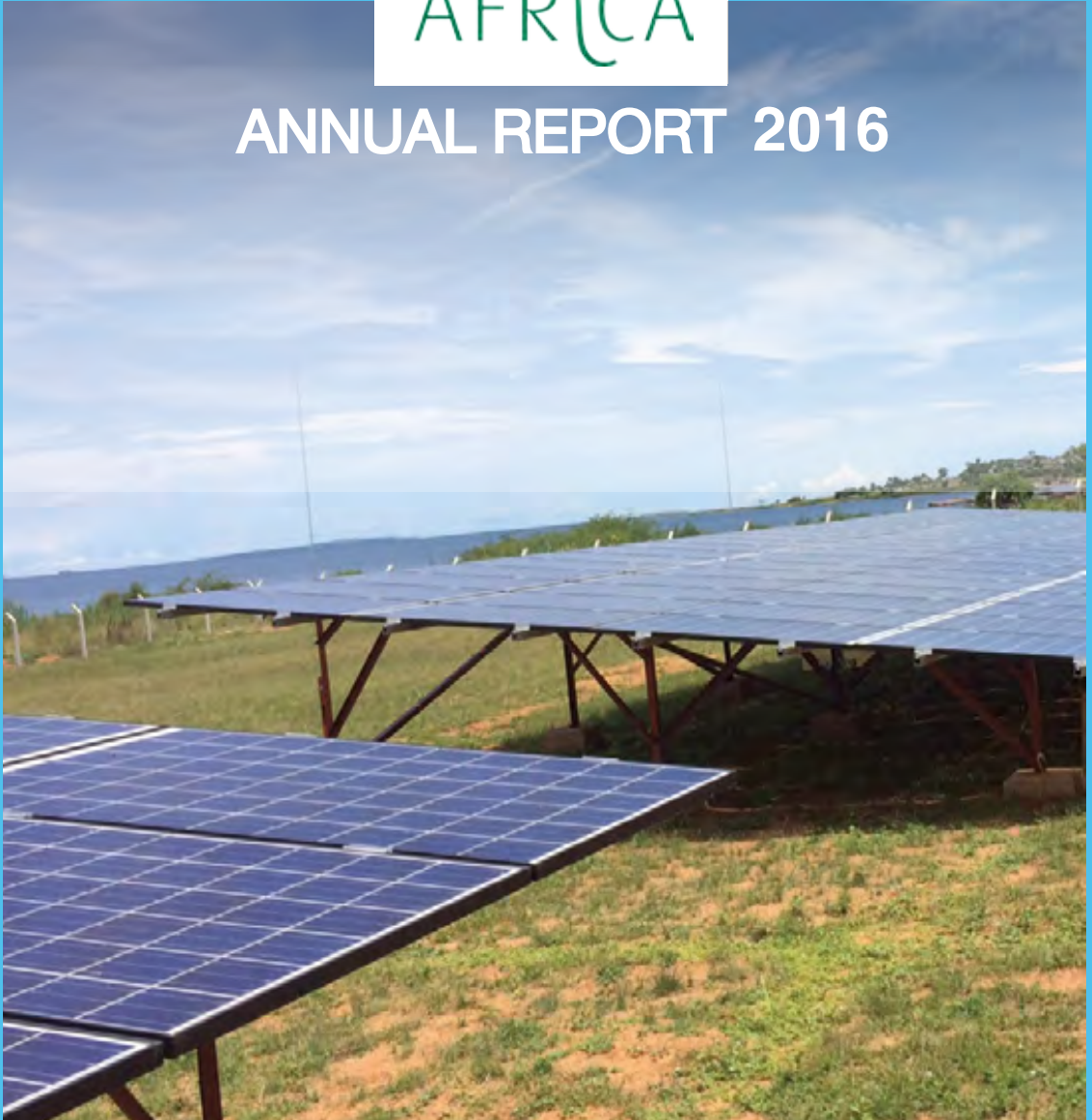


SUSTAINABLE
ENERGY
FUND FOR
AFRICA

ANNUAL REPORT 2016



MINISTRY OF FOREIGN AFFAIRS OF DENMARK
DANIDA | INTERNATIONAL
DEVELOPMENT COOPERATION



TABLE OF CONTENTS

LIST OF ACRONYMS	1
MESSAGE FROM THE VICE-PRESIDENT	3
1-INTRODUCTION	4
THE SUSTAINABLE ENERGY FUND FOR AFRICA	4
THE PARTNERS	5
PROGRAM OPERATIONS AND GUIDELINES	5
SEFA AT THE AFRICAN DEVELOPMENT BANK	6
2-PROGRAM HIGHLIGHTS FOR 2016	8
PROJECT PORTFOLIO ACROSS THE THREE COMPONENTS	10
3-PROJECT APPROVALS IN 2016	14
COMPONENT I: PROJECT PREPARATION GRANTS	14
COMPONENT II: EQUITY INVESTMENTS	16
COMPONENT III: ENABLING ENVIRONMENT GRANTS	17
4-SUMMARY OF FINANCIAL AND OPERATIONAL PERFORMANCE	20
5-SCREENING OF REQUESTS	23
6-SEFA 2016 NEWS AT A GLANCE	25
7-OUTLOOK FOR 2017	27
8-THE SEFA TEAM	27
ANNEX I: SEFA RESULTS LOG FRAME	29
ANNEX II: BREAKDOWN OF APPLICATIONS RECEIVED BY SEFA IN 2016	30
ANNEX III: FINANCIAL STATEMENT AS AT 31 DECEMBER 2016	31

LIST OF ACRONYMS

AfDB	African Development Bank
AFP	African Power Corporation
AREF	African Renewable Energy Fund
BIO	Belgian Investment Company for Developing Countries
BOAD	West African Development Bank
CBO	Community-based organization
CTI-PFAN	Climate Technology Initiative's Private Financing Advisory Network
DANIDA	Danish International Development Agency
DFID	Department for International Development of the United Kingdom
DMT	Department Management Team
ECOWAS	Economic Community of West African States
EE	Energy Efficiency
EIB	European Investment Bank
EPC	Engineering, Procurement and Construction
FEI	Facility for Energy Inclusion
ESIA	Environmental and Social Impact Assessment
FMO	Netherlands Development Finance Company
GEEREF	Global Energy Efficiency and Renewable Energy Fund
GEF	Global Environmental Facility
GHG	Greenhouse gas
GMG	Green Mini-Grid
GoB	Government of Burundi
GoN	Government of Niger
GoT	Government of Tanzania
ICA	Infrastructure Consortium of Africa
IRMA	Initiative for Risk Mitigation in Africa
MW	Megawatt
ONEC	AfDB's former Energy, Environment and Climate Change Department
PPG	Project Preparation Grant
PPM	Private Placement Memorandum
PPP	Public-private partnership
PSF	Project Support Facility
PV	Solar Photovoltaic
RE	Renewable Energy
RMC	Regional Member Country of the AfDB
SE	Sustainable Energy Project
SEFA	Sustainable Energy Fund for Africa
SE4ALL	Sustainable Energy for All Initiative
SPV	Special Purpose Vehicle
UNEP	United Nations Environment Program
USAID	United States Agency for International Development

“

**SEFA is enabling private
sector investments in
renewable energy and
energy efficiency projects
on the African continent**

”



Amadou HOTT

Vice President

Power, Energy, Climate and Green Growth

The African Development Bank Group

Many clean energy projects in Africa are potentially technically and commercially viable, but have yet to become bankable investment opportunities. High initial development costs, lack of start-up capital, limited know-how on project financing, and inadequate enabling environments are some of the key impediments. Through early stage involvement in project development, financing and enabling environment improvement, the Sustainable Energy Fund for Africa (SEFA), is helping to address these challenges.

2016 was a successful year for SEFA with the approval of 3 project preparation grants, 6 equity investments and 4 enabling environment grants for a total amount of 16.4 million dollars. Following its fifth year of operations, SEFA has cumulatively committed over USD 55 million of its USD 95 million capitalization across 32 projects in 18 countries, including six multinational projects. The project preparation and equity components alone currently represent a total of USD 1.37 billion in investments and 443 MW of prospective installed capacity.

Moving forward, in order for SEFA to attain its overall goals—connecting small businesses and households; increasing renewable energy supply into the energy mix; creating jobs; and reducing or avoiding greenhouse gas emissions—it must

continue to leverage AfDB's resources while maintaining its current momentum in pipeline development and delivery of bankable projects and in supporting countries to enable more clean investments at scale.

Africa is endowed with abundant and largely untapped renewable energy resources, yet over 640 million Africans still have no access to electricity. This situation is untenable, which is why the African Development Bank launched the New Deal on Energy for Africa, which aims to achieve universal energy access by 2025. The Bank will encourage a variety of energy solutions to the region's electricity challenges and bring together all relevant stakeholders under a transformative partnership on energy. Innovative endeavors, such as SEFA, which promote clean, modern, reliable and affordable energy services, are instrumental in attaining these ambitious goals and providing long-lasting solutions to the continent's energy crisis.

