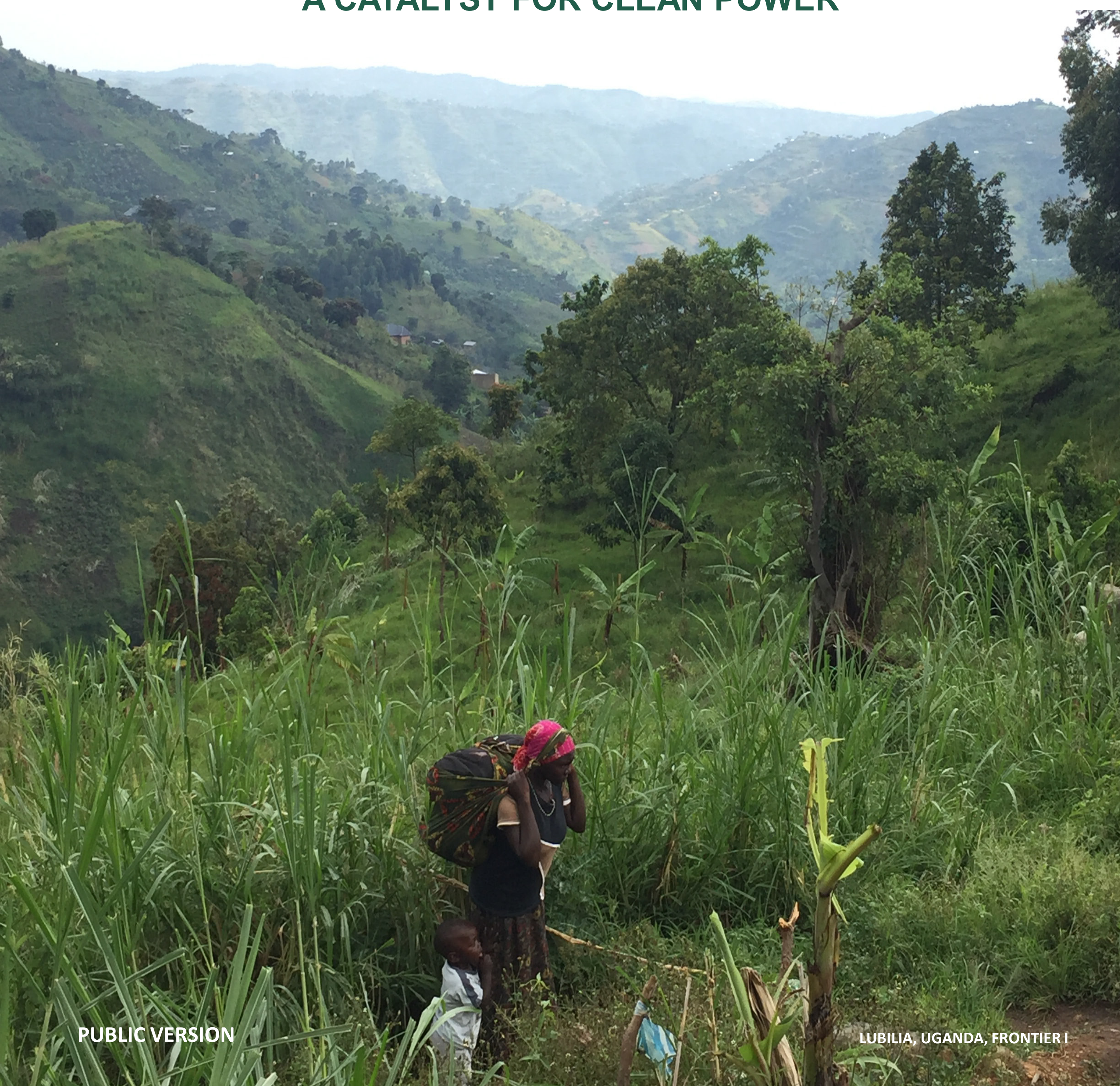
European Investment Bank
The EU bank

EUROPEAN INVESTMENT FUND

GLOBAL ENERGY EFFICIENCY AND RENEWABLE ENERGY FUND IMPACT REPORT 2017

A CATALYST FOR CLEAN POWER



LUBILIA, UGANDA, FRONTIER I

PUBLIC VERSION

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FROM THE TEAM

Dear investors,

At the end of 2017, the Global Energy Efficiency and Renewable Energy Fund (GEEREF) portfolio consisted of 13 funds whose investment activities had reached 450 000 households in 15 countries. Once the funds' projects are built, we expect to reach at least 24 countries and 12 million households annually. EUR 166m has been committed, which led to over EUR 3bn of investments into more than 100 renewable energy projects, creating 2.7 GW of new clean energy generation capacity, of which 0.8 GW is already operational.

This report seeks to highlight the impact that your trust and committed capital have had so far – impact beyond financial results. While this will not be discussed further in the following pages, I wanted to stress how you, our public and private investors, have already made a lasting mark on impact finance. Today, any discussion of impact or sustainable finance is bound to evoke "blended finance". Blended finance is the new buzzword to describe how investors (especially public and private investors) with different risk and return appetites can work together on common impact goals. In 2008, GEEREF may have been among the first such blended finance investment vehicles, if not the very first. At the time, I used to speak of a Public Private Partnership; today I must say "a blended finance" fund.

If our 24 investors had not blended together, we could not have demonstrated that developing new renewable energy power plants and energy efficiency projects in frontier markets is possible and profitable. In addition, this can be done while keeping affected communities and the environment at the centre of each project. Credit goes to each one of our fund management teams for the professionalism they demonstrate day after day, project after project, but it also goes to each one of our investors, for your commitment and trust. I often like to say that more than blended capital, we have smart capital to invest.

We wish to put special emphasis in this report on land acquisition and its impact on local communities. Most of our projects involve some degree of displacement of population. It is always a lengthy, labour-intensive process. It requires patience, building trust with affected communities and absolute care that they be left at least as well off – and preferably better off – at the end of the process. Because GEEREF's resettlement and compensation processes treat women and men equally, and are done with full respect for local traditional structures, we plant the seeds that benefit the next generation of boys and girls. They will have seen their mothers empowered in the same way as their fathers.

When we initially met, we told you that we were all about people, planet and profit. Our conviction that these three pillars must continue to guide us is stronger than ever.

People: it is not only the right thing to do, but also the intelligent thing to do. Everyone should be free to move around the world if they so desire; but it should not be because life has become unbearable and unsafe in their own land.

Planet: month after month, hurricane after hurricane, drought after drought, melting iceberg after melting iceberg, we see our environment disturbed.

Profit: I must confess that I can imagine puzzled historians of the future, if we get there, pondering whether their ancestors really hesitated to consider how financially profitable the rescue of the mothership would be and wondering if they had any wit or sense. Since profitability is the engine of greater funding and can be done without diminishing the impact our projects have on the planet and its people, and we also have our fiduciary obligation at heart, profit remains part of the foundation of our action.

CYRILLE ARNOULD
HEAD OF THE GEEREF FRONT OFFICE

The GEEREF team from left to right: David Pin, Jenia Ganzen, Dunja Dolanjski, Mélanie Martin, Cyrille Arnould, Ioannis Tsakiris, Aglaé Touchard-Le Drian, Mervin Chaumiere, Gunter Fischer, Mónica Arévalo, Quirin Sluijs, Eleni Zioga, Nicolas Panayotopoulos, Eva Chrysanthou and Eugene Howard.
Not pictured: Lucie Bernatkova and Alvyda Usiskaite.

GEEREF PORTFOLIO
2017 SUMMARY & PORTFOLIO MAP

PUBLIC AND PRIVATE INVESTORS HAVE COMMITTED

EUR 222M

TO GEEREF – THE FUND OF FUNDS

GEEREF HAS COMMITTED

EUR 166M

TO ITS 13 UNDERLYING FUNDS…

A multiplier of 6.3x of GEEREF's investment

THESE FUNDS HAVE RAISED

EUR ~1BN

AND INVESTED EUR 0.6BN INTO 105 PROJECTS SO FAR

A multiplier of 5x of the funds' investments

THESE 105 PROJECTS REPRESENT

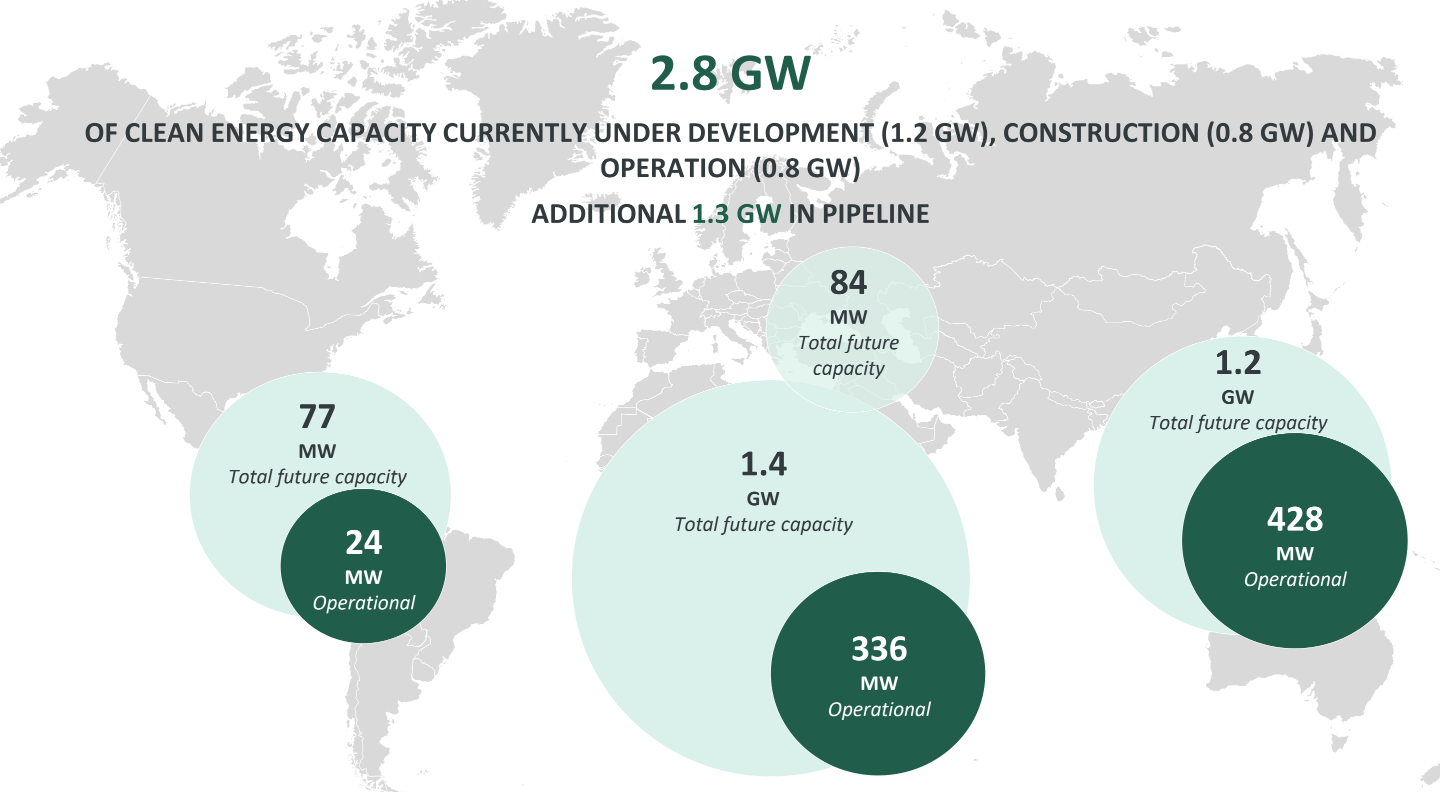
EUR 3BN

IN TOTAL PROJECT COSTS

2.8 GW

OF CLEAN ENERGY CAPACITY CURRENTLY UNDER DEVELOPMENT (1.2 GW), CONSTRUCTION (0.8 GW) AND OPERATION (0.8 GW)

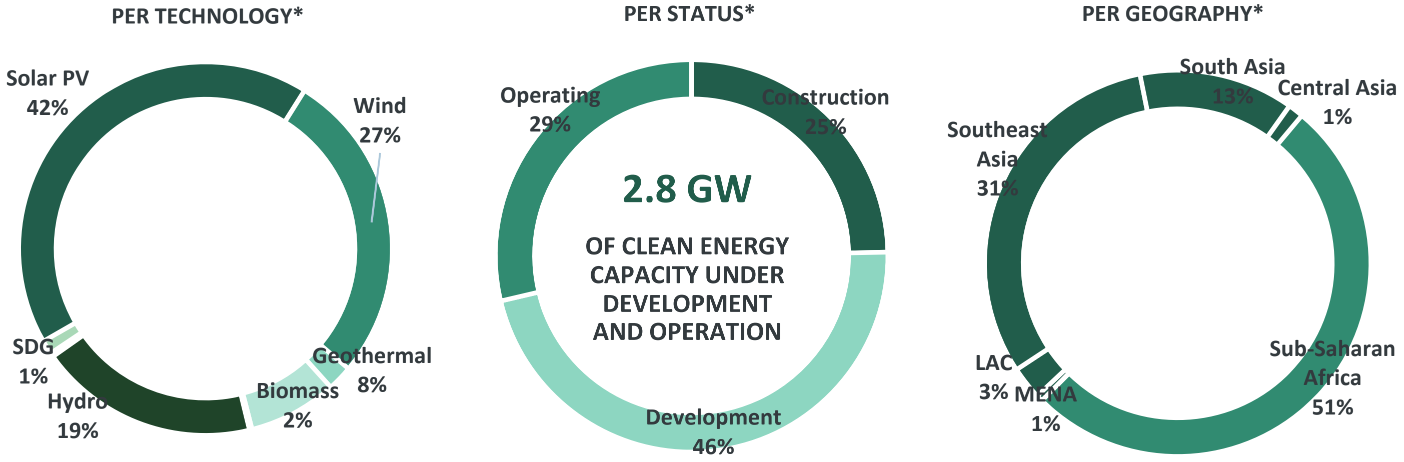
ADDITIONAL 1.3 GW IN PIPELINE



~800MW	**1 900 GWH**	**450 000**	**1.5M TCO2**
OF CLEAN ENERGY CAPACITY INSTALLED	OF CLEAN ENERGY GENERATED	HOUSEHOLDS IMPACTED	AVOIDED

Please note, figures may not add up due to rounding.

