE is well positioned against competitors in the market including Eranove and DI Frontier, mostly focusing in early and mid-stage lifecycle phases of their projects. There is little overlap in the investment mandate with the early stage appetite of responsAbility, the appetite for thermal and other sources of Meridiam and the larger appetite of Actis, Enel and Globeleq for construction-ready and/or fully operating assets. Further stratification is provided by project size. While BE focuses medium sized projects (average of 45MW), most players aim either at larger or smaller projects. Other competitors include Climate Investor One, ARCH ARPF, Evolution II and Metier, in which AfDB is already an investor.

2.34 Opportunity. The opportunity for AREF II arises from the convergence of several variables. There is an increasing need for new power capacity in SSA because of the economic and population growth which will continue to be the main drivers of electricity demand. Africa's population is expected to increase to 1.8 billion by 2040, which along with the increasing urbanization and industrialization in the continent, means demand for energy is expected grow annually by 6% until 2040. Meeting this demand will require power generation capacity to increase, therefore creating a strong need for further investments. Furthermore, SSA countries possess attractive renewable energy resources which remain largely untapped and, if appropriately used, could aid the expansion and stabilization of power grids helping securing an energy transition. This is happening at a time when sector reforms supporting renewables are being undertaken in many targeted countries which will lead to an increase in confidence and consequent investors crowding-in.

2.35 Alignment with AfDB's Policies and Strategies. The Fund's objectives are in line with AfDB's Strategy for 2013-2022 that focus on providing avenues to secure inclusive and green growth for the African continent. AREF II is also in line with the AfDB's Energy Sector Policy as it will contribute to ensure energy security while directly contributing to increase energy access in a sustainable and environmentally manner. AfDB continues promoting the deployment of green baseload solutions through a combination of renewable energy technologies including energy storage solutions. The Fund's investment in the clean energy infrastructure is also aligned with AfDB's Climate Change Action Plan II (2016-20) that aims at promoting investment in sustainable infrastructure development, prioritizing power sector, and private sector development and engagement to take climate action. Additional alignment is provided by AfDB's High Five priorities, in particular the *'light up and power Africa'* priority and the *'improve the quality of lives of Africans'*.

2.36 In addition, AREF II is fully committed to ensuring its investments do not adversely impact local communities and the environment under the provisions of its Environment and Social Management System and policies which are strongly aligned with AfDB's Integrated Safeguards Systems. AfDB safeguards' team will closely monitor the FM during project implementation.

2.37 The proposed equity investment in AREF II also aligns well with the objectives formulated in AfDB's Private Sector Development Policy, namely: (i) improving the investment and business climate; (ii) enhancing the access to quality social and economic infrastructure; and (iii) promoting enterprise development, by encouraging the development of competitive infrastructure on the continent while creating an enabling environment for the private sector to thrive.

Blended Finance Approach

2.38 AREF II will employ a blended finance approach to achieve maximum impact by facilitating the participation of a wide range of investors with different return expectations as well as risk tolerance. The Fund will be structured with up to three tranches of equity that can accommodate different risk appetites that is tailored to both participating DFIs and commercial investors.

2.39 CTF resources will be structured in a way to maximize the leverage from commercial and institutional investors by directly contributing to de-risking the capital structure of AREF II and/or to enhance returns so as to ensure appropriate risk-return profiles are attained. This will be achieved by deploying CTF resources into a “catalytic” tranche with either first-loss or capped return features or even a combination of both. This will lay the foundations for such investors to join AREF II through to second financial close and hopefully even during first close.

2.40 Rationale for Blended Finance and Role of CTF Capital: AREF II will be pushing new investment frontiers that are not yet established enough to attract commercial capital only. To date, the focus of power generation in Africa, including renewables, has been on large-scale grid-connected projects. The financiers of these projects have almost exclusively been DFIs and industries. African stakeholders are increasingly convinced that universal energy access in Africa can only be achieved through a combination of larger, centralized power stations as well as smaller, sometimes decentralized solutions, driven by new technologies (digital/mobile payment solutions, internet-enabled data platforms, smart meters, batteries, etc.). This decentralized approach transcends the traditional grid model, with power being generated where it is consumed, either by households or commercial and industrial users. AREF II is strategically prioritizing rural areas with little to no power coverage and maximize the impact of its investments.