I-INTRODUCTION

The Sustainable Energy Fund for Africa

The Sustainable Energy Fund for Africa (SEFA) seeks to promote energy access and local economic development by unlocking investments in small and medium-scale renewable energy and energy efficiency (RE/EE) projects. Financing options available through SEFA include project preparation grants, equity investments and enabling environment grants.

Massive power deficits currently hinder economic growth and socio-economic development in Africa. A large share of the continent's population either lack electricity, or reliable access to it. The ability to complete routine tasks such as studying or working after sunset, charging phones in order to stay connected, and running water pumps to remain productive are hampered by this absence, greatly impacting the continent's development potential. Without access to power, entire areas are disconnected and left behind. At the same time, the continent possesses tremendous renewable resources. It is therefore essential the continent harnesses this opportunity to allow RE/EE projects to bridge the region's power deficit gap. The RE/EE sectors have long featured on the international development agenda. The outcomes of the 22nd Conference of the Parties to the United Nations Climate Change Convention (COP22) exemplify the increasing global awareness on climate change and the need to accelerate the transition to clean energy to help lessen its harmful impacts.

Many clean energy projects in Africa are technically and commercially viable, but have yet to become bankable investment opportunities. High initial development costs, lack of start-up capital, limited know-how of project financing, and inadequate enabling environments all impede such progress. In many cases across the region, the banking sector and financial markets are not yet sufficiently developed to offer attractive terms and financing solutions for early stage projects. Despite recent improvements, RE/EE projects still face major constraints when seeking financing and technical assistance during project development.

Through early stage involvement in project development and enabling environment creation, as well as through the Africa Renewable Energy Fund (AREF), SEFA supports nascent private sector RE/EE projects. Its support to regional private and public sector actors is pivotal to promote the continent's clean energy goals as it fulfills a role not adequately covered by any other source.

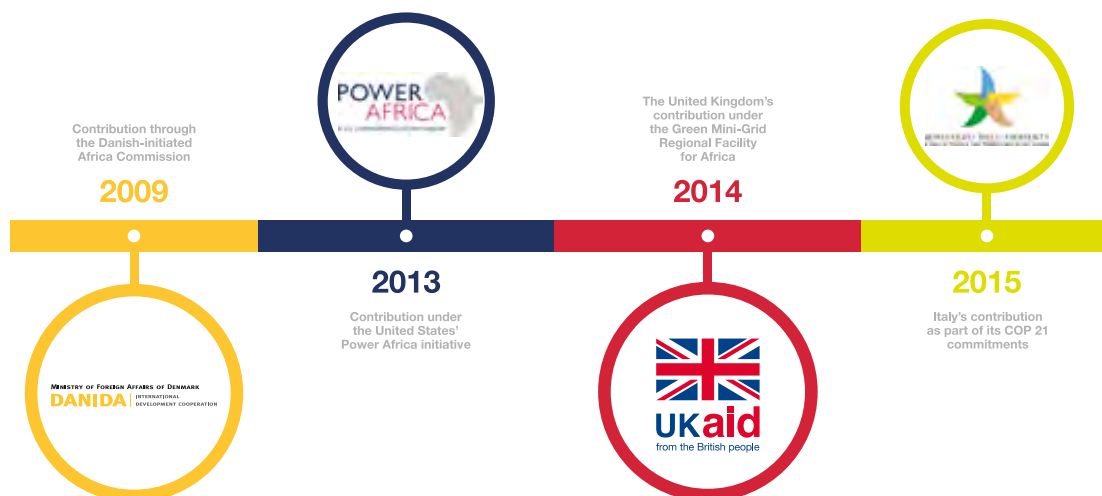
The positive development outcomes of RE/EE projects have been widely acknowledged. SEFA's activities are leading to job creation and human development through the use of sustainable, affordable and reliable clean energy.

The Fund's contribution to the efficient utilization of untapped renewable energy resources aligns nicely with the African Development Bank's (AfDB) "New Deal on Energy for Africa," which has the overarching goal of universal energy access by 2025. SEFA is also aligned with the Sustainable Energy for All Initiative (SE4All) and works closely with the AfDB-hosted SE4All Africa Hub. Strong compatibility with institutional strategic goals and objectives ensures a successful and sustainable implementation backed by high-level support. Meanwhile, the Fund's contribution to the UN Sustainable Development Goals, further highlights the catalytic role SEFA plays in supporting sustainable private sector-led economic growth in regional countries.

¹ See IRENA, Africa 2030 Remap, 2014

² See IEA

The Partners



SEFA was developed jointly with the AfDB and Government of Denmark in 2011 with an initial pledge of USD 52 million. In September 2013, the United States Government committed USD 20 million to SEFA, thereby re-positioning SEFA as a multi-donor facility. In December 2014, the United Kingdom joined SEFA with a pledge of GBP 10 million (approximately USD 15 million) and in late December 2015, the Government of Italy joined the fund with a total commitment of EUR 7.4 million (approximately USD 8 million). At the end of 2016, SEFA's total capitalization stands at USD 95 million.

Program Operations and Guidelines

SEFA supports small and medium-scale private sector projects in the renewable energy and energy efficiency sectors in Africa. It helps projects develop bankable investment opportunities and thus enables sponsors to attract equity and debt financing for successful implementation through the Africa Renewable Energy Fund (AREF). The Fund also provides enabling environment grants to improve the regulatory and policy framework for investments in sustainable energy.

SEFA operates through three instruments working to maximise impact:

- (i) **Project preparation grants** to bring medium-scale renewable energy generation and energy efficiency projects to bankability;
- (ii) **Equity investments** to bridge the financing gap for small -and medium- scale renewable energy generation projects; and
- (iii) **Enabling environment grants** for creating and improving the environment for private investments in on-grid and mini-grid projects, as well as upstream Sustainable Energy for All initiative activities.

SEFA Financing Components

	I-PROJECT PREPARATION GRANTS	II-EQUITY INVESTMENTS	III-ENABLING ENVIRONMENT GRANTS
SCOPE	Activities from feasibility to financial close	Seed and growth capital for RE projects	Technical assistance and capacity building
ELIGIBLE PROJECTS	Private and PPP projects in Africa with expected project cost between USD 30-200 million which employ clean technologies	Private projects in Sub-Saharan Africa with expected project cost between USD 10-80 million and employ mature technologies* only	Public sector enabling environment projects in the on-grid and mini-grid spaces
ELIGIBLE ACTIVITIES	Including, but not limited to: feasibility studies, environment and social assessments, engineering studies, transaction advisory and due diligence for lenders	not applicable	Strategy, legal, policy and regulatory activities; advisory and training; market development; and knowledge generation
FINANCING INSTRUMENT	Grants of up to USD 1 million to project developers or sponsors	Equity capital tickets between USD 10-30 million in project companies	Grants of up to USD 1 million to public sector institutions
MANAGEMENT	SEFA Secretariat	Berkeley Energy LLC (AREF)**	SEFA Secretariat
RESOURCES ENVELOPE	USD 21.7 million	USD 35.5 million***	USD 30 million****