GEEREF PORTFOLIO
2017 SUMMARY: PORTFOLIO SPLIT



*Based on total current capacity (i.e. 2.8 GW) under development, construction and operation.

COOPEGUANACASTE SOLAR PARK, COSTA RICA, MSEF I

THE GEEREF SETUP

PUBLIC-PRIVATE PARTNERSHIP ADVISED BY THE EIB GROUP

GEEREF	
PUBLIC INVESTORS (SUBORDINATED CAPITAL)	**EUR 112m**
European Commission Germany Norway	
PRIVATE INVESTORS	**EUR 110m**
Including Australian pension funds, European and US family offices, Canadian asset managers	

Board of Directors

Three Directors appointed by public investors and one Independent Director

Responsible for all aspects of administration and management of the Fund

Investment Committee

Three permanent and three expert members nominated by public shareholders, and one independent member

Investment Advisor: The EIB Group

The European Investment Fund is the advisor to the GEEREF Board and Investment Committee

The European Investment Bank is the sub-advisor, responsible for identifying and recommending investment opportunities to the advisor as well as ongoing portfolio monitoring

European Investment Bank – The EU bank

- Owned by 28 EU Member States
- AAA-rating
- Largest multilateral borrower and lender by volume
- Largest provider of climate finance (USD 19.4bn in 2017)
- Active in developing countries for over 50 years
- Global leader in standards for ESG
- Over 2 900 staff based in Luxembourg

European Investment Fund

- Public-private partnership owned by the EIB Group, the EU and 29 public and private banks
- AAA-rating
- Leader in European private equity with over EUR 14.4bn of outstanding PE assets under management, and over 500 funds
- Over 500 staff based in Luxembourg

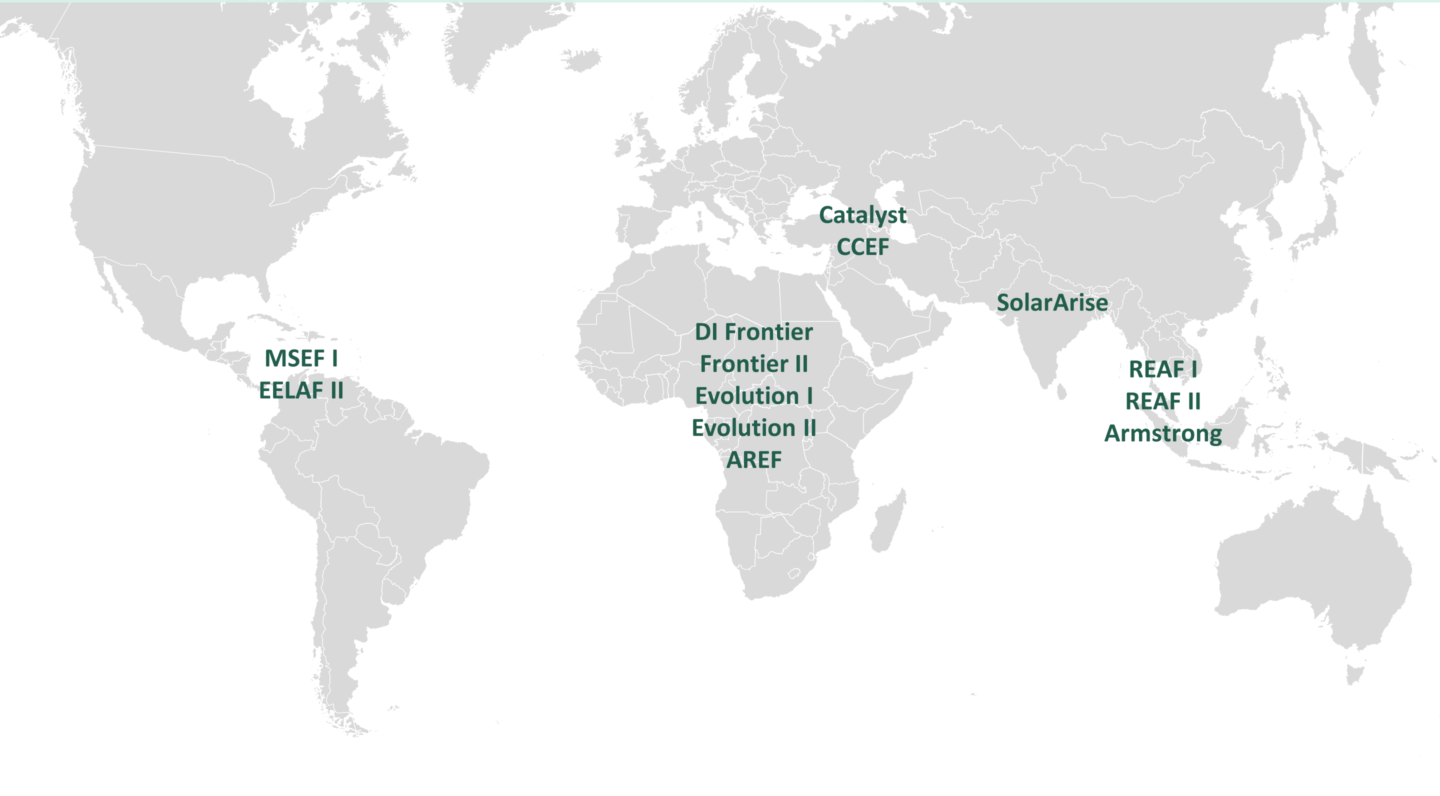
EIB HEADQUARTERS, LUXEMBOURG

"GEEREF has been a pioneering initiative in the EIB Group in the field of blended finance and impact investment. The impact report provides a good illustration of the team's comprehensive approach to achieving its triple bottom line: Planet, People, Profit".

Adrian Kamenitzer, Director Equity, New Products and Special Transactions, EIB

EUCALYPTUS PLANT NURSERY, APSD BIOMASS, GHANA, AREF

GEEREF IMPACT STRATEGY
A CATALYST FOR CLEAN POWER



GEEREF: IMPACT STRATEGY
MOBILISING CAPITAL FOR CLEAN ENERGY

GEEREF's strategy: GEEREF is a fund that invests in renewable energy and energy efficiency-focused private equity funds and directly into projects or companies, with the aim of generating both financial and social returns for its investors and stakeholders.

At the end of 2017, GEEREF had 13 funds in its portfolio across emerging markets in Sub-Saharan Africa, South and Southeast Asia, Latin America and the Caribbean, the Middle East and Central Asia. These have, in turn developed more than 105 renewable energy and energy efficiency projects, 36 of which are operational. GEEREF's approach to financing clean energy expansion – which combines patient capital investment into infrastructure with specialised technical assistance to support fund managers and developers – is overlaid with a comprehensive impact approach that maximises the returns for all of its stakeholders. This includes both GEEREF's investors and the local communities that host each of GEEREF's 105 projects.

Mobilisation of capital: GEEREF was designed to mobilise a high amount of investment, in particular from private investors, into its underlying projects. GEEREF has a blended structure where public capital has been used to attract private sector investors. The fund of funds approach enables further leverage on the public capital at an investee fund level as well as further down at a project level.

INPUTS

GEEREF: THE FUND OF FUNDS (APPROACH)

PUBLIC INVESTORS (CONCESSIONAL CAPITAL)	PRIVATE INVESTORS
EU, GERMANY AND NORWAY	24 INVESTORS FROM NORTH AMERICA, EUROPE AND AUSTRALIA

OUTPUTS

GEEREF'S INVESTEE FUNDS

REAF EVOLUTION FRONTIER EELAF II ARMSTRONG MSEF AREF	SOLARARISE CCEF CATALYST REAF II EVOLUTION II FRONTIER II

OUTCOMES

FUNDS' UNDERLYING PORTFOLIO PROJECTS

FUND EQUITY	EQUITY CO-INVESTMENT	PROJECT DEBT

IMPACTS

DELIVERED IN ACCORDANCE WITH EIB E&S STANDARDS AND GEEREF'S TRIPLE BOTTOM LINE

2.8 GW CLEAN ENERGY CAPACITY (4.15 GW including current pipeline)	9 500 GWh OF ELECTRICITY TO BE PRODUCED PER ANNUM (14.37 GWh incl. current pipeline)	5 MILLION TONNES OF CARBON EMISSIONS TO BE REDUCED PER ANNUM (8.24 tCO2eq incl. current pipeline)
	8.5 MILLION BENEFICIARY HOUSEHOLDS PER ANNUM (11.8 million incl. pipeline)	

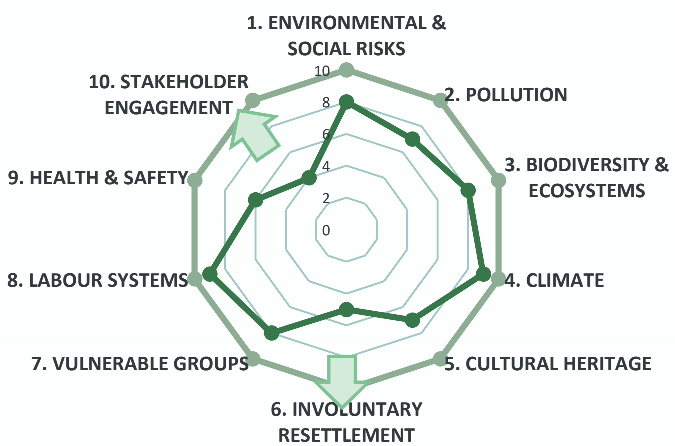
GEEREF: IMPACT STRATEGY
COMBINING QUALITATIVE AND QUANTITATIVE IMPACT ASSESSMENT

Impact assessment: GEEREF implements a two-fold approach that combines qualitative and quantitative assessments to ensure that its impact objectives and the triple bottom line approach are achieved in all of its investment activities.

1. QUALITATIVE EIB STANDARDS
Implement and comply with standards and processes

GEEREF requires its portfolio funds to carry out social and environmental due diligence in their new projects, using the EIB's ten Environmental and Social Standards, and subsequently monitor the projects in compliance with the standards. This is institutionalised in the contractual framework with the fund managers. GEEREF's early participation as a cornerstone investor supports the implementation of EIB Standards from the onset of a fund's structuring and portfolio construction.

EIB STANDARDS*



Investee fund initial score against EIB Standards

GEEREF helps its funds raise standards

*Figure only illustrative

2. QUANTITATIVE GEEREF IMPACT METRICS
Quantify and measure

GEEREF measures and monitors quantifiable, realised impact on the ground on an annual basis to assess ESG performance and share results with investors and the wider investment community.

GEEREF IMPACT METRICS

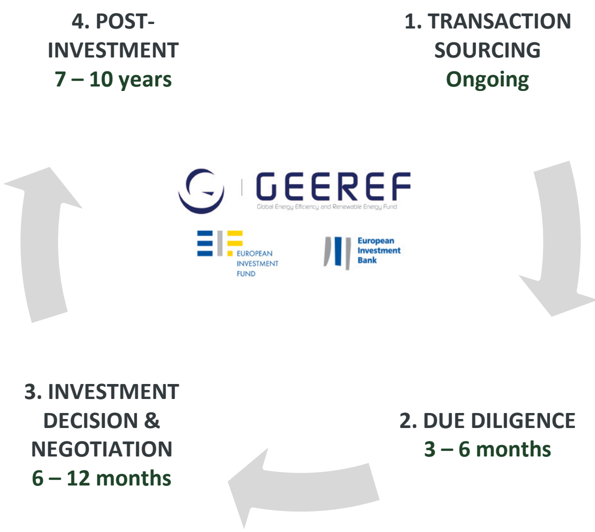
PILLAR 1: CLEAN ENERGY	PILLAR 2: ENVIRONMENT/CLIMATE CHANGE
INSTALLED CAPACITY (MW) ELECTRICITY GENERATED (MWH) ENERGY EFFICIENCY SAVINGS (MWH)	NET EMISSIONS REDUCED (CO_2eq)
PILLAR 3: SUSTAINABLE DEVELOPMENT	**PILLAR 4: FINANCIAL LEVERAGE**
BENEFICIARY HOUSEHOLDS (#) BENEFICIARY SMES (#) NUMBER OF PEOPLE EMPLOYED (#) TRAINING (HRS.)	FUND MULTIPLIER PROJECT MULTIPLIER

GEEREF: IMPACT STRATEGY
VALUE ADDED THROUGHOUT THE PROJECT VALUE CHAIN

Value added: GEEREF works closely with fund managers at each stage of transaction development. GEEREF provides input on the structuring and strategy to the funds' teams.