2.41 Blending of capital will be achieved by combining CTF and SEFA equity at concessional terms with other investors coming at commercially priced ordinary equity. This will help achieving risk-adjusted return for commercial investors in a context where concentration limits on geographies and sectors increase the risk profile of AREF II and reduces appetite for commercial investors.

2.42 Staging of Capital Raising. It is customary for private capital vehicles to raise funding in two or more stages. AREF II anticipates a first close followed by a second on (eventually even a third and final close). The rationale for staging fund raising is twofold. Firstly, certain investors prefer to commit capital at first close, which gives them influence over fund documentation and policies while other investors prefer to invest into Funds that are already fully established and operational. Secondly, given the time it takes to raise funding (and the need to demonstrate a fully operational fund to some investors), it is common that funds start operating as soon as sufficient capital has been committed and start implementing its investment policy.

2.43 The total CTF allocation of USD 10 million will be deployed in the form of concessional equity and contribute to the first and/or second financial close of AREF II depending on the rhythm of negotiations and onboarding of commercial investors. CTF’s contribution will give existing committed equity investors the comfort in terms of their risk/return expectations and allow the Fund to progress rapidly towards operations.

2.44 The importance of blended finance for AREF II cannot be overstated. The higher the amounts of commercial and institutional finance being unlocked as a result of the concessional equity tranches capitalized by CTF and SEFA, the higher the impact the Fund is likely to have on the ground going forward.

3. CTF INVESTMENT CRITERIA

Potential GHG Emission Savings

3.1 With CTF funds of USD 10 million, the project will contribute to leverage, over time, an additional USD 290 million in equity from other investors plus USD 5 million in grant resources to fund a technical assistance facility attached to AREF II. This provides a leverage ratio of roughly 29.5x for a total of 840 MW of renewable installed capacity and the generation close to 3.5 TWh per year assuming an availability factor of 50%. Greenhouse Gas (GHG) emission reductions for the program are expected to equal 928,000 tCO₂ eq. per year as soon as all generation assets are under operations. Assuming an average life of 20 years for each power plant financed, the total GHG mission reduction potential is measured at 18,560,000 tCO₂ eq.

Cost Effectiveness

3.2 With CTF funds of USD 10 million and estimated GHG emission reductions of 18,560,000 tCO₂ eq. over the life of the power plants funded by AREF II, the cost effectiveness of CTF funds is roughly estimated at USD 0.54 per tCO₂ eq. More detailed information on these calculations can be found in Annex I.

Demonstration Potential at Scale

3.3 Underpinning the creation of AREF II is the belief that the transformation of the African power sector towards renewable energy will require stronger participation of commercial capital sources. The overall task, and capital needs, are simply too large to be funded exclusively by DFIs, Multilateral Development Banks (MDBs) and other foreign investors. AREF II will continue establishing valuable track record that will, over time, lead to the participation of for local commercial banks investors.

3.4 Africa's energy transition requires meeting the growing demand of the continent. Africa's energy access rate at 43% is well below the global average of 87%. This lack of energy access constraints economic development and negatively impacts life expectancy and quality of life. It also limits adoption of emerging technologies in various areas such as banking, education and agriculture. This economical lag makes Africans more prone to energy shocks such as the recent breakdown in oil prices in the global markets.

3.5 AREF II will advance the goal of creating universal energy access by supporting existing and new business models. As the African continent moves towards 'on-shoring' more value added in manufacturing, and the focus moves increasingly towards small medium enterprises' led economic growth, access to electricity – not just in the largest urban centers - is fundamental in supporting these economic trends.

