Department for Evaluation

REPORT 9, 2024

Evaluation of Norfund's investments in renewable energy

This report is the product of the authors, and responsibility for the accuracy of data included in this report rests with the authors alone. The findings, interpretations, and conclusions in this report do not necessarily reflect the views of the Department for Evaluation.

Acknowledgements
This report has been prepared by KPMG Norway International Development Advisory Services for the Department for Evaluation at the Norwegian Agency for Development Cooperation (Norad).

The team comprised Thomas Fugelsnes, Team Leader; Lars Engen, Blended Finance and Evaluation Expert; Said Jeylani, Renewable Energy Investment and Evaluation Expert; Rafik Mahjoubi, Rural Development and Innovation Expert; Zubair Hakim, Risk and Governance Expert; Ole Kristian Aars, Quasi-experimental Research Expert; Anvesha Thakker, Renewable Energy Investment Expert; Harsh Kanani, Renewable Energy and Evaluation Expert, India; Ole Winckler, Evaluation Methodology Expert and Quality Assurance; Ralf Tobich, Renewable Energy and Evaluation Expert, South Africa; Miarakap, Field Data Collection, Madagascar. Additional support was provided in India by KPMG India (Arpita Gupta, Jatin Sabharwal, and Amit Patidar).

The team would like to thank the Norad Department for Evaluation and Norfund staff for working closely with the KPMG team to finalize the report.

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Norad
Norwegian Agency for Development Cooperation
www.norad.no
December 2024
ISBN: 978-82-8369-218-1

Coverphoto: **Copperbelt Energy Corporation**
Photo: **WeLight** →

Foreword

The Norwegian Investment Fund for Developing Countries (Norfund) has an important and special role in Norway's development cooperation. Norfund is tasked with investing on commercial terms in businesses that create jobs, reduce poverty and support the green transition.

This evaluation concentrates on Norfund's investments in renewable energy – an area which constitutes more than a third of Norfund's portfolio. The overall purpose of the evaluation has been to provide the Norwegian Ministry of Foreign Affairs and Norfund with information that can strengthen Norfund's current and future renewable energy investments.

The evaluation assesses the effects, additionality and sustainability of the investments, as well as Norfund's strategies and efficiency related to renewable energy.

The report shows that there are significant development and climate impacts of Norfund's investments, and the company has improved its strategies and follow-up of investments in renewable energy over the last years. The operational efficiency is assessed as good. At the same time the report highlights several areas of improvement. These include the strategic ambitions for renewable energy under the Climate Investment Mandate, the system and practices to ensure that investments are additional and the approach Norfund has to strengthen corporate governance in its investees.

Norfund has reservations to some of the findings and recommendations. These reservations are attached to the evaluation report.

I wish to express my sincere gratitude to KPMG's evaluation team, Norfund and all the stakeholders who have contributed with their expertise and reflections during the process. Their inputs have been invaluable in ensuring the quality and relevance of this evaluation.

Oslo, 17 December 2024

Tori Hoven
Acting Director
Department for Evaluation
Norad

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Abbreviations and Acronyms

Advisory Committee	AC
Black Economic Empowerment	BEE
British International Investment	BII
Broad-Based Black Economic Empowerment	B-BBEE
Bronkhorstspruit Biogas Project	BBP
Capital Expenditure	CAPEX
Carbon dioxide	CO_2
Climate Investment Fund	CIF
Climate Investment Mandate	CIM
Combined Church in Action	CCIA
Commercial and Industrial	C&I
Commonwealth Development Corporation	CDC
Consumer Price Index	CPI
Corporate Social Responsibility	CSR
Development Bank of South Africa	DBSA
Development Finance Institutions	DFI
Development Impact Mandate	DIM
Earnings Before Income Tax, Depreciation and Amortization	EBITDA
Eksportfinansiering Norge	Eksfin
Engineering, Procurement and Construction	EPC
Enterprise Development	ED
Environmental and Social	E&S
Environmental and Social Management System	ESMS
Environmental, Social, and Governance	ESG
European Development Finance Institutions	EDFI
Executive Vice President	EVP
Financial Year	FY
Full Time Employee	FTE
Gigawatt	GW
Gigawatt hour	GWh
Greenhouse Gases	GHG
Gross Domestic Product	GDP
Independent Power Producer	IPP

Independent Power Producer Office	IPPO
Internal Rate of Return	IRR
International Renewable Energy Agency	IRENA
Investeringfonden for Udviklingslande	IFU
Investment Committee	IC
Joint Impact Model	JIM
Key Performance Indicator	KPI
Kilovolt	kV
Kilowatt hour	KWh
Kommunal Landspensjonskasse	KLP
Least Developed Countries	LDC
Low- and Middle-Income Countries	LMIC
Low Income Countries	LIC
Megawatt	MW
Megawatt hour	MWh
Ministry of Foreign Affairs	MFA
Norwegian Agency for Development Cooperation	Norad
Norwegian Investment Fund for Developing Countries	Norfund
Norwegian Kroner	NOK
Operational Expenditure	OPEX
Operations and Maintenance	O&M
Organisation for Economic Co-operation and Development	OECD
Overseas Development Institute	ODI
Power Purchase Agreement	PPA
Renewable Energy Holdings	REH
Renewable Energy Independent Power Producer Procurement	REIPPP
Secured Overnight Financing Rate	SOFR
Small and Medium Enterprises	SME
Socioeconomic Development	SED
South African Rand	ZAR
Special Purpose Vehicle	SPV
Sub-Saharan Africa	SSA
Sustainable Energy Fund for Africa	SEFA

Executive summary

Background

The overall purpose of this evaluation is to provide the Norwegian Ministry of Foreign Affairs (MFA) and Norfund with information that can be utilized to strengthen Norfund's current and future renewable energy investments. The objectives of the evaluation are as follows:

- **Results:** To assess to what extent investments have generated, or are likely to generate, results.
- **Sustainability:** To assess whether achievements, have been sustainable and will endure over time.
- **Efficiency:** To assess the efficiency of Norfund's management of renewable energy investments.
- **Lessons:** To extract relevant lessons regarding Norfund's strategy, approaches, processes, and allocation in the context of renewable energy.

The scope of the evaluation focuses on all Norfund's renewable energy investments from 2015 to 2023, including both those under the Development Impact Mandate (DIM; 68 investments) and climate impact mandate (CIM, 12 investments). The evaluation is based on a mixed methodology, using evidence collected from document review, third-party literature, portfolio analysis, key informant interviews, surveys of Norfund investment managers and investees, and nine case studies of investments in India (3), Madagascar (2), and South Africa (4).

Norfund invests in renewable energy with the goal of facilitating the expansion of power generation and improving access to electricity in targeted markets. Renewable energy accounts for one-third of DIM investments as of 2023. The rationale for investing in renewable energy under DIM is to achieve the following:

a. **Increase supply of energy** to enable economic growth and job creation and mitigate climate change (economic development and de-bottlenecking).

b. **Provide access to clean energy** to improve living standards through, for example, solar home systems, mini-grids, and other off-grid solutions.

In 2022, the Norwegian government established the Climate Investment Fund. The fund's goal is to

c. **contribute to the reduction or avoidance of GHG emissions** by investing in renewable energy projects in emerging markets that heavily rely on coal and other fossil-fuel power generation. Norfund was designated the manager of the Fund, which was operationalized as a separate mandate – the Climate Investment Mandate (CIM).

In addition to their development and climate impact goals, both mandates contain provisions for making investments that would not otherwise be made. Norfund, like other development finance institutions (DFIs) is mandated to make investments that are *additional*. Additionality refers to the extent to which the benefits of Norfund's investments would not otherwise occur without Norfund's involvement. The report distinguishes financial additionality (bringing new finances) from non-financial additionality (other value added by Norfund).

Findings and recommendations

Mandate, positioning and operationalization

The DIM strategies have evolved and become better defined in terms of objectives and targets over the evaluation period, and strategies are, to a large extent, well-designed to meet the mandate. However, under the "supply of energy" objective, other bottlenecks than capacity exist, such as transmission and grid connection, which are de-emphasized in the strategies. Furthermore, the list of 30 core countries in the DIM strategy includes countries with relatively high income levels. These are less relevant choices when selecting core countries for a portfolio targeting additionality while addressing access to energy or energy generation.

Recommendation 1: Under the "supply" objective, more focus should be given to enabling technologies and other bottlenecks besides capacity (such as transmission and grid connection), which in many countries can be important factors in addition to generation capacity.

Recommendation 2: Norfund should change the DIM focus countries to more challenging countries with higher needs, where investments are more likely to be additional. Current focus countries such as Colombia, South Africa and Vietnam are considered more crowded markets with less needs for DFI investments.

The CIM strategy reflects the part of the mandate that concerns replacing coal in coal-intensive economies. However, the way this has been defined in terms of core countries is, to some extent, contradictory to the mandated objective of providing additionality in investments. The CIM has a dual objective structure like DIM (achieving impacts ***while*** making investments that would not otherwise have been made). However, compared to DIM, there are fewer safeguards to ensure additionality at the portfolio level.

Recommendation 3 (for owner): MFA should clarify the mandate for CIM in light of the trade-offs between targeting countries with high coal-intensity and targeting "investments that would not otherwise have been made". In the current iteration, the strategy built on the mandate is designed more around the former than the latter, potentially leading to less additional investments.

Most of the market segments selected under the CIM strategy fit within its mandate, but less evidence is found to support the alignment of large-scale independent power producers (IPPs) with the mandate of additionality. There is a large need for investments in new or enabling technologies (including grid, transmission, evacuation), whereas comparatively, the IPP segment (especially in CIM countries) is relatively crowded and in less need of DFI funding.

Recommendation 4: Norfund should consider balancing CIM investments in IPPs in large middle income countries with investments in enabling technologies or in more challenging country contexts.

Business model

The renewable energy portfolio is a good fit with Norfund's overall business model. This is largely a reflection of the large role of renewable energy investments in shaping Norfund's business model, policies and procedures. Aspects of Norfund that are conducive to the renewable energy sector include: the right menu of instruments and tools, an experienced team of sectoral experts, and strong networks, partnerships and platforms in the sector.

Complementarity

Norfund activities are rarely aligned with or feature complementarity with other Norwegian development efforts with similar objectives. Complementarity is considered outside the Norfund mandate, and neither Norfund nor MFA/Norad actively pursue opportunities to achieve synergies with each other, despite the similar objectives.

Impact and Effectiveness

Development effects

Norfund has improved the extent to which they track indicators on output and outcome level, as well as setting targets at both individual investment level and portfolio level, over the evaluation

period. Tracking of development effects is largely done through collecting indicator data directly from investees. Achievement of outcome and impact objectives is estimated from models based on this data. The theories of change linking results at output level with impact are reasonable, with important assumptions made explicit, such as grid connectivity and transmission for energy supply. The validity of these assumptions might affect the impact of Norfund's investments. Some potential issues are observed in case studies, such as subsidies needed for energy access in off grid market.

Norfund has largely met the renewable energy targets set out in its strategy papers, as per Norfund's internal results monitoring. Under its two mandates, Norfund has financed more than 11 GW of renewable electricity capacity, companies in the DIM portfolio have provided electricity access to more than 7 million households, and investments funded under the CIM portfolio avoid an estimated 5.8 million tons of CO_2 through their renewable energy production every year. Norfund is well on track to meet the targets for the current strategies for both CIM and DIM and is, in fact, overshooting the target for CIM already - just two years into the mandate.

Recommendation 5: Norfund should reassess the targets for the current CIM period to reflect the rapid progress made to date.

Development effects reported by Norfund must be considered in the context of challenges with determining Norfund investments' causality, attribution and additionality. The development effect numbers used by Norfund reflect indicator values reported by investee companies, and they do not in and of themselves say much about the impact of Norfund's actions. Norfund's reporting on *financed* results (in addition to *achieved* results) makes processes complex and opaque.

Recommendation 6: Norfund should investigate how to measure development effects more accurately, particularly in terms of attributing development effects to Norfund's actions.

Effect on corporate governance

Compared to other DFIs, Norfund's approach to corporate governance in its investment strategy appears less defined. Although Norfund is committed to responsible investment practices, evidenced by its adherence to various sustainability frameworks and due diligence in assessing potential projects and partners, it lacks a specific framework for evaluating the corporate governance of its investees, and limits Norfund's ability to showcase its effects on corporate governance.

Recommendation 7: Norfund should develop and implement a specific corporate governance framework which adapts the framework developed by the Corporate Governance Development Framework but tailored to Norfund's unique position and objectives. This framework should include specific criteria and expectations for board composition, oversight, risk management, and internal controls.

Additionality

Additionality as a concept and objective has become considerably more formalized in Norfund's operations during the period under review (2015-2023), allowing a clearer insight into the decision-making behind investment decisions in the later period, through inter alia the additionality calculator.

Investment-level assessments of additionality (including the additionality calculator) are subjective and allow for finely detailed assessments, which are sometimes needed, reflecting the complexities of investments. However, the portfolio-wide tools for ensuring additionality, such as KPIs on geographical allocation, act as safeguards to ensure investment-level assessments do not go too far in providing exceptions. The CIM portfolio is not guided as clearly by such portfolio-wide targets of countries with high needs. Without these safeguards, the current focus on coal-intensive countries combined with the targeting of segments like IPPs means that investments with low likelihood of additionality can be done, which is not in line with the mandate.

Recommendation 8: Norfund should consider including geographical targets for the CIM similar to those employed for the DIM, in order to provide further safeguards to ensure investments are made with financial additionality.