During the due diligence and negotiations phase, GEEREF provides feedback on terms and conditions to ensure the fund's marketability to private investors. In addition, EIB technical experts thoroughly review the fund's environmental and social processes, standards and staffing plan to ensure alignment with international best practices. GEEREF's technical assistance facility (RFSF) helps fund managers to upgrade their practices where gaps are identified.

Finally, following a fund's inclusion in GEEREF's portfolio, GEEREF provides continuous feedback to the fund managers through an active advisory role and makes site visits when necessary. GEEREF chairs some of the portfolio funds' Advisory Boards. The EIB's technical experts review and enhance the funds' E&S practices via regular monitoring.



INITIAL FUND STRUCTURING → **PROJECT IMPLEMENTATION** → **ONGOING MONITORING**

E&S STANDARDS	E&S best practice through the lifecycle of operations. E&S obligations, processes and procedures are listed and described in relevant contractual documents (Limited Partnership Agreement, Side Letter and others) Environmental and Social Management Systems (ESMS) are built within each fund's management system to manage risks associated with projects and enhance positive outcomes.
TECHNICAL ASSISTANCE FACILITY	GEEREF's Regional Fund Support Facility (RFSF), funded by the European Commission, helps nascent fund managers address gaps with the recruitment of qualified professionals and the development of investment and monitoring capabilities.
ADVISORY BOARD	Regular formal and informal supervision to advise on best practice, conflicts of interest, deviations from stated policies, internal issues, strategy and market context.
IMPACT REPORTING	GEEREF's annual impact reporting exercise helps funds maintain focus on Impact and E&S issues. "GEEREF Days", an annual meeting for investors and fund managers, facilitates best practice and learning across the global portfolio and strives for greater results. GEEREF's Impact Report supports greater transparency in impact investment and knowledge sharing.

GEEREF: IMPACT STRATEGY
CONTRIBUTING TO SDGs IN DEVELOPING COUNTRIES

GEEREF's approach and SDGs: GEEREF has a triple bottom line approach: People, Planet, Profit. Underpinning its investment strategy, there is a fundamental commitment to financial, environmental and social sustainability principles that are mutually reinforcing and create maximum value for GEEREF's shareholders.

Importantly, GEEREF is in a unique place to anchor, influence and drive the strategy of funds and their underlying projects via the use of private equity as a long-term investment instrument.

GEEREF has mapped its portfolio to SDG targets. Its activities directly contribute to four SDGs. GEEREF contributes to the expansion of clean energy capacity in developing countries and climate change mitigation and as such, directly contributes to SDG 7: Affordable and Clean Energy and SDG 13: Climate Action. Given the labour intensity associated with construction of infrastructure assets, GEEREF also contributes to employment opportunities and skills training in markets where it operates (SDG 8). As a public private partnership, GEEREF also directly contributes to SDG 17 (partnerships for the goals).

In addition, as expansion of clean energy promotes the broader development objectives of economic prosperity, well-being and a healthy environment, GEEREF's activities contribute at least to 13 SDGs*.

Measuring SDG impact: Assessing the exact contribution to SDGs that GEEREF can claim remains a challenge because of the wide breadth of the SDGs, underlying targets and key performance indicators, all of which are set at a national level. As a result, the figures and findings of this report may not capture the entirety of the impact generated.

GEEREF has endeavored to track its direct contribution to SDGs via its existing metrics, as illustrated below.

*As per the latest IRENA study on SDGs.

DIRECT SDG CONTRIBUTION	*METRICS*	*REALISED IMPACT IN 2017*	*CUMULATIVE REALISED IMPACT SINCE 2014*
GEEREF BUILDS UP NEW CLEAN ENERGY CAPACITY (7 AFFORDABLE AND CLEAN ENERGY)	Capacity installed (MW) Electricity generated and saved (MWh)	120 MW (new capacity) 1.8 million MWh	788 MW 4.9 million MWh
GEEREF CONTRIBUTES TO DECREASING GHG EMISSIONS IN ENERGY AND OTHER INDUSTRIES (13 CLIMATE ACTION)	Emissions reduced (tonnes of CO_2eq)	1.5 million tonnes of CO_2eq	4.3 million tonnes of CO_2eq
GEEREF CREATES EMPLOYMENT OPPORTUNITIES AND SKILLS TRAINING (8 DECENT WORK AND ECONOMIC GROWTH)	Number of people employed: temporary, permanent, male, female Training delivered (hours)	1 800 permanent male jobs 630 permanent female jobs 4 500 temporary male jobs 360 temporary female jobs 46 500 training hours	
GEEREF IS A PUBLIC-PRIVATE PARTNERSHIP (17 PARTNERSHIPS FOR THE GOALS)			

IMPACT METRICS

PORTFOLIO METRICS
BEHIND THE FIGURES

All data are **collected annually** from GEEREF's fund managers and are analysed by the GEEREF team. The report accounts for data and results for the entirety of each project, rather than a pro rata share of them, with the underlying assumption that the projects would not have been financed without GEEREF support. The data is reported on an annual basis as a snapshot of the status at year-end 2017.

The analysis is done at three levels:

1. **Actual reported values** from the relevant financial year from each of the investments in each portfolio in the reporting period. This may include assets that have been fully operational for the whole financial year or partially operational. The "actual" figures present total realised figures as of the end of the year.
2. **Current portfolio** assumes that all projects in the existing portfolio (under development, construction and in operation) are fully operational for a full year. The figure provides a snapshot of the expected annual impact of the projects that were in the portfolio in 2017 once they are fully operational.
3. **Targeted portfolio** assumes that all projects in the current portfolio and in pipeline are fully operational for a full year. It provides a snapshot of the expected annual impact of all the projects that GEEREF's portfolio funds will end up supporting.

Both **current portfolio and targeted portfolio** metrics are modelled and use total capital commitments, project sizes and technologies, capex and capacity factors in order to derive a set of notional values for the portfolio. These figures are very sensitive to the evolution of assumptions, including the grid factor and the average consumption per household per country. These assumptions are updated on an annual basis.

It is to be highlighted that all reported data attribute the full scale of impact to GEEREF, considering GEEREF's role as an anchor investor.

The data collection is organised in four pillars: **energy**, **environment**, **sustainable development** and **financial leverage**. While some metrics in energy, environment and sustainable development pillars are reported as provided by the fund managers, others are calculated by the GEEREF team using inputs from fund managers and external resources. The latter category includes: households impacted and emissions reduced. The number of households impacted is calculated by dividing total electricity generated (as reported by fund managers) by average household consumption in a given country (World Bank statistics). The amount of emissions reduced is calculated by multiplying electricity generated (as reported by the fund manager) by a given country grid emission factor (as provided by the EIB statistics). For the fourth pillar, financial leverage, GEEREF reports on the amount of capital mobilised (both private and public) at three layers: project level, fund level and GEEREF level. The ***project level*** multiplier assesses the total project capex (including fund equity, co-investment and debt) relative to the equity invested by the fund manager. The ***fund level*** multiplier assesses the total that a fund has raised from all of investors relative to the initial capital contribution made by GEEREF. The ***GEEREF level*** multiplier is the project level multiplier times the fund level multiplier.

A final calculation (*ODA impact*) shows the impact achieved by ODA funding which catalysed the private investors. This calculates the ratio of public to total capital and derives a final multiplier for all capital invested through GEEREF's portfolio projects relative to the initial ODA contributions to GEEREF.

GEEREF reports to the OECD on the amount of private finance mobilised by its investments on an annual basis. The OECD methodology can be found here. The above described GEEREF methodology differs from the OECD methodology in a few ways. The OECD methodology focuses on private capital mobilisation while GEEREF accounts both for public and private capital mobilisation. In addition, the OECD only accounts for capital mobilised on the fund level (based on the shareholding percentage) and ignores the mobilisation effect on the project level.

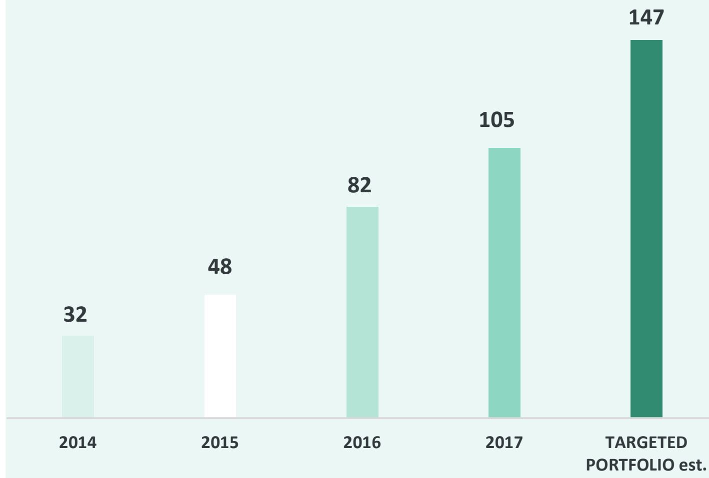
A more detailed explanation of the GEEREF Impact Methodology can be found on GEEREF's website here.

GEEREF PORTFOLIO METRICS
PILLAR 1 AND 2: CLEAN ENERGY & ENVIRONMENT/CLIMATE

In 2017, 120 MW of new clean energy capacity was delivered in developing countries.

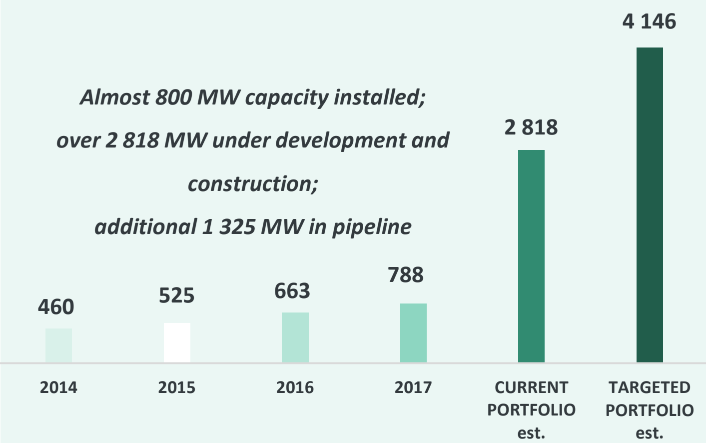
GEEREF's operational projects generated 2 000 GWh of clean energy and electricity savings of 67 GWh, equivalent to 1.5 million tonnes of CO_2 saved.