Development Impact

3.6 Among other key development outcomes, the Fund's supported projects will have the capacity to provide access to clean and affordable electricity to around 16 million people across various countries. This

will promote the growth of Small and Medium Enterprises and improve livelihoods especially in local communities near the vicinity of the projects. During construction and operations, the projects will improve domestic economies through creation of a local supply chain for manufactured goods such as steel and cement that will be sourced locally. Once projects become operational, there will be on-going procurement of materials and services from local suppliers such as security, personal protective equipment and catering services. The presence of projects in a country that source equipment and specialist services over their long-life time creates significant opportunities for development of local businesses that, over time, can become regional market leaders. This leads to the creation of higher paying jobs in the long run and boosts industrial activity and expertise that benefit other economic activities.

3.7 In addition, the Fund will support youth in education and vocational training to ensure that they are empowered to participate productively in the local economic development. At least 1,500 local small and medium and enterprises will benefit from the existence of projects through enhanced local procurement from, and capacity building of, the local businesses and suppliers. AREF II is expected to contribute to the creation of about 4,500 indirect jobs (at least 40% for youths) over the supported projects' lives. Enabling community members to earn an income allows them to improve their livelihoods and be less prone to the negative impacts of climate change.

3.8 AREF II will create around 1,000 full-time direct jobs during construction and operation phases. Around 30% of these jobs are expected to be filled by women. An inclusive hiring strategy will be used to attract young talent and women.

3.9 Furthermore, AREF II will allow governments to release public resources to other sectors such as health and education, where there is comparatively limited private financing available. At the same time, governments will make earn taxes generated by the increase in business activity resulting from the various projects.

Implementation Potential

3.10 AfDB and BE have been partners in the African renewable energy space for a number of years now with good results to date. AREF I, capitalized at USD 205 million, was sponsored and anchored by AfDB and SEFA in 2012. It is fully committed and achievements to date include investments in 16 companies for a total of 564 MW and over 2,000 jobs created at fund and project level.

3.11 It is clear that AREF II is positioned to fill a gap in the market that is holding back a more rapid roll-out of renewable energy across the continent. A trend towards smaller solar IPPs, especially in underserved regions of a country, is quickly emerging.

Minimum Concessionality and Mitigation of Market Distortions

3.12 Renewable energy in frontier markets can only achieve its potential if private investors recognize it as a bankable asset class. This requires among others, establishment of track records as well as legal and regulatory frameworks that properly allocate risk and are conducive to business. One of the most sustainable development outcomes of AREF II is its demonstration effect which seeks to prove that renewable energy can deliver risk adjusted returns to investors in emerging markets. Over time, this will contribute to enable

private sector investment flows and replace investors that are still dependent on development financing or concessional capital which, to a large extent, is still the case in the African context.

3.13 While technology costs have fallen over the years, investors still face high financing costs for both debt and equity. These reflect a range of technical, regulatory, financial and, above all, political information barriers which translate into investment risk. While the return figures are in line with other comparable vehicles, a number of investors – including some DFIs – are currently seeking to obtain some form of downside risk protection in order to commit their resources.

3.14 Therefore, the economics of AREF II remain very tight with returns estimated in the low double digits, making it hardly attractive given the risk profile of the targeted projects and locations. Furthermore, the COVID19 pandemic is adding more uncertainty and is contributing to an environment where renewable energy investments could be further delayed in exchange of fossil fuel-based technologies.

3.15 One of the key success factors of AREF II will be its ability to provide equity investments to its target universe of projects. Based on the Fund's Investment Policy, an overall portfolio return of 13.2% is anticipated. This is in line with current market conditions and comparable to a number of financial intermediary vehicles in which AfDB is currently invested.

3.16 CTF concessionality will play a critical role in de-risking the capital structure of the Fund and/or in enhancing risk-return profiles for other investors with the objective of crowding-in investors in particular private sector ones. In particular, if deployed as a first-loss tranche, CTF together with SEFA will provide downside protection to other investors by assuming any first-loss at the portfolio level up to the aggregate amount of USD 20 million. This means that in case the Fund face a financial loss up to that amount, the returns of other investors including commercial ones will not be affected. This layered equity structure provides substantial coverage and added-value to other investors which otherwise would not be in conditions to proceed with their commitment due to the perceived high-risk of the Fund. If deployed as a capped-return equity tranche, CTF returns would be limited up to a certain percentage with any excess being distributed across other commercial investors on a pro-rata basis.