There is room for further improvement in the additionality framework and its operationalization. Guidance should be provided on trade-offs between additionality, impact and risk, especially under the CIM.

Recommendation 9: Norfund should consider moving beyond the minimum standards set by OECD and stop considering non-financial additionality as a substitute for financial additionality. Financial and non-financial additionality should be treated as two separate scores, with a separate threshold for financial additionality.

Recommendation 10: Similarly, mobilization should be detached and separated from additionality, and be treated as a separate objective. Mobilization is neither necessary nor sufficient for additionality. Mobilization might be a worthy objective in itself, as a means to amplify developmental outcomes, but it should not be conflated with additionality.

Recommendation 11: Qualitative justifications for additionality should be strengthened in investment documents to strengthen accountability and make explicit the decision-making behind investment approval.

Recommendation 12: Internal ex-post assessments of additionality for investments should be conducted in order to provide feedback that can be used to improve the system.

Actual (ex-post) additionality is difficult to determine, but evidence suggesting that some investments were less likely to be additional has been identified. For instance, CIM investments in India appear less additional due to the booming market and a large influx of capital, particularly in the IPP and C&I sectors.

Sustainability[1]

Evidence from case studies and surveys of investment managers suggest that Norfund investments are generally designed with conditions for sustainability, mainly reflecting the inherent focus investments have on supporting commercially viable investments. Some aspects of Norfund's strategy and operations are inherently conducive to sustainability, such as targeting commercially viable projects, but other priorities such as taking risks and additionality run counter to sustainability.

Efficiency

Economic Efficiency

Overall, Norfund exhibits operational efficiency across several metrics, including operational expense ratio, productivity per full time equivalent (FTE), average number of projects per FTE, and number of new projects per FTE. However, the increasing workload per employee raises concerns about sustainable growth.

Over the review period, while the total committed portfolio for renewable energy investments initially exhibited growth, peaking in 2020, it has subsequently declined relative to the overall investment portfolio. However, despite this reduction in the committed portfolio size, the operational expenditures associated with managing these investments have not followed the same downward trend.

Norfund's post-*SN Power* sale liquidity boost has led to a strategic shift towards making secure liquidity placements, with a strategy to fully reinvest these funds by 2027. Norfund's annual reports show a significant rise in liquidity, evidenced by the sharp increase in bank deposits, cash, and cash equivalents from 2020 onwards. This liquidity spike coincides with Norfund's exit from SN Power, leading to substantial temporary investments. Norfund has developed a liquidity strategy to reinvest all the proceeds from the SN Power sale by the end of 2027.

Financial Performance

Overall, the Renewable Energy portfolio demonstrates a combination of returns close to Norfund's targets with notable volatility. The Renewable Energy portfolio,

1 Sustainability here refers to "The extent to which the net benefits of the intervention continue, or are likely to continue"

with an average excess return (on investment that exceeds what is expected based on risk and market conditions) of 1.02 percent is performing better than Norfund's total portfolio average excess return of 0.42 percent.

The Sharpe Ratio, which compares the return of an investment to its risk, is significantly lower for the renewable energy portfolio than for the financial institutions portfolio, implying that the additional risks taken in the renewable energy sector are not compensated proportionately by the returns.

Risk Exposure and risk management

Norfund evaluates three key risks categories, — Financial, Environment and Social (E&S), and Business Integrity — for each potential investment, a practice that is aligned with other European DFIs.

Norfund's country risk assessment tool, developed in 2021, is intended primarily for strategic portfolio risk management rather than individual investment decision-making.

Recommendation 13: Norfund should enhance integration and utilization of the Country Risk Assessment Tool in the initial screening and due diligence phases of every investment process. Norfund should ensure that all investment teams are trained and familiar with the tool's functionalities and methodologies.

Photo: **Rift Valley Energy Tanzania**

1

Introduction and background

1.1 Purpose and scope of evaluation

The overall purpose of this evaluation is to provide the Norwegian Ministry of Foreign Affairs (MFA) and Norfund with information that can be utilized to strengthen Norfund's current and future renewable energy investments.

The objectives of the evaluation are as follows:

1. **Results:** To assess to what extent Norfund's renewable energy investments have generated, or are likely to generate, results within its dual mandate.
2. **Sustainability:** To assess whether achievements have been sustainable and will endure over time.
3. **Efficiency:** To assess the efficiency of Norfund's management of renewable energy investment.
4. **Lessons:** To extract relevant lessons regarding Norfund's strategy, approaches, processes, and allocation in the context of renewable energy, including the climate investment fund.

The evaluation has been commissioned by Norad Evaluation Department. The evaluation process and this report has followed the guidance and structure set out in the terms of reference by client.

The scope of the evaluation focuses on all Norfund's renewable energy investments from 2015 to 2023, including both those under the development and climate mandates (68 under the development mandate; 12 under the climate mandate).

1.2 Methodology

Evaluation questions were provided in the Terms of Reference (ToR). The evaluation questions are grouped by the OECD DAC Evaluation criteria: Impact and effectiveness, sustainability and efficiency. Within each criteria, a list of evaluation questions and sub-questions were provided; the analytical approach to each question was outlined in the inception report.

The evaluation is based on a mixed methodology, using evidence collected from document review, third-party literature, key informant interviews, surveys and nine case studies of investments. Documentation is collected from various sources on the three levels of the evaluation – 1) strategic level, 2) portfolio level, and 3) case study level (i.e. country and investment level). Sources include Norwegian government documents, Norfund documents, comparator development finance institutions (DFIs) and European Development Finance Institutions (EDFI) sources, country level documentation, and portfolio data received from Norfund. Third-party literature includes academic literature, reports and evaluations from other development partners, and country and sector level documentation. Interviews were done with a broad set of stakeholders, including MFA, Norad, Norfund staff at strategic level, and comparator DFIs. The case studies include further interviews with investees, Norfund investment managers, co-investors and financial institutions, purchasers/off-takers, government counterparts, beneficiaries and Norwegian embassies. Two surveys were conducted to collect perception data from stakeholders, including investees and investment managers. Portfolio data from Norfund including financial, additionality, and development effects was received from Norfund and analyzed. Limitations to the data collection methodology include purposive sampling, complex and idiosyncratic data on additionality and development effects, lack of control group data, and reliance on data provided by Norfund.

Please see Annex 2: Methodology for detailed methodology.

1.3 Renewable Energy at Norfund

Norfund, the Norwegian Investment Fund for Developing Countries, was established on May 9, 1997, under the Norfund Act. Its key governing documents are the Norfund Act and Norfund Statutes. Funded by the Norwegian government, Norfund aims to create jobs, improve lives, and support the transition to net zero emissions in developing countries. Owned by the Norwegian Ministry of Foreign Affairs and financed by the central government budget, this state-owned fund operates with financial independence. Norfund's primary role is to provide risk capital in the form of equity, loans, and guarantees into viable and profitable initiatives that are often avoided by other investors due to high risks.[2]

2 Statutes of the Norwegian Government Investment Fund for Developing Countries (Norfund).

Norfund's core mandate is to contribute to economic growth and job creation through investments in businesses that drive sustainable development. Under this development impact mandate (DIM), Norfund invests in four key areas with the aim of accomplishing the following:

1. **Renewable Energy:**[3] increasing energy access and supply
2. **Green Infrastructure:** improving essential infrastructure services
3. **Financial Institutions:** strengthening financial inclusion
4. **Scalable Enterprises:** growing companies in agribusiness and manufacturing

Renewable energy has historically been an important sector for Norfund, dating back to its first investment in 2002. In the period 2002-2018, renewable energy accounted for over or near 50% of the invested portfolio. However, since 2017, the renewable energy share in Norfund's overall portfolio has decreased, particularly due to the sale of SN Power in 2021[4] (the single largest Norfund investment, at the time valued at 1.17 billion USD). Not all of the profits from SN Power have been reinvested,[5] thus the renewable energy portfolio has contracted since its peak in 2020, and the renewable energy portfolio is no longer the largest single sector (Figure 1). As of 2023, renewable energy accounted for 32% of total Norfund DIM commitments, and 34% of Norfund's disbursed DIM funds[6] are in renewable energy projects.

3 The "sector" is in some periods referred to as *Clean Energy* in Norfund strategies and datasets, as some strategy periods have included natural gas power. In this report we refer to investments as being in the renewable energy portfolio even though they were made during the period when the sector was referred to as clean energy, expect where highlighting differences. Technically Norfund is still allowed to make investments in natural gas power, as long as it is aligned with the Paris Agreement. The only gas power in the current portfolio is through the platform company Globeleq.

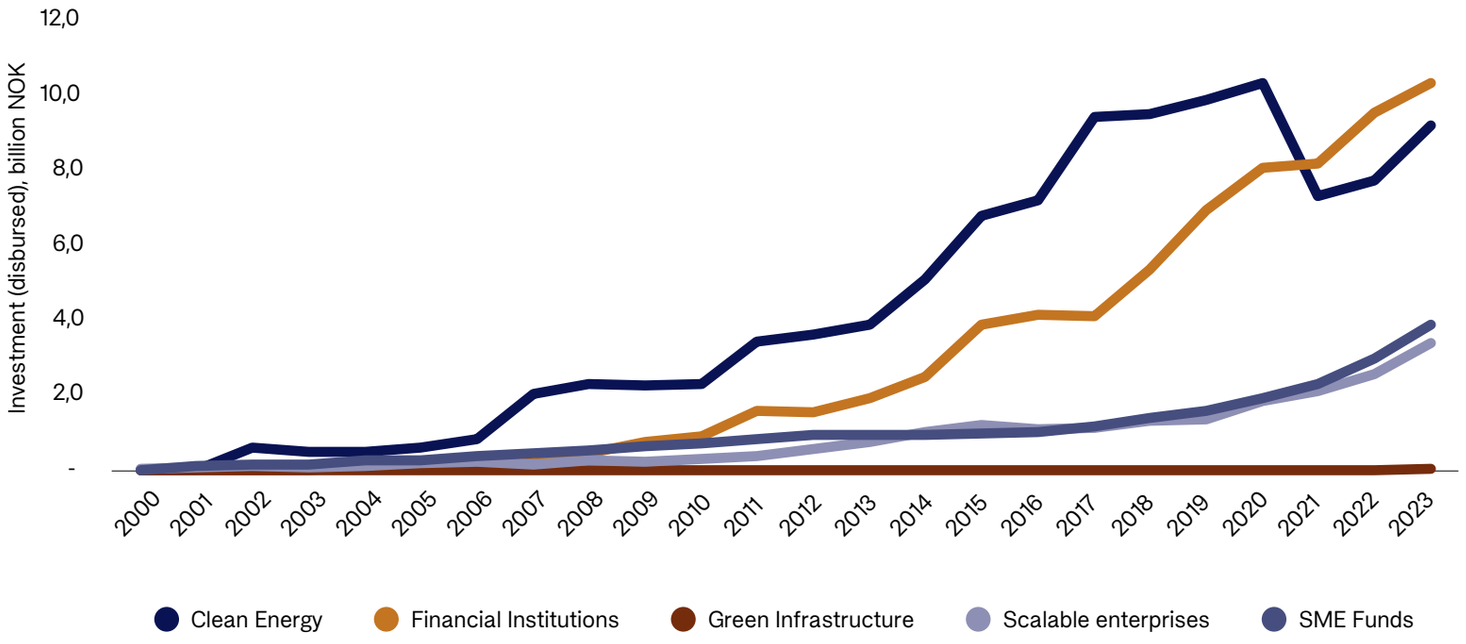
4 Although the sale itself was published in 2020, the exit is recorded in the dataset as 29 January 2021, and was tracked in the 2021 financial statements. See https://www.norfund.no/annualreport-2020/year-2020/key-events/historic-circulation-of-capital-through-sale-of-sn-power/.

5 Partly because this takes time, partly because Norfund has been instructed to transfer 5 billion NOK to the new Climate Impact Mandate, some of which was taken from the renewable energy portfolio surplus.

6 *Disbursed* and *disbursements* refer here (and in the following figures) to Norfund's current outstanding investment at a given point in time, i.e. the value of Norfund funds that have been transferred into the investment. This is also referred to as "cost" in Norfund datasets, or value of investments minus value of repayments at any given time. This does not take into account any price changes in equity, nor changes in exchange rates; in practice, the returned capital at exit would therefore not be identical to the figures shown here.

FIGURE 1

Norfund DIM Portfolio (disbursed) as of 31 December each year



Source: *Norfund portfolio data*

Norfund aims to invest in renewable energy with the goal of facilitating the expansion of power generation and improving access to electricity in targeted markets. While Norfund has previously invested in other clean(er) energy sources such as gas, this is no longer the case.[7] The rationale for investing in renewable energy under DIM is based on energy generation and access:[8]

- Renewable **energy generation** enables economic growth and job creation and mitigates climate change (economic development and de-bottlenecking). To increase the supply of energy (generation), Norfund invests in large-scale, greenfield, grid-connected power plants (Independent Power Producers, also known as IPPs), primarily focusing on solar, wind, and hydroelectric energy. Additionally, Norfund monitors developments in other clean technologies such as offshore wind power, floating solar technology, and storage.
- **Access** to clean energy improves living standards and thus, contributes to social development. To increase access to clean energy, Norfund invests in distributed generation and off-grid supply. Within distributed generation, Norfund focuses on two segments:
  - Distributed generation to commercial and industrial (C&I) customers, covering business models supplying power directly to C&I, typically with on-site solar generation.
  - Off-grid supply, primarily to companies supplying solar home systems on credit.