*Includes solar, wind, hydro, geothermal and stranded gas

** The African Renewable Energy Fund (AREF) manager

***As part of a total envelope of USD 200 million provided by other investors in Africa Renewable Energy Fund

**** Includes USD 15 million for green mini-grid activities

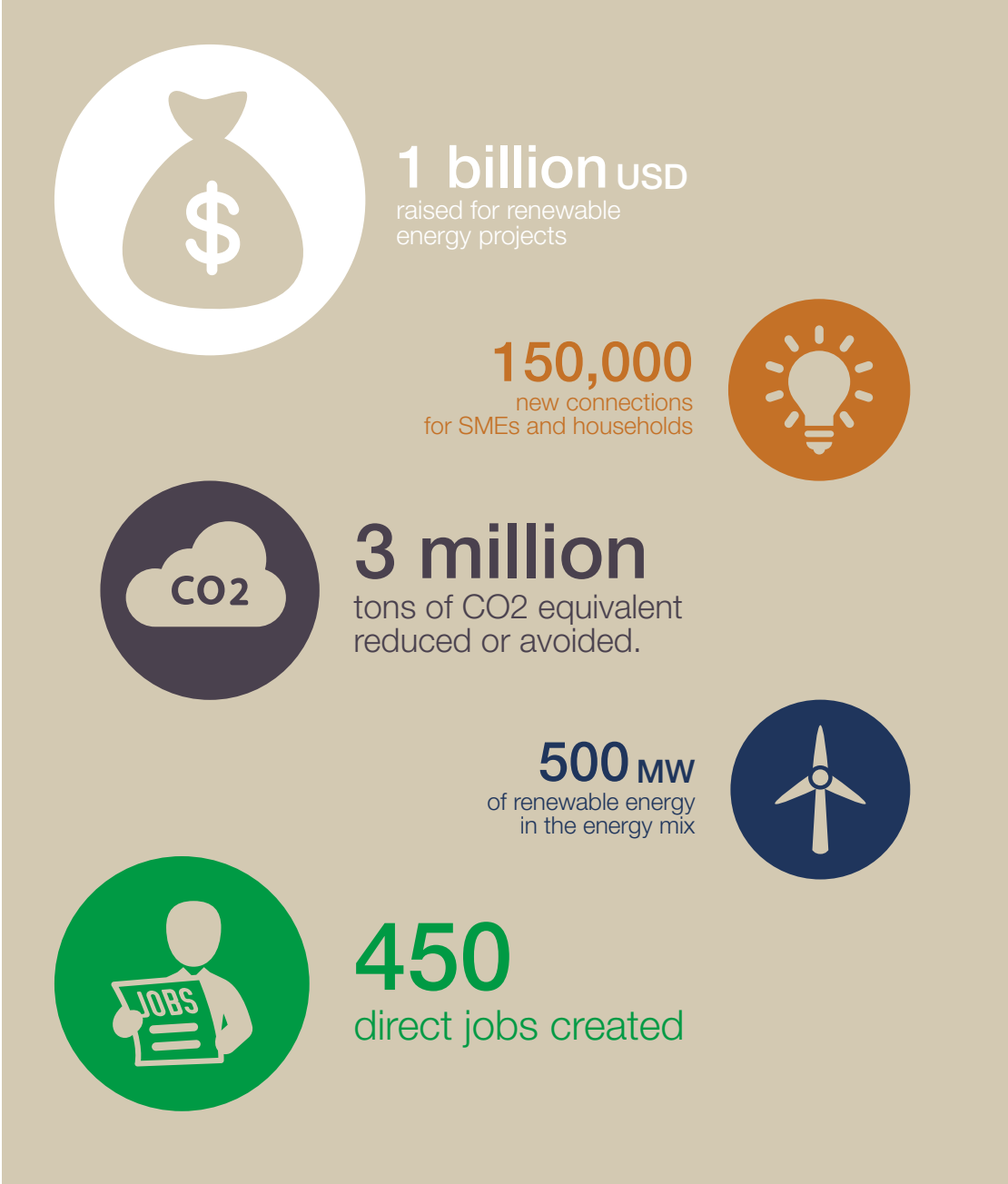
SEFA at the African Development Bank

SEFA is housed at and managed by the AfDB's Power, Energy, Climate and Green Growth Complex, governed by an oversight committee and administered in accordance with the AfDB's procedures, rules and policy guidelines¹. The AfDB's Resource Mobilization and External Finance Department provides fiduciary oversight. Project origination, review and approval processes are managed through various steps in accordance with approved operational guidelines (Annex I).

¹ For more information on AfDB's policies and procedures, please visit: <http://www.afdb.org/en/projects-and-operations/procurement/resources-for-borrowers/policies-procedures/>.

Among the many benefits of SEFA, the main expected impacts include: energy access, job creation, private sector-led growth, and human development through the use of sustainable (affordable, reliable, clean) energy. Results expected by end 2018, include the following:

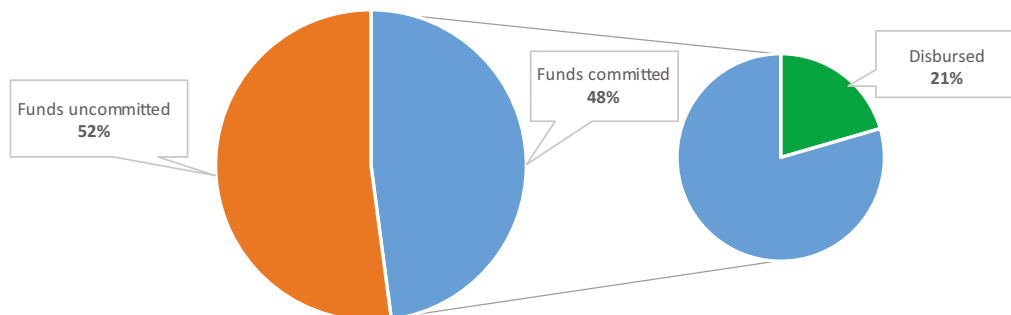
SEFA Expected Results – Targets for 2018



II-PROGRAM HIGHLIGHTS FOR 2016

Component I : Project Preparation Grants

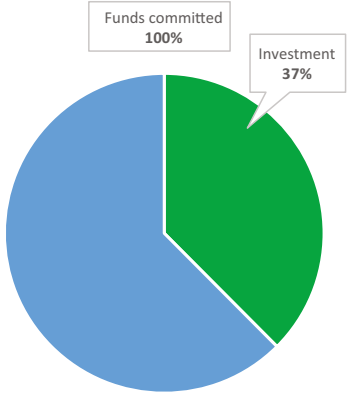
- Grants resulted in the first 250 direct connections for the Tanzania Jumeme Rural Power Project. SEFA grant approvals totaled USD 2.59 million, and are expected to result in over 28 MW of additional capacity and USD 148 million in capital expenditure for hydro projects in Kenya, the first biomass and the first gasification projects in Uganda, and one multinational project (Facility for Energy Inclusion). (See page 14)
- A total of USD 1.89 million was disbursed for technical assistance services, translating into a 21% disbursement rate.
- The SEFA Secretariat reviewed and screened 175 funding requests of which 64 projects proved eligible; several sponsors of which benefited from advisory and coaching by SEFA experts.
- SEFA participated as part of the selection panel in the Access Co-Development Facility 2016 during the Africa Energy Forum, a competition designed to support Africa's brightest home-grown clean energy entrepreneurs.



Component II : Equity Investments

- AREF celebrated its first hydropower investment in a project expected to generate an additional 42 MW in Uganda.
- A total of USD 8.6 million in equity was invested, representing 35% of the available amount (USD 25 million), while the remainder was committed to projects.
- Six projects reached investment stage and are expected to generate an additional total capacity of 79 MW through hydro projects in Uganda and Cameroon, 50 MW wind project in Tanzania, and 15 MW through one investment in the commercial and industrial solar sector.

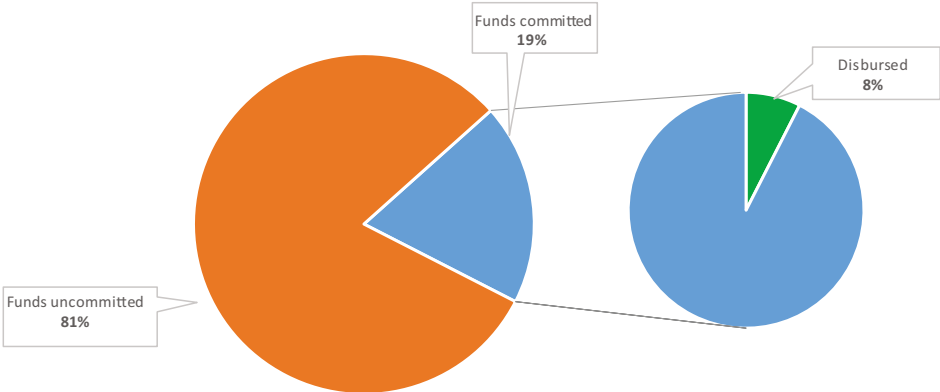
■ AREF provided funds to nine projects through the SEFA-funded Project Support Facility (PSF). In total, SEFA disbursed USD 2.5 million to date. The PSF resources utilized for the development costs of the Achwa Hydro Power Project project were reimbursed after the project’s financial close having served its purpose as early-stage risk capital needed to advance project to bankability. (See page 16)



Component III : Enabling Environment Grants

■ SEFA approved four enabling environment grants amounting to USD 3.2 million related to the National Energy Master Plan in Burundi, a multinational program for risk mitigation in sustainable energy projects, the Green Mini-Grids Country Programme in Niger and the Renewable Energy Investment Facility in Tanzania. (See page 17)

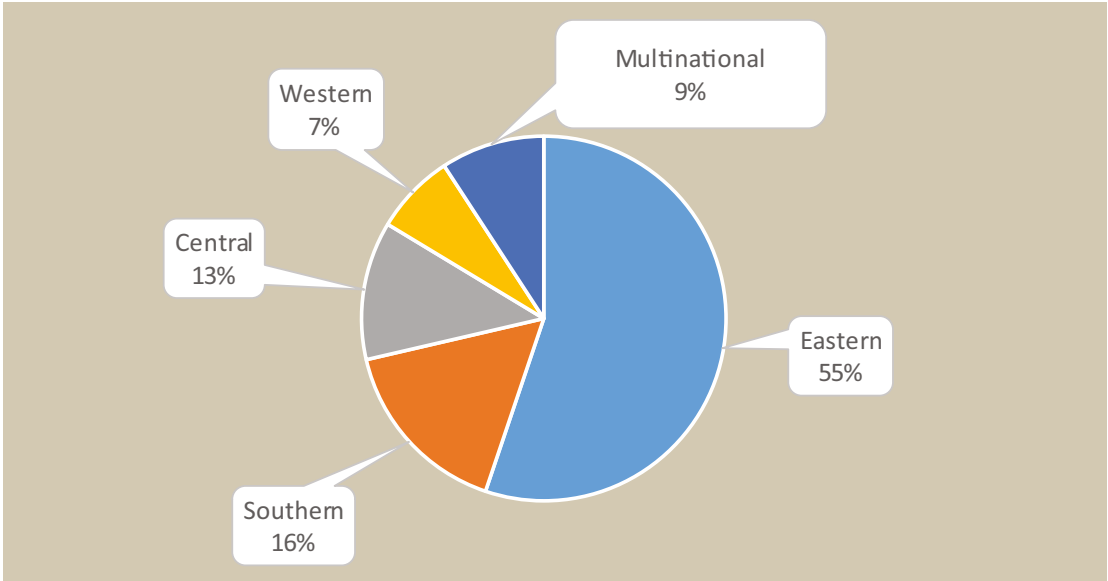
■ Approximately USD 0.5 million was disbursed.