3.17 The final structuring of the CTF and SEFA equity instruments will be decided at a later stage during negotiations and substantiated by market consultations and evidence. The final structure of the equity instrument will seek to secure that the full potential of concessionality is used to attract private capital. Terms will primarily depend on the needs and demands from other investors so as to not compromise the USD 300 million target fund size at second financial close.

Financial Sustainability

3.18 The Fund's business model has been reviewed to ascertain that underlying assumptions are realistic and consistent with the Fund's investment strategy. The Fund's base case model simulations indicate a weighted average return on investable capital for AREF II portfolio of 1.8x, assuming two exit tranches for asset clusters (in and 2026 respectively). The Fund will target a net IRR of around 13%.

3.19 As a FM with substantial experience in Africa, the financial sustainability associated with CTF financing is considered strong in the countries that will ultimately benefit from these investments. Future funds in the space managed by BE should not require additional concessional funds as its investment strategy is proven and a strong track record is perceived by investors.

3.20 It is expected that at the end of the life of AREF II, the commercial financial sector will slowly start to play a more valuable role in financing energy access projects in a sustainable and inclusive manner.

3.21 Finally, it is worth saying that all PPAs will include provisions that secure the transfer of the assets to their respective governments once these PPAs reach an end.

Risks

3.22 AREF II will rely on a rigorous risk management system in line with best practices across the private equity market in Africa. These will be continuously monitored by AfDB during the life of the Fund. Annex II covers each of the identified risks in detail.

4. MONITORING & EVALUATION

4.1 AfDB will undertake supervision missions throughout the implementation phase of AREF II to access the performance of the Fund financially and also in terms of the management associated with environmental and social risks (including gender) while assessing project level indicators and respective targets. This supervision will be in addition to the oversight role as a member of AREF II Advisory Board.

4.2 The legal agreement between the CTF and AREF II will include the obligation by the latter to submit on a semi-annual basis a monitoring and evaluation report capturing the CTF indicators included in the CTF Results Measurement Framework. Table 3 includes the CTF expected results.

Table 3: CTF Performance Indicators

INDICATORS	TARGET
Annual GHG Emission Reductions	928,000 tCO ₂ eq.
Lifetime GHG Emission Reductions	18,560,000 tCO ₂ eq.
New Renewable Energy Installed Capacity	840 MW
Additional Power Generation	3,500,000 MWh / per year
Cost Effectiveness of CTF Funds	USD 0.54 per tCO ₂ eq.
CTF Financial Leverage	29.5 x
Number of Jobs Created	1,000 full-time equivalent jobs 4,500 indirect jobs

5. CONCLUSIONS

5.1 AfDB requests the CTF Trust Fund Committee to consider the approval of an equity investment in the amount of USD 10 million into AREF II.

Annex I: CTF Investment Criteria Calculations

SOURCE OF FUNDS	USD million	%
AfDB	18.00	5.9
Fund Manager	5.00	1.6
SEFA	15.00	4.9
CTF	10.00	3.2
Other Investors	257.00	84.2
TOTAL	305.00	100%

Leverage	1 / 47
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EMISSION REDUCTIONS	
Installed Capacity (MW)	840
Annual Generation (MWh / year)	3,500,000
Project Life Time Generation (MWh)	70,000,000
Annual Emission Reductions (t/CO ₂ eq.)	928,000
Project Life Emission Reductions (t/CO ₂ eq. / 20 years)	18,560,000

CTF COST EFFECTIVENESS	
CTF Funds (USD million)	10.0
GHG Emission Reductions for the Fund (t CO ₂ eq.)	18,560,000
Cost Effectiveness of Total Funds (USD per CO ₂ eq.)	0.54