7 Except rare cases under platforms, such as the 2022 Globeleq investment in Temane, see https://globeleq.com/power-plants/temane-450-mw-gas-project/

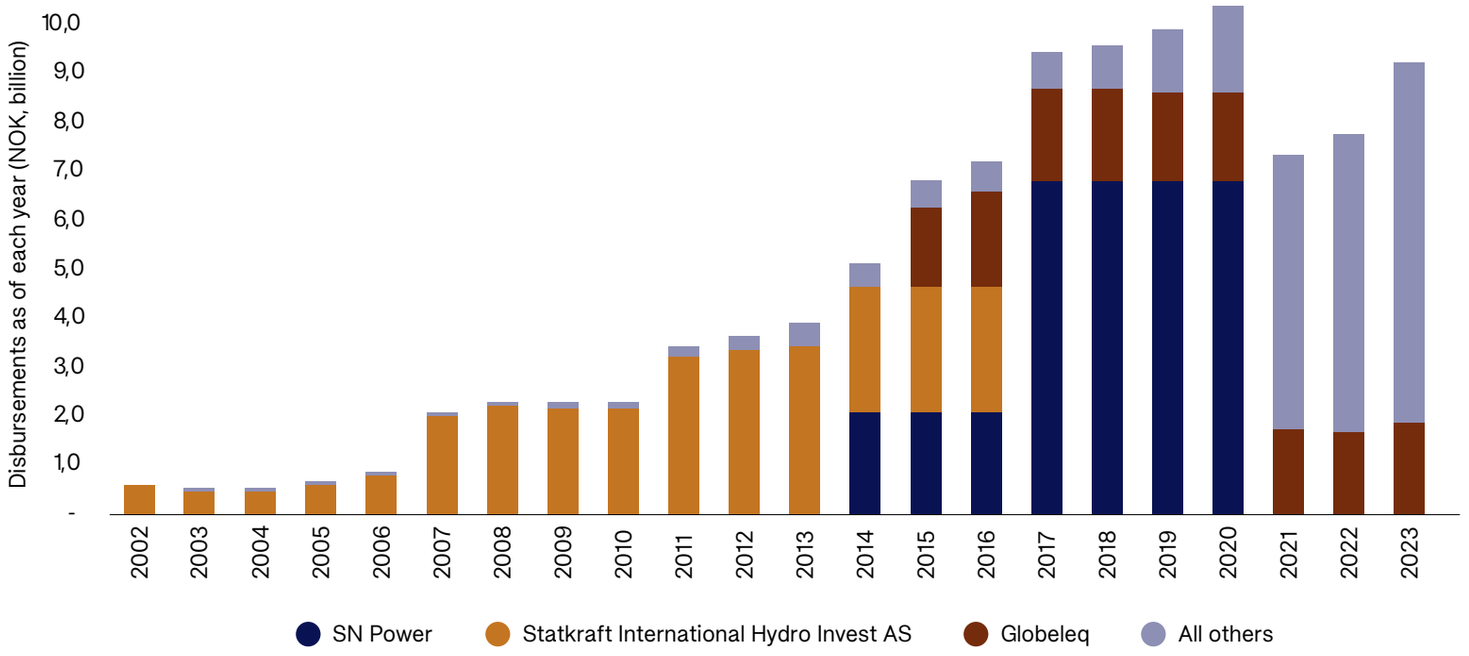
8 For more detail on the Theory of Change, please see Annex 2.

Under DIM, Norfund has made a total of 73 renewable energy investments.[9] During the evaluation period (2015-2023), 68 of these have been active. As of Q4 2023, 40 of these projects are still held in Norfund's portfolio, while 33 have been exited. Most of the renewable energy projects have been small and have historically been dwarfed by the three large renewable energy investments in Statkraft Hydro Invest, SN Power, and Globeleq (all three are referred to as platforms with a large number of underlying investments). Between 2002-2020, these three projects accounted for more than 80% of the total disbursements in the renewable energy portfolio, until the sale of SN Power in 2021 (Figure 2).

In 2022, the Norwegian government established the Climate Investment Fund (CIF). The fund's goal is to contribute to the reduction or avoidance of GHG emissions by investing in renewable energy projects in emerging markets that heavily rely on coal and other fossil-fuel power generation, while ensuring that economic growth is built on low carbon technologies through investments in renewable energy and enabling technologies.[10] Norfund was designated the manager of the Fund, operationalized as a separate mandate – the Climate Investment Mandate (CIM).[11] This implies that Norfund is responsible for managing the government's allocations according to guidelines provided by the MFA.[12] In implementing

FIGURE 2

Disbursements in renewable energy portfolio, top 3 largest investments and others



Source: *Norfund portfolio data*

9 The nomenclature of *investment* is used here to refer to a specific instance of an investment in an investee. In the Norfund data these are sometimes tracked as projects, clients, investments or investees. In most cases, additional funding to the same investee does not count as separate investments. For clarity, the list of projects in question is found in Figure 2.

10 Norfund defines avoided or reduced emissions as "the sum of all system-wide changes in emissions or removal occurring because of the investment. Avoided/reduced emissions implies that the investment leads to lower emissions compared to a baseline by reducing existing or future emissions. Both direct and indirect impacts are considered".

11 This study uses the phrase CIM to refer to the CIF mandate and portfolio, as opposed to the Development Impact Mandate (DIM), which refers to Norfund's core mandate and portfolio

12 Det Kongelige Utenriksdepartment. Instructions for Norfund's Management of the Fund for Investment in Renewable Energy in Developing Countries

the CIM, Norfund employs the operating model established by the original development mandate. This integration encompasses the adoption of the same governance structures and processes, while also drawing upon the expertise of the existing team. Norfund has operationalized this through a strategy for implementing CIM, including a parallel theory of change, with the objective of avoiding or reducing CO_2 emissions.

The CIM became formally operative only in 2022,[13] and thus only has a limited portfolio of 12 investments so far. As of Q4 2023, NOK 3.8 billion from the CIF had been invested across 12 investees, mostly in India and South Africa (Table 1).

The 68 DIM investments and 12 CIM investments make up the portfolio under the scope of this evaluation. Out of the 73 DIM and 12 CIM investments in renewable energy, 68 DIM and 12 CIM investments were active during the evaluation period (2015-2023; Figure 3).

13 Although some commitments are registered in the data for financial year 2021.

TABLE 1

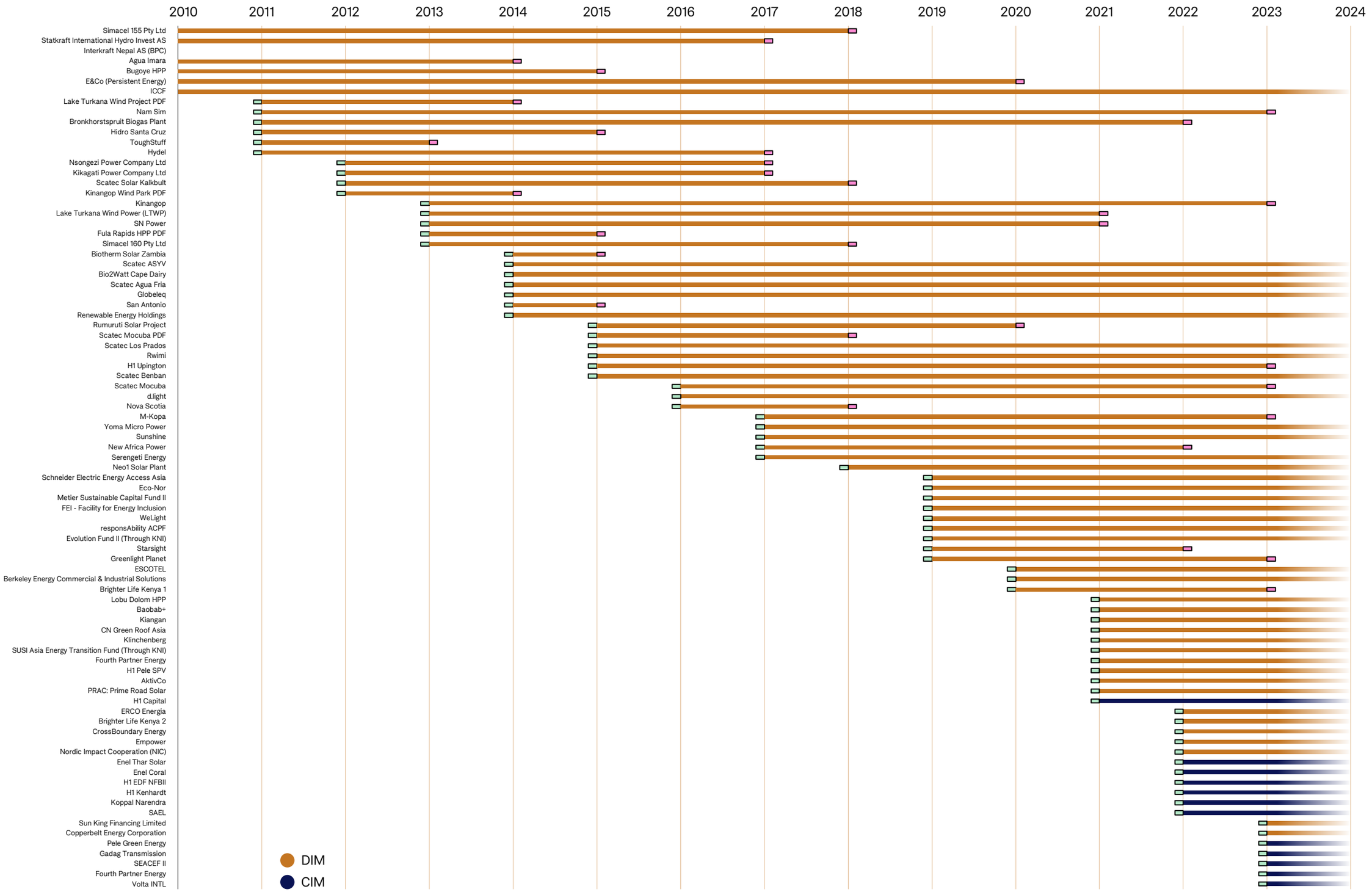
CIM investments as of Q4 2023

#	Investee	Country	Commitment (NOK) as of Q4 2023	Sector	Instrument	Commitment year
1	Fourth Partner Energy	India	431,514,820	Solar power	Equity (Ordinary share)	2023
2	SAEL	India	1,126,507,122	Biomass	Equity (Preferred share)	2022
3	Koppal Narendra	India	61,879,367	Energy	Loan, Equity (Ordinary share)	2022
4	Enel Thar Solar	India	276,523,066	Solar power	Equity (Ordinary share), Guarantee	2022
5	Enel Coral	India	430,236,047	Wind power	Equity (Ordinary share), Guarantee	2022
6	H1 Capital	South Africa	212,745,464	Other/hybrid renewables	Equity (Preferred share)	2021
7	H1 EDF NFBII	South Africa	172,639,675	Wind power	Loan	2022
8	H1 Kenhardt	South Africa	388,889,600	Solar power	Loan (Mezzanine)	2022
9	Volta INTL	Sri Lanka	83,056,751	Solar power	Loan, Equity (Ordinary share)	2023
10	Pele Green Energy	South Africa	363,809,200	Other/hybrid renewables	Equity	2023
11	Gadag Transmission	India	107,322,831	Energy	Equity	2023
12	SEACEF II	Regional	101,724,000	Energy	Funds	2023

Source: *Norfund portfolio data*

FIGURE 3

Overview of 85 renewable energy investments (DIM and CIM)



Source: *Norfund portfolio data*

2

Findings

2.1 Mandate, Positioning and Operationalization

Evaluation questions

1. How does Norfund's positioning with respect to developmental, environmental, and economic priorities align with priorities outlined in Norfund's mandate?
2. How does the renewable energy portfolio fit within Norfund's overall business model?
3. To what extent is there complementarity/ substitutability between Norfund and other renewable energy efforts supported by Norwegian development aid, and private sector financing?

Key findings

+	The DIM strategies have been largely **in line with the DIM mandate**, both in terms of targeting and additionality. Some concern is raised over the selection of core countries, which includes some countries that are not well aligned with the mandate.
+	The **DIM portfolio largely reflects the strategy**, and is mostly aligned with the mandate.
+	The **CIM strategy is well aligned with the first of two mandates** under CIM (avoiding CO_2 emissions).
−	The CIM strategy reflects the part of the mandate that concerns replacing coal in coal-intensive economies. However, the way this has been defined in terms of core countries is, to some extent, contradictory to the mandated objective of providing additionality in investments. The CIM has a dual objective structure like DIM (achieving impacts ***while*** making investments that would not otherwise have been made). However, **compared to DIM, there are fewer safeguards to ensure additionality at the portfolio level.**
~	The Overemphasis on **IPPs (over other segments** such as transmission or battery storage) under the CIM strategy risks having a negative effect on the likely additionality of investments, but it is important to note that it is still very early to assess the portfolio composition.
+	The renewable energy portfolio is a **good fit with Norfund's overall business model**, reflecting the large role of renewable energy investments in shaping Norfund's business model, policies and procedures.
~	Norfund activities are **rarely aligned with or feature complementarity** with other Norwegian development efforts with similar objectives. Neither Norfund nor MFA/Norad consider complementarity as part of Norfund's mandate, nor actively pursue opportunities to achieve synergies with each other, despite the similar objectives.

+ = Positive finding − = Negative finding ~ = A noteworthy finding not clearly positive or negative

2.1.1 Mandate and Operationalization

This section assesses how Norfund has converted its mandates into strategies, and subsequently how it has operationalized/implemented these strategies.

