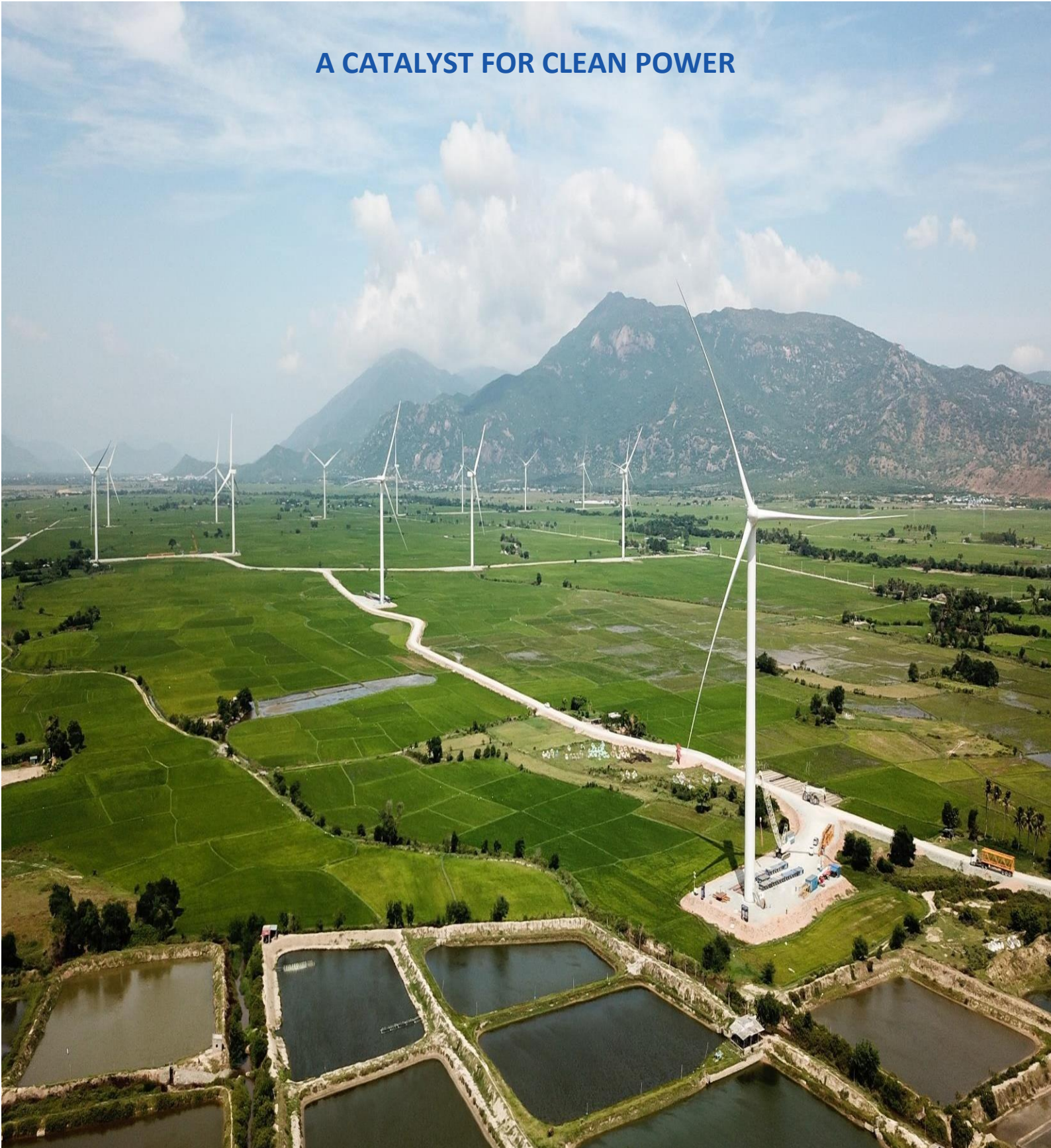


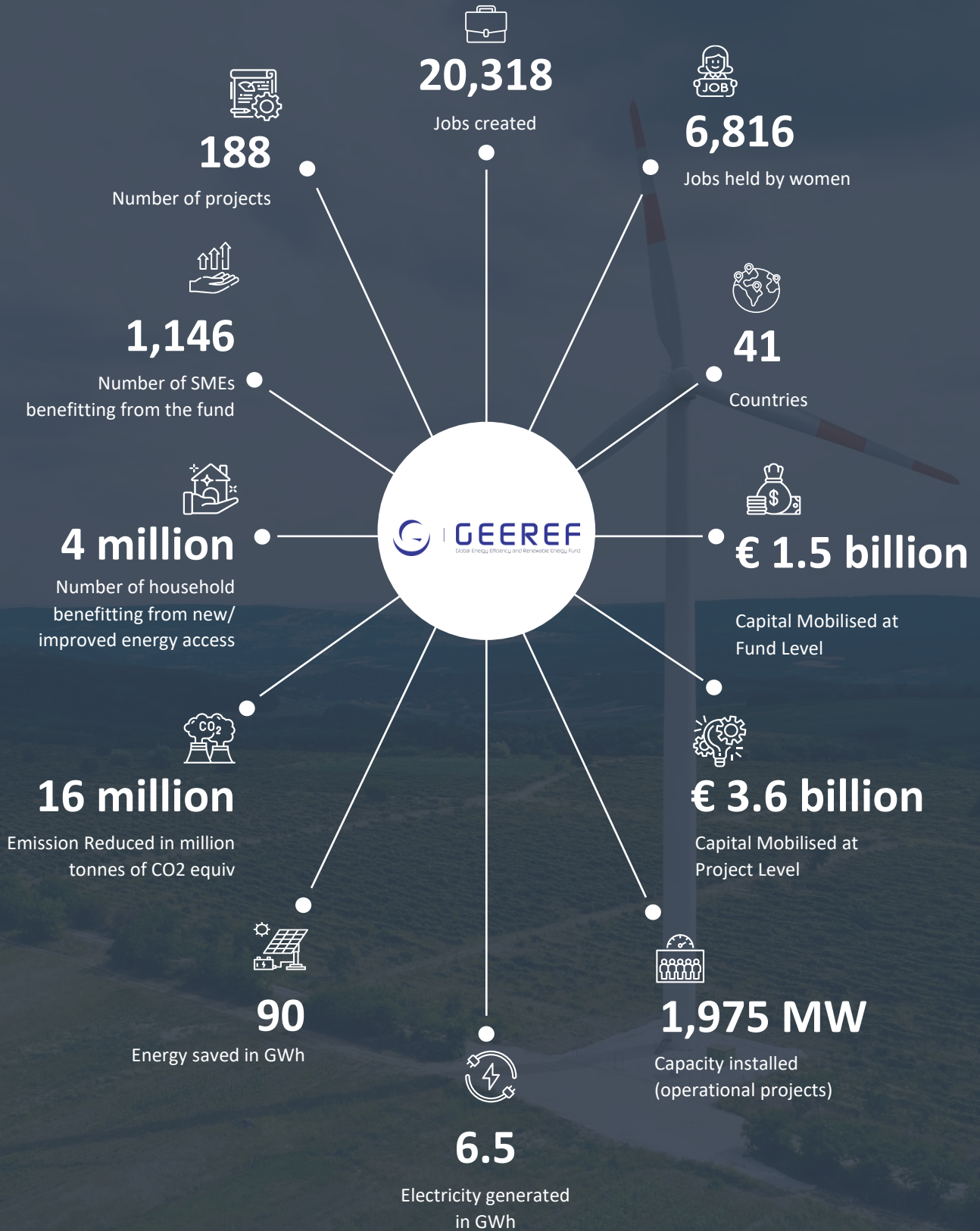
GLOBAL ENERGY EFFICIENCY AND RENEWABLE ENERGY FUND IMPACT REPORT 2021

A CATALYST FOR CLEAN POWER

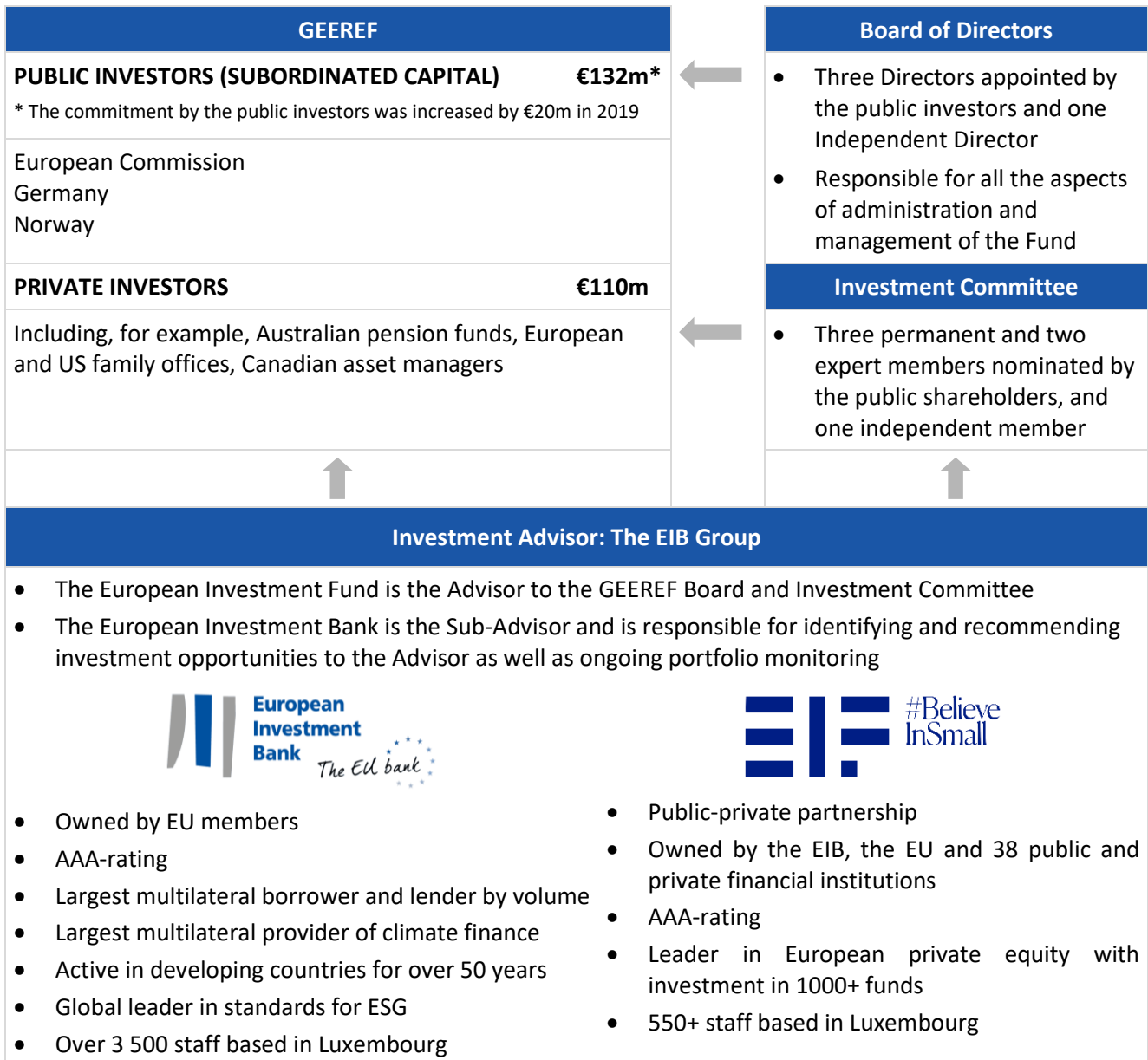


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GEEREF—A PUBLIC–PRIVATE PARTNERSHIP



TRANSFORMATIONAL IMPACTS: IN-COUNTRY HIGHLIGHTS

GEEREF's transformational goal is to create a self-sustaining market for private investment in small-scale renewable energy in Sub-Saharan Africa, with the aim to give millions of people first-time access to energy and plug a financing gap too large for public money to fill. It is working to achieve this by reducing investor risk so that more commercial funds flow in the future in those markets. It does this by:

Undertaking complementary measures in the area in which the project is based and developed.

- The ACHWA 1 & 2 Hydropower plant in Uganda supported the girl scholarship program in the Achwa river area of Uganda. The program was developed because the Achwa River area in Uganda faces significant socio-economic challenges including limited, underdeveloped infrastructure and poor access to healthcare and education.
- The Kikagati Hydropower project enabled the development of a micro-credit programme which supports financial inclusion. The programme proposes low interest finance solutions to communities in both Uganda and Tanzania. Charging a 1.5% interest rate, the programme offers finance at half the interest rate offered by market competitors. The low-interest rate charged is used to cover the operating costs of OMPIA SACCO (a micro-finance Savings & Credit Cooperative Society) and no profits are expected from the scheme. The programme fund is revolving, and members can continue to borrow over time and improve their credit records. As of December 2021, the programme has over 276 total beneficiaries with 60.8 million Uganda Shillings (USD 16 849) provided in loans.



Developing innovative solar and hydropower projects which benefit a wider national objective.