PROGRAM COST EFFECTIVENESS	
Total Funds (USD million)	305.0
GHG Emission Reductions for the Program (t CO ₂ eq.)	18,560,000
Cost Effectiveness of Total Funds (USD per t CO ₂ eq.)	16.43

Annex II: Risk Assessment

Identified risk	Mitigation strategy
<p>Market conditions:</p> <p>Legal and regulatory frameworks for renewable IPPs not conducive in Sub-Saharan Africa.</p> <p>Feed-in tariffs have been either unavailable or inadequate for renewable project development.</p> <p>Weak government and institutional capacity.</p> <p>Weak infrastructure, including roads, transmission and distribution networks.</p> <p>Weak off-takers.</p>	<p>The frameworks have been substantially improved in the target countries and DFI initiatives support governments.</p> <p>Tariff revisions and procurement programs such as GET FiT.</p> <p>Better understanding and appreciation of renewables.</p> <p>Enabling infrastructure is improving through investment programs.</p> <p>Credit enhancing measures e.g. RLSF</p>
<p>Development approach:</p> <p>Few developers with commercial and technical capability and experience to develop renewable energy projects (other than solar PV).</p> <p>Little capital for early stage development and construction.</p> <p>Developers seek high premiums, out of line with project economics.</p>	<p>Developers for hydro projects still lacking but this is the market niche for the fund manager.</p> <p>AREF II targeting large fund capitalization to contribute to filling the financing gap.</p> <p>AREF II to develop and construct power plants as single entity thereby reducing the need to pay developer premium to co-investors.</p>
<p>Capital availability:</p> <p>Lack of early stage capital for project development outside of established markets.</p> <p>Lack of bankable projects for investors and developers.</p> <p>Debt mobilization for project finance IPPs is lengthy and cumbersome with limited risk appetite from lenders including DFIs.</p>	<p>Provide dedicated early stage capital for development e.g. AREF's PSF facility (with SEFA support).</p> <p>AREF II originates its own projects by selecting sites that make sense for grid stability, develops these from early stage onwards and thereby ensures a bankable proprietary project pipeline.</p> <p>Construction is financed with equity only and lenders are brought in shortly before or after commissioning when construction risk is marginal.</p>

1.1 **Currency Risk.** A portion of the Fund's investments expected revenues and expenses are likely to be denominated in currencies other than USD, though revenues from investments may be linked to USD or other currencies. The Fund will therefore be subject to typical risks of an international business including, but not limited to, differing tax structures, and general foreign exchange rate volatility. For investments denominated in a foreign currency, the value in local currency of the investment will vary with movements in exchange rates.

1.2 **Portfolio Concentration Risk.** Given the diversified nature of the Fund's interest and focus on different technologies (hydro, solar, energy storage and hybrid solutions, wind,) and countries (Angola, Cameroon, Kenya, Madagascar, Uganda and Zambia), this risk is considered minor. In addition, the Fund will not invest more than 20% of total commitments into one project (single obligor limit), more than 35% in a single country (single country limit), and more than 70% in a single technology. If any investment intends to breach the single limit thresholds, the FM will have to seek consent from the IAC. These limits have been carefully reviewed and assessed during appraisal and the investment team is comfortable with the justification in the context of the fund strategy. In particular, the 70% limit for

investments in hydro power projects is justified by the strong experience of the fund team which is unmatched in the market and provides a competitive advantage and higher return than investments, for example in solar projects, would provide. The fund manager ensures not selecting hydro projects in the same catchment area to diversify the hydrological risk. The investment is most comfortable with this approach, as from detailed discussions the fund manager's strength in the small and medium sized hydro projects in decentralized locations to stabilize the grid became clear and is seen as a competitive advantage which mitigates commercial risks.