NUMBER OF PROJECTS



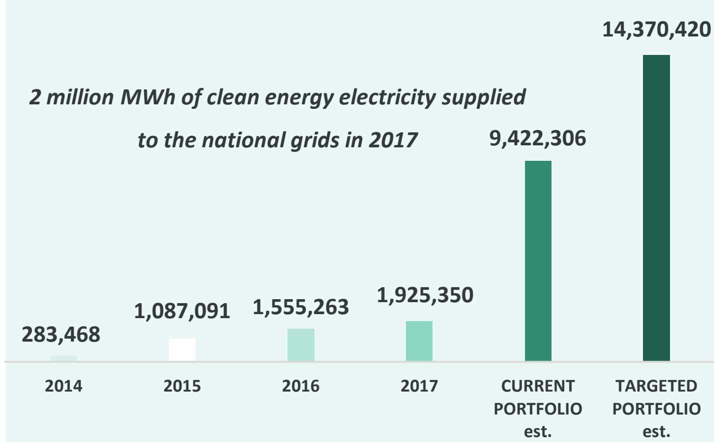
INSTALLED CAPACITY (MW)

Almost 800 MW capacity installed; over 2 818 MW under development and construction; additional 1 325 MW in pipeline



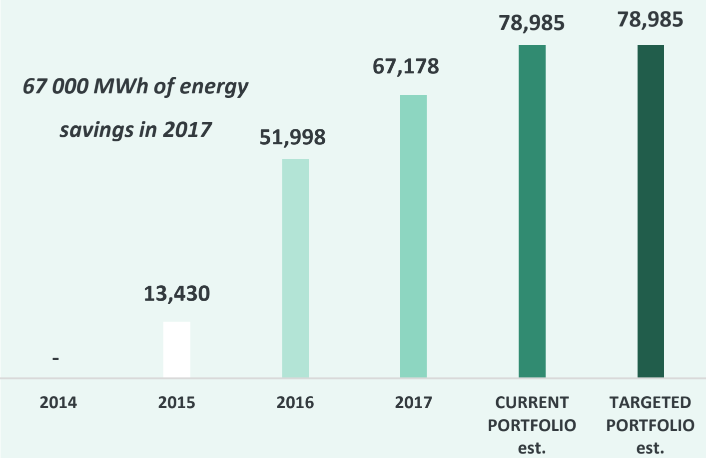
ELECTRICITY GENERATED (MWH)

2 million MWh of clean energy electricity supplied to the national grids in 2017



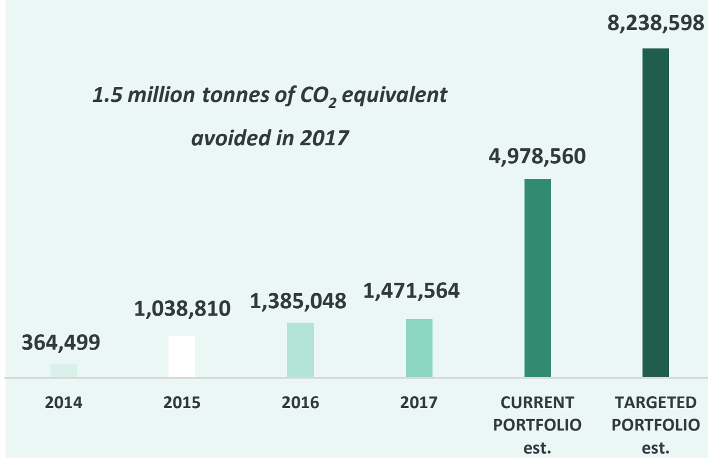
ELECTRICITY SAVED (MWH)

67 000 MWh of energy savings in 2017



GHG MITIGATION (tCO_2EQ)

1.5 million tonnes of CO_2 equivalent avoided in 2017



GEEREF PORTFOLIO METRICS

PILLAR 1 AND 2: CLEAN ENERGY & ENVIRONMENT/CLIMATE MITIGATION

~800 MW
CLEAN ENERGY CAPACITY INSTALLED

In 2017 GEEREF's funds registered a 20% increase in the installed capacity, reaching a total of 800 MW. 125 MW were connected to the grid throughout the year, primarily in South and Southeast Asia (86% of new addition).

A majority of the installed projects were concentrated in three countries – South Africa (40%), India (30%) and Vietnam (11%) – and implemented by the three oldest and most advanced funds in GEEREF's portfolio: Evolution I, REAF I and Armstrong. As a minority shareholder in relatively large operating projects, Evolution I represents the largest contributor to the aggregate capacity installed.

With 2 GW currently under development and construction and an additional 1.3 GW in the pipeline, a total of 4.15 GW is the current notional capacity of GEEREF's investments (based on GEEREF's 13 existing portfolio funds). This figure will keep increasing with each new GEEREF commitment until it is fully invested and its portfolio funds have all allocated their funds to investments.

2 000 GWH
CLEAN ENERGY GENERATED

In 2017, GEEREF's 36 grid-connected projects generated 2 000 GWh of clean energy, up by 25%, or 400 GWh, from 2016. Most of the electricity generated was in South Africa (46%), Vietnam (23%) and India (17%). While India has more installed capacity than Vietnam, the capacity factor of these projects (solar) is lower than that of those in Vietnam (hydro), resulting in higher electricity generation by Vietnamese projects.

Once all portfolio projects currently under development and construction are operational, 9 400 GWh of clean energy will be generated annually, with Vietnam (21%), South Africa (16%), India (13%) and Kenya as main beneficiaries. When pipeline projects are included, the generation goes up to 14 400 GWh annually. Assuming a renewable energy asset life of 20 years, the total electricity generated over the life of all projects in the future portfolio will be 288 000 GWh.

67 GWH
ELECTRICITY SAVED

GEEREF had two active funds – MSEF and Evolution I – and one liquidated fund (EELAF II) that also target energy efficiency, with a total of 18 operational projects in their portfolio. Combined, these projects generated savings of 52 GWh in 2017, with the majority of the savings located in Mexico (60%), followed by South Africa (25%) and Colombia (13%).

When additional projects currently under development or being installed are commissioned, GEEREF's funds will save the equivalent of 79 GWh annually. Assuming an energy efficiency asset life of ten years, the total electricity saved over the life of all projects in the future portfolio will be 790 GWh.

1.5 MILLION tCO_2eq AVOIDED

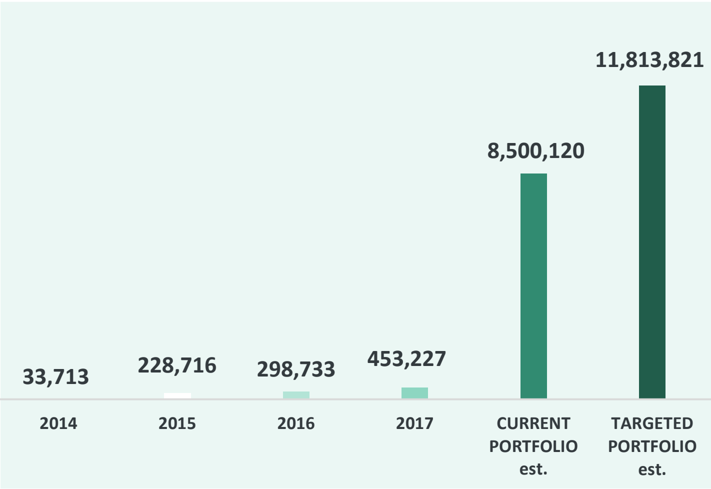
In 2017, the electricity production and savings contributed to the avoidance of an equivalent of 1.5 million tonnes of CO_2 annually. Once all projects that are currently under development or construction are installed, the figure increases to 5 million tonnes of CO_2 annually. This is an equivalent to emissions generated by a coal plant in a year, 700 000 OECD households' electricity use in a year, or emissions of almost 1 billion passenger vehicles, using EPA data.* Once all pipeline projects are operational, 8.2 million tonnes of CO_2 will be avoided annually. Over the full life of the assets this translates into 164 million tonnes of CO_2 avoided.

* https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

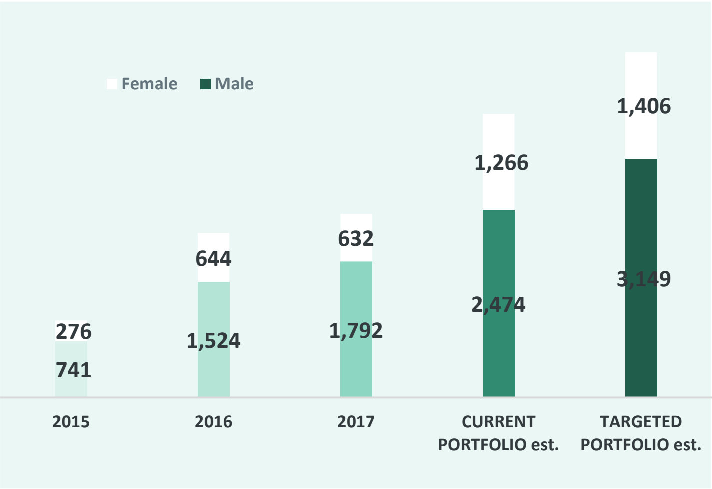
GEEREF PORTFOLIO METRICS

PILLAR 3: SUSTAINABLE DEVELOPMENT

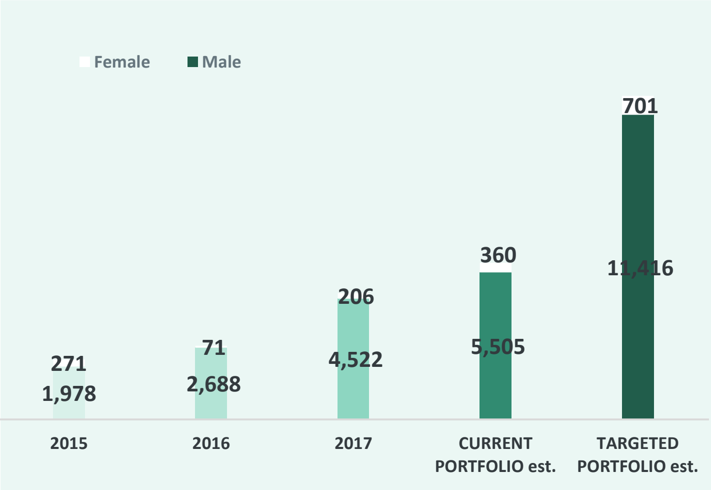
IMPLIED BENEFICIARY HOUSEHOLDS
BENEFITING FROM NEW/IMPROVED ENERGY ACCESS (ANNUAL)



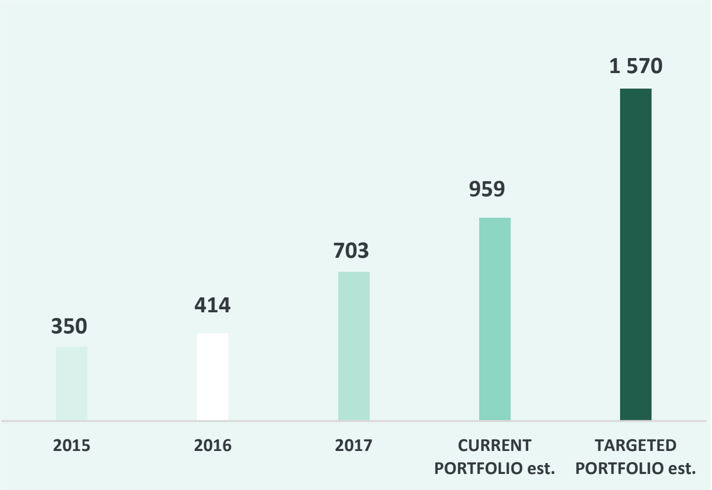
PERMANENT EMPLOYEES



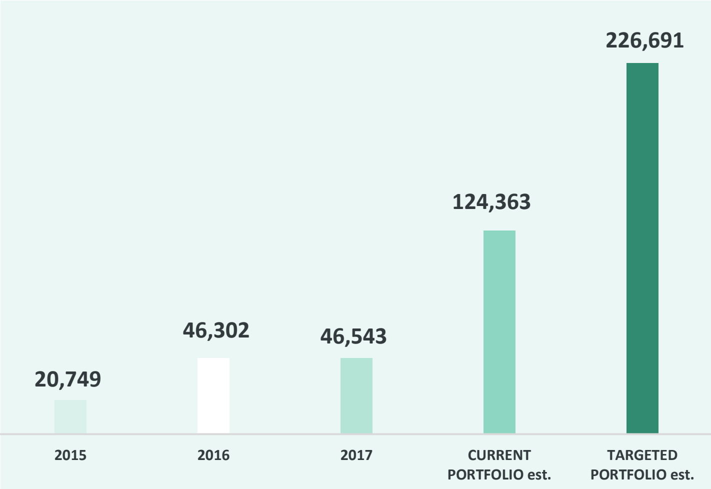
TEMPORARY EMPLOYEES



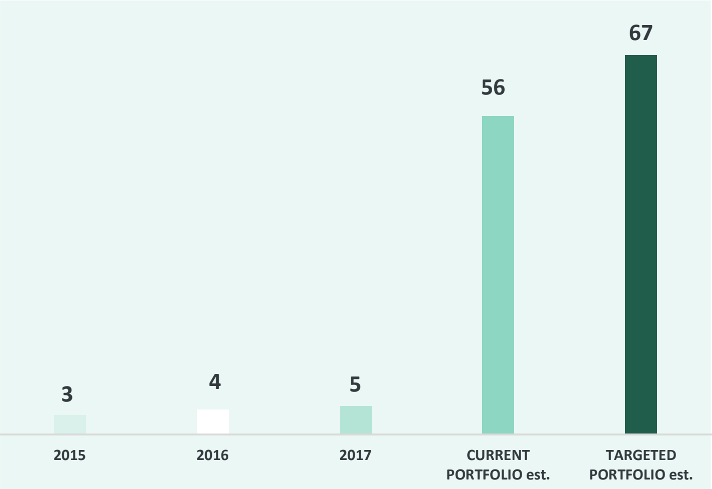
BENEFICIARY SMES



TRAINING PROVIDED (HRS, ANNUAL)



TAXES PAID (EUR M, ANNUAL)



GEEREF PORTFOLIO METRICS
PILLAR 3: SUSTAINABLE DEVELOPMENT

450 000
HOUSEHOLDS BENEFITTING FROM NEW/IMPROVED ENERGY ACCESS

In 2017, GEEREF's funds reached an equivalent of 450 000 beneficiary households in 15 countries through electricity generated from 788 MW of installed capacity. This is up by 34%, or 150 000 households, and from 12 countries in 2016.

Once the funds' projects are fully built up (including pipeline, i.e. 4.2 GW of installed capacity) GEEREF should provide new or improved access to 11.8 million households annually in 24 countries, with the largest portion of households located in Africa, where two countries represent half of the beneficiary households – Uganda (15%) and Kenya (32%). This stems from low household consumption in these countries, where every new MWh generated impacts a high number household beneficiaries (for instance 0.6 MWh in Uganda per household compared to 20.5 MWh per household in South Africa).