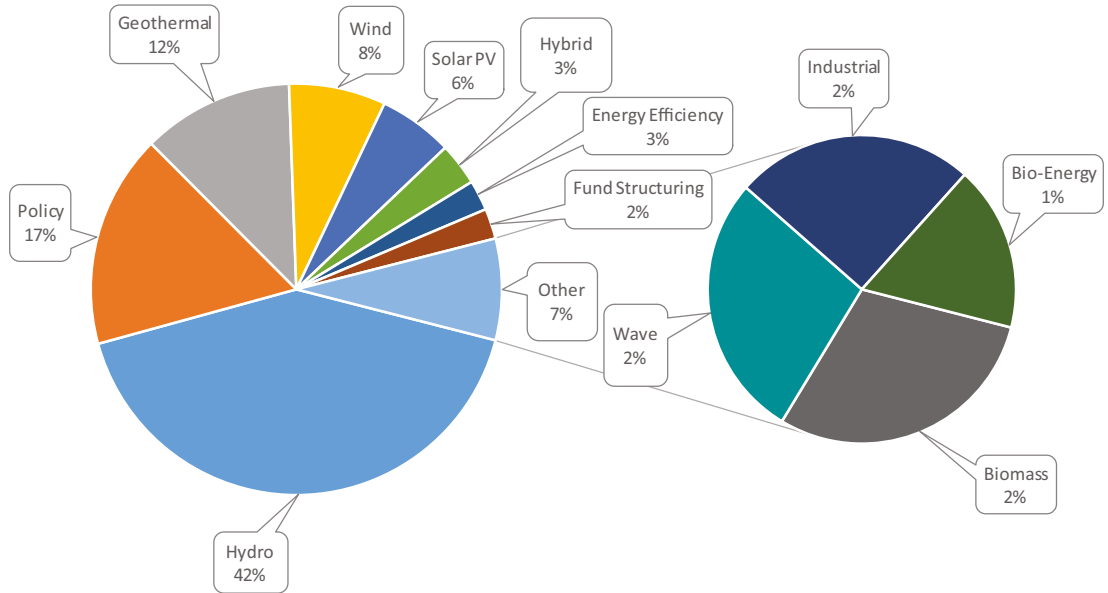
Project Portfolio Across The Three Components

At the of 2016, SEFA had an active portfolio of **32** projects in 18 countries, including six (6) multinational projects, totaling **USD 42 million** in commitments across its three components. The project preparation and equity components currently represent a **total of USD 1.37 billion in investments needs and 258 MW of installed capacity.**

SEFA Commitments by Region



SEFA Commitments by Technology



SEFA Portfolio

Component	#	Project	Country	Technology	Approval Date	SEFA Commitment (\$)	MW	Capital Expenditure (USD million)
I- Project Preparation Grants	1	ABREF	Multinational	Other	2012	398,656	-	-
	2	Nosy Be	Madagascar	Hybrid	2013	987,000	8	35
	3	Lake Assal	Djibouti	Geothermal	2013	1,800,000	20	75
	4	DOWA	Mauritius	EE	2013	1,000,000	45	107
	5	Green Energy and Biofuels	Nigeria	Bio-Energy	2014	580,000	-	67
	6	Dventus Technologies	Ethiopia	Industrial	2014	842,000	-	32
	7	JCM Greenquest	Cameroon	Solar PV	2014	777,000	72	130
	8	Jumeme Rural Power Supply	Tanzania	Hybrid-Mini-Grid	2014	420,000	5	22
	9	Starsol	Chad	Solar PV	2015	780,000	40	80
	10	Saltinho Hydropower Project	Guinea-Bissau	Hydro	2015	965,000	40	83
	11	Wave2O Desalination	Cape Verde	Ocean	2015	930,000	-	40
	12	Facility for Energy Inclusion	Multinational	Other	2016	600,000	-	-
	13	Earth Energy	Uganda	Biomass	2016	993,000	20	130
	14	Mutunguru	Kenya	Hydro	2016	992,000	8	18
Sub-total						12,064,656	258	819
II- Equity Investments	15	Achwa 2	Uganda	Hydro	2014	4,427,687	42	102
	16	Corbetti	Ethiopia	Geothermal	2014	3,200,000	20	90
	17	Bugoye brownfield	Uganda	Hydro	2015	4,644,981	-	-
	18	Kigagati	Uganda	Hydro	2016	2,100,000	16	55
	19	Makanbako	Tanzania	Wind	2016	3,200,000	50	121
	20	Kaboni	Cameroon	Hydro	2016	2,600,000	21	68
	21	Achwa 1	Uganda	Hydro	2016	1,800,000	42	95
22	Azimuth	Multinational	Solar	2016	900,000	15	17	
Sub-total						22,872,668	206	548
III – Enabling Environment, including GMG	23	Renewable Energy Promotion (PAPERM)	Mali	Policy	2014	530,000		
	24	UNEP/ICA Atlas Africa Energy Resources	Multinational	Policy	2014	265,000		
	25	Energy Sector Support	Comoros	Policy	2014	480,000		
	26	Renewable Energy Promotion	Mozambique	Policy	2015	740,000		
	27	Green Mini-Grid Market Development Programme (GMG/MDP)	Multinational	Policy	2015	1,000,000		
	28	GMG Support Programme	Rwanda	Policy	2015	840,000		
	29	RE Master Plan	Burundi	Policy	2016	630,000		
	30	Programme for Risk Mitigation - RSME	Multinational	Policy	2016	700,000		
	31	GMG Country Programme	Niger	Policy	2016	994,270		
	32	Renewable Energy Policy Support	Tanzania	Policy	2016	870,000		
Sub-total						7,049,270		
TOTAL						41,986,594	464	1,367

SEFA Program Overview

32
PROJECTS

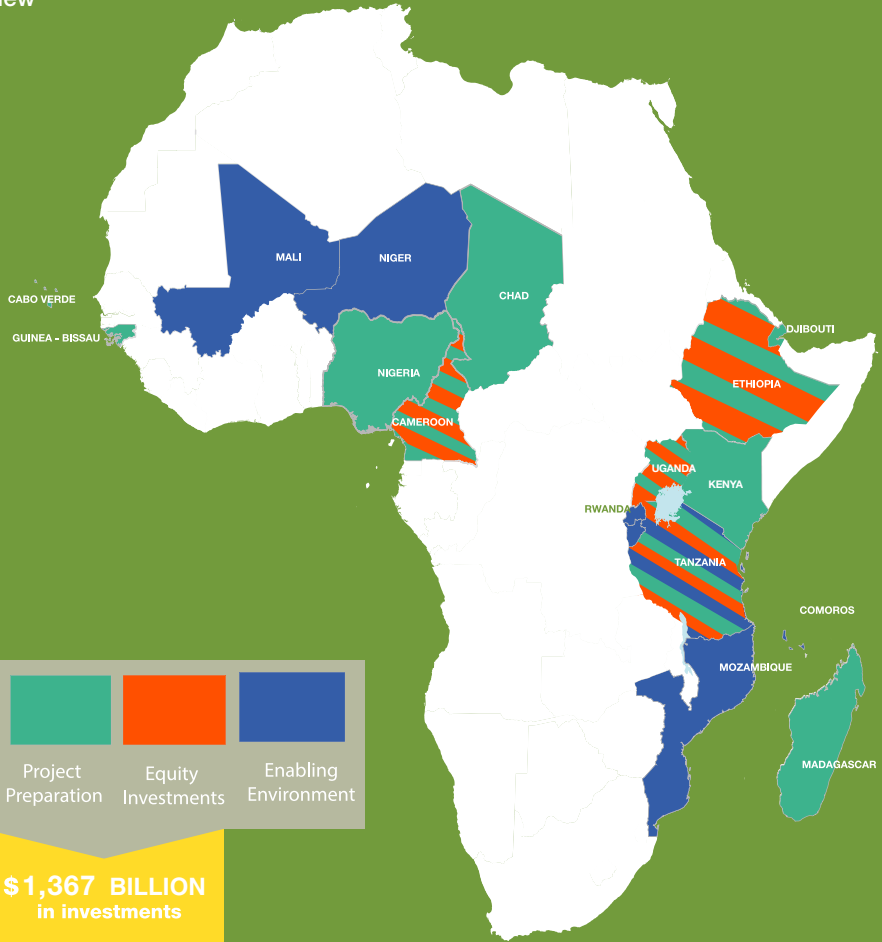
18
COUNTRIES
+ 6 multinational projects

3
COMPONENTS
= \$42 MILLION



\$1,367 BILLION
in investments

464 MW
of installed capacity



2012	2013	2014	2015	2016
Component I – PP Multinational AREF Private Equity Fund	Component I – PP Madagascar PPP 8 MW Djibouti Geothermal 20 MW Mauritius Deep Ocean Water Applications	Component I – PP Nigeria Bio-Energy 45 MW Cameroon Solar PV 72 MW Tanzania Green Mini-Grids 5 MW Ethiopia Smart Meters	Component I – PP Chad Starsol 40 MW Guinea-Bissau Hydro 24 MW Cabo Verde Wave20	Component I – PP Multinational Facility for Energy Inclusion Uganda Biomass 20 MW Kenya Hydropower 8 MW
		Component II - EI Uganda Achwa Hydro 20 MW Ethiopia Geothermal 10 MW	Component II - EI Uganda Bugoye Hydro 13 MW	Component II - EI Uganda Achwa Hydro 42 MW Uganda Kigagati Hydro 16 MW Tanzania Wind 50 MW Cameroon Hydro 21 MW Multinational Azimuth 15 MW
		Component III - EE Mali Promotion of Renewable Energy Multinational Atlas for Africa Energy Sources Multinational Green Mini-grid market development program Union of Comoros Promotion of Renewable Energy	Component III - EE Mozambique Promotion of RE Rwanda GMG country program	Component III - EE Burundi Master Plan Multinational Programme for Risk Mitigation Niger GMG Country Programme Tanzania RE Investment Facility