- The Selenkei and Cedate Solar Power project in the Eldoret Uasin County achieved commercial operation date and is currently supplying the national grid in Kenya.
- The 3MW Rwaza 1 Hydropower Project in Rwanda continues to feed electricity into the national grid in Rwanda.
- The Nyamagasani II hydropower project achieved its commercial operation date in 2021 and will also supply the national grid in Uganda.





GEEREF IMPACT STRATEGY A CATALYST FOR CLEAN POWER



GEEREF IMPACT STRATEGY

MOBILIZING CAPITAL FOR CLEAN ENERGY

GEEREF's Strategy: GEEREF is a vehicle that invests in renewable energy and energy efficiency- focused private equity funds and directly into companies. GEEREF's aim is to generate both financial and social returns for its investors and stakeholders. It follows a triple bottom line strategy: People - Planet - Profit.

GEEREF reached the end of its investment period in May 2019 and is fully invested. The last investments made were commitments to ARPF fund. As of the end of 2021, GEEREF had 14 funds, still active in its portfolio across emerging markets in Africa, Asia and Latin America (six funds are still in their investment periods). These have, in turn developed a total of 188 renewable energy and energy efficiency projects, out of which 107 were operational at the end of 2021. GEEREF's approach to financing clean energy expansion combines patient capital investment into infrastructure with specialized technical assistance supporting fund managers and developers. This approach is complemented by a comprehensive impact approach that maximizes the returns for all of its stakeholders – GEEREF's investors as well as the local communities that host each of GEEREF's projects.

Mobilisation of Capital: GEEREF was designed to mobilize high amounts 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 the investee fund-level as well as further down, at the project-level.

INPUTS	CAPITAL RAISED	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	TOTAL CAPITAL DEPLOYED	GEEREF'S INVESTEE FUNDS		
		REAF EVOLUTION ONE DI FRONTIER EELAF II ARMSTRONG MSEF MSEF II AREF	SOLAR ARISE CCEF CATALYST REAF II EVOLUTION II FRONTIER II ARPF	
OUTCOMES	CAPITAL DEPLOYED AT PROJECT LEVEL	FUNDS' UNDERLYING PORTFOLIO PROJECTS		
		FUND EQUITY	EQUITY CO-INVESTMENT	PROJECT DEBT
IMPACTS	OPERATIONAL PROJECTS, INCL. EXITED PROJECTS	DELIVERED UNDER EIB E&S STANDARDS AND GEEREF'S TRIPLE BOTTOM LINE		
		4.4 GW CLEAN ENERGY CAPACITY	6,495 GWh OF ELECTRICITY PRODUCED PER YEAR 90 GWh OF ENERGY SAVED PER YEAR	3.9M TONNES OF CO ₂ EQUIV. TO BE REDUCED PER YEAR
		Only operational projects, including exited projects	EQUALS 4.1M BENEFICIARY HOUSEHOLDS PER YEAR	

GEEREF IMPACT STRATEGY

QUALITATIVE AND QUANTITATIVE IMPACT ASSESSMENT

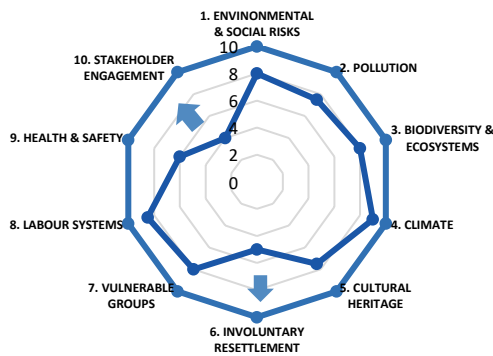
Impact Assessment: GEEREF carries out a twofold approach, which combines qualitative and quantitative assessments, to ensure that its impact objectives and the triple bottom line approach are achieved in all of its investment activities.

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 EIB’s 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 STANDARDS¹



● Investee fund initial score against EIB Standards → GEEREF helps its funds raise standards

¹ The chart is 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, share results with investors and the wider investment community. These impact indicators were agreed upon between GEEREF and the fund managers.

GEEREF IMPACT METRICS AS PROVIDED IN THIS REPORT

PILLAR 1: CLEAN ENERGY	PILLAR 2: ENVIRONMENT/ CLIMATE CHANGE
INSTALLED CAPACITY (MW) ELECTRICITY GENERATED (MWH) ENERGY EFFICIENCY SAVINGS (MWH)	NET EMISSIONS REDUCED (tonnes of CO₂ equiv.)
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 CHAIN

Value added: GEEREF works closely with fund managers at each stage of the 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 review the fund’s environmental and social processes, standards, and staffing plan to ensure alignment with best international practices. GEEREF’s technical assistance facility (RFSF) supported fund managers in upgrading their practices in case of gaps.

Finally, following a fund’s inclusion into GEEREF’s portfolio, GEEREF provides continuous feedback to the fund managers through an active role in the Advisory Board and site visits when necessary. EIB’s technical experts review and enhance the funds’ E&S practices via monitoring.

LIFECYCLE OF GEEREF TRANSACTION

The diagram illustrates the lifecycle of a GEEREF transaction in a clockwise cycle. At the top right is '1. TRANSACTION SOURCING Ongoing'. Moving clockwise to the bottom right is '2. DUE DILIGENCE 3 to 6 months'. At the bottom left is '3. INVESTMENT DECISION & NEGOTIATION 6 to 12 months'. At the top left is '4. POST-INVESTMENT 7 to 10 years'. In the center, the GEEREF logo is displayed above the logos for the European Investment Fund and the European Investment Bank.

STEPS OF GEEREF TRANSACTION	INITIAL FUND STRUCTURING	PROJECT IMPLEMENTATION	ONGOING MONITORING
E&S STANDARDS	<p>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 other).</p> <p>Environmental and Social Management Systems (ESMS) are built within each fund’s management system to manage risks associated with projects and enhance positive outcomes.</p>		
TECHNICAL ASSISTANCE FACILITY	<p>GEEREF’s Regional Fund Support Facility (RFSF), funded by the European Commission, helped nascent fund managers address gaps with recruitment of qualified professionals and the development of investment and monitoring capabilities. The RFSF is now fully deployed and finished operation.</p>		
ADVISORY BOARD	<p>Regular formal and informal supervision to monitor best practice, conflicts of interest, deviations from stated policies, internal issues, strategy, and market context.</p>		
IMPACT REPORTING	<p>GEEREF’s annual impact reporting exercise helps funds maintain focus on Impact and E&S issues. GEEREF’s Impact Report supports greater transparency in Impact Investment and knowledge sharing.</p>		

GEEREF IMPACT STRATEGY

CONTRIBUTING TO SDGS IN DEVELOPING COUNTRIES

GEEREF’s Approach and Sustainable Development Goals:

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 which are mutually reinforcing and create value for GEEREF’s shareholders

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

GEEREF mapped its portfolio to the sustainable development goals (SDGs). Its activities directly contribute to 4 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 indirectly to SDGs 7,8,13 & 17.