1.3 ***Exit Risk.*** Potential exit scenarios include the sale to investors such as infrastructure investment holding companies or permanent capital vehicle fund, fellow shareholders in the portfolio companies or other PE funds, pension funds, special purpose acquisition companies and similar platforms as a mechanism to manage the exit of the yielding operational energy assets in the Fund. Based on the market sounding process engaged by BE during 2019 with the support of JP Morgan, exit risks for AREF, also replicable for AREF II, include: (i) the valuation of mature operating assets is attractive, although there are more risks associated with construction assets, particularly in hydro; (ii) the pipeline is difficult to value due to typical challenges expected in development process; (iii) the portfolio valuation will benefit significantly from additional maturity; and (iii) Madagascar is relatively unknown as an investment destination. Prequin data backs these exit options as it indicates that since 2010, around 20 full private equity exits in renewable energy projects have taken place in Sub-Saharan Africa.

Annex III: AREF II Pipeline Concept Notes as of March 2020

Kanengo – Malawi

240 MWh/60 MW battery storage project

Project Details	Description
Location	<ul style="list-style-type: none"> Kanengo Substation, Lilongwe, Malawi
Capacity & Equipment	<ul style="list-style-type: none"> 240MWh storage, equal to 60MW power input/output over 4 hours Equipment to be confirmed but expected to be Tesla lithium ion batteries
Development Status	<ul style="list-style-type: none"> MoU signed with Ministry of Energy granting exclusivity period until end 2021 Detailed feasibility studies ongoing
Development & Construction	<ul style="list-style-type: none"> Development to be completed in 18 months Construction to begin H2 2021 for H1 2022 commercial operation date (6 month construction period)
PLF	<ul style="list-style-type: none"> 100%; 1 cycle per day
Offtake	<ul style="list-style-type: none"> 20-year Power Purchase Agreement to be negotiated with state-owned power company, Escom. Tariff to be negotiated bilaterally
Evacuation	<ul style="list-style-type: none"> Located on land adjacent to 132/66kV Kanengo substation
Project Cost	<ul style="list-style-type: none"> Estimated total project cost of \$100m
Financing	<ul style="list-style-type: none"> Equity to be funded by Berkeley Expected to be financed with 70% 15 year debt
Delivery Structure	<ul style="list-style-type: none"> Battery supplier: Tesla EPC: To be determined
O&M	<ul style="list-style-type: none"> TBC
BE Shareholding (expected)	<ul style="list-style-type: none"> 80-90%
E&S Considerations	<ul style="list-style-type: none"> Project involves containerised battery technology adjacent to existing Suswa substation and has minimal E&S impact
Land	<ul style="list-style-type: none"> Long-term land lease to be entered into with landowner Escom
Partners and Advisors	<ul style="list-style-type: none"> Development partnership with UK based developer, Energy Storage Africa

Lyoa La Okole

15 MW run-of-river hydro project

Project Details	Description
Location	<ul style="list-style-type: none"> Matoh Butu, South-West Region, Cameroon
Capacity & Equipment	<ul style="list-style-type: none"> 15MW capacity, Equipment to be confirmed. Voith Hydro turbines expected to be used
Status	<ul style="list-style-type: none"> Exclusivity secured through MOU with MINEE (Ministry of Energy); Prefeasibility study completed. Project development paused due to current security situation in South-West Region. It is expected that the situation will improve in 2020 and development activities can resume in couple of years
Development & Construction	<ul style="list-style-type: none"> Development to be completed in 18 months following resumption of activities Construction to begin in 2023 for 2025 operations, subject to resumption of activities
PLF	<ul style="list-style-type: none"> TBC, 65% initial estimate
Offtake	<ul style="list-style-type: none"> Power Purchase Agreement to be negotiated with ENEO. Tariff to be negotiated bilaterally
Evacuation	<ul style="list-style-type: none"> Interconnection to Kumba substation at 33kV located 25km from project
Project Cost	<ul style="list-style-type: none"> Estimated total project cost of \$52.5m
Financing	<ul style="list-style-type: none"> Equity to be funded by Berkeley Expected to be finance with 70% 15 year debt
Delivery Structure	<ul style="list-style-type: none"> Electromechanical EPC: Voith Hydro Pvt Limited Civil works EPC: PAC SpA
O&M	<ul style="list-style-type: none"> TBC
Permitting	<ul style="list-style-type: none"> Permitting process to be initiated following validation of feasibility study
Land	<ul style="list-style-type: none"> Long-term lease agreement to be entered into with the state
E&S considerations	<ul style="list-style-type: none"> Run-of-river hydro with no storage. Environmental and social impacts to be assessed further through ESIA to be commenced following resumption of activities
BE shareholding	<ul style="list-style-type: none"> 96.6% held by BE, with local partner holding a free carry of 3.4%. PAC expected to take 20% stake
Partners and Advisors	<ul style="list-style-type: none"> Local partner with long standing relationships supporting government engagement. Fichtner appointed as technical consultant, with PAC providing technical oversight