7 200
EMPLOYEES

In 2017, GEEREF's projects employed around 7 200 people. A majority of the employees were on temporary contracts (65%) and most were located in Uganda (27%), India (20%) and the Philippines (16%).

The largest portion of labour (47%) was employed during construction, followed by operations (19%) and development (22%). 66% of temporary labour was hired during construction and 28% for the operational phase. Permanent labour was mostly employed in the development (54%) and operational (37%) stages.

The vast majority of all employees were male (88%). A majority (75%) of female employees were in permanent positions and engaged in the development (58%) and operational stages (21%) of projects. 21% of women were engaged in construction.

Importantly, a large number of the funds' projects are located in overlooked rural areas, where employment has a significant catalytic effect that trickles into and benefits the wider rural economy.

In addition, GEEREF funds employed 181 employees directly at a fund level, including 54 women. 13% of fund-level partners/directors are women.

46 500
TRAINING HOURS

Most of the training provided included health and safety training, technical training and environmental and social compliance training. Most of the training hours (50%) were given on operational projects.

It is expected that, once all the projects that are currently under development and construction reach their operational phase, 28 500 hours of training will have been provided annually. The run-rate figure is lower than the actual 2017 figure as less training is required during operation of projects than during construction.

5 MILLION
TAXES PAID

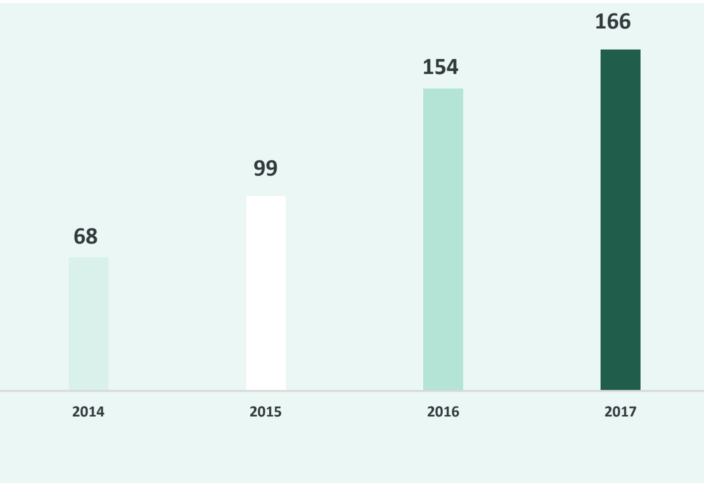
In 2017, GEEREF-supported projects contributed EUR 5m in taxes to national governments. Clean energy infrastructure receives beneficial tax treatment in some countries of our investments to incentivise investors' participation in and the expansion of the sector.

The relatively low level of taxes paid in 2017 reflects the fact that the majority of GEEREF's projects are either in development or construction.

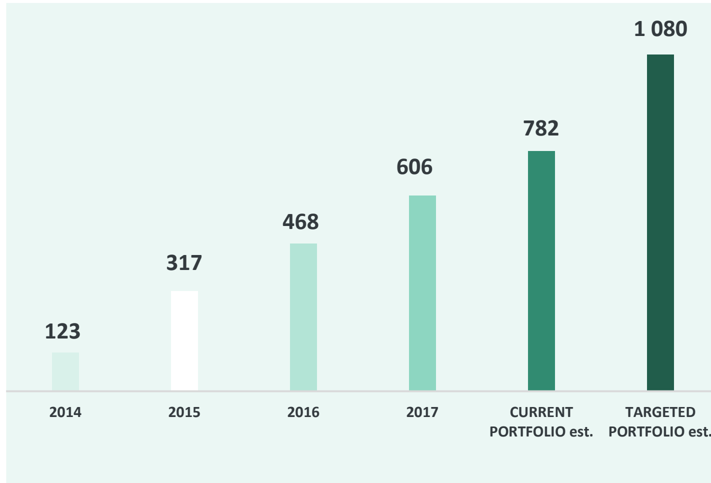
GEEREF PORTFOLIO METRICS

PILLAR 4: FINANCIAL LEVERAGE

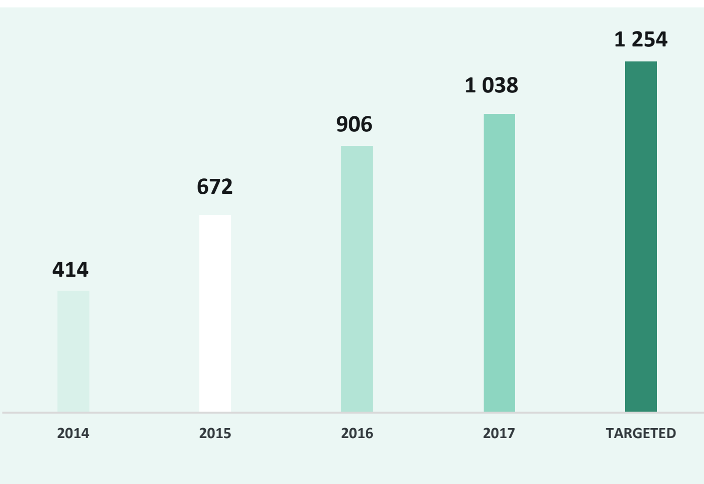
GEEREF COMMITMENTS TO FUNDS (EUR M)



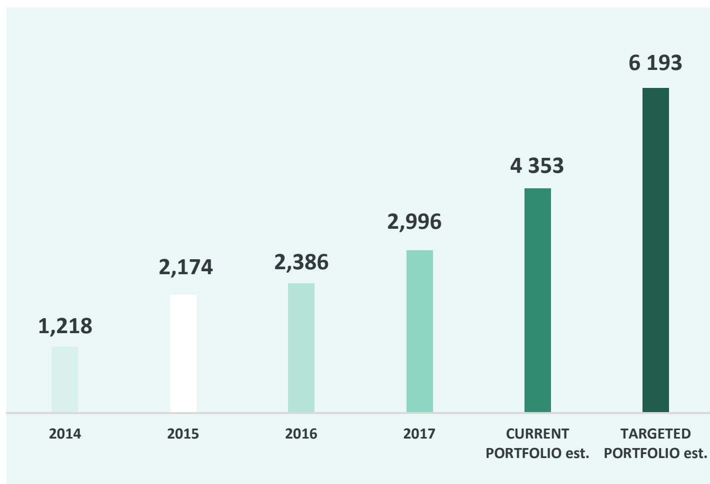
FUNDS' COMMITMENTS TO PROJECTS (EUR M)



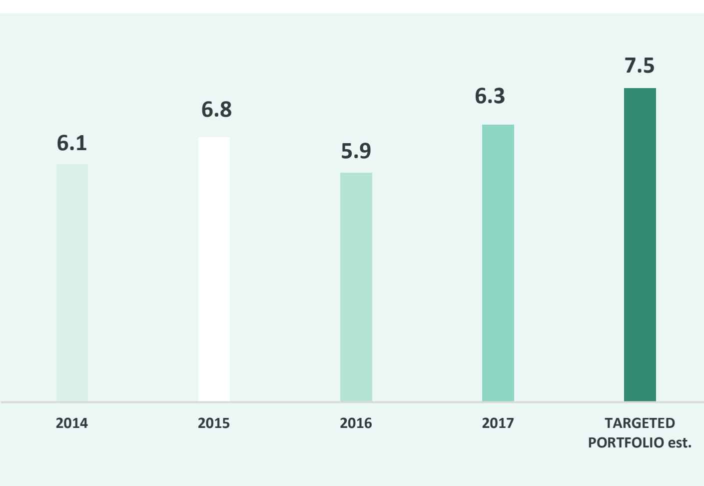
TOTAL RAISED BY GEEREF FUNDS (EUR M)[1]



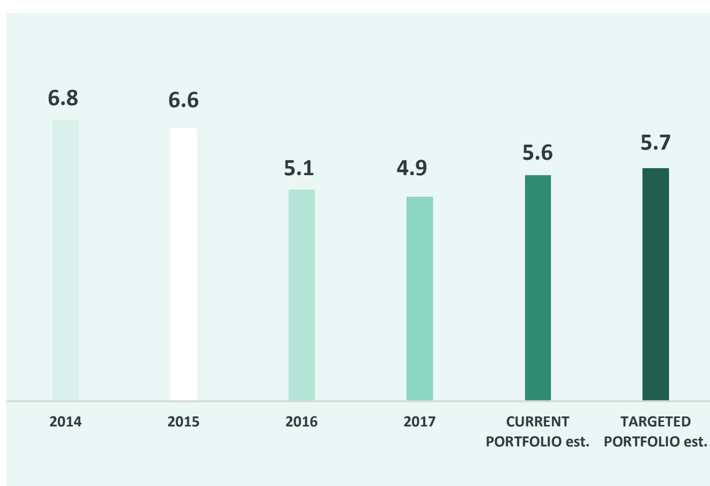
TOTAL PROJECT FINANCE COMMITTED (EUR M)



FUND MULTIPLIER



PROJECT MULTIPLIER

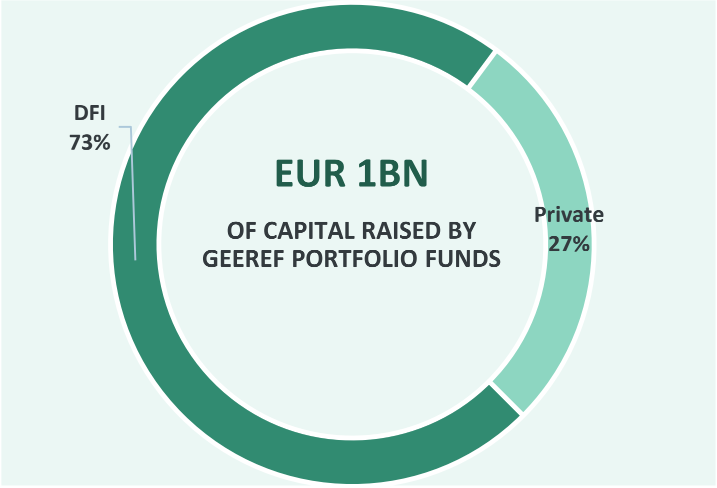


[1] Including GEEREF commitments

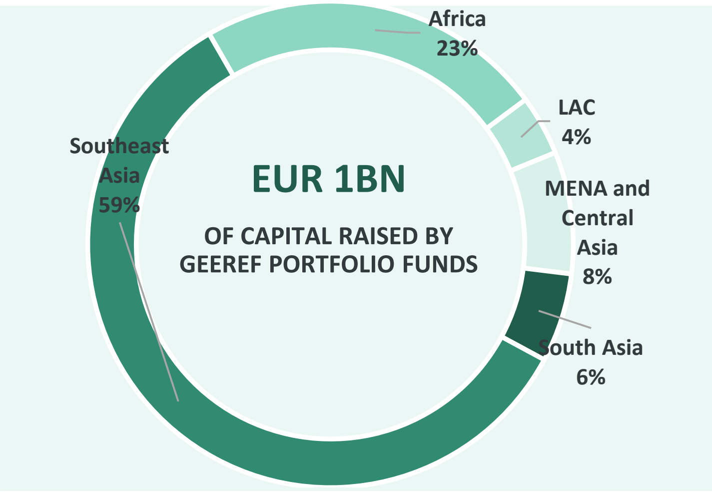
GEEREF PORTFOLIO METRICS

PILLAR 4: FINANCIAL LEVERAGE

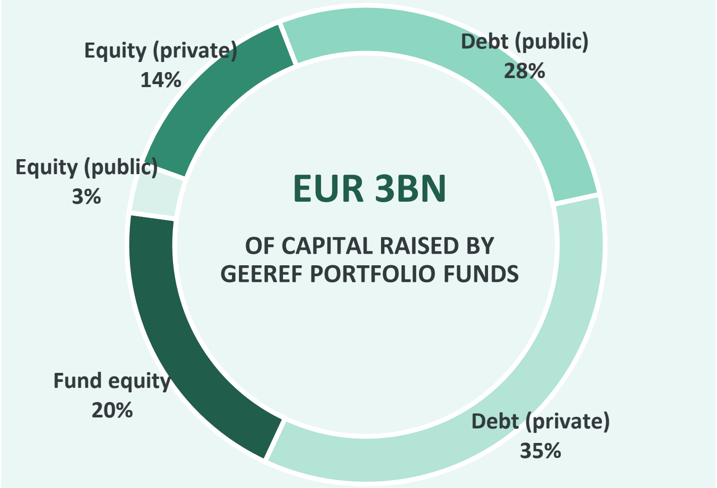
CAPITAL MOBILISATION AT FUND-LEVEL, BY FUNDING SOURCE



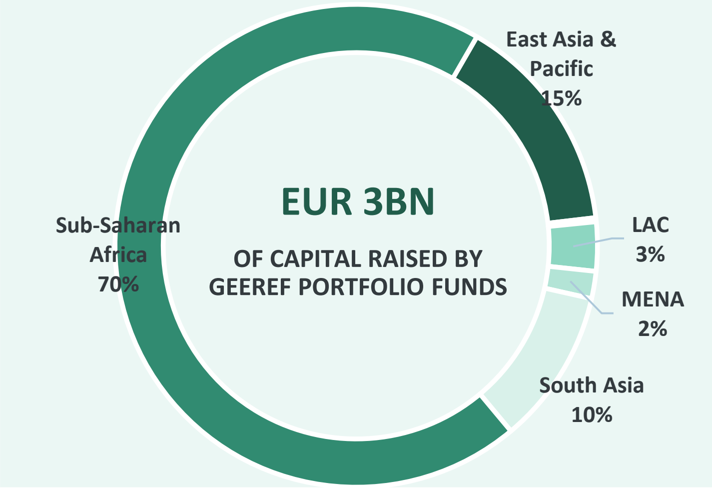
PRIVATE CAPITAL MOBILISATION AT A FUND LEVEL, BY GEOGRAPHY



CAPITAL MOBILISATION AT A PROJECT LEVEL, BY FINANCIAL INSTRUMENT & SOURCE



CAPITAL MOBILISATION AT A PROJECT LEVEL, BY GEOGRAPHY



DAM NAI WIND PROJECT PHASE 2 TURBINE BLADE ARRIVAL AT CAM RANH PORT, VIETNAM, ARMSTRONG

[1] Including GEEREF commitments

GEEREF PORTFOLIO METRICS
PILLAR 4: FINANCIAL LEVERAGE

GEEREF LEVEL

EUR 222M
SIZE OF GEEREF

Public investors committed EUR 112m to GEEREF, which mobilised a further EUR 110m of private investor commitments.