Uganda: Biomass Gasifier

III-PROJECT APPROVALS IN 2016

Component I : Project Preparation Grants

The project preparation grant request component provides financial and technical assistance to facilitate pre-investment activities of commercially viable private sector medium-scale projects. Grants are awarded on a cost-sharing basis to fund specific development activities, from feasibility to financial close. During 2016, SEFA approved three preparation grants valued at USD 2.58 million to projects in Uganda and Kenya, which are expected to add 28 MW to the grid. A new pan-African facility was also approved that will provide senior and mezzanine debt to small and medium-sized private sector renewable energy projects.

Multinational: Facility for Energy Inclusion

Approval of a preparation grant of USD 600,000 for the structuring and implementation of the Facility for Energy Inclusion (FEI). This Fund is expected to provide senior and mezzanine debt financing to small-scale on-grid, mini-grid and off-grid projects with total costs not exceeding USD 30 million, as well as energy

distribution companies and other entities focused on 'last mile' energy solutions. Activities to be funded by SEFA grant resources include: (i) market scoping and development of a positioning study, (ii) proposal of a fund structure, including its financial model; and (iii) drafting of a Private Placement Memorandum (PPM) and assessment of facility management options. The grant is being implemented by a task team within the Bank's Private Sector Department.

Expected Results	Target
Generation capacity	180 MW
New connections	2,900
Jobs created	5,000
Debt and equity leverage	USD 500 million

Uganda: Earth Energy 20 MW Biomass Project

Grant of USD 993,000 to Earth Energy Co. Ltd for the development and operation of a 20 MW baseload Biomass plant with a broad, modular-shaped business model which foresees diversified income streams beyond the sale of electricity to the national grid. This

project is the very first biomass project supported by the AfDB. Located at the outskirts of Gulu Town in Uganda, the plant will generate electricity through the gasification of biomass into syngas via a gas engine. The resulting biochar will then be sold as cooking and boiler fuel. The project will comprise 18 biomass sourcing hubs spread over the greater Victoria Nile Region, which will reliably supply the project with feedstock. Leasehold owners are favorable to the project. Public, institutional and community-based organizational support is also strong due to the political priority placed upon electrifying Gulu Town and its prospects for additional income potential for farmers. Main components under the SEFA grant include: (i) environmental and social impact assessment, and (ii) a technical feasibility study, including a biomass feasibility and feedstock study, front-end engineering design, detailed engineering design and a power evacuation study.

Expected Results	Target
Generation capacity	20 MW
Jobs created	6,088 (51% for women)
Debt and equity leverage	USD 130 million

Kenya: Mutunguru 7.8 MW Hydro Power Project

Grant of USD 930,000 to Mutunguru Hydroelectric Co. Ltd (MHCL) for the development, construction and operationalization of a 7.8 MW run-of-the-river small hydro power project, located at Mutunguru, Meru County of Kenya, designed to feed into the national grid. Igoji Hydropower

Ltd. (Kenya) is the project special purpose vehicle (SPV) made up of the developer, US-based Virunga Power (Kenya) Ltd. and a community-based organization (CBO), Mutunguru Hydroelectric Co. Ltd (MHCL). The Mutunguru Hydropower Project is based on standard technology but features an innovative ownership structure. The structure helps financial returns to also accrue to members of the Mutunguru community, mainly due to a shareholding structure through which communities receive a small fixed share of the project's profits. This additional financial benefit to be used for the development of other community projects is expected to translate into significant economic and developmental impacts in the project area, particularly in terms of socio-economic empowerment and job creation. This "community ownership" and support makes it deserving of SEFA intervention as a model to be considered in future Bank operations. The SEFA Grant will both support activities required for the project to reach financial close and fine-tune the modalities for CBO profit-sharing as shareholders in the SPV. Main components under the SEFA grant include: (i) legal advisory, (ii) financial advisory, (iii) financial, legal and technical due diligence, (iv) environmental and social impact management, and (v) project management and audit.

Key Results	Target
Generation capacity	7.8 MW
Jobs created	130 (30% for women)
Debt and equity leverage	USD 20 million



Uganda: Agricultural residue feedstock
groundnut husks and rice husks

Component II : Equity Investments

SEFA's equity investment component seeks to address the lack of access to early stage capital for small and medium-sized projects, as well as the limited managerial and technical capability of small-scale entrepreneurs and developers. SEFA equity capital combined with dedicated technical assistance funds are deployed by the SEFA co-sponsored Africa Renewable Energy Fund (AREF), a Sub-Saharan Africa (excl. South Africa) private equity fund solely focused on small and medium-sized (5-50 MW) independent power projects utilizing solar, wind, biomass, hydro, as well as geothermal and stranded gas technologies.

Investment decisions are the sole responsibility of AREF's Fund Manager, Berkeley Energy LLC, subject to the terms of AREF agreements. The SEFA Secretariat provides general oversight to AREF implementation through its seat on the advisory board and collaborates on project identification.

AREF capitalization stands at USD 200 million with significant commercial capital. Besides SEFA and AfDB, investors include: African Power Corporation (APC), Belgian Investment Company for Developing Countries (BIO), West African Development Bank (BOAD), Calvert World Values International Equity Fund, Calvert Social Investment Fund Equity Portfolio, CDC Group Plc, ECOWAS Bank for Investment and Development, European Investment Bank (EIB), Netherlands Development Finance Company (FMO), Global Energy Efficiency and Renewable Energy Fund (GEEREF), The Global Environment Facility (GEF), Humming Bird Limited, Oesterreichische Entwicklungsbank AG, Sonen Global Sustainable Real Assets Master Fund, Wallace Global Fund II and the Fund Manager, Berkeley Energy. SEFA's current shareholding in AREF stands at 12.74%.

In 2016, six projects were added to the AREF portfolio after approval of AREF's Final Investment Committee. These projects have the capacity to generate: 79 MW from hydro projects in Uganda and Cameroon; 50 MW from a wind project in Tanzania; and 15 MW of "off-grid" generation in multiple sites from an investment in a commercial and industrial solar company. This investment is added to the current greenfield portfolio which totals a potential generation of 206 MW and USD 548 million in investments.

SEFA established a USD 10 million Project Support Facility (PSF) alongside AREF in order to provide a range of assistance to support the development of early stage renewable energy projects under AREF. The PSF is used for: (i) energy resource assessments, (ii) socioeconomic and environmental studies, (iii) technical and legal due diligence, (iv) down payments for equipment suppliers, (v) geotechnical site investigation and assessments, and (vi) in-house technical assistance towards the pre-screening of specific and targeted deal flow opportunities. At the end of 2016, a total of USD 1.24 million was disbursed, which corresponds to 12.4% of the funds allocated by SEFA for the PSF.

AREF Status	Amount allocated by SEFA USD (A)	Commitments on Projects (SEFA equity share) USD	AREF Expenditure USD (B)	Disbursement rate (B/A)
Equity (FIC and IS projects*)	25,500,000	22,872,668	12,085,493	47.4%
Project Support Facility	10,000,000	2,500,000	1,237,884	12.4%
Total	35,500,000	25,372,668	13,237,377	37.3%

*FIC- Final Investment Committee
IS – Initial Screening

Component III : Enabling Environment Grants

SEFA's enabling environment grant component supports activities that work toward the creation of an enabling environment for private investments in sustainable energy in Africa. This includes advisory services which support implementation of regulatory and policy regimes that provide clear and predictable rules for RE project development, in addition to operation and capacity building activities which allow the public sector to act as a reliable and creditworthy counterpart to such projects. Component III also allows SEFA to better align with the SE4All initiative by supporting preparatory, sector planning and capacity-building activities arising from the AfDB-hosted SEforAll Africa Hub.

During 2016, SEFA approved four enabling environment grants for a total amount of USD 3.2 million. These include grants for Burundi, Niger and Tanzania. A Bank-executed program to mitigate risk in sustainable energy projects was also approved.