Suswa – Kenya

440 MWh/110 MW battery storage project

Project Details	Description
Location	<ul style="list-style-type: none"> Suswa Substation, Kajiado County, Kenya
Capacity & Equipment	<ul style="list-style-type: none"> 440MWh storage, equal to 110MW power input/output over 4 hours Equipment to be confirmed but expected to be Tesla lithium ion batteries
Development Status	<ul style="list-style-type: none"> Project being developed as a Privately Initiated Investment Project under the PPP Act in Kenya Letter of Intent providing exclusivity to be signed in H1 2020 Feasibility studies ongoing and expected to be concluded in Q2 2020
Development & Construction	<ul style="list-style-type: none"> Development to be completed in 14 months Construction to begin H1 2021 for H2 2021 commercial operation date (6 month construction period)
PLF	<ul style="list-style-type: none"> 100%; 1 cycle per day
Offtake	<ul style="list-style-type: none"> 20-year Power Purchase Agreement to be negotiated with Kenya Power. Tariff to be negotiated bilaterally
Evacuation	<ul style="list-style-type: none"> Located on land adjacent to 220/400kV Suswa substation
Project Cost	<ul style="list-style-type: none"> Estimated total project cost of \$150m
Financing	<ul style="list-style-type: none"> Equity to be funded by Berkeley Expected to be financed with 70% 15 year debt
Delivery Structure	<ul style="list-style-type: none"> Battery supplier: Tesla EPC: To be determined
O&M	<ul style="list-style-type: none"> TBC
BE Shareholding (expected)	<ul style="list-style-type: none"> 80-90%
E&S Considerations	<ul style="list-style-type: none"> Project involves containerised battery technology adjacent to existing Suswa substation and has minimal E&S impact
Land	<ul style="list-style-type: none"> Long-term land lease to be entered into with landowner KetraCo
Partners and Advisors	<ul style="list-style-type: none"> Development partnership with UK based developer, Energy Storage Africa

Co-located Solar

10-20 MW solar PV project

Project Details	Description
Location	<ul style="list-style-type: none"> Co-located with either of the Cameroon hydro projects
Capacity & Equipment	<ul style="list-style-type: none"> 10-20 MW depending on hydro capacity, Equipment to be confirmed
Status	<ul style="list-style-type: none"> Conceptual
Development & Construction	<ul style="list-style-type: none"> TBC, Dependent on progress of hydro projects
PLF	<ul style="list-style-type: none"> TBC, subject to progress of hydro projects, initial estimate P50 20%;
Offtake	<ul style="list-style-type: none"> Power Purchase Agreement to be negotiated with ENEO. Tariff to be negotiated bilaterally
Evacuation	<ul style="list-style-type: none"> TBC
Project Cost	<ul style="list-style-type: none"> TBC, initial estimated total project cost of \$10-20m
Financing	<ul style="list-style-type: none"> Equity to be funded by Berkeley Debt financing TBC
Delivery Structure	<ul style="list-style-type: none"> TBC
O&M	<ul style="list-style-type: none"> TBC
Permitting	<ul style="list-style-type: none"> Permitting process to be initiated following completion of feasibility study
Land	<ul style="list-style-type: none"> TBC
E&S considerations	<ul style="list-style-type: none"> TBC
BE shareholding	<ul style="list-style-type: none"> 100% BE shareholding
Partners and Advisors	<ul style="list-style-type: none"> Local partner with long standing relationships supporting government engagement