2.1.1.1 Development Impact Mandate (DIM)

2.1.1.1.1 Mandate to Strategy

The DIM mandate is broad and presents few restrictions for Norfund's operations. The original mandate for Norfund DIM (at the time just referred to as Norfund) is outlined in the Norfund Act establishing Norfund, originally in 1997 and last amended in 2022. The mandate is broad: *"The purpose of [Norfund] is to assist in developing sustainable business and industry in developing countries by proving equity capital and other risk capital, and by furnishing loans or guarantees. The aim is to establish viable, profitable activities that would not otherwise be initiated because of the high risk involved".*[14] Beyond this, the only restrictions are on eligible countries – Lower Middle Income (LMIC) or lower, or otherwise in line with Norwegian parliament instructions – and the rest is up to Norfund to define internally. Further guidance from the owner is given through MFA's annual budget propositions. For 2023-2024, this specifies two targets for Norfund: (i) Creating sustainable development and good jobs in poor countries through maintenance and development of profitable businesses, and (ii) Investing in countries with less developed capital markets. Since 2022, the budget propositions have included an imposition that Norfund is required to allocate at least 60% of its new capital allocation from the government to the renewable energy sector. In practice this means few changes, as the additional capital is simply integrated into Norfund's ongoing process of identifying and making new investments within the renewable energy portfolio.

The DIM mandate has been translated into periodic strategy documents with varying but largely coherent strategies, of successively improving clarity. Under the evaluation period, there have been four DIM strategies: 2012-2015, 2016-2020, 2019-2022, and 2023-2026. The strategy documents outline how Norfund will achieve the broad mandate of the DIM, including priority sectors, geographical scope, instruments, financial profitability, how to ensure additionality, how to improve leverage, etc. Recently these have been based on sectoral theories of change. In the case of the renewable energy sector in the 2023-2026 strategies, the two core objectives are (i) **energy generation** and (ii) **access to energy**. Notably, the recent strategies include explicit "ambitions" through targets for portfolios, which are decided internally by the Board, as the mandate does not formally specify the ambitions or quantify the targets of Norfund. Renewable energy has been a priority sector under the DIM strategy since before the 2012-2015 strategy, however, other aspects such as targets, countries, instruments, and so on have varied slightly. The quality, clarity and coherence of these strategies have clearly improved over the evaluation period, and the recent strategies are better able to justify and rationalize choices made, and contain clear objectives and targets, whereas the previous strategies were more vague.

Considering the broad scope of the mandate, the strategy is well positioned to align with it. The mandate broadly requires two elements: (i) impacts and (ii) additionality.

i. In terms of **impact**, the sector in question (energy) is a core pillar of economic development and crucial for developing sustainable business and industry, well documented in the academic literature.[15] The two focus themes under the 2022-2026 strategy, energy generation and access to energy are both important areas for development, with large funding gaps, and having more than one target area reflects the variations in countries' needs. One potential area for future growth could be to focus even more explicitly on enabling technologies to the energy sector, such as

14 MFA (1997) Act relating to the Norwegian Investment Fund for Developing Countries

15 See overviews for example at https://blogs.worldbank.org/en/energy/how-much-do-we-know-about-development-impacts-energy-infrastructure, https://voxdev.org/topic/energy-environment/does-rural-electrification-cause-economic-development

transmission and grid connection[16], which present critical bottlenecks in many countries, in addition to energy generation (see also section 2.2.3.1.2; see also case studies of South Africa). This is highlighted as a target segment under the CIM strategy, but the rationale for targeting the segment under CIM could also be used for DIM.

ii. **Additionality** – doing activities that would not otherwise be initiated because of the high risks involved – is maintained by targeting countries as proxies for likely additionality, such as LDCs and Sub-Saharan Africa, and through using equity. The targeting of lower income countries being correlated with additionality is established in the literature,[17] as is the use of equity,[18] chiefly because the availability of alternative sources of those types of capital is low. In the strategy, this is institutionalized through the selection of core countries to target, and through the strategy documents, which impose the following key performance indicators on the portfolio composition:

33% of investments in **LDCs**
50% of investments in **Sub-Saharan Africa**
70% of capital employed through **equity**

The list of 30 core countries includes relatively high income countries which are not obvious choices if selecting core countries for a portfolio targeting additionality, access to energy or energy generation. The DIM strategy focuses on 30 core countries, which are selected across all Norfund's sectors (including renewable energy), based on *"financial additionality (scarcity of capital), available investment opportunities and our market knowledge and network".*[19] While many of these are countries with real needs in terms of low income, low investments, low access to electricity and low annual generation, these conditions vary between countries (Figure 4 and 5). Examples of countries that are not obvious selections based on needs are South Africa, Vietnam, Ecuador, Dominican Republic and

16 Such as the recent DIM investment in Copperbelt Energy Corporation, or the CIM investment in Gadag Transmission

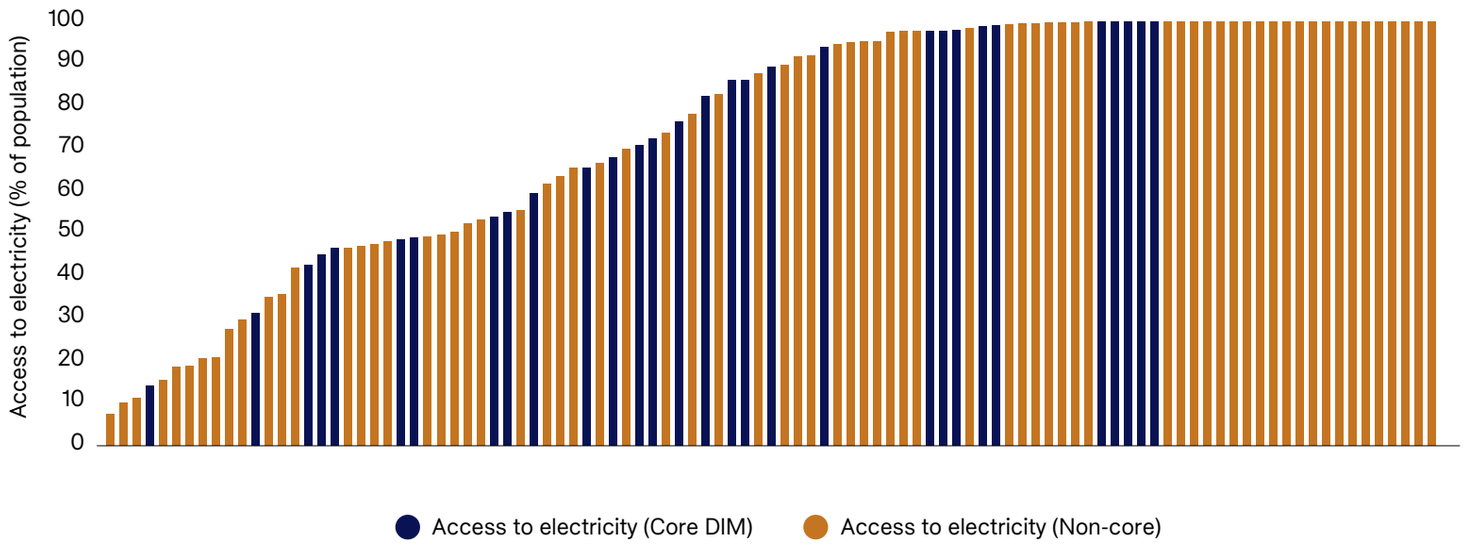
17 https://ieg.worldbankgroup.org/sites/default/files/Data/Evaluation/files/ifc-additionality-middle-income-countries.pdf, https://www.oecd-ilibrary.org/docserver/a13bf17d-en.pdf?expires=1731934116&id=id&accname=guest&checksum=6DDBB9C9CFDD740F0970D41961C0DFF1

18 https://www.oecd-ilibrary.org/docserver/a13bf17d-en.pdf?expires=1731934116&id=id&accname=guest&checksum=6DDBB9C9CFDD740F0970D41961C0DFF1

19 DIM Strategy 2023-2026

FIGURE 4

Access to electricity in ODA-eligible countries, DIM core countries vs non-core countries

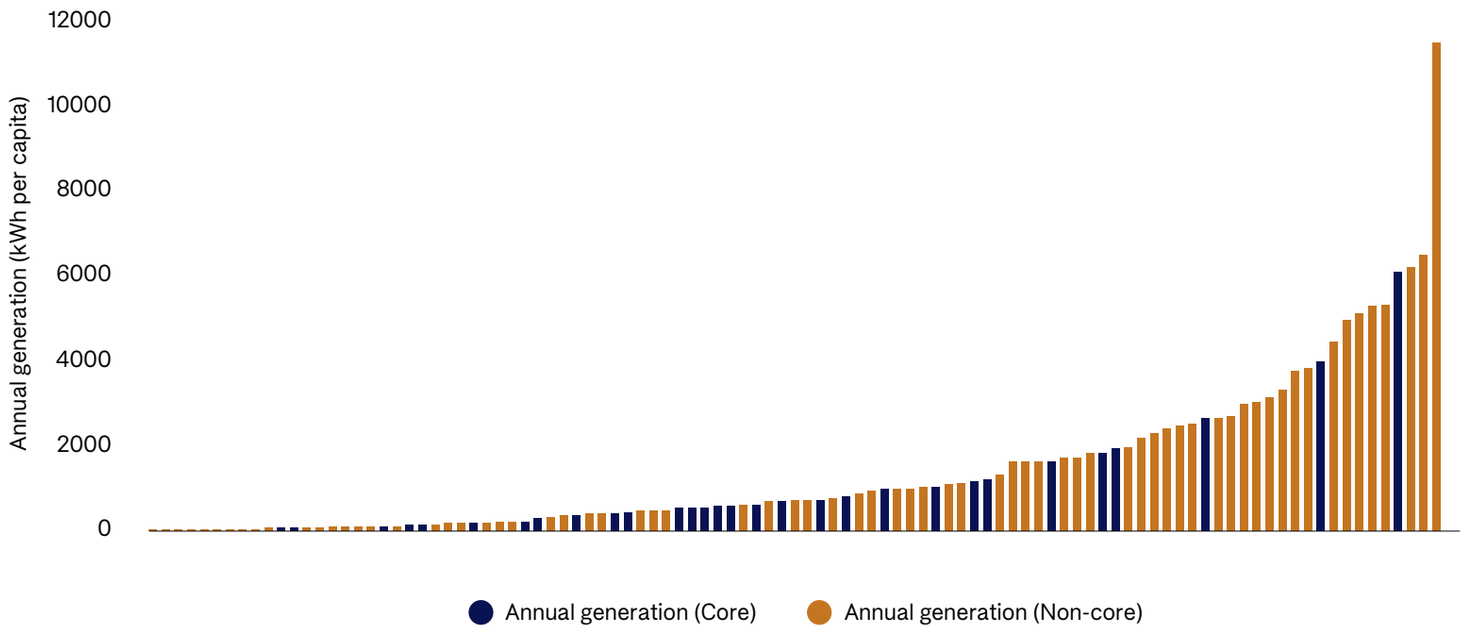


Source: *https://ourworldindata.org/energy-access*

Colombia, which all are relatively high income, have wide access to energy, and produce considerable energy. Table 2 illustrates the difference between core countries. The reason for the idiosyncratic list of core countries is partly historical and partly due to broader Norwegian development interests. Furthermore, there is no explicit mention that DIM should focus on the worst-faring countries in its mandate, which makes the selection of core countries technically in line with its mandate, but not perhaps aligned with the largest needs.

FIGURE 5

Annual electricity generation in ODA-eligible countries, DIM core countries vs non-core countries



Source: *https://ourworldindata.org/grapher/per-capita-electricity-generation*

TABLE 2

DIM Core Countries

Entity	Access to electricity (% of population) (source)	Annual generation (kWh per capita) (source)	ODA score[1]	GNI per capita (USD) (source)
Mozambique	31	577	1	490
Malawi	14	66	1	640
Rwanda	49	71	1	930
Uganda	45	114	1	930
Ethiopia	54	125	1	1020
Zambia	47	973	1	1170
Tanzania	43	138	1	1200
Myanmar	72	376	1	1280
Senegal	68	448	1	1620
Cameroon	65	291	0,5	1630
Cambodia	83	525	1	1690
Zimbabwe	49	547	0,5	1720
Nicaragua	86	619	0,5	2090
Nigeria	60	169	0,5	2160
Kenya	77	229	0,5	2170
Laos	100	6103	1	2310
Ghana	86	672	0,5	2380
Ivory Coast	71	395	0,5	2620
Honduras	94	1151	0,5	2710
Bangladesh	99	596	1	2820
Sri Lanka	100	796	0,5	3620
Vietnam	100	2648	0,5	4020
Indonesia	99	1211	0,5	4580
El Salvador	98	1002	0,5	4670
Namibia	55	526	0	4840
Guatemala	98	738	0	5340
Ecuador	100	1814	0	6520
Colombia	100	1643	0	6630
South Africa	89	3986	0	6780
Dominican Republic	98	1918	0	9070

1 "ODA score" refers to the internal Norfund score used in the additionality calculator, based on income classification see section 2.3.2

2.1.1.1.2 Operationalization of Strategy

Project selection (and thus the portfolio allocation) under DIM is aligned with the DIM strategy. The renewable energy portfolio (NOK 10.2 billion as of Q4 2023) is in line with the KPI for LDCs (goal = 33%; portfolio allocation NOK 3.5 billion) and the KPI for Sub-Saharan Africa (SSA) (50%; portfolio allocation NOK 6.8 billion) but just short of the KPI for equity (70%; portfolio allocation NOK 6.4 billion) (see Figure 6).[20] In this sense, the renewable energy portfolio is well-aligned with the overarching DIM strategy. However, it should be noted that of the NOK 6.8 billion allocated to SSA, NOK 1.1 billion (16%) is in South Africa, which, while technically being in the region, perhaps fits less with the spirit of the KPI. The renewable energy portfolio is concentrated in the strategy's core countries, which receive 78% of the total allocations (Figure 7).[21] Of the remaining 22% going to non-core countries, India accounts for half. This is because of one large scale investment in Fourth Partner Energy, which CIM also later invested in, and is covered by a case study in this report. Some anecdotal evidence from the case studies suggest that some funds have investments that do not fit with the core country list (or even expanded list of countries for funds and platforms), such as ResponsAbility Access to Clean Power Fund (ACPF)'s investments in Thailand and Seychelles (see case study 6.3.3). Portfolio composition in terms of additionality is captured separately in Section 2.3, and in terms of financial returns is covered separately in Section 2.5.2. Finally, the renewable energy composition has also been sufficient to meet the strategic level objectives for the most recent strategy periods, covered in Section 2.2.3.