Burundi: Power Sector Master Plan on Renewable Energy

USD 630,000 approved for the Government of Burundi (GoB) to co-finance the power generation segment of its master plan, together with the Fragile State Facility and the World Bank Group. The grant is expected to help highlight the various renewable energy options for Burundi in the 'power generation segment', paving the way for strong private sector participation, removing market barriers and strengthening the ecosystem for the scaling-up of GMG investments in Sub-Saharan Africa. Specific activities under this support to the GoB include: (i) identifying load centers and forecasting the long-term growth in demand, (ii) developing an electricity generation strategy that considers all available options, including renewable energy sources, based on power demand forecasting and least cost analysis, and (iii) capacity building of related government and parastatal staff in updating the master plan on a continuous basis. The master plan will use the load forecast to determine the least cost indicative generation plan.

Expected Results	Target
RE/EE operations that receive permits/authorizations from national responsible entity	5
People trained on RE matters	30
Debt and equity leverage	USD 100 million

Multinational: Program for Risk Mitigation in Sustainable Energy

USD 700,000 approved for the Initiative for Risk Mitigation in Africa (IRMA) managed by the AfDB's Private Sector Department. The AfDB, through its energy policy and New Deal on Energy for Africa, has declared the transition to cleaner energy sources a key priority for the continent. However, risk mitigation and risk perception are major constraints for energy projects to reach bankability. This program will provide assistance to a range of stakeholders

Expected Results	Target
Incorporation of AfDB's and other risk mitigation tools in sustainable energy projects in RMCs	100% of RE projects
Bank's Project risk rating (average)	4 out of 5
Sustainable Energy projects supported (number)	4

in overcoming the risk-related obstacles to the financing of sustainable energy projects across the continent. It will thus make a direct, albeit modest, contribution to the development of more sustainable energy projects in Africa. SEFA funding will cover three components: (i) capacity building and integration of risk/risk mitigation into sustainable energy programs and project and sector policies and/or regulations, (ii) development of SE specific risk mitigation tools and instruments, and (iii) project support to relevant AfDB staff in risk mitigation for SE. SEFA funds will finance the cost of three consultants and associated activities.

Niger: Green Mini-Grid Support Program

USD 994,270 to the Government of Niger (GoN) to support the implementation of the Green Mini-Grid (GMG) Country Support Program. The project aims to improve the enabling environment in Niger to facilitate future private sector investment in GMGs. Specific objectives for SEFA financing are to:

(i) establish a GMG policy and regulatory framework with technical norms, quality control, and institutional arrangements to create an enabling environment for private sector engagement in GMGs, operationalized through capacity building to GoN institutions, and (ii) provide targeted support to GMG developers, including capacity building and financing for feasibility studies, and engage with operators, banks, investors and donors to create appropriate stimulation measures to demonstrate bankability of GMGs and prepare for their scale-up. The project is expected to contribute to increased rural access to energy through off-grid and mini-grid solutions, resulting in increased effective day length and income, and a reduction in recurring energy expenditures.

Expected Results	Target
REIF initial capitalization	USD 50 million
Debt and equity leverage	USD 10 million
RE/EE operations that receive permits/authorizations from national responsible entity	5

Tanzania: Renewable Energy Investment Facility (REIF)

USD 870,000 to the Government of Tanzania (GoT) to establish the Renewable Energy Investment Facility, which will provide affordable finance to private sector clean energy projects expanding energy access to rural communities. This will include advisory support in structuring the Facility, establishing operational guidelines, creating risk mitigation framework, identifying a fund manager and providing capacity building to the Rural Energy Agency (REA) and project developers. The project will contribute to help Tanzania achieve its energy sector objectives (inclusive of the SEforALL objectives) of widening access to energy services for its citizens, especially those in rural areas.

Expected Results	Target
Installed capacity of GMGs	15 MW
Debt and equity leverage	USD 15 million
RE/EE operations that receive permits/authorizations from national responsible entity	12



Tanzania Jumeme Rural Power Project

Award winning SEFA-financed rural electrification project in Tanzania kicks off connecting 250 households and small businesses

The pilot project of the Jumeme Rural Power project in Bwisya Village, in Tanzania's Mwanza Region, is being carried out in two phases. Phase I consists of the installation of a mini-grid of 7 kilometre 400 volt low-voltage lines, a 60 kWp solar PV system, a 240 kWh (C10) battery bank, 54 kW bidirectional battery inverters and a 33 kVA diesel generator. To date, a total of 250 domestic, commercial and small industrial clients in the centre of the village have been connected to the system. In the second half of 2016, Phase II saw the capacity of the power station increased to 380 kW and a medium voltage line installed which connected an additional six villages on Ukara Island.

IV-SUMMARY OF FINANCIAL AND OPERATIONAL PERFORMANCE

Since its inception in 2011, SEFA has committed just over USD 59 million corresponding to a 74% implementation rate². Of this commitment, almost USD 19.5 million was disbursed or invested, which corresponds to 24% of available resources. There is an outstanding cash balance of USD 20.8 million for new commitments.

<i>Financial summary as of December 2016</i>	<i>Resource Envelope</i>	<i>Committed</i>	<i>Disbursed</i>	<i>% disbursed</i>
Donor pledged contributions		\$95 424 260	\$79 853 797	84%
DANIDA (DK 300 million)		\$51 933 100	\$51 933 100	100%
USAID (USD 20 million)		\$20 000 000	\$16 000 000	80%
DFID (GBP 10 million)		\$15 400 000	\$3 366 518	22%
Italy (EUR 7.4 million)		\$8 091 160	\$8 091 160	
+Interest accrued			\$463 019	
Project commitments	\$95 424 260	\$54 613 926	\$17 563 879	32,1%
Approvals component I	\$25 185 559	\$12 064 656	\$2 485 458	21%
Approvals component II – Equity	\$25 500 000	\$25 500 000*	\$12 085 493	47%
Approvals component II – PSF	\$10 000 000	\$10 000 000*	\$2 500 000	25%
Approvals component III	\$34 738 702	\$7 049 270	\$492 928	7%
Overhead		\$4 432 698	\$1 905 554	43%
Admin & Secretariat costs		\$1 568 543	\$1 325 061	84%
Bank management fee		\$2 864 155	\$580 493	20%
Financial Key Performance Indicators		Amount	% of cash	
<i>Cumulative commitments</i>		\$59 046 624	74%	
<i>Cumulative disbursements</i>		\$19 457 433	24%	
<i>Cash available for new commitments</i>		\$20 807 174	26%	

* The entire available equity resources stemming from the AfDB have been committed to AREF.

In terms of funding committed to actual projects across the three components, in 2016 thirteen projects were approved for a combined total of almost **USD 16.4 million** – USD 2.6 million for three preparation grants, USD 3.2 million for four enabling environment grants, and USD 10.6 million in equity commitments for six projects through AREF.

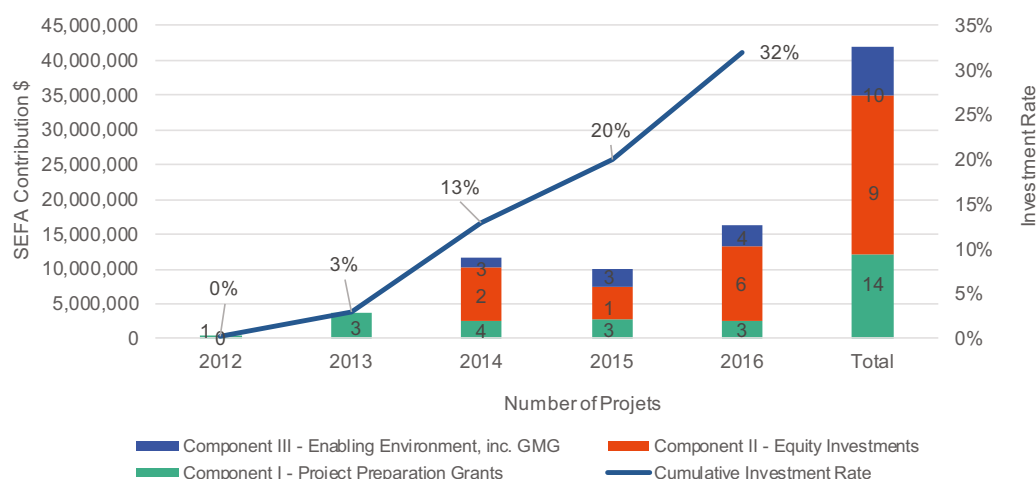
² SEFA committed \$59 million (amounts from project commitments in three components and overhead) which corresponds to 74% of the cash made available by donors, i.e. actual amount disbursed by the donors.