Measuring Sustainable Development Goals impact:

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

GEEREF has tried to track its direct contribution to SDGs via its existing metrics, as illustrated later.

2021 GEEREF’S DIRECT SDG CONTRIBUTION	GEEREF’S METRICS	GEEREF’S IMPACT
<p>GEEREF BUILDS UP NEW CLEAN ENERGY CAPACITY</p> 	<p>Capacity installed (GW²) Electricity generated and saved (GWh²)</p>	<p>1.6 GW in development, 0.8 GW in construction, 2 GW in operation 6,495 GWh of electricity generated and 90 GWh of electricity saved</p>
<p>GEEREF CONTRIBUTES TO DECREASING GHG EMISSIONS IN ENERGY AND OTHER INDUSTRIES</p> 	<p>Emissions reduced (tonnes of CO₂ equiv.)</p>	<p>3.9 million tonnes of CO₂ equiv. avoided by operational projects per year</p>
<p>GEEREF CREATES EMPLOYMENT OPPORTUNITIES AND SKILLS TRAINING</p> 	<p>Number of people employed: temporary, permanent, male, female Training delivered (hours)</p>	<p>c. 4k permanent male jobs c. 1.5k permanent female jobs c. 9.5k temporary male jobs c. 5.3k temporary female jobs c. 111k training hours</p>
<p>GEEREF IS A PUBLIC-PRIVATE PARTNERSHIP</p> 		

² 1 G W h = 1 000 M W h, 1 G W = 1 000 M W.



SPEE Solar Project in Egypt, Catalyst

GEEREF IMPACT METRICS

CATALYSING BILLIONS OF EUROS FOR CLEAN POWER

GEEREF PORTFOLIO METRICS

BEHIND THE FIGURES

- All data are **collected annually** from GEEREF's fund managers. 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's support.
- The data is reported on an annual basis.

The analysis is done at the level of the current portfolio of the funds at year-end 2021. This includes reported values from the relevant financial year on each of the active investments in each portfolio as well as assets under construction. Projects already exited/sold by the underlying funds are also included in the reported information, based on the data as last reported and as available.

The portfolio contains a wide variety of projects, ranging from larger-scale renewable energy projects to small solar PV plants for the commercial and industry sector, as well as solar home systems and solar lanterns. In addition, the portfolio grew to its present level over a number of years. This all implies large variations between portfolio projects regarding specific costs, capacity factors and specific GHG emissions avoided, making it difficult to draw general conclusions.

- The data collection is reported along 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 GEEREF Team using inputs from fund managers and external resources.
- The data calculated by the GEEREF Team are sensitive to the evolution of assumptions, including the grid emission factor and the average consumption per household by country.

The number of households impacted is calculated by dividing total electricity generated (as reported by fund managers) by average household consumption in a given country¹.

The amount of emissions reduced is calculated by multiplying electricity generated (as reported by fund manager) by a given country grid emission factor².

- For the fourth pillar: financial leverage, GEEREF reports on the amount of capital mobilized (both private and public) at three levels: project level, fund level and GEEREF level.

The project level multiplier assesses the total project capex (both private and public, 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 investors (both private and public) relative to the initial capital contribution made by GEEREF.

The GEEREF level multiplier is the project level multiplier times the fund level multiplier.

A more detailed explanation of the GEEREF Impact Methodology can be found on GEEREF's website [here](#).

¹ Enerdata, 2014 figures

² https://unfccc.int/sites/default/files/resource/Harmonized_Grid_Emission_factor_data_set.pdf, July 2019 data