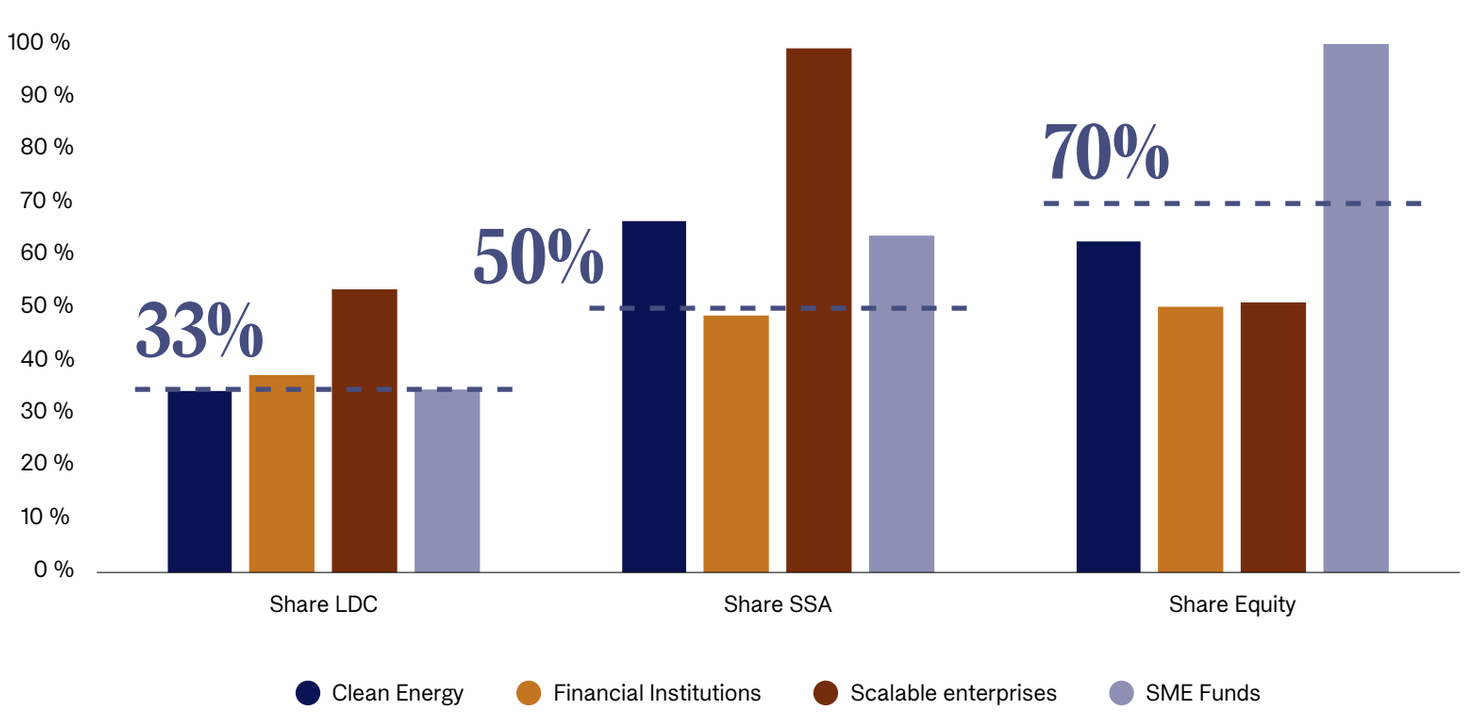
20 For comparison, a comparative study of European DFIs find that their total portfolio allocations (not limited to renewable energy) to LDCs is 17%, SSA 37% and Equity 45% (EDFI Comparative Analysis 2022)

21 Investment amounts are estimated between countries even for funds and multi-country platform investments. The data is also tagged with % share going to LDCs and SSA, which is how the above calculations were possible.

FIGURE 6

Portfolio KPIs by department, based on share of USD commitments Q4 2023[22]

Source: *Norfund portfolio data*[23]

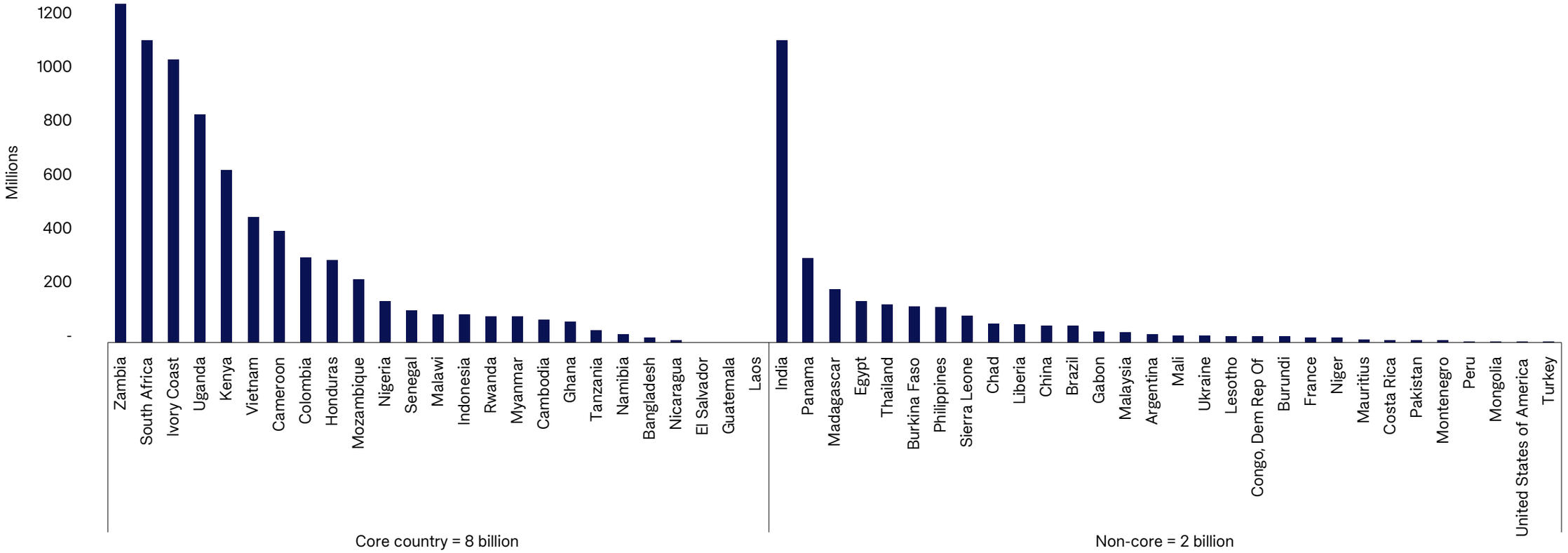


22 Equity = Ordinary shares, preferenced share, funds

23 Based on Norfund's internal tagging of investments as LDC and SSA

FIGURE 7

Renewable energy portfolio allocation by country, NOK commitments Q4 2023



Source: *Norfund portfolio data*

Investments examined in further detail in the case studies for this evaluation show that investments are generally in line with the DIM mandate. Investments fit this mandate most commonly in terms of following priority country lists, targeted segments, and the instruments used (chiefly equity). Investments score slightly lower on additionality and being catalytic. See further details in the case studies (Annex 3).

TABLE 3

DIM case study investments' alignment with DIM strategies

Strategy dimension	ACPF, India	WeLight	Baobab+	Bronkhorstspruit Biogas Plant	Globeleq	Renewable Energy Holdings	H1 Upington
Geography							
Segment/technology							
Instruments							
Additionality							
Catalytic							

2.1.1.2 Climate Investment Mandate (CIM)

2.1.1.2.1 Mandate to Strategy

The CIM mandate has a narrower focus than the DIM – directly targeting greenhouse gas emissions only. The CIM mandate is given by MFA's "Instructions for Norfund's management of the Fund for Investment in Renewable Energy in Developing Countries". It specifies that its mission is *"to contribute to reducing or avoiding greenhouse gas emissions by investing in renewable energy in developing countries with extensive emissions from coal-based and other fossil-fuel power generation."* As with the DIM, the mandate further explicitly states that the Fund should strictly promote *"investment in renewable energy that would not otherwise take place,"* i.e. ensure additionality. However, unlike the DIM, there is no country income level thresholds beyond ODA eligibility, and the CIM scope is narrowed to *"countries where greenhouse gas emissions are or are expected to become substantial, and where investment can help to suppress coal-based power and other fossil-fuel energy generation."* Like with the DIM, the MFA budget propositions (Prop 1.) contain instructions for the objectives of the CIM, but they do not diverge from or add to what is already in the mandate.

Notably, given the narrower scope, there is less room for Norfund to interpret the CIM mandate compared to DIM – under the DIM mandate, renewable energy is not even mentioned, whereas under CIM, the mandate clearly states that emissions are to be reduced or avoided using renewable energy. While under DIM, Norfund has selected to pursue two areas (energy generation and access to energy) in order to contribute towards the ultimate (very broad) objective of economic growth, in line with its constructed theory of change, under CIM both the objectives *and* the pathways there are given in the mandate. These are nonetheless reflected in a theory of change in the Norfund-developed CIM strategies.

The mandate as received from MFA has in turn been translated into Norfund's internal CIM Strategy 2022-2026. Key points of the strategy include:

- **Geography:** A separate list of priority countries from the DIM list has been developed, based on

an assessment of (a) coal in pipeline,[24] (b) grid emission factor, (c) additionality, (d) investability, and (e) Norfund capabilities. In the 2022-2026 Strategy this means India, Vietnam, Philippines, Cambodia, Indonesia, Sri Lanka, Bangladesh and South Africa. All but two of these are already on the DIM list of core countries (India, Philippines).

The adjusted geographical priority scope of the CIM as compared to DIM involves trade-offs that are in line with the part of the CIM mandate regarding coal-based economy, but not with the part of the mandate regarding additionality. The CIM instructions provide a dual mandate that is to some extent contradictory when it comes to selecting countries: countries with the highest coal emissions (or equivalent) are not typically the countries with most opportunities to make investments that would not otherwise take place, because (on aggregate) these countries are more likely to already be receiving investments. There is a tradeoff between (i) cost efficiency (achieving most per USD invested),[25] which is enshrined in the mandate as selecting coal-intensive countries, and (ii) ensuring additionality of investments.

24 Total coal-based power capacity in development, as measured in MW. See https://globalenergymonitor.org/report/boom-and-bust-coal-2023/. CIM Strategy was based on 2021 numbers (https://globalenergymonitor.org/wp-content/uploads/2021/04/BoomAndBust_2021_final.pdf).

25 The grid emission factor in effect measures the CO_2 emissions per unit of electricity generated on the grid. The higher the factor, the bigger impact replacing or avoiding one unit of electricity has.

In effect, the solution Norfund has come up with for CIM is to focus country selection (relatively) more in line with where there to achieve largest reported impact (avoiding CO_2 emissions) per USD invested, and (relatively) less on the likelihood that investments are additional. This is seen from the core country selection in the CIM strategy (Figure 8): the driving factor is largely coal in pipeline, not additionality. Another factor – "investability" – is used in the CIM country selection as an argument for investing in a country, whereas one would expect investments in lower investability countries to be more likely to be additional.

This is different to how the same implicit tradeoff has been done under DIM. The two mandates follow the same structure of expecting both reported impacts and additionality. But the DIM has safeguards in place, such as KPIs on country allocation, and selection of core countries, that ensure the balance is not skewed towards reported impacts or profits, but maintains a focus on additionality. Under CIM, on the contrary, the strategy is designed without safeguards for ensuring additionality from the top-down, and relies on the bottom-up investment-level safeguards only (see Section 2.3.3.1). The risk is that Norfund ends up doing investments under CIM that would have taken place without their involvement, which is not in line with its mandate.

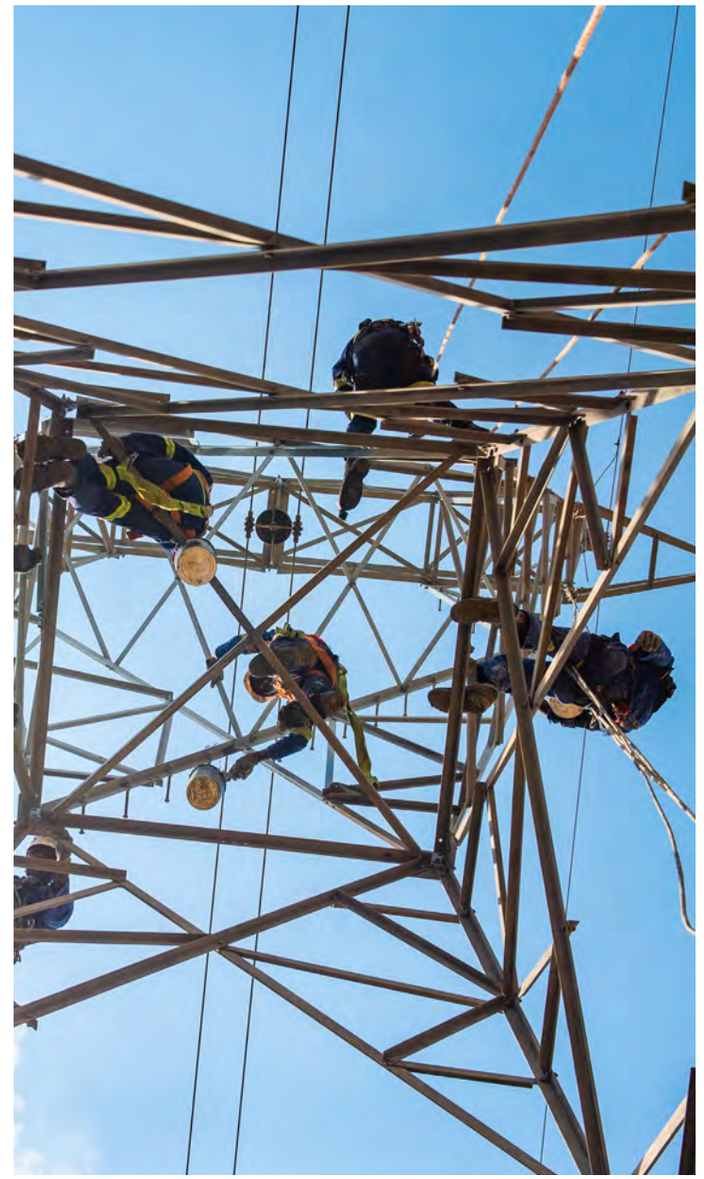
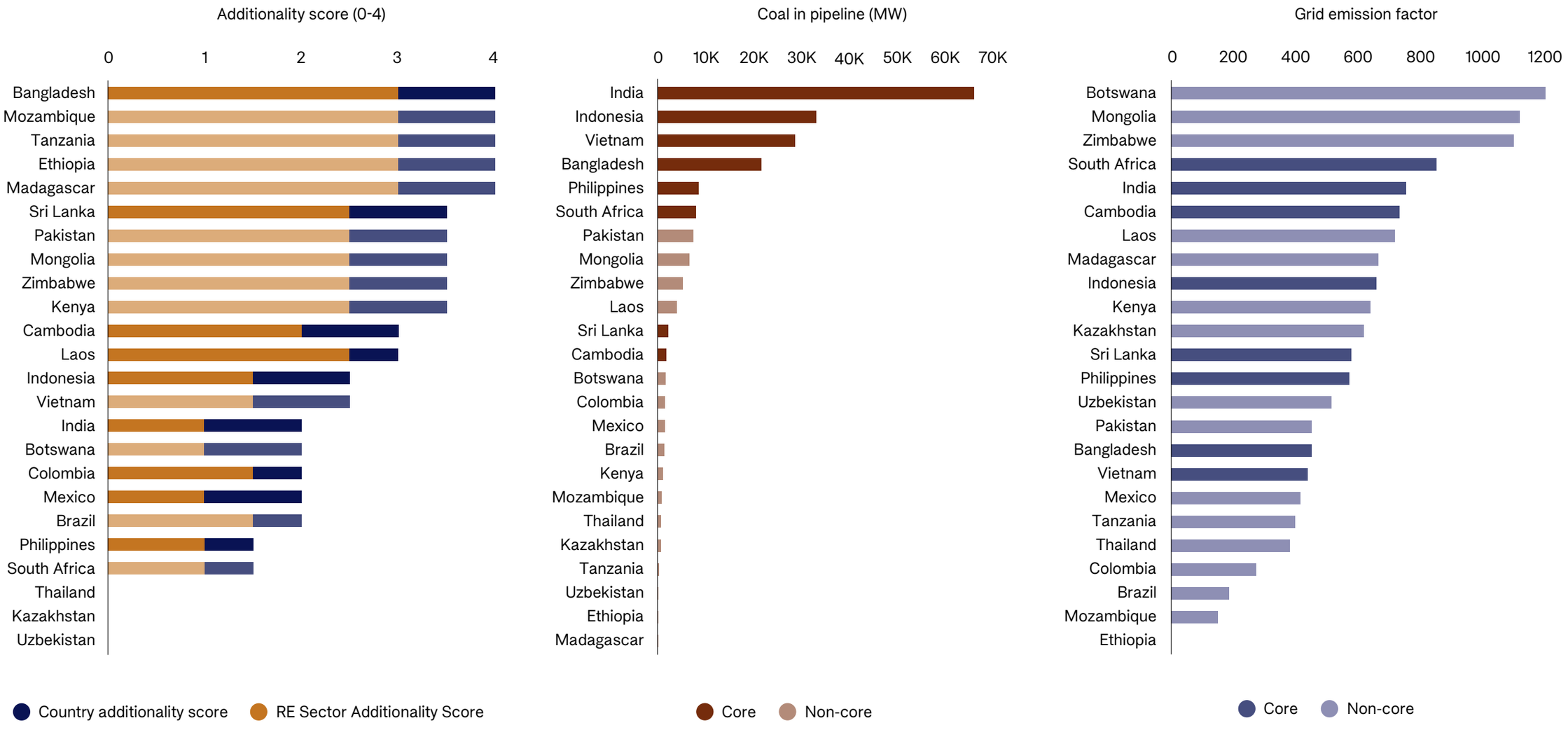


Photo and rights: **Copperbelt Energy Corporation Plc**

FIGURE 8

Country selection for CIM core countries (dark colors = core countries)[26]



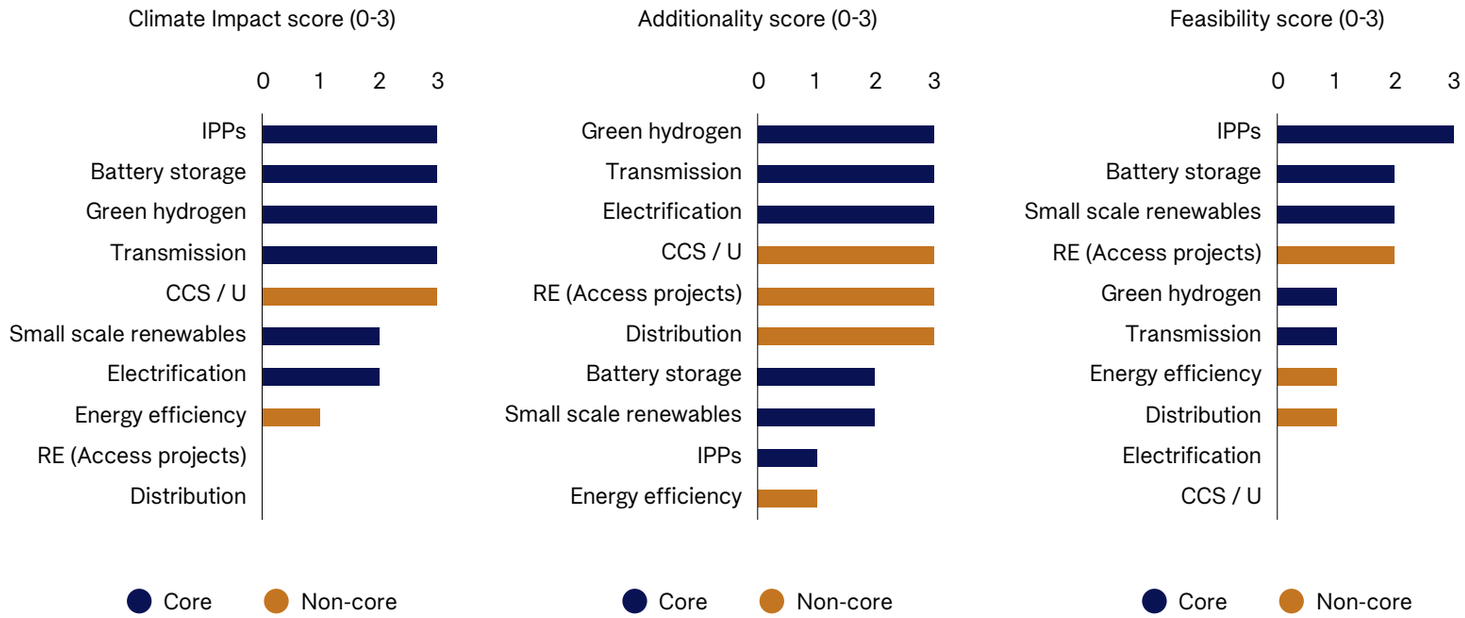
26 Adapted from CIM 2022-2026 Strategy. Additionality: based on Norfund Additionality Calculator last updated December 2022. Coal in pipeline & Grid emission factor: From Norfund CIM 2023-2026 strategy. The shortlist of 24 countries is based on ODA countries excluding China and countries in Europe, excluding countries with 0 coal in pipeline.

- **Segments:** Five core segments were selected in the strategy, based on an assessment of (a) climate impact, (b) additionality and (c) feasibility. These segments are large scale renewables (i.e. IPP), battery storage, green hydrogen, transmission, small scale renewables (i.e. C&I).

  The segments selected in the strategy largely fit with the CIM's mandate, but with regards to the mandate of additionality, the IPP segment is less convincingly relevant. Segments such as transmission, battery storage and green hydrogen see little investment today compared to the investment needs going forward. The IPP and to a lesser extent the C&I segments, however, are relatively more crowded. This is evidenced in Norfund's internal assessment of the segments – which categorizes IPPs as *medium* score (2 on a 1-4 scale), with the description: *"Proven technology and business model in our markets; Private capital available"* (Figure 9). As the case studies of CIM investments in India suggest, the likelihood of additionality in such investments are low due to the competitive markets (see Case study Enel Coral 6.3.2). Interviews in South Africa also revealed a trend where the IPP market was a less competitive years ago than now, and as the market has matured, IPPs are not where Norfund can make the most difference (see Case studies South Africa).

FIGURE 9

CIM Strategy segment classification – Norfund internal additionality score from 0 (low) to 3 (very high)



Source: *Norfund Strategy – Climate Mandate 2022-26*

- **Instruments:** As with DIM, the CIM strategy focuses on equity as a key instrument, aiming for at least 70% equity exposure. As with the DIM, the use of equity as a key instrument is sensible in terms of additionality, as this is typically more difficult to acquire by investees, all else being equal.

2.1.1.2.2 Operationalization of Strategy

The CIM portfolio is relatively new and so a full portfolio analysis is premature. Initiated in 2022, the CIM, as of this evaluation (Q4 2023), has made only 12 investments: six in India, four in South Africa, one in Sri Lanka, and one in a regional fund primarily targeting Southeast Asia. Notably, and not coincidentally, Norfund was able to very quickly disburse CIM funds after its establishment in 2022, in large part thanks to the strategic targeting of countries where Norfund already had operations. Indeed, some of the projects under CIM were even in pipeline already by the time CIM was announced, either because of the anticipated CIM announcement, or because they were originally in pipeline as DIM projects and later converted into CIM project. For example, the Enel projects in India are based on a joint investment agreement Norfund signed with Enel in 2018 (see case study Enel Coral 6.3.2). It should be noted that 9 out of the 12 CIM investments made under the evaluation period were in large scale IPPs or C&I, with the remaining in transmission projects (2) and one regional fund. Although the current portfolio does not fully reflect the breadth of the strategy, it is important to note that it is still very early to assess the portfolio composition.

Investments examined in further detail under case studies for this evaluation are in line with mandate. Two CIM investments were investigated under the evaluation, both of which in India (Enel Coral and Fourth Partner Energy). Generally both investments are mostly in line with the CIM mandate, but there are questions around whether the investments would have taken place otherwise (Table 4).

TABLE 4

Case study investments alignment with CIM mandate

CIM mandate	Enel Coral	Fourth Partner Energy
Contributes to reducing or avoiding greenhouse gas emissions by investing in renewable energy in developing countries with extensive emissions from coal-based and other fossil-fuel power generation	High	High
Promote investments in renewable energy that would not otherwise take place	Low	Medium-Low
Focus shall be on profitable projects, investment shall be based on commercial terms	High	High
Investments in accordance with the national energy and climate plans of investment countries	High	High

2.1.2 Business model

The renewable energy portfolio is a good fit with Norfund's overall business model, reflecting the large role of renewable energy investments in shaping Norfund's business model, policies and procedures. The renewable energy sector accounts for about 1/3 of Norfund's portfolio, and was for a long time the largest single sector (see Section 1.3). As a core part of Norfund's activities, the business model around which Norfund has therefore been structured has to a large degree reflected the renewable energy sector. Furthermore, Norfund as an organization is relatively decentralized, which affords departments such as renewable energy to develop and structure policies in line with their needs. More concretely, aspects of Norfund operations that are well suited to the renewable energy sector include:

- Appropriate menu of instruments, particularly debt and equity. Fund investments are available to reach smaller-ticket size investments. As an infrastructure sector, it is particularly important that Norfund can offer patient long-term funding, and has large amounts of capital and are willing to do repeat investments (See for example Case Study Fourth Partner 6.3.4).
- Good team of sectoral experts, built up through many years of conducting renewable energy investments.
- Strong networks, partnerships and platforms, again built up through years of working with other DFIs, Norwegian private sector, private investors and a broad group of investees (see for example Case Study Globeleq 6.1.5), and others. Through such platforms Norfund is able to invest in larger projects, which can be relevant especially in the IPP segment (particularly relevant for wind projects).

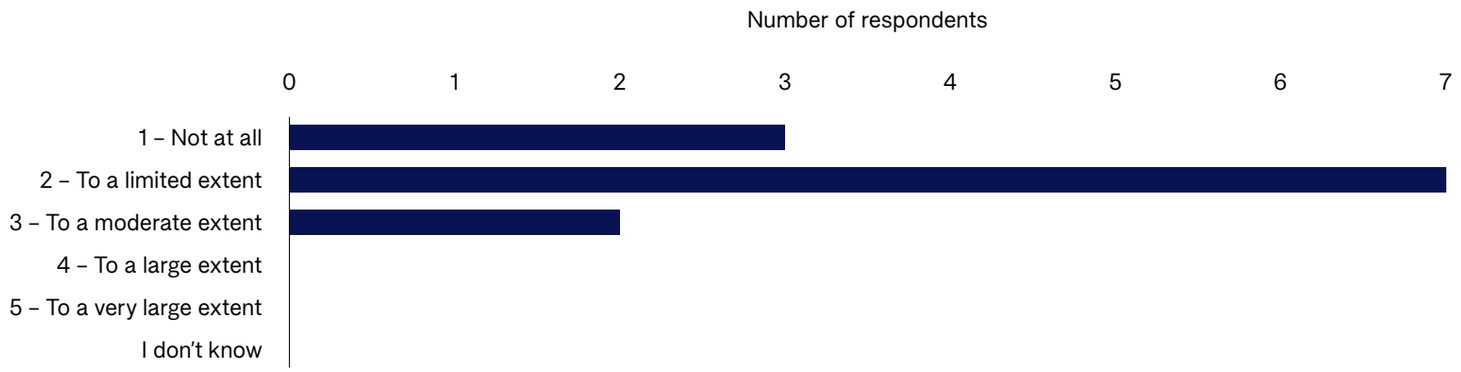
2.1.3 Coherence

2.1.3.1 Norwegian development aid

There is little complementarity between Norfund's investments in renewable energy and other Norwegian official development efforts in the sector. Interviews with Norfund stakeholders on both the strategic level and through the case studies, as well as with embassies in case study countries, informed of little to no efforts made in attempting to make investments fit into larger Norwegian development strategies, actively achieve synergies with other Norwegian development partners' activities, or even communicating in any explicit manner about cooperation (see also survey results in Figure 10). Some examples were identified, such as keeping embassies updated, or possibly making political connections through embassies, but they did not amount to material impacts on the investment projects.

FIGURE 10

Investment manager survey: To what extent did you try to identify opportunities for collaboration with other Norwegian development aid projects when selecting/designing the project? (N=12)



The role for Norfund in Norwegian development cooperation is separate from other actors on purpose. The lack of complementarity between Norfund and the rest of Norwegian development efforts on renewable energy is not surprising, given that Norfund is not treated by the Norwegian government, and MFA in particular, as an instrument in their strategic toolbox for achieving their objectives in the sector. This is unlike other instruments used by MFA, such as funding through Norad. Norfund is an independent, state-owned enterprise given broad directions by MFA, but is empowered by-design to make investment decisions independent from its owner. MFA does not expect Norfund to cooperate with Norwegian official entities, but rather to follow its own strategy, which should reflect its mandates. The Norwegian government's country or sector strategies do not outline roles for Norfund. An illustrative example is the Norway-India 2030 strategy[27] adopted in 2018, where Energy is one of five main areas, but where Norfund or the Climate Investment Fund is not mentioned.

In cases where there has been coherence between Norfund investments and other Norwegian development efforts this has been coincidental – based on independent actors taking decisions within their own incentive structures. One rare success story of Norwegian collaboration involving Norfund is the Mocuba solar power plant project in Mozambique, where Norfund invested in the hydropower plant, alongside embassy funding for transmission and access roads. Another example is a recent project in Indonesia, where Norad helped Norwegian private sector company Tinfos, before Tinfos later made an investment in a hydropower plant. In these cases, there were no overarching strategies or coordination from the Norwegian government, but rather each actor pursuing their own objectives, which happened to overlap. Norfund is looking for investment opportunities aligned with its strategies, and if one happens to have Norwegian involvement this is seen neutrally. The same goes for the embassies, or Norad, who are not obliged to prioritize working with Norfund over other DFIs. This kind of coincidental cooperation depends on the extent to which the Norwegian development actors work in the same countries, segments, etc. A final example is companies that receive early stage funding from Norad's Enterprise Development for Renewable Energy scheme, and later receive investments from Norfund; Norfund is not obligated to look for these kinds of investments, but also not banned from it, they are treated the same as any other company.

While there are potential benefits to be reaped by Norfund from other Norwegian development actors, it is not clear that increasing emphasis on complementarity from the top would improve outcomes. To the extent that Norway supports facilitating factors that can benefit renewable energy investments like the ones that Norfund are doing, such as improving enabling environments, infrastructure, regulation, early-stage risky capital (like the Enterprise Development for Renewable Energy scheme), first loss capital for renewable energy funds[28], or other, this can certainly be capitalized on by Norfund. Just as it could by other DFIs or even private investors. However, there is no evidence suggesting that Norfund would operate better if it was guided by its owner to collaborate with other Norwegian development actors. Nor that Norwegian efforts would be better served by Norad supporting Norfund as opposed to other DFIs. Norfund could foreseeably benefit from other actors supporting its investments, but whether this is a better use of the totality of Norwegian development support for renewable energy or not is outside the scope of this evaluation.

2.1.3.2 Norwegian private sector financing

There are more examples of Norfund collaborating with the Norwegian private sector. The renewable energy portfolio has for a long time been dominated by investments together with Statkraft, another Norwegian government-owned independent enterprise. Norfund has made multiple renewable energy investments together with the mutual insurance

27 https://www.regjeringen.no/contentassets/66f86b283207423fbda-106ce045744d7/indiastrategy_nett.pdf

28 Norad has indirectly provided first loss equity to the Africa Renewable Energy Fund (AREF) through its financial support to Sustainable Energy for Africa (SEFA), in the hope of mobilizing funding (including DFI funding)

company KLP, including the Enel Coral investment examined in the case study, as well as with other companies such as Tinfos, TrønderEnergi, and Scatec.

Norfund's relatively close relation to the private sector benefits from Norway having a relatively developed renewable energy sector keen on investing abroad. For a small country, Norwegian private sector is specialized in renewable energy, with a broad array of expertise.[29] Norfund is neither obligated nor encouraged to favor domestic companies (through ODA), as this would violate OECD regulations on tied aid. To the extent Norfund chooses to work with Norwegian companies compared to companies of other nationalities, this is based on commercial/ financial considerations, alignment with strategy, etc.

Photo: **Per Kristian Sbertoli** | Norfund

29 https://www.nordicenergy.org/wp-content/uploads/2018/12/ZERO-Norfund-Solklyngen_Report.pdf

2.2 Impact and Effectiveness

Evaluation questions

4. To what extent (and how) have Norfund's renewable energy investments generated, or are likely to generate, the results (development outcomes) they were set to achieve as per Norfund's mandate?
   - 4.a Extent and actual outcomes and impact of investments to build sustainable business
   - 4.b Factors influencing success in these engagements
   - 4.c The distributional impacts (i.e. impacts across diverse groups of people) of Norfund's investments
   - 4.d Impacts on corporate governance and/or value of the investee firms
5. Have Norfund's renewable energy investments had any unintended developmental, environmental and social effects, positive or negative?

Key findings

+	Using Norfund's internal result management framework, Norfund has **overachieved its previous targets at the strategy level** (where targets have been set): Under its two mandates, Norfund has financed more than 11 GW of renewable electricity capacity, companies in the DIM portfolio have provided electricity access to more than 7 million households, and investments funded under the CIM portfolio avoid an estimated 5.8 million tons of CO_2 through their renewable energy production every year. Norfund is also well on track to meet the targets for the current strategies for both CIM and DIM.
~	**Distributional impacts** on Norfund's investments are difficult to measure, as two of the three objectives (energy generation and reduced emissions), distributional impacts are largely outside of Norfund's control. The third objective – energy access – offers clearer impact measurement of distributional impacts since investments directly serve local communities and individuals.
~	The **factors influencing success and challenges** vary between investments, but a general trend is that finding the right investee/partner is the most important factor.
~	Norfund's **effect on the corporate governance of its investees** varies across different projects and locations, often shaped the regulatory landscape and its stakeholder position within the investee companies. The best results are found in E&S responsibilities.
−	Compared to other DFIs, Norfund's **approach to corporate governance** in its investment strategy appears less defined. Although Norfund is committed to responsible investment practices, evidenced by its adherence to various sustainability frameworks and due diligence in assessing potential projects and partners, it lacks a specific framework for evaluating the corporate governance of its investees, and limits Norfund's ability to showcase its positive effects in that topic area.

+ = Positive finding − = Negative finding ~ = A noteworthy finding not clearly positive or negative

2.2.1 Measurement of development effects at Norfund

Norfund's measurement of development effects for renewable energy investments is derived from its theories of change. The theories of change for renewable energy outlines which inputs and outputs provided by Norfund lead to what outcomes, and in turn impacts (one theory of change for DIM Supply, one for DIM Access and one for CIM). The mandates for the portfolios (CIM and DIM) are given by Norfund's owner (MFA), which Norfund translated into strategies and accompanying theories of change (see Section 2.1.1). Which development effects are measured, and at what level (output, outcome, impact) is determined by Norfund, and should ideally give a sense of what Norfund is contributing to, but should also feasibly be connected to what Norfund can influence. Compared to the large number of nodes in the theory of change, indicators are tracked for only four nodes on the strategy level for renewable energy:[30]

- DIM Supply: (i) Energy Generation (**output**)
- DIM Access to energy: (i) Increased supply of off-grid energy solutions (**output**)
- CIM: (i) Renewable energy generation (**output**), (ii) Avoided or reduced GHG emissions (**outcome**)

30 In addition, there are Norfund-wide cross-cutting indicators such as job creation and taxes paid

Notably none of these objectives are on the impact level. This is because the impact objectives, such as "economic growth" are very difficult to connect convincingly back to Norfund's actions. Instead, each theory of change links the output objectives tracked (above) with impacts, making assumptions such as: increased energy generation (which is tracked) leads eventually to economic growth (not tracked). This is good practice and commonly used, however it does mean that it is difficult to assess (quantitatively) the extent to which Norfund has achieved its impact objectives. Because of this difficulty, the evaluation has assessed the theories of change and their assumptions instead of attempting to quantify the impact of Norfund's renewable energy investments.

For the four nodes that are tracked, the indicator data is either directly provided by investee companies, or models have been used to estimate the indicator achievements. The four nodes above (Energy generation; Increased supply of off-grid energy solutions; Renewable energy generation; Avoided or reduced GHG emissions) are tracked with specific indicators such as "Electricity production GWh per year", or "number of households provided with electricity." These indicators used by Norfund are collected directly from investee companies through an annual data reporting exercise. Other indicators, such as "Tons CO_2 avoided annually" or indirect jobs are estimated through feeding collected information from investee companies into models (see Box 1). For example, "Tons of CO_2 avoided" is based on the GWh produced (as reported by an investee company) fed into a model that takes into consideration the grid emission factors and other variables.

BOX 1

Assessment of JIM and CO_2 emissions model

The Joint Impact Model (JIM) is a tool for calculating indirect effects, such as indirect jobs created, from data reported on by investee companies.[31] It is useful for estimating *outcomes* when data is only collected on the *output* level. The JIM is based on sound assumptions and is adopted by all the major DFIs. However, it is important to note that the results are only estimates, and the usefulness of those estimates can be questioned. In the renewable energy portfolio, results are calculated for indirect jobs, however this is not a main objective and it is not reported on by Norfund.

The calculations for estimating avoided CO_2 emissions are built on the same principle – calculating an *outcome* level effect from the *output* level data reported by investee companies. However, in the case of CO_2 emissions, this is one of the main objectives of the CIM, and thus its accuracy should be high in order to reflect Norfund's actual outcomes. CO_2 avoidance is calculated from the electricity produced from a specific investment multiplied by the grid emission factor of the country. The grid emission factor is a standard internationally recognized measurement of the CO_2-intensity of a kWh of electricity produced on a certain grid, given for example in tCO_2e/MWh.[32] It is a widely used methodology, developed by United Nations Framework Convention on Climate Change and used by most other similar DFIs. Its use by Norfund is justifiable, and there is no clearly better alternative. However, the measurement of it, especially in developing countries is fraught with challenges,[33] which makes accurate estimates difficult. In general, statistics in developing countries tends to be more unreliable. Furthermore, specific factors make national data collection procedures inadequate; for example, in Western Africa, 40% of electricity consumed is produced by backup generators running on fossil fuels, which are not included in calculations.[34] It is difficult to determine whether these data issues cause a systematic bias in Norfund's reporting, beyond the fact that the numbers are likely not accurate – is CO_2 emission avoidance being overstated or understated; does it vary by country? However, it is important to recognize that the emission avoidance numbers are estimates.