At the end of 2017, GEEREF's portfolio consisted of EUR 166m of commitments to 13 funds.

FUND LEVEL

EUR 1BN
TOTAL RAISED BY FUND MANAGERS AS A RESULT OF GEEREF'S COMMITMENT

Based on GEEREF's commitment of EUR 166m, fund managers have raised a total of EUR ~1bn. This translates into a fund-level multiplier of 6.3x, an increase compared to the 2016 multiplier of 5.9x. The slight increase in the fund multiplier is mostly driven by a successful final closing of REAF II, where the fund manager was able to raise EUR 50m on the back of GEEREF's EUR 14.4m commitment. As of the end of 2017, three of GEEREF's funds were still fundraising. It is expected that once these funds reach final closings, the fund-level multiplier will increase to 7.2x.

A vast majority of the capital raised as of the end of 2017 – 73% – comes from Development Finance Institutions (DFIs) such as the Dutch Development Bank (FMO), the UK development finance institution CDC Group, and International Finance Corporation (IFC). 27% comes from a diversified pool of private investors (asset managers, impact investors, and others). This is a 4% increase as compared to 2016, demonstrating a larger appetite from private investors for the asset class. At the time of this report, Asia received 59% of private capital catalysed by GEEREF.

International organisations have been working on a harmonised approach to calculating financial mobilisation. GEEREF has been reviewing the approaches of the OECD and a set of Multilateral Development Banks. However, their approaches do not fully capture the full scope of the capital mobilisation of a vehicle like GEEREF. For example, the OECD's approach focuses solely on the amount of private capital mobilised and only at a fund level. It also attributes the private capital mobilised to each of the DFIs investing in a fund based on their share in a fund. Using the OECD methodology, GEEREF would have mobilised a total of EUR 30m of private capital at an investee fund level between 2012 and 2016 and in 2017, GEEREF would have mobilised an additional EUR 15m of private capital.

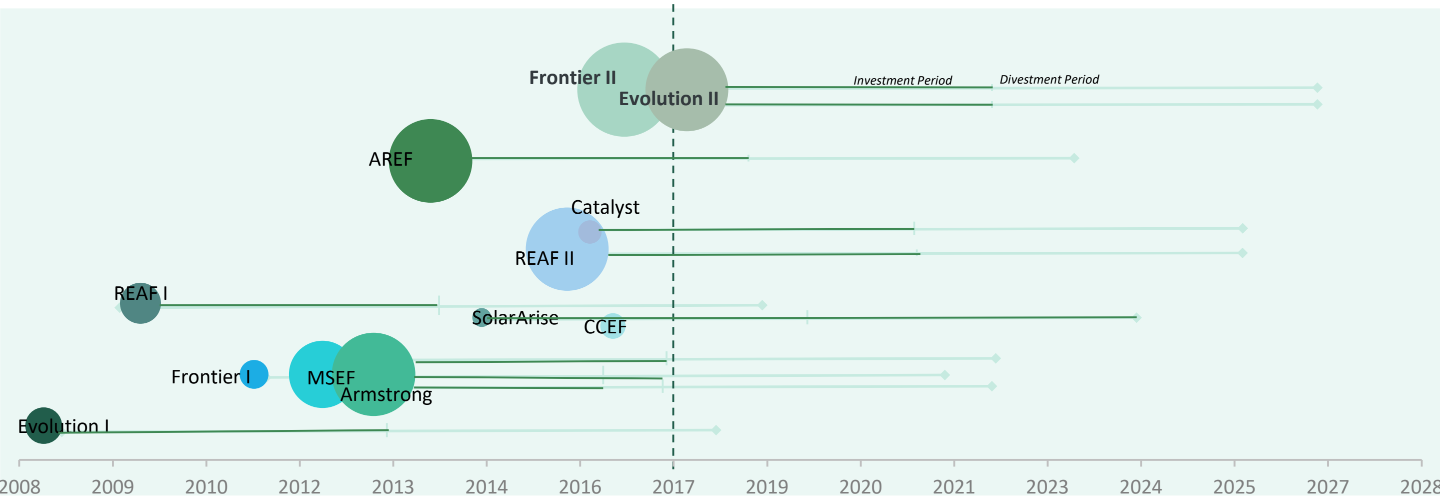
PROJECT-LEVEL

EUR 3BN
OF PROJECT FINANCING RAISED

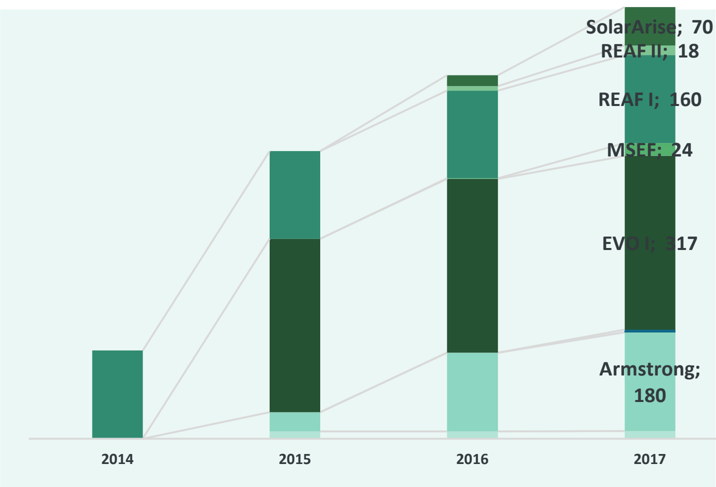
By year-end 2017, the final cost of projects developed by GEEREF fund managers reached EUR 3bn, 20% of which represents their equity contribution and 17% represents the equity contribution of other, mostly private, investors. The remaining 63% of project financing comes from lenders, almost evenly split between DFIs, national development banks and equivalent and private local banks.

The total capital mobilised increased by EUR 0.7bn compared to 2016 but the multiplier decreased from 5.1x to 4.9x. This is driven by the immaturity of some of the project portfolios of the latest vintages (e.g. Evolution II, REAF II, CCEF, Catalyst). In addition, funds have been increasingly performing all-equity financing of underlying projects. Based on forecasts provided by these portfolio funds, once portfolios mature and all portfolio and pipeline projects reach financial close, the multiplier is expected to increase to 5.7x.

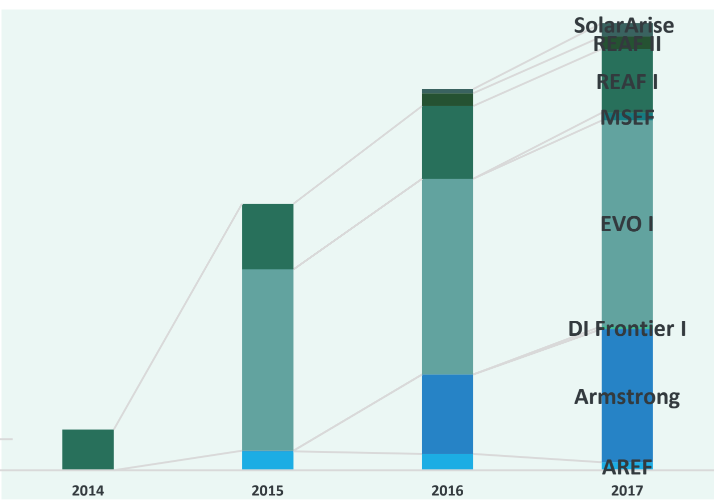
GEEREF PORTFOLIO METRICS
FUND IMPACT FIGURES CONTRIBUTION ANALYSIS



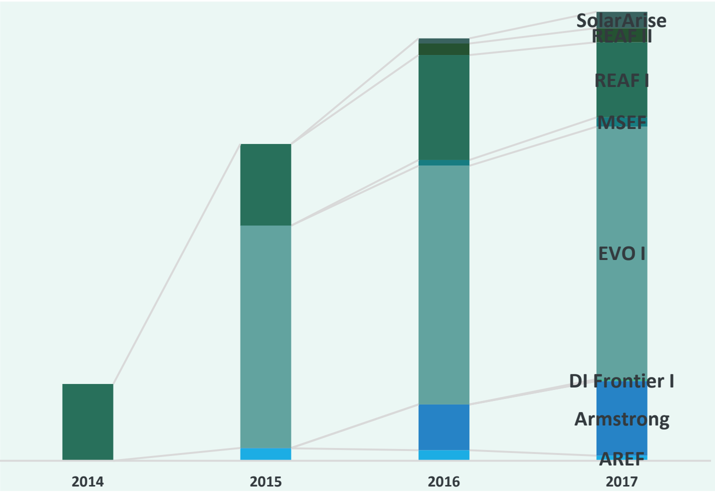
INSTALLED CAPACITY (MW, PER FUND)



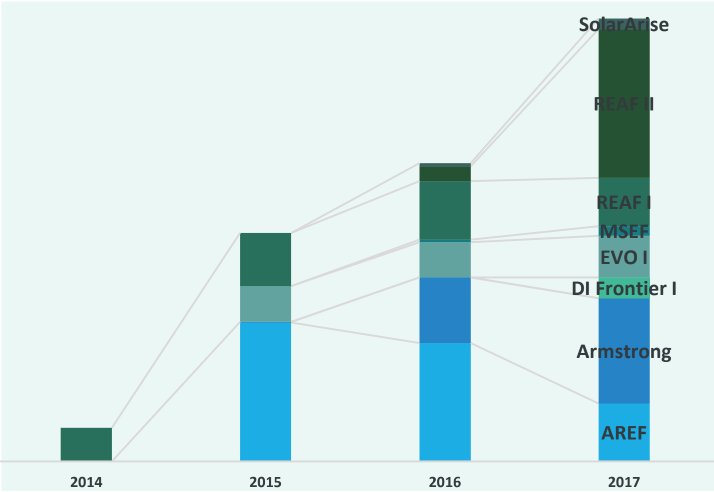
ELECTRICITY GENERATED (MWH, PER FUND)



GHG MITIGATION (TCO2EQ, PER FUND)



BENEFICIARY HOUSEHOLDS (#, PER FUND)



GEEREF IMPACT THEME: LAND ACQUISITION

LAND ACQUISITION

COMMON CHALLENGES AND EXAMPLES FROM GEEREF PORTFOLIO

How do GEEREF fund managers address this sensitive issue on the ground?

Land acquisition is a challenging stage of project development but can also be seen an opportunity to improve local conditions

Almost all of GEEREF's funds need to secure land locally to develop projects, either through lease or acquisition, with the latter being the most common.

Land acquisition often represents one of major operational challenges for fund managers and project developers. It may also be a life-altering event for local communities as land represents a key element for self-identity and socioeconomic status.

The land acquisition might entail negative consequences for local communities, including involuntary resettlement (physical and/or economic). As such, it requires a very prudent approach by GEEREF's fund managers and project developers.

The EIB and other DFIs have developed compulsory standards and provide guidance to enforce a sound implementation of those standards as well as to ensure a fair and efficient process for developers, fund managers, and affected communities. Application of the above creates a win-win situation: improved livelihoods for people affected by resettlement and a cost-effective and timely project implementation for fund managers.