GEEREF PORTFOLIO METRICS

PILLAR 1: CLEAN ENERGY

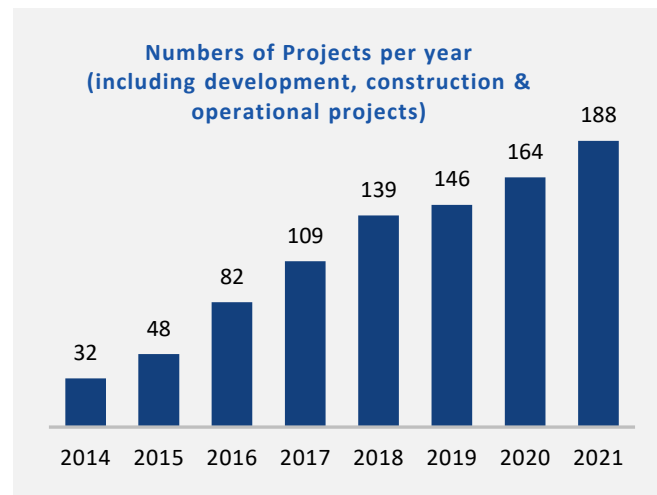
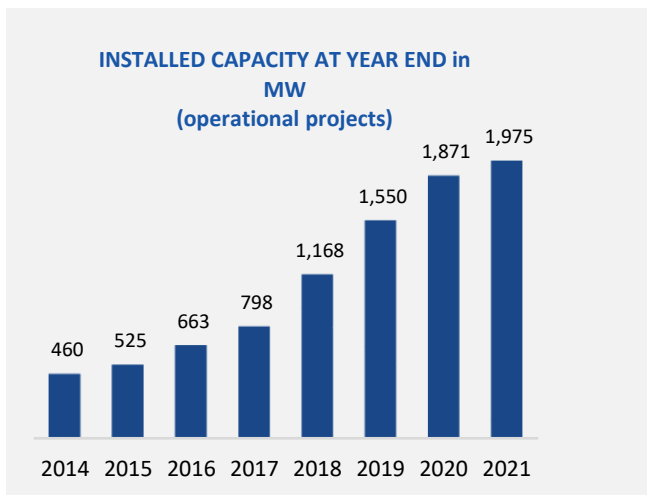
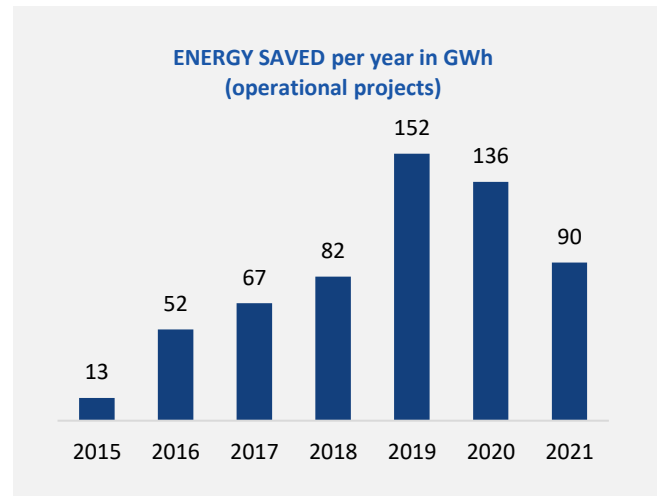
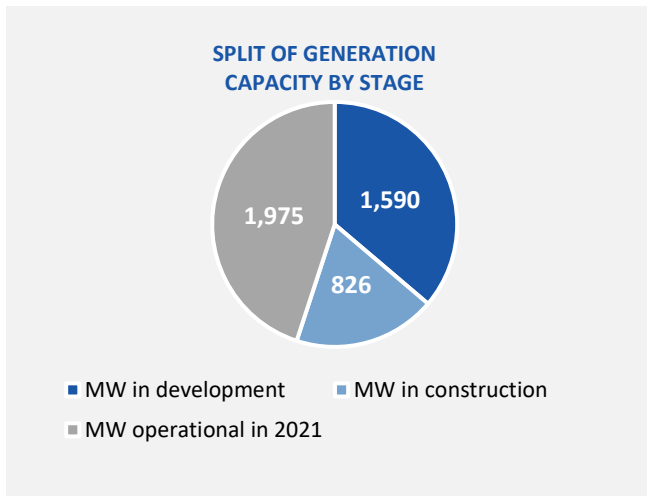
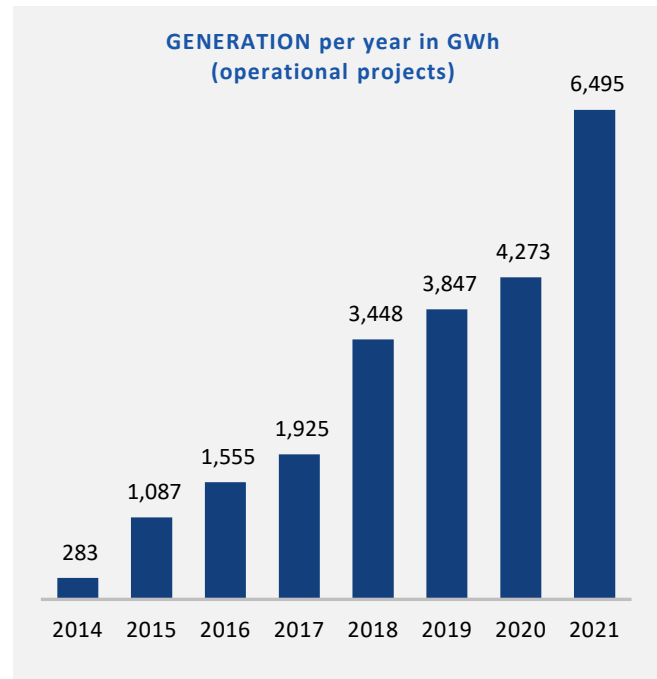
In 2021, GEEREF's underlying funds had about 4.4 GW of capacity of new clean energy capacity in developing countries in different stages.

Given the early-stage focus of GEEREF's funds, about half of this capacity (about 2.4 GW) was still in development or under construction. Still, about 2.0GW was already operational.

The operational projects generated about 6,495 GWh of electricity in 2021.

Energy savings were slightly lower in 2021 due to COVID restrictions and operational implications in some projects.

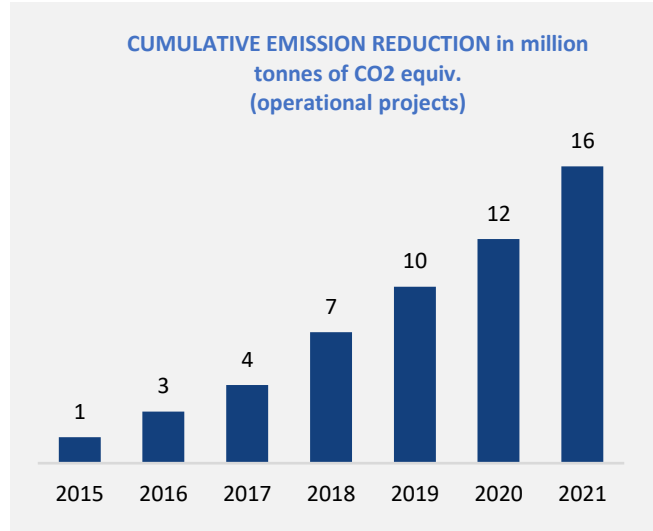
Despite the marginal increase in operational projects in 2021, there was a significant increase on energy generation in 2021, and this is attributed to lagged energy generation in 2020 in the context of the COVID-19 pandemic.



GEEREF PORTFOLIO METRICS

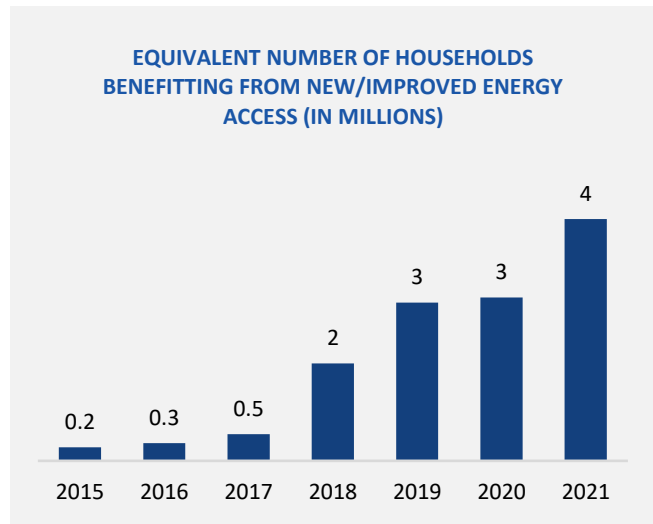
PILLARS 2 AND 3: CLIMATE MITIGATION/ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

As of end 2021, GEEREF's operational projects (including projects exited by the funds) had a climate mitigation effect of c. 16.0m tonnes CO2 equiv. (cumulatively since 2015).

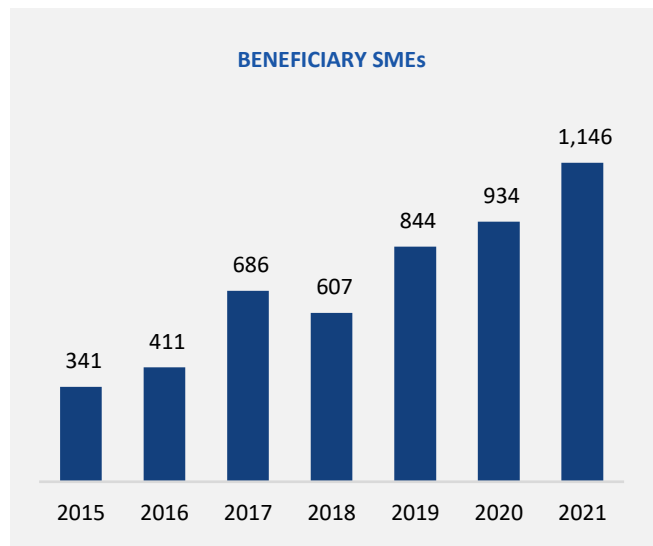


The 6.5 GWh of electricity generated and 90 GWh saved by GEEREF's operational projects in 2021 is equivalent to the energy consumption of c. 4.1 million households which was higher in 2021.

The reason for the increase is the ease of COVID-19 restriction which helped in the project accessibility to more households



GEEREF's operational projects, projects under construction and pipeline projects benefited 1,146 beneficiary SMEs in 2021.



GEEREF PORTFOLIO METRICS

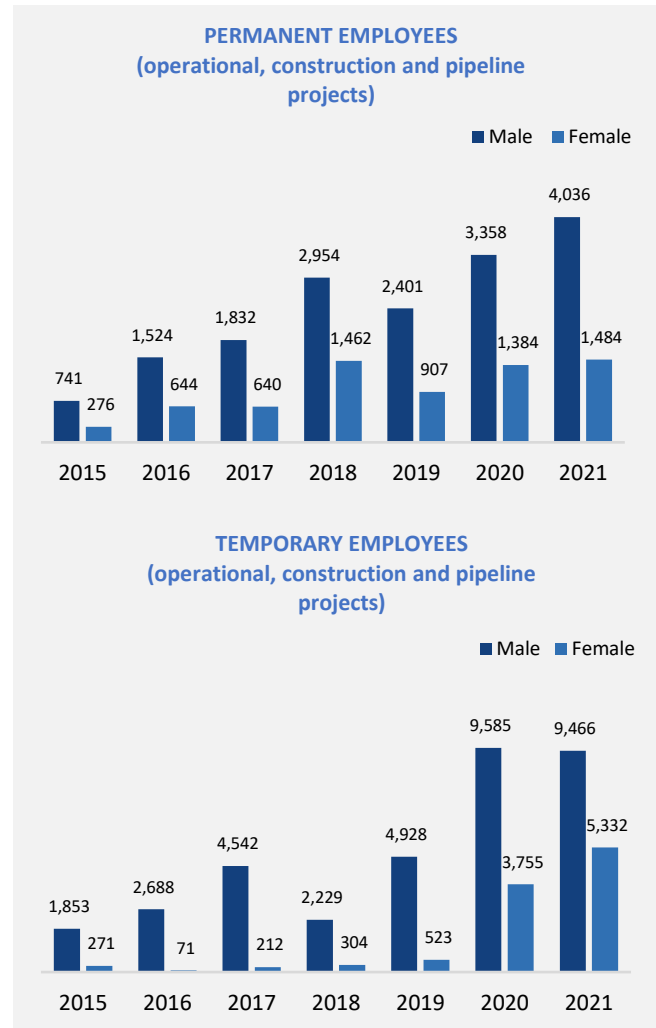
PILLAR 3: SUSTAINABLE DEVELOPMENT³

The total number of jobs created (permanent and temporary) has been increasing year after year.

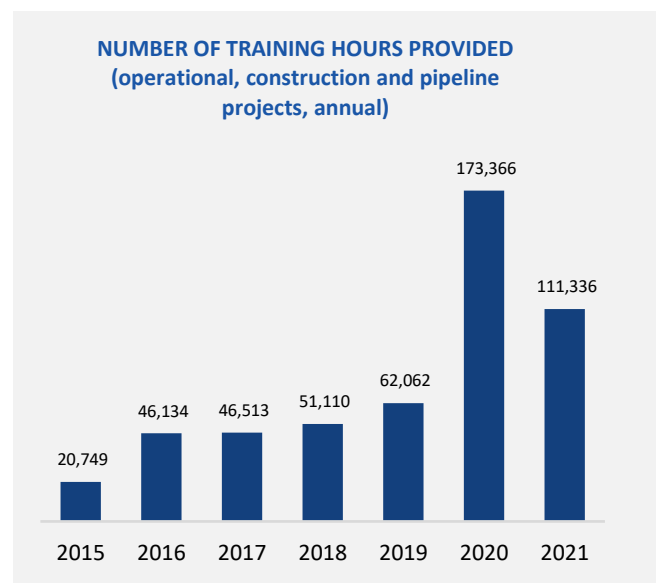
The number of temporary employees has been significantly higher than the number of permanent employees since 2019.

The number of male positions is higher than the number of female positions every year.

The number of female employees has seen significant growth albeit from a low base and primarily for temporary positions.



The amount of training hours provided by the funds and their projects decreased in 2021 to 113,336 hours (annualized). One major reason is the reduction of training hours in one of the African funds.



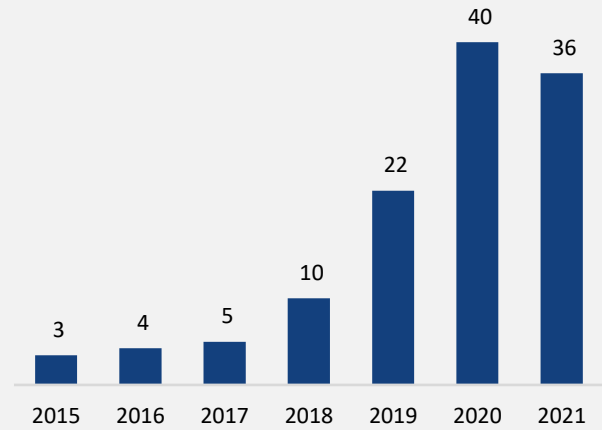
³ All employment and training figures are reported annualized as when projects are fully operational.

GEEREF PORTFOLIO METRICS

PILLAR 3: SUSTAINABLE DEVELOPMENT

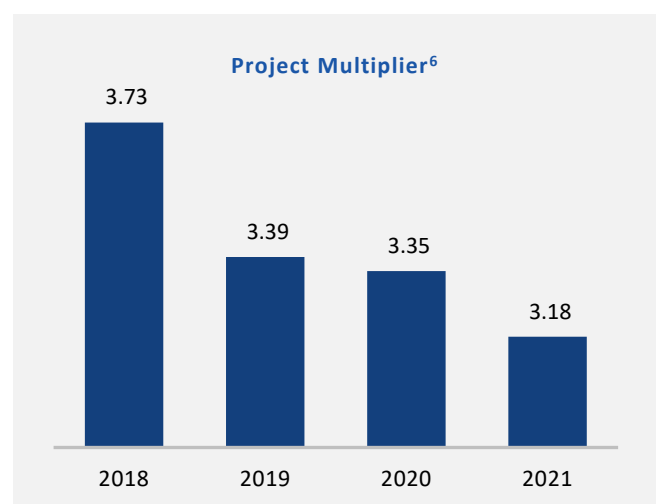
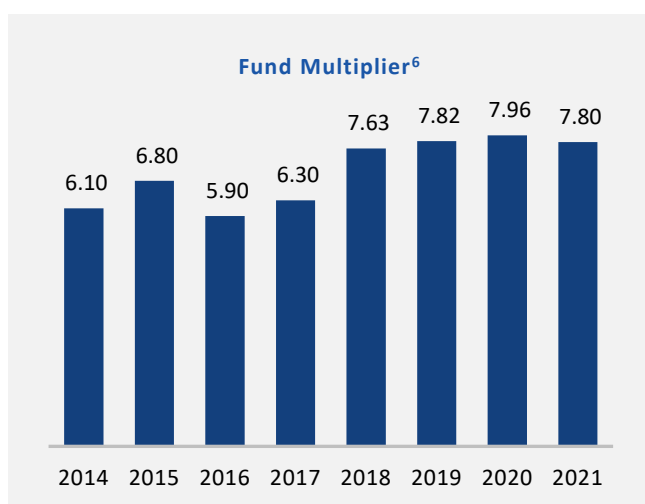
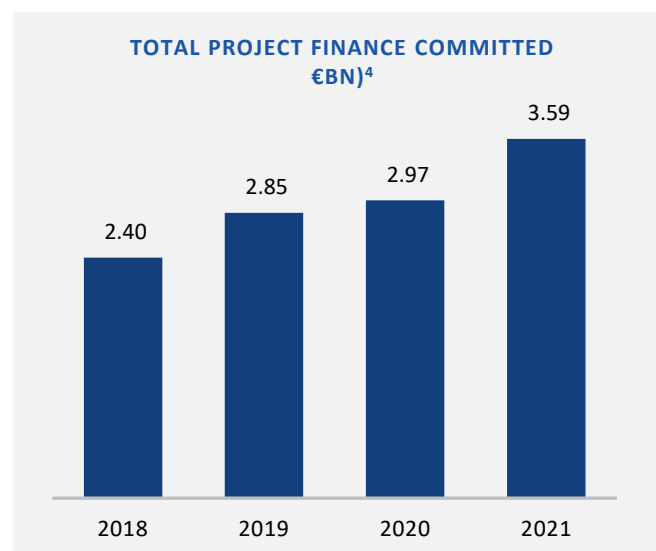
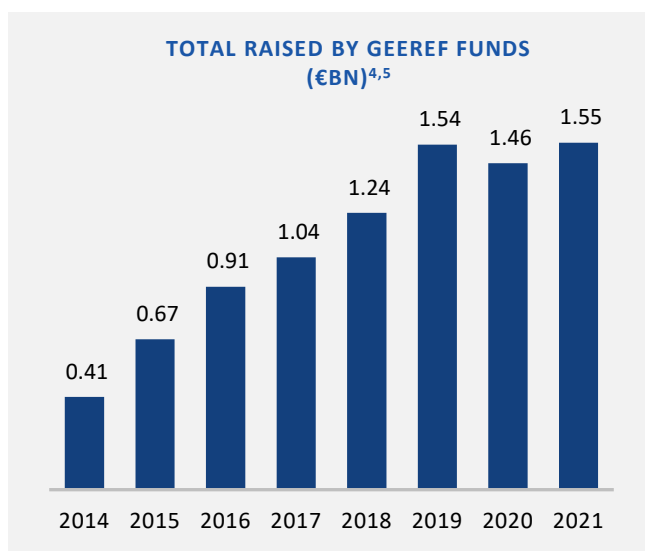
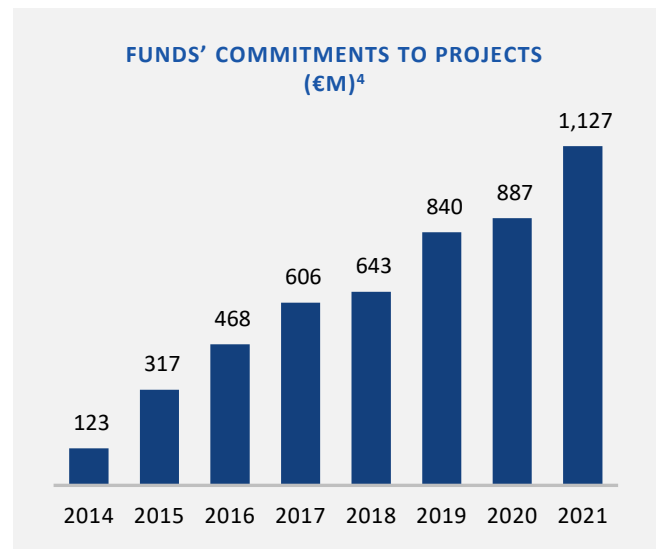
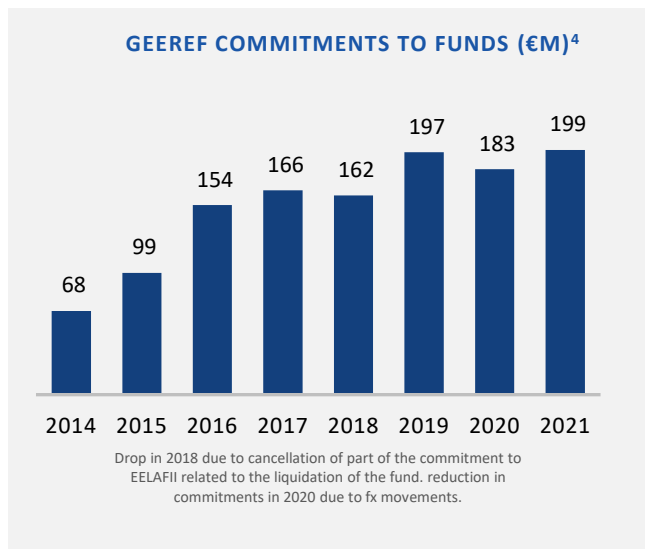
The underlying projects paid an equivalent amount of EUR 36 million in taxes locally, which is slightly lower than 2020. These taxes support the local government institutions and their revenue generation potential.

TAXES PAID
(operational, construction and pipeline projects, in €m)



GEEREF PORTFOLIO METRICS

PILLAR 4: FINANCIAL LEVERAGE

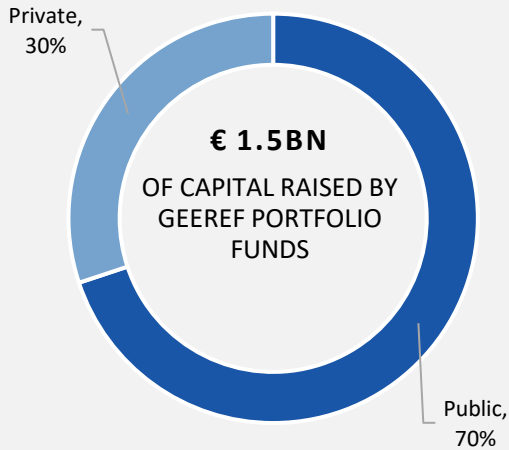


⁴ All above numbers are subjected to FX movements. ⁵ Including GEEREF commitments. ⁶ See definitions on page 12 and see page 18

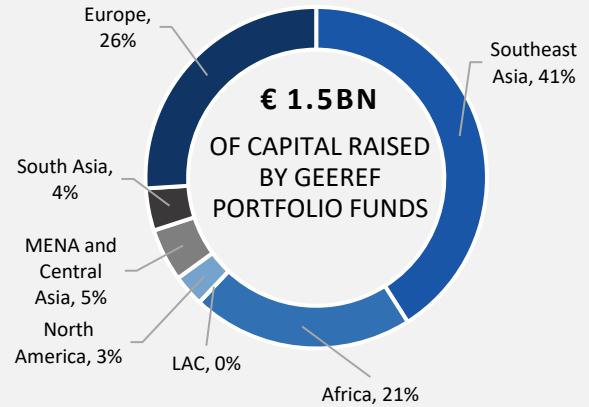
GEEREF PORTFOLIO METRICS

PILLAR 4: FINANCIAL LEVERAGE

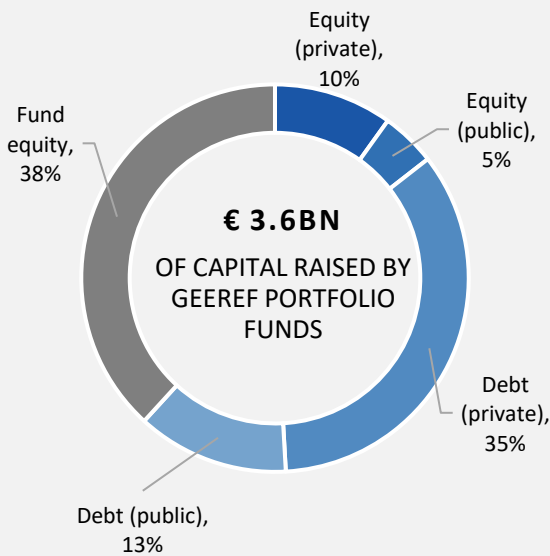
CAPITAL MOBILISATION AT A FUND LEVEL, BY FUNDING SOURCE



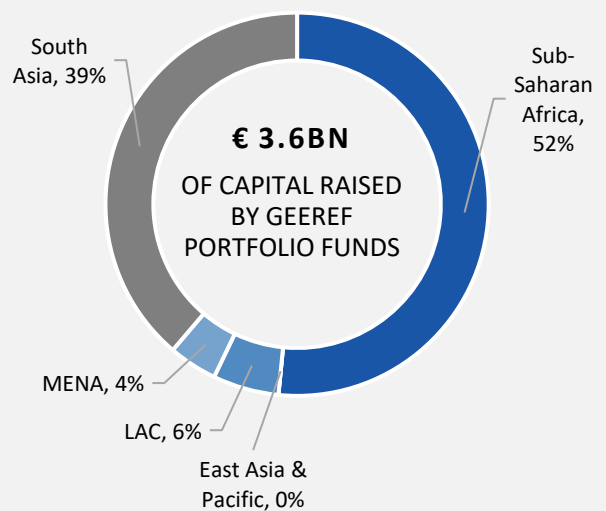
CAPITAL MOBILISATION AT A FUND LEVEL, BY GEOGRAPHY



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



CAPITAL MOBILISATION AT A PROJECT LEVEL, BY GEOGRAPHY



GEEREF PORTFOLIO METRICS

PILLAR 4: FINANCIAL LEVERAGE

GEEREF LEVEL

€242M

SIZE OF GEERE

- Public investors committed EUR 132m to GEEREF, which mobilized a further EUR 110m of private investor commitments.
- At the end of 2021, GEEREF's portfolio consisted of EUR 199m of commitments to 14 funds.

FUND LEVEL

€1.51BN

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

- Based on GEEREF's commitment of EUR 199m, fund managers have raised a total of EUR ~1.5bn. This translates into a fund-level multiplier of 8x, which is similar to the 2020 multiplier. Up until 2021, one of GEEREF's funds was still fundraising.
- A vast majority of the capital raised as of the end of 2021 – 70% – comes from Development Finance Institutions (DFIs). 30% comes from a diversified pool of private investors (asset managers, impact investors, and others). Asian funds attracted the biggest portion of private capital (~45% of the capital raised) whereas the private capital share raised by funds focusing on Africa and Latin America was significantly less.

PROJECT LEVEL

€3.6BN

OF PROJECT FINANCING RAISED

- By year-end 2021, the final cost of projects developed by GEEREF fund managers reached EUR 3.6bn, 38% of which represents their equity contribution, 10% represents private investors' equity contribution and, 5% the public investors' equity support. Lenders supplied the remaining 47% of project financing: 13% stemmed from DFIs, national development banks and equivalent and, 35% from private local banks.
- The total capital mobilized increased by EUR 0.6bn compared to 2020 and the project multiplier declined slightly to 3.2x.

ABBREVIATIONS

AREF	Africa Renewable Energy Fund	GEEREF	Global Energy Efficiency and Renewable Energy Fund
ARPF	ARCH Africa Renewable Power Fund	GHG	Greenhouse gas
CCEF	Caucasus Clean Energy Fund	MENA	Middle East and North Africa
CO2	Carbon dioxide	MSEF	MGM Sustainable Energy Fund
DFI	Development Finance Institution	MW	Megawatt
EELAF	Emerging Energy Latin America Fund	MWh	Megawatt hour
EIB	European Investment Bank	REAF	Renewable Energy Asia Fund
EIF	European Investment Fund	RFSF	Regional Fund Support Facility
E&S	Environmental and social	SDG	Sustainable Development Goals
ESG	Environmental, social and governance		
ESMS	Environmental and social management system		
EU	European Union		