31 https://www.fmo.nl/l/en/library/download/urn:uuid:8ded8883-633c-4a6c-9c7b-7a08254d13a7/jim+methodology+-+jim+2.0.pdf

32 https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v5.0.pdf

33 Even in developed countries various estimates for the same grids vary considerably: https://www.ifc.org/content/dam/ifc/doc/mgrt/20190919-full-report-the-dirty-footprint-of-the-broken-grid.pdf

34 https://www.ifc.org/content/dam/ifc/doc/mgrt/20190919-full-report-the-dirty-footprint-of-the-broken-grid.pdf

Determining the development effects from Norfund's renewable energy investments involves three important challenges: causality, attribution and additionality. Understanding these challenges is important for understanding how to interpret indicators reported by Norfund:

- **Causality** refers to the cause-and-effect relationship between Norfund's investments and the observed outcomes or impact. The successes of investee companies can be a causal effect of Norfund's investment, or they can be caused by a number of other external reasons. Only in the former can we assign effectiveness to Norfund, but this is often difficult to prove. As a result, isolating Norfund's impact can be difficult, leading to potential over- or underestimation of its effectiveness. Norfund alleviates this to some extent by reporting on greenfield (brand new) vs brownfield (already existing) investments, and through comparing increases against baselines for investees.
- **Attribution** involves the challenge of accurately assigning development effects to Norfund's activities as opposed to other investors. In an investment with multiple investors it is not straightforward how to attribute which development effect to which investor.[35] Norfund's approach is to bypass this and report the entire effects without making any claims about relative attribution,[36] hence the attentive language in Norfund's reporting of for example "jobs created in portfolio companies", as opposed to "created by Norfund." The lack of attribution likely leads to an overestimation of Norfund's effects if only looking at the indicator values.

35 This topic is much discussed among DFIs, see for example https://www.bii.co.uk/en/news-insight/research/attribution-not-contribution/ ; https://s3.amazonaws.com/giin-web-assets/giin/assets/publication/research/methodology-for-standardizing-and-comparing-impact-performance-webfile.pdf ; https://www.cgdev.org/blog/what-are-development-outcomes-development-finance

36 This is also the approach taken by many other DFIs, see https://www.publishwhatyoufund.org/app/uploads/dlm_uploads/2021/10/Advancing-DFITransparency.pdf

- **Additionality** is the extent to which the effects would have been achieved without Norfund's involvement. Without additionality, Norfund is achieving development effects that would have been achieved in any case, because they were, for example, obtained through a profitable investment that another investor would have made. Additionality is treated in further detail in Section 2.3.

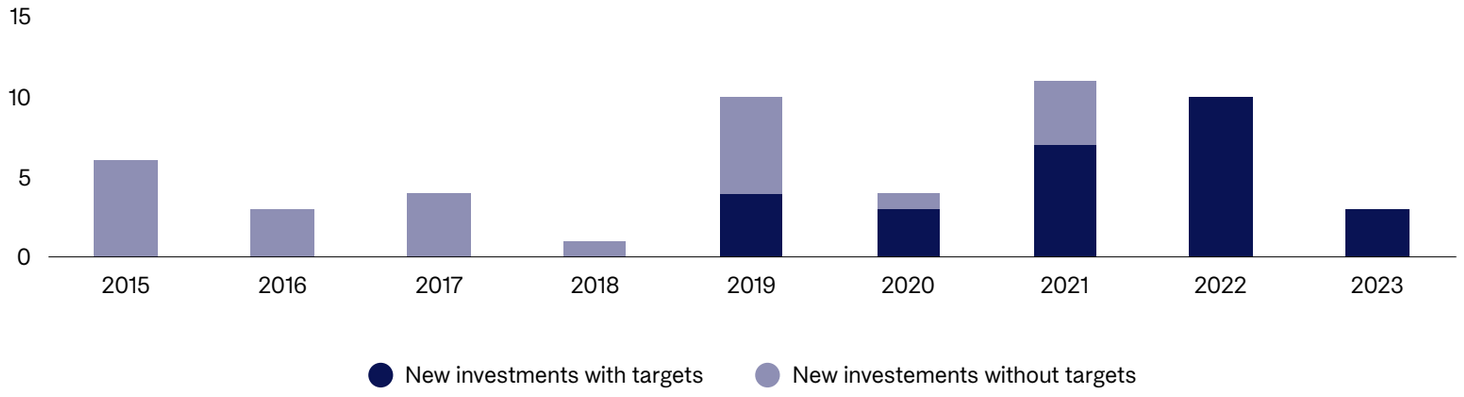
In general, for any fund, one could collect indicator data from investee companies in the portfolio and find large development effects achieved by the fund. Consider for example the aggregate indicators of funds like "Statens Pensjonsfond Utland" or an S&P 500 index fund if they replicated Norfund's data reporting exercises. Norfund's mandate clearly goes beyond that of such funds, but the Norfund results framework does not include much information on the causality, attribution or additionality of investments. These are instead handled on the mandate and strategy level (see Section 2.1.1), and through ensuring additionality for every investment (see Section 2.3), which the reporting *assumes* is sufficient to ensure. Thus, the reported results need to be considered in light of Norfund's performance on those aspects.

2.2.2 Development effect targets and objectives

Prior to 2019, Norfund did not have development effect targets on either investment level or portfolio level. This means we are not able to evaluate the extent to which Norfund met is objectives, as no concrete targets were set. However, from 2019, investment level target data for development effects starts appearing in investment documents (Figure 11). But because these investments made since 2019 have not yet been exited (and do not have expected dates for their objectives), we are not able to analyze the development effect achievement of these (objectives met vs. not met).

FIGURE 11

New Norfund RE investments with and without investment-level targets



Source: *Investment documents*

Also starting from 2019, targets have been set on the strategy level, which allows for a tracking of target achievement. Three strategy documents under the evaluation period include quantifiable objectives, called "impact ambitions" by Norfund, summarized in Table 5 below. Note that the targets are listed in terms of *new* capacity and *new* households, which is described in further detail in Box 2.

TABLE 5

Overview of Strategy level quantitative targets

Mandate	Years	Energy Supply	Energy Access	Avoided emissions
DIM	2019-2022	5000 MW new capacity financed[1]	1.5 million new households provided with electricity	
DIM	2023-2026	6.5 GW new capacity financed	6.5 million new households provided with access to electricity	
CIM	2022-2026	9 GW new capacity financed		>14 million tons CO_2 avoided per year

Source: *Norfund strategies*

1 Of these, 4,000MW should be renewable (as gas power was more relevant back then; the new strategies assumes 100% is in renewable energy).

BOX 2

A note on stocks and flows

It is important, and somewhat complicated, to keep in mind the units of measurements of Norfund's indicators and objectives. On a broad level indicators are categorized as two types:

1. **Stocks** represent quantities that exist at a particular point in time. They are **accumulated totals**, such as MW capacity of Norfund's investees on December 31, 2022, or number of jobs in portfolio companies.
2. **Flows** represent changes over time, measuring the cumulative changes to the stock, such as MWh electricity generated, or CO_2 emissions avoided, over a certain timeframe. We can aggregate these numbers to annual totals, to get data on for example MWh electricity generated in 2022, or annual CO_2 emissions avoided.

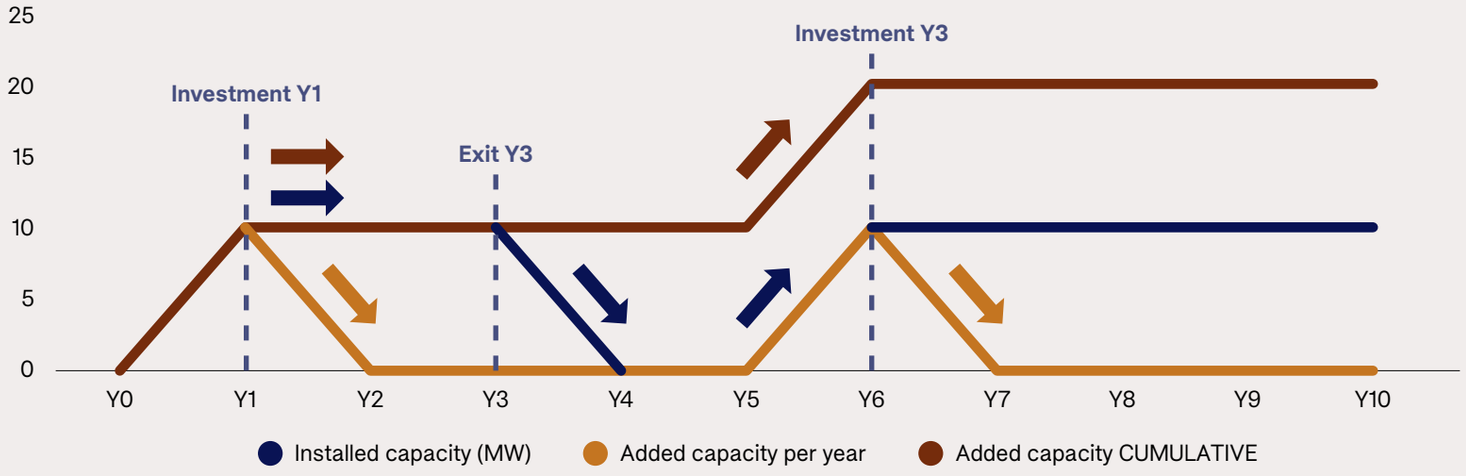
Part of Norfund's aim is to make investments in greenfield projects in order to fund the construction of new capacity (under energy supply), i.e. *recycling capital.* This implies that there is no goal in and of itself for Norfund to have large stock values in its portfolio companies (for example MW capacity). The goal is to fund the construction of new capacity, which is counted as a flow value over the course of a year *(added capacity)*.

For indicators like "CO_2 emissions avoided" it gets more complicated, as once the infrastructure is created, it will (ideally) continue to generate MWh of electricity and thus avoid CO_2 emissions every year. But there is, again, no goal for Norfund to sit on a large portfolio of CO_2-avoiding production. The goal is to construct the capacity that will generate the electricity, then recycle the capital into a new investment.

In short, a successful Norfund would report continuously increasing values on cumulative *"added capacity"* indicators such as "MW greenfield capacity installed", and "CO_2 emissions avoided by constructed greenfield capacity", but the values for indicators such as MW installed capacity or jobs in portfolio companies do not need to grow. For a given investment, added capacity should be counted only once, when the capacity is added, except for cases where Norfund provides additional investment into the same investee. Such one-off indicators should be prioritized over indicators measuring annual outputs or stocks. If annual outputs are measured, they should continue counting for exited investments, which might be difficult operationally (as Norfund can no longer request reporting from the company).

In the figure below, an investment in Year 1 adds 10MW installed capacity to the portfolio, and adds a one-off reported value on the added capacity. In Year 3 the investment is exited, which means the installed capacity falls by 10MW again. In Year 6 a new investment is made which adds 10MW. That year records 10MW added capacity, and cumulative added capacity is now at 20MW, while installed capacity is back to 10MW. For the 10 year period, the total reported value of added capacity is 20MW, which is the critical value; the capacity *installed* at any point in time is of less importance to Norfund's objectives.

	Capacity installed	Added capacity Year x	Added capacity since Y0
Y1	10	10	10
Y2	10	0	10
Y3	10	0	10
Y4	0	0	10
Y5	0	0	10
Y6	10	10	20
Y7	10	0	20
Y8	10	0	20
Y9	10	0	20
Y10	10	0	20



2.2.3 Achievement of development effects[37]

2.2.3.1 DIM: Energy supply

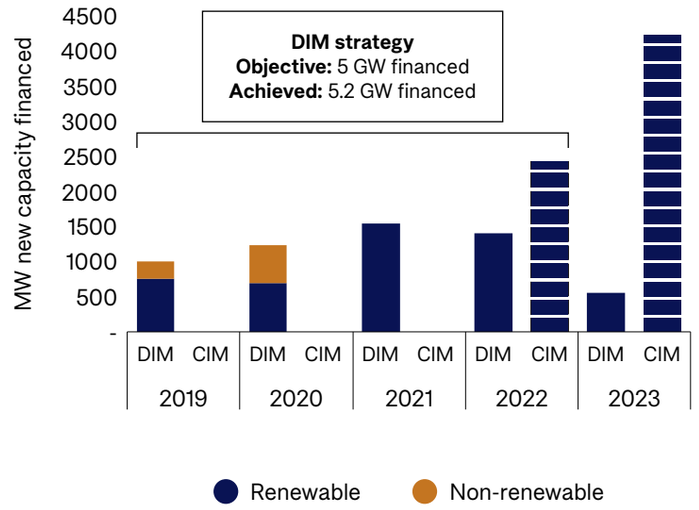
2.2.3.1.1 Outputs and outcomes

The main indicator used by Norfund to measure energy capacity is financed capacity, which is an ex ante input indicator, as opposed to an outcome indicator. When an investment reports X MW new capacity financed, this means that Norfund has committed funds to a project that is expected to have a capacity of X MW when it is completed. This subtracts any capacity the project or company had prior to the Norfund investment, in order to count new (or "greenfield") capacity. This indicator is calculated by Norfund internally at the time of commitment, and the actual MW capacity is later reported on through the annual reporting channels, from the company (as "installed capacity"). As an example: CIM reported 4,244 MW new capacity financed in 2023; this means the six CIM investments signed in 2023 are expected to have an additional capacity of 4,244 MW when construction is eventually completed.[38] In one case study investment (Fourth Partner Energy), Norfund is providing "bridge