Portfolio commitment summary by component

Year	I-Project Preparation		II-Equity Investments		III-Enabling Environment		TOTAL	
	#	USD	#	USD	#	USD	#	USD
2012	1	398,656	0	0	0	-	1	398,656
2013	3	3,787,000	0	0	0	-	3	3,787,000
2014	4	2,619,000	2	7,627,687	3	1,275,000	9	11,521,687
2015	3	2,675,000	1	4,644,981	3	2,580,000	7	9,899,981
2016	3	2,585,000	6	10,600,000	4	3,194,270	13	16,379,270
TOTAL	14	12,064,656	9	22,872,668*	10	7,049,270	33	41,986,594

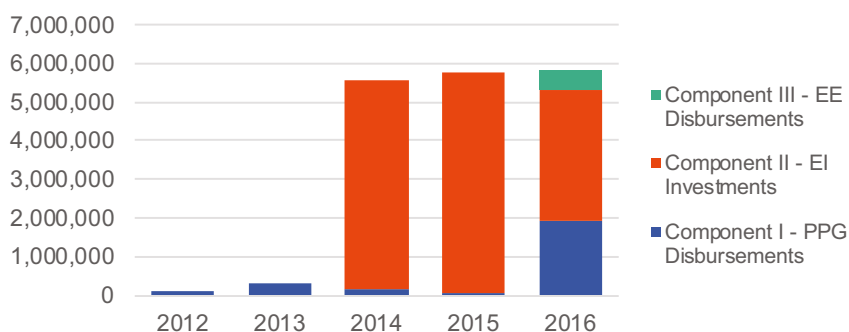
* Current SEFA Equity commitment for AREF projects at investment stage. The entire available equity resources stemming from the AfDB have been committed to AREF.

SEFA Commitments by year & component, and SEFA Program investment rate



SEFA disbursed a total amount of USD 5.8 million in 2016, the highest amount disbursed in any calendar year to date. This was partly driven by the solid disbursement performance of components 1 and 3. Several project preparation, as well as enabling environment grants started implementation. The disbursement rate for component 1 has increased from 6% in 2015 to 21% in 2016; whilst the disbursement rate for component 3 rose from 0% in 2015 to 8% in 2016.

SEFA Program disbursements by year and component





Mauritius Deep Ocean Water Applications Project

Mauritius reaches milestone in pioneering Africa's first sea water air conditioning project

The Deep Ocean Water Applications project in Mauritius carried out detailed offshore marine surveys to introduce an innovative "Sea Water Air Conditioning" (SWAC) system that lowers building cooling costs using cold ocean water – a first of its kind in Africa. The studies were performed with the help of the largest marine engineering platform of its kind, the 'Joseph Plateau,' funded by SEFA. The project feasibility phase will conclude in the first half of 2017.

V-SCREENING OF REQUESTS

The SEFA Secretariat screened 175 project preparation funding requests in 2016. Out of the total application pool, 64 were considered SEFA-eligible, representing a combined total potential of installed capacity of over 1930 MW, with an average capacity of 39 MW and USD 105 million in capital expenditure.

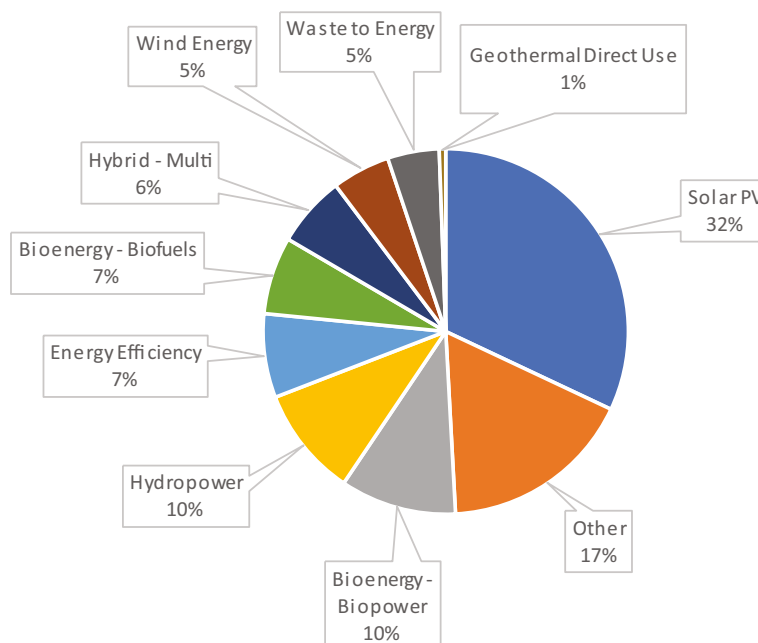
The majority of the requests came from Southern Africa (54 requests), followed by East Africa (46), West Africa (38) and Central Africa (23). Solar PV and bio-energy appeared the most frequent technologies. Most of the applications were for projects to be developed in Kenya, Nigeria, Zambia and South Africa, or multi-nationally, and were mainly in the solar PV, hydropower and biomass sectors. More information is provided in Annex 2.

Number of requests received in 2016 by status

Applications Received in 2016		Status of Applications Screened by Secretariat		Department Management Team Review	
Eligible for SEFA	64	Cleared for DMT	17	Cleared for pipeline	10
Not Eligible for SEFA	111	Under consideration	21	Pending review	7
TOTAL	175	Declined	26		

About two-thirds of the applications were rejected due to their immaturity to be considered in the SEFA pipeline (i.e., pre-feasibility studies not completed) or their mismatch with SEFA's scope (i.e., below SEFA's threshold of USD 30 million investment size). Rejected applications are often referred to more suitable initiatives by the SEFA Secretariat.

Requests by Technology





SEFA/SEforALL Green Mini-Grid Market Development Program

Launch of the Green Mini-Grid Help Desk to support project developers deliver energy access in rural areas

The AfDB-hosted Sustainable Energy for All (SEforAll) Africa Hub launched a Green Mini-Grid Help Desk for clean energy mini-grid project developers during the Third International Off-Grid Renewable Energy Conference on October 1st in Nairobi. The GMG Help Desk provides on-line technical assistance on the myriad of activities important to the business cycle of developing and operating a clean energy mini-grid. The portal provides knowledge products and tutorials on: setting up a mini-grid business, site selection, legal and compliance issues, mini-grid business models, technical system design, community and stakeholder engagement, financing, procurement, installation and commissioning, as well as operation and maintenance. The portal includes country-specific information for much of the above. Project developers can apply through the portal for bespoke support on their projects.

VI-SEFA 2016 NEWS AT A GLANCE

2016

Prize-winning SEFA-financed JUMEME rural electrification project in Tanzania begins operations



April

June



SEFA participation in the Access Co-Development Facility 2016: Evaluation of five projects for the final contest



Participation in a national event "Les Journées Promotionnelles des Energies Renouvelables" in Abidjan

SEFA grants USD 1 million to promote green mini-grids in Niger



August

October

Mauritius reaches milestone in SEFA-supported pioneering low-carbon technology project



AfDB launches Green Mini-Grid Help Desk to support project developers deliver energy access in rural areas



WAFCEF - Business plan competition seeks clean energy entrepreneurs in West Africa

Reaffirming Power Africa's contribution of USD 11 million to the Sustainable Energy Fund for Africa



November

SEFA funds preparation of first-ever Biomass Gasification Project in Uganda



AfDB approves USD 50 million equity investment and USD 50 million convertible loan to seed the establishment of the multi-investor USD 500 million Facility for Energy Inclusion (FEI)



SEFA grants US \$1 million to prepare an innovative community-owned hydropower project in Kenya

2017



Kenya: Site of future weir of the Small Hydropower Plant (SHPP) and old power house of defunct former SHHP

VII-OUTLOOK FOR 2017

With a maturing portfolio of technical assistance activities and increased demand for its advisory and early-stage financing services, in 2017 SEFA is expected to approve funding for up to 12 projects while focusing on:

- improved pipeline screening procedures and prioritization of projects;
- accelerated implementation and disbursement of funds for ongoing projects;
- steering projects completing preparation phase towards prospective investors and debt financiers;
- newer technologies and decentralized solutions; and
- pipeline development and investor mobilization.

Key program-level targets are as follows:

Performance indicator	2016	2017 Target
Project preparation grants approved (number)	3	5
Enabling environment projects (including Green Mini-Grid Country Programmes) approvals (number)	4	5
Total funding approved (cumulative USD million)	54.6	68.6
Overall disbursement/investment rate	32.1%	53%

VIII-The SEFA Team

-  Joao Duarte CUNHA – Chief Renewable Energy Officer and SEFA Coordinator – j.cunha@afdb.org
-  Yusef HATIRA – Senior Climate Finance & Environmentalist Officer – y.hatira@afdb.org
-  Thomas MICHOLITSCH – SEFA Advisor – t.micholitsch@afdb.org
-  Cherif SEYE – SEFA Financial Advisor – c.seye@afdb.org
-  Emmanuel BIRIRIZA – SEFA Green Mini-Grid Expert – e.biririza@afdb.org
-  Goran LIMA – SEFA Programme Officer – g.lima@afdb.org
-  Michael KANE – SEFA PPP Advisor – m.kane@afdb.org

More information may be found online at: <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/sustainable-energy-fund-for-africa/> or by emailing SEFA@afdb.org



SEFA/AREF Uganda Achwa Hydro Power Project

AREF's first financial closure to bring power in Uganda

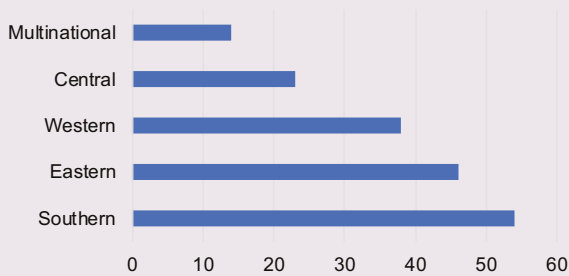
The 42 MW run-of-the-river hydro project in Uganda benefitted from SEFA project preparation support through the African Renewable Energy Fund (AREF)'s Project Support Facility. The Board of Directors of the African Development Bank Group also approved a senior loan for this project.