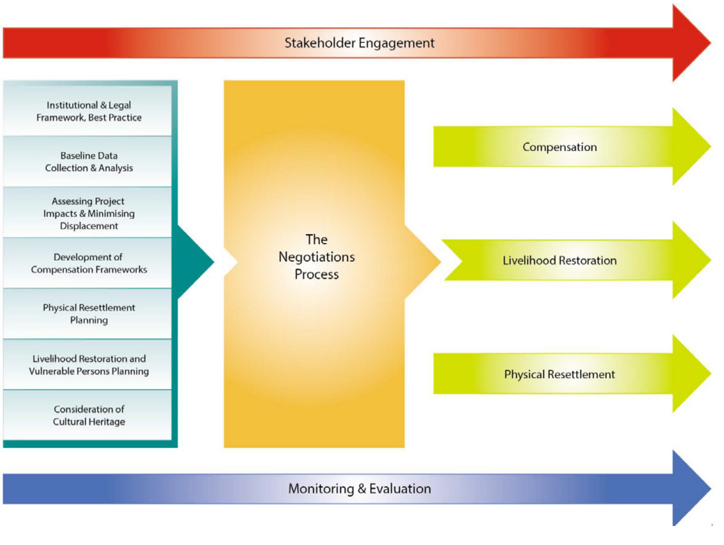
The following pages present specific challenges and examples that GEEREF fund managers face in this process, ranging from unclear land tenure right to difficulties in establishing a fair valuation for the land. GEEREF portfolio provides interesting examples from various regions and project types.

Land acquisition process

In the case of involuntary resettlement (physical or economic), the land acquisition (purchase or lease) process includes:
- consultation with land owners
- survey of land/mapping
- valuation of property
- classification of Project Affected People (PAPs) and land owners, as per EIB standard 6 (equivalent to IFC PS 5)
- agreement with the PAPs (local legal advisors)
- appropriate compensation, livelihood restoration and physical resettlement
- ongoing monitoring and valuation

In the case of a willing seller-willing buyer transaction, comprehensive due diligence also applies, ensuring a fair and transparent process with mechanisms to address grievances from local communities.

Component of the involuntary resettlement process



Relevant EIB E&S standards apply throughout the involuntary resettlement process, helping fund managers to improve their E&S performance through the implementation of sound environmental and social practices, transparency and accountability.

- **Standard 1: Assessment and Management of Environmental and Social Impacts and Risks**
- **Standard 2: Pollution**
- **Standard 3: Biodiversity & Ecosystems**
- **Standard 4: Climate**
- **Standard 5: Cultural Heritage**
- **Standard 6: Involuntary Resettlement**
- **Standard 7: Rights and Interests of Vulnerable Population Groups**
- **Standard 8: Labour Standards**
- **Standard 9: Occupational and Public Health, Safety and Security**
- **Standard 10: Stakeholder Engagement**

LAND ACQUISITION

COMMON CHALLENGES AND EXAMPLES FROM THE GEEREF PORTFOLIO

The most common challenges faced by fund managers in the process of acquiring land include:

CHALLENGE	EXAMPLE FROM FUND
1. Issues with the local **legal regulation,** especially regarding **land tenure rights:** Unclear land ownership and tenure rights (customary rights vs statutory rights) Ownership of the land restricted to the household head, including in some in patriarchal tribes Lengthy public approval processes to secure land tenure rights Weak enforceability of land sale contracts	*"We have encountered instances where the land is not titled or where land is titled, you encounter two individuals/entities claiming ownership to the same piece of land. Some even have separate valid certificates to prove ownership to the same land. Proving legal ownership becomes a cumbersome and lengthy legal process. In addition, bureaucratic delays associated with the transfer of ownership within the government agencies affect the release of land for project execution. The project could also affect informal settlers. For instance, the Kikagati project had to be categorised as category A due to the over 600 undocumented settlers who were farming illegally within the riparian land that required compensation and relocation despite the affected land largely being owned by the Ugandan government through the National Environmental Management Authority."* AREF (Sub-Saharan Africa)
2. **Environmental matters**, as the project development might lead to potential negative impacts on the land	*"The steep terrain in which projects are located means that protecting land from degradation through erosion, rock falls and spoil material tipping is hard to manage. This has led to a number of grievances, and the project has had to compensate landowners for damage to land, structures and/or crops." Frontier Energy (East Africa)*
3. Agreement on the **land valuation and the compensation mechanism**	*"During the compensation process, it is common to receive exaggerated claims greater than the actual land and this requires detailed surveys to determine the actual and current farm sizes."* AREF (Sub-Saharan Africa)
4. Handling **grievance mechanisms from local communities**	*"When displacement cannot be avoided, the developer will generally offer displaced communities and persons compensation for loss of assets at full replacement cost and other assistance to help them improve or restore their standards of living or livelihoods, as provided in EIB standard 6 or IFC PS5. However, different types of land can be compensated at different rates, and allocations may lead to objections, disputes and/or grievances. It is therefore of the utmost importance that Evolution I follows international best practice guidelines and ensures that portfolio companies implement transparent and consistent compensation procedures, as well as robust stakeholder engagement processes, where applicable." Evolution I (South Africa)*
5. Change of **land use** and convoluted zoning of land (fragmented)	*"By law we have to convert the acquired land into non-agricultural land to use it for setting up a solar plant. In some states, the process of conversion is time consuming." Solar Arise (India)*

LAND ACQUISITION

COMMON CHALLENGES AND EXAMPLES FROM THE GEEREF PORTFOLIO

6. Agreement between community members on livelihood restoration programmes	*"Building consensus between competing ideas within the community is a significant challenge when identifying livelihood restoration programmes. Where livelihood support projects have been set up with a community management structure, they tend to not perform well due to the lack of commitment among the members selected. A case in point is the sustainable community charcoal production set up by APSD. APSD set up community-owned and managed fast growing acacia plantations that would be processed in efficient community charcoal kilns and sold to earn an income. The management of the plantation faltered due to competing ideas. Poor management resulted in the plantations being affected by fires that made the projects not as successful as envisaged. Measures are being considered regarding how to optimise the projects and ensure that the community benefits." AREF (Africa)*
7. **Interaction with local authorities** might be challenging, as they might not be aware of the international standards implemented and lack proper incentives to be engaged	*"Local authorities often aren't aware of the international standards that are followed, therefore when local authorities are leading the land acquisition process it can be difficult to steer them in a direction consistent with EIB standard 6 or IFC PS 5. This can be solved by proper engagement beforehand and guiding the authorities each step of the way. It means that even though this is a government-led land acquisition process, it requires the project team to be very involved at each step." REAFII (South East Asia)*
8. **Political interference,** as politicians might try to claim ownership of the job creation due to the project development	*"As part of the engagement process, political interests try to capitalise on the land acquisition process as well as the project activities, especially the community development programmes and the ability to create local employment opportunities, as an opportunity to seek political mileage."* AREF (Sub-Saharan Africa) *"In Vietnam, the Government is responsible for land acquisition and the compensation process for approved projects of "national importance", including energy projects. Armstrong and our developers must collaborate with them to try to improve the process. We aim to increase transparency, speed, and consultation with the affected people, and we also usually provide additional compensation in many cases. The extent of collaboration permitted depends on the particular provincial GOV agency in charge. We aim to achieve compliance with IFC PS5 but must also work within the GOV-mandated process."* Armstrong (South East Asia) *"We have seen cases where a land acquisition process can go wrong when there are political influences involved. This can be very difficult to manoeuvre as the sensitivities surrounding the process can be high. This requires increased engagement with the community and authorities while not taking political sides. Additionally, documentation and proper records are even more important in this instance as on many occasions an offer that has been accepted can be retracted due to political influences." REAF II (South East Asia)*

LAND ACQUISITION

COMMON CHALLENGES AND EXAMPLES FROM THE GEEREF PORTFOLIO

Lessons learned from Frontier Energy's approach to land acquisition

1. Active ongoing community and public engagement during the land acquisition process (example of Siti 1 and 2)

Engaging the whole household

- While land might be owned in specific patriarchal tribes by the male head of household (such as the Sabiny tribe in Eastern Uganda where Siti 1 and 2 are located), partners, wives and children might not be involved in the process of land sale.

- Frontier implements international best practices and always ensures that all processes – not just disclosure – include spouses. The Frontier team approaches these gender imbalances with great care, so as to neither alienate the women PAPs from their families and communities nor undermine gender relations and balance. The Frontier team rather tries to engage women so that their opinions provide input in the decision-making together with, or on behalf of, their spouses and families.

Proper disclosure

- The Frontier team systematically ensures that community liaison officers dealing with disclosures to PAPs are sensitive to local beliefs, while also ensuring everyone is informed on projects' rational and implementation processes, including land acquisition.

Getting local support

- Frontier continuously engages local leaders in support of projects to raise awareness and ensure the people in their communities are familiar with the applied legal processes available to protect their rights.

- As a private developer, engaging with public authorities might also be challenging. Hence it is critical to engage them at an early stage and fully inform them concerning the project and its impacts.

Proactive supervision and monitoring

- Proactive supervision and monitoring of the land acquisition process is key to ensuring that the commitments and limits set during the engagement process are maintained. Engagement is an ongoing, two-way communication process that serves to foster a relationship of confidence and mutual trust between the project managers and the communities concerned.

LAND ACQUISITION

COMMON CHALLENGES AND EXAMPLES FROM THE GEEREF PORTFOLIO

2. Ensuring the fairness of the compensation mechanism (example of Nyagamasani)

- As part of the compensation process, Frontier favours the replacement of houses over payment in cash, although within a single country such as Uganda, PAPs might have different priorities *("For example, the majority of PAPs opted for cash compensation in western Uganda (Lubilia site), while on our eastern Uganda projects (Siti I&II), they opted for land-for-land compensation. This difference could be attributed to socioeconomic conditions such as accessibility (or lack thereof) to urban areas, employment opportunities, administrative services, and dependency on agriculture."* Head of E&S at Frontier) .

- In the case of replacement, the PAPs identify their own land, with the support from the project's community liaison officer, and the portfolio company then buys the land for the PAP as a replacement. The Frontier team also assures that the PAP has security of tenure for their newly acquired land, either in the form of a letter from the local authority or a land title.

- As part of the compensation process, Frontier also integrates the **lost income from crops** (coffee/vanilla) into the valuation.

- Rates guiding the compensation mechanism are set by a public assessor and do not always reflect the market price. The team has done its best to ensure that the lost income is valued at the actual market price (crop valuations might not have been reviewed on a regular basis in some countries).

- Frontier also tried to include **cultural compensation** in the replacement cost (where the relocation of graves is concerned for instance), as there is still little guidance on these aspects.

- In addition, the Frontier team has also worked to bring water networks to local communities in which they participated via minor **voluntary land donations**.

- For Frontier, the most challenging issues have been faced when acquiring additional land at an advanced stage of project development when there are only limited options for the fund manager and hence prices are often over-valued.

- Key enablers to agree on the valuation throughout the land acquisition process include **proper public disclosure, ongoing stakeholder engagement and on-time payment.**

LAND ACQUISITION

COMMON CHALLENGES AND EXAMPLES FROM THE GEEREF PORTFOLIO

3. Anticipating the process and its inherent costs as much as possible

- While Resettlement Action Plans provide a rough idea of numbers of PAPs and the land to be acquired, the actual numbers of PAPs and amount of land will be different by the time the project construction commences and could change during construction as well.
- Budgeting for previously unforeseen costs and delays must be taken into account during project feasibility studies as a contingency cost. In addition, Resettlement Action Plans have to be updated on a regular basis to reflect an accurate number of PAPs.

4. Support of local communities (example of Lubilia)

- In addition, **supporting local communities** through active engagement, such as **training** (skills development, health and safety), **waste management and water schemes** for communities as well as **livelihoods restoration plans**.

- Frontier aims to replicate some of the lessons learned at the new sites that the team is developing, while taking into account local traditions.

Trainees learning how to use sewing machines

A community standpipe supplied by the scheme

LAND ACQUISITION

COMMON CHALLENGES AND EXAMPLES FROM THE GEEREF PORTFOLIO

As illustrated through the GEEREF portfolio, key general lessons learned from fund managers through the land acquisition process include:

- **engaging with the local community and local authorities** at the onset to get support at the earliest stages of the project, and then regularly through its planning, designing, construction and operation
- ensuring proper **land mapping** at the earliest stage of due diligence
- engaging with **local legal advisors**
- favouring **land replacement** over payment in cash when possible
- **trying to avoid involuntary resettlement** wherever possible and to minimise its impact on those affected or displaced through mitigation measures
- **fair compensation for improvements to living conditions**
- as well as **restoration, and when possible, improvement of livelihood**
- supporting **security of land tenure** for local communities
- supporting **social activities** for local communities and **enabling the transfer of skills** and competencies
- **providing jobs locally**
- finally, **proactively supervising and monitoring** the land acquisition process is key to ensuring that the commitments and limits set during the engagement process are respected

A balanced and humble approach to land acquisition

- Preserving the **balance** between achieving economic development (be it through the development of renewable energy or energy efficiency projects) and ensuring respect for human rights, and the environmental and social sustainability is demanding.

- On the one hand, a poorly managed land acquisition process can negatively impact the sustainability of the project and negatively impact project sustainability and wellbeing of affected communities, on the other hand, a proactive and interactive process can enhance the outcomes of the project and improve living standards of local communities.

- Anticipating potential issues related to land acquisition during the **due diligence** – at a GEEREF level, and then at a fund manager and portfolio company level –is hence instrumental throughout the key steps of the process (including stakeholder engagement, land mapping, a proper compensation system, restoration of livelihood and ongoing monitoring).

- The EIB proactively tries to integrate the key principles of the **voluntary guidelines** on the responsible governance of tenure (VGGT*) into its due diligence. The guidelines provide guidance on improving the governance of tenure of land (as well as fisheries and forests) with the aim to preserve sustainable social and economic livelihood and to preserve the security of land tenure.

* VGGT (Voluntary Guidelines on the Responsible Governance of Tenure):
www.fao.org/docrep/016/i2801e/i2801e.pdf

ABBREVIATIONS

AML	Anti-money laundering
AREF	Africa Renewable Energy Fund
BEE	Black Economic Empowerment
CAP	Corrective Action Plan
CAPEX	Capital Expenditure
CO2	Carbon dioxide
CSR	Corporate Social Responsibility
DFI	Development finance institution
EC	European Commission
EE	Energy Efficiency
EELAF	Emerging Energy Latin America Fund
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIF	European Investment Fund
EMPEA	Emerging Markets Private Equity Association
EPA	U.S. Environment Protection Fund
EPC	Engineering, procurement and construction
E&S	Environmental and social
ESG	Environmental, social and governance
ESIA	Environmental and social impact assessment
ESMP	Environmental and social management plan
ESMS	Environmental and social management system
EU	European Union
GEEREF	Global Energy Efficiency and Renewable Energy Fund
GHG	Greenhouse gas
H&S	Health and Safety
IFC	International Finance Corporation
IPP	Independent power producer
KYC	Know Your Customer
MENA	Middle East and North Africa
MSEF	MGM Sustainable Energy Fund
MW	Megawatt
MWh	Megawatt hour
ODA	Official Development Assistance
PAP	Project-affected People
PE	Private Equity
PPA	Power purchase agreement
PS	Performance Standards
RAP	Resettlement Action Plan
RE	Renewable energy
REAF	Renewable Energy Asia Fund
RFSF	Regional Fund Support Facility
SCAF	Seed Capital Assistance Facility
SDG	Sustainable Development Goals
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure

European Investment Bank
The EU bank

GEEREF
Global Energy Efficiency and Renewable Energy Fund

EUROPEAN INVESTMENT FUND

Global Energy Efficiency and Renewable Energy Fund
European Investment Bank
96-100 Boulevard Konrad Adenauer
L-2950
Luxembourg
www.geeref.com

LUBILIA, UGANDA (FRONTIER I)


European Investment Bank
The EU bank
GEEREF
Global Energy Efficiency and Renewable Energy Fund
EUROPEAN INVESTMENT FUND

GEEREF IMPACT METHODOLOGY

INTRODUCTION

The GEEREF team focuses on backing emerging investment teams active in the renewable energy and energy efficiency sectors that share its values and implement the highest international standards for responsible investment through their businesses and projects. By catalysing nascent managers, GEEREF is able to have a profound bearing upon its funds' strategies and their approaches to impact investing in particular.

GEEREF's approach to impact is two-fold: 1) implement and comply; and 2) quantify and measure. GEEREF requires all its fund managers to implement and comply with the EIB's environmental and social standards, which are outlined in detail in the EIB's *Environmental and Social Practices Handbook*. GEEREF collects impact data from all its fund managers and reports them to investors.

This document sets out the key impact metrics that GEEREF and its funds track across their portfolio of investments. These metrics fall within four categories in line with GEEREF's policy objectives:

PILLAR 1: ENERGY
PILLAR 2: ENVIRONMENT/CLIMATE MITIGATION
PILLAR 3: SUSTAINABLE DEVELOPMENT
PILLAR 4: FINANCIAL LEVERAGE

The metrics are calculated both on the actual results of portfolio projects in the reporting year and for the projected economic lifetimes of the projects. The metrics are reported annually in GEEREF's impact report with additional quantitative information on the impacts of the projects financed.

GEEREF is committed to the continued pursuit of best practice in impact reporting and welcomes all feedback.

The GEEREF team

METHODOLOGY

All impact data are collected annually from GEEREF's fund managers and are analysed by the GEEREF team. The report accounts for data and results for the entirety of each project, rather than a pro rata share of them, with the underlying assumption that the projects would not have been financed without GEEREF support. The data is reported on an annual basis as a snapshot of the status at year-end.

The analysis comprises three layers of data:

Actual reported values from the relevant financial year from each of the investments in each portfolio in the reporting period. This may include assets that have been fully operational for the whole financial year, partially operational or still in development or under construction. Please note that as of 2015 we have tracked committed capital in order to reflect its expected mobilisation impact. The "actual" figures present total realised figures as of the end of the year.

Current portfolio assumes that all projects in the existing portfolio (under development, construction and in operation) are fully operational for a full year. The figure provides a snapshot of the expected annual impact of the projects that are in the portfolio once operational.

Targeted portfolio assumes that all projects in the current portfolio and in pipeline are fully operational for a full year. It provides a snapshot of the expected annual impact of all the projects that GEEREF's funds will end up supporting.

Both current portfolio and targeted portfolio metrics are modelled and use total capital commitments, project sizes and technologies, capex and capacity factors in order to derive a set of notional values for the portfolio. It is to be noted that these figures are very sensitive to the evolution of some of the assumptions, including the grid factor and the average consumption per household per country. We update these assumptions on an annual basis.

The data collection exercise is divided into four pillars: energy, environment, sustainable development and financial leverage. While some metrics in the energy, environment and sustainable development pillars are reported as provided by the fund managers, others are calculated by the GFO based using inputs from fund managers and from external resources. The latter category includes these indicators: households impacted and emissions reduced. The number of households impacted is calculated by dividing total electricity generated (as reported by the fund manager) by average household consumption in a country (as provided by the World Bank). The amount of emissions reduced is calculated by multiplying electricity generated (as reported by the fund manager) by a country grid emission factor (as provided by the EIB). For the fourth pillar, financial leverage, GEEREF reports on the amount of capital mobilised (both private and public) on three layers: project level, fund level and GEEREF level. The project level multiplier assesses the total project capex (including fund equity, co-investment and debt) relative to the equity invested by the fund manager. The fund level multiplier assesses the total commitments that a fund has raised from all of its investors relative to the initial commitment made by GEEREF. The GEEREF level multiplier is the project level multiplier times the fund level multiplier.

A final calculation (ODA impact) shows the impact achieved by ODA investors who catalysed the private sector limited partners. This calculates the ratio of public to total commitments and derives a final multiplier for all capital invested through GEEREF's portfolio projects relative to the initial ODA commitments to GEEREF.

Please note, GEEREF reports to the OECD on the amount of private finance mobilised by its investments on an annual basis. The OECD methodology can be found here. The above-described GEEREF methodology differs from the OECD methodology in few important ways. The OECD methodology focuses on private capital mobilisation while GEEREF accounts both for public and private capital mobilisation. In addition, the OECD only accounts for capital mobilised on a fund level and ignores the mobilisation effect on a project level.

PILLAR 1: ENERGY

IMPACT METRICS	
INSTALLED CAPACITY	Definition: The amount of energy generating capacity installed and operational (in MWs). *Actual* refers to known figures for the financial year. *Current portfolio* refers to the expected capacity installed once all the projects that are currently under development and construction are fully operational. *Future portfolio* refers to the expected capacity installed for the full portfolio once all current portfolio and pipeline projects are operational.
TOTAL ELECTRICITY PRODUCED	Definition: Renewable energy output (in MWhs) annually. *Actual* refers to known figures for the financial year as reported by the fund managers. *Current portfolio* refers to expected annual output once the existing projects are fully operational. *Targeted portfolio* refers to the expected annual output once all current portfolio and pipeline projects are operational. The *current portfolio* and *targeted portfolio* figures are calculated by GEEREF by multiplying installed capacity by project's capacity factor and the number of hours in a year (8 760 hours). Fund managers provide capacity factors for each of the underlying projects.
TOTAL ENERGY EFFICIENCY IMPROVEMENT	Definition: The amount of energy savings produced (*in MWhs*) annually. *Actual* refers to known figures for the financial year as reported by the fund managers. *Current portfolio* refers to expected savings once the existing projects are fully operational. *Targeted portfolio* refers to the expected annual savings once all current portfolio and pipeline projects are operational. The *current portfolio* and *targeted portfolio* figures are provided by the fund managers.

PILLAR 2: ENVIRONMENT/CLIMATE MITIGATION

IMPACT METRICS	
NET CO2 EMISSIONS REDUCED	Definition: The amount of net tonnes of CO2 equivalent reduced annually. GEEREF uses the EIB Carbon Footprint Methodology to calculate this metric. It is calculated by multiplying total energy generated by a project by the fossil fuel grid emissions factor of the country where the project is located (see page 34-42 of the Methodology). Any emissions associated with its operations (e.g. CO2 emissions from some geothermal power technologies) are subtracted. *Actual* refers to the figure calculated for the financial year and based on the amount of energy generated by a project as reported by the fund manager. *Current Portfolio* refers to the expected yearly figure once the existing projects are fully operational. *Targeted portfolio* refers to the expected annual savings once all current portfolio and pipeline projects are operational.

PILLAR 3: SUSTAINABLE DEVELOPMENT

IMPACT CRITERIA	
BENEFICIARY HOUSEHOLDS	Definition: The estimated total number of beneficiary households that potentially gain new and/or improved access to modern renewable energy supply as a result of the project. This figure is calculated by dividing total annual electricity generation of the project by the average annual household electricity consumption in the country where the project is located, using data provided by the World Bank and, where these are not available, country statistics. *Actual* refers to number of households benefiting from new/improved energy access figures for the financial year. *Current Portfolio* refers to the expected yearly figure once the existing projects are fully operational.

	Targeted Portfolio refers to the expected annual figure for the full portfolio once all current portfolio and pipeline projects are operational.
BENEFICIARY SMES	Definition: The estimated total number of small and medium-sized businesses with fewer than 250 employees that were involved in the project (including the investee companies of the funds) through a commercial agreement with the investee project company, as reported by the fund managers. *Actual* refers to known figures for the calendar year. *Current Portfolio* refers to the expected yearly figure once the project is fully operational. *Targeted Portfolio* refers to the expected annual figure for the full portfolio once all current portfolio and pipeline projects are operational.
PERMANENT JOBS CREATED (MALE AND FEMALE)	Definition: The number of personnel hired on a full-time basis by the investee project company (this would typically include asset management services such as O&M, accounting and the like), as reported by the fund managers. *Actual* refers to known figures for the calendar year. *Current Portfolio* refers to the expected yearly figure once the project is fully operational. *Targeted Portfolio* refers to the expected annual figure for the full portfolio once all current portfolio and pipeline projects are operational.
TEMPORARY JOBS CREATED (MALE AND FEMALE)	Definition: The number of personnel hired on a temporary basis by the investee project company (this would typically include technical services ahead of construction, construction work and the like), as reported by the fund managers. *Actual* refers to known figures for the calendar year. *Current Portfolio* refers to the expected yearly figure once the project is fully operational. *Targeted Portfolio* refers to the expected annual figure for the full portfolio once all current portfolio and pipeline projects are operational.

TRAINING PROVIDED	Definition: The number of person-hours of work-related training provided by the investee project company, as reported by the fund managers. *Actual* refers to known figures for the calendar year. *Current Portfolio* refers to the expected yearly figure once the project is fully operational. *Targeted Portfolio* refers to the expected annual figure for the full portfolio once all current portfolio and pipeline projects are operational.
TAXES PAID	Definition: The total amount of local corporate tax paid at an investee project company level. *Actual* refers to known figures for the calendar year. *Current Portfolio* refers to the expected yearly figure once the project is fully operational. *Targeted Portfolio* refers to the expected annual figure for the full portfolio once all current portfolio and pipeline projects are operational.

PILLAR 4: FINANCIAL LEVERAGE

IMPACT METRICS	
FUND MULTIPLIER	Definition: The multiple of capital invested by GEEREF into underlying funds to the total capital raised by these funds. The fund multiplier is calculated by dividing the amount of total capital raised by GEEREF's investee funds and dividing the commitments made by GEEREF to investee funds. As of the end of 2017, GEEREF made commitments of EUR 166m to its investee funds. These funds raised a total of EUR ~1bn. This translates into a multiplier of 6.3x. *Actual* refers to known figures for the calendar year. *Targeted Portfolio* refers to the expected figure for the full portfolio once all current portfolio and pipeline projects are operational.

PROJECT MULTIPLIER	Definition: The multiple of capital invested by investee funds over the total final cost of the project. The project multiplier is calculated by dividing the total final cost of a project (equity and debt) by the amount of equity invested by investee funds. As of the end of 2017, GEEREF's investee funds committed EUR 606m to their underlying projects and raised additional equity and debt to finance these projects for a total amount of EUR ~3bn. This translates into a multiplier of 4.9x. *Actual* refers to known figures for the calendar year. *Targeted Portfolio* refers to the expected figure for the full portfolio once all current portfolio and pipeline projects are operational.