Annex I: SEFA Results Log Frame

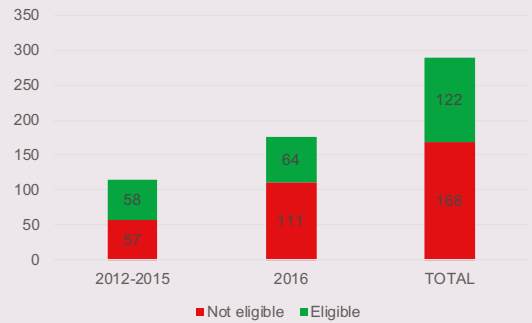
RESULTS CHAIN		PERFORMANCE INDICATORS			ACTUAL VALUES	Commitments based on projects approved
		Indicator	Baseline	Target		Total
IMPACT	Promoting job creation, private sector led growth, and human development through the use of sustainable (affordable, reliable, clean) energy	Energy Development Index (EDI) Human Development Index (HDI)*	2012 HDI value and EDI value for each country	N/A	N/A	N/A
OUTCOMES	Access to modern energy increased for SMEs and households	New connections (number) for projects	0 (2012)	150000 (2018)	250	309,600
	Funding raised for RE projects (financial leverage)	Total volume (of equity and debt raised for RE projects USD million)	0 (2012)	1,000 (2018)	31.1	1,058
	Increase in RE in the energy mix	Aggregate installed RE capacity (MW)	0 (2012)	500 (2018)	0	464
	Direct employment creation (sector/project level)	Jobs created at project sites (number)	0 (2012)	450 (2018)	26	8,164
	Reduction/avoidance of GHG emissions (project level)	CO2 equiv. saved through use of RE (tons)	0 (2012)	3,000,000 (2018)	0	155,100
OUTPUTS - I	RE projects supported by SEFA reaching financial close	No. of projects receiving Project Preparation Grants reaching financial close - 1 project/year from 2014	0 (2012)	4 (2018)	1	12
	RE projects receiving pre-investment assistance from SEFA	No. of PPGs awarded - 4-6 new PPGs/year from 2013 to 2018	0 (2012)	30 (2018)	14	14
OUTPUTS - II	RE projects receiving equity and managerial support	Committed capital invested (%)	0 (2013)	90 (2018)	47	47
		Portfolio companies at end of investment period (number)	0 (2013)	10 (2018)	8	8
	Pre-investment support provided to RE projects and entrepreneurs	Companies/projects supported (number)	0 (2013)	20 (2018)	8	8
OUTPUTS - III	Improved investment environment for RE projects	Countries with new policies - 3 countries/year supported from 2014 (number)	0 (2013)	12 (2018)	0	6
	Completed activities related to institutional support and capacity development on RE/EE	People trained on RE/EE *** (number)	0 (2013)	150 (2018)	0	1531
	Improved regulatory and market conditions for Green Mini-Grids	No. of GMG enabling projects - 5 country support packages & Market Development Programmes implemented	0 (2014)	6 (2018)	3	6

Annex II: Breakdown of Applications received by SEFA in 2016

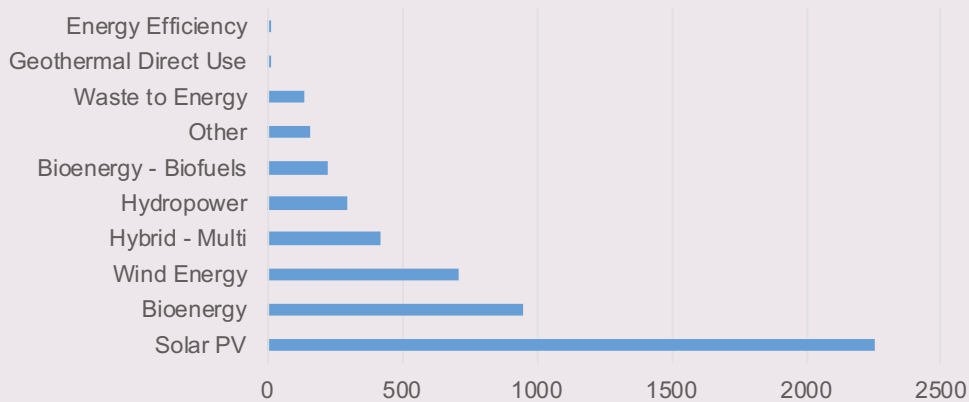
Number of Requests Received by Region



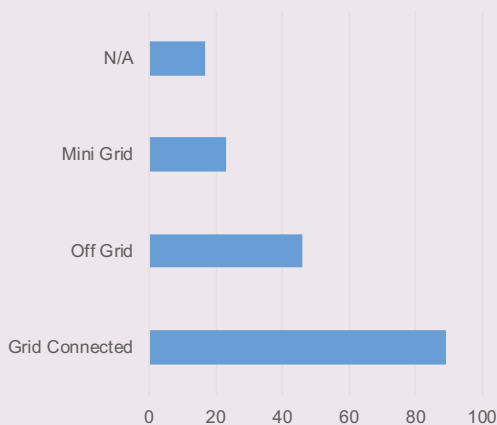
Number of Requests by Year and Eligibility



Proposed Installed MW Capacity per Technology



Number of Requests by Delivery Approach



Number of Requests per country

Country	Not eligible for SEFA	Eligible For SEFA	Total
Kenya	18	5	23
Nigeria	10	6	16
Multinational	6	7	13
Zambia	9	4	13
South Africa	8	3	11
Cameroon	8	3	11
Rwanda	9	1	10
Zimbabwe	8	2	10

Annex III: Financial Statement as at 31 December 2016

	Budgeted Amount	Disbursement 2016	Cumulative Disbursements	Undisbursed Balance
(USD)				
Component I - Project Preparation Support				
African Biofuel and Renewable Energy	398,656	-	398,656	-
Madagascar Nosy Be Solar/Hydro	987,000	27,065	172,415	814,585
Djibouti Lake Assal Geothermal	1,800,000	563,189	563,189	1,236,811
Mauritius DOWA Urban Cooling	1,000,000	362,400	362,400	637,600
Nigeria Green Energy & Biofuels	580,000	156,000	156,000	424,000
Ethiopia dVentus Technologies	842,000	118,300	143,500	698,500
Tanzania Jumeme Rural Energy Supply	420,000	192,930	210,253	209,749
Cameroon JCM Solar PV	777,000	-	-	777,000
Chad Starsol Solar PV	780,000	-	-	780,000
Saltinho Hydro Power Project	965,000	-	-	965,000
Cabo Verde Wave 2o Desalination Plan Project	930,000	-	-	930,000
Facility for Energy Inclusion (FEI)	600,000	479,045	479,045	120,955
Uganda Earth Energy Biomass Project	993,000	-	-	993,000
Kenya Mutunguru Hydro Power Project	992,000	-	-	992,000
Sub-total	12,064,656	1,886,930	2,485,458	9,591,198
Component II – Equity Investment and Support to RE/EE Enterprises				
Investment Capital	25,000,000	3,418,546	12,085,493	13,414,507
Project Support Facility	10,000,000	-	2,500,000	7,500,000
Sub-total	35,000,000	3,418,546	14,585,493	20,914,507
Component III - Enabling Environment Support				
Comoros Energy Sector Support	480,000	-	-	480,000
Mozambique Renewable Energy Promotion	740,000	-	-	740,000
Mali Renewable Energy Promotion (PAPERM)	530,000	-	-	530,000
UNEP/ICA Atlas of Africa Energy Resources	265,000	173,880	173,880	91,120
Green Mini-Grid Market Develop. Programme (GMG/MDP)	1,000,000	319,048	319,048	680,952
Rwanda GMG Support Programme	840,000	-	-	840,000
Burundi Sector Master Plan	630,000	-	-	630,000
Programme for Risk Mitigation in Sustainable Energy	700,000	-	-	700,000
Niger GMG Support Programme	994,270	-	-	994,270
Tanzania RE Investment Facility	870,000	-	-	870,000
Sub-total	7,049,270	492,928	492,928	6,556,342
TOTAL	54,613,926	5,798,404	17,551,879	37,062,047



ANNUAL REPORT

African Development Bank

Immeuble du Centre de Commerce International d'Abidjan CCIA
Avenue Jean-Paul II
01 BP 1387
Abidjan 01, Côte d'Ivoire
www.afdb.org

SEFA at the AfDB

Power, Energy, Climate and Green Growth (PEVP) Complex

Renewable Energy and Energy Efficiency Department (PERN)

sefa@afdb.org

Contacts :

SEFA Coordinator
Joao Duarte Cunha,
j.cunha@afdb.org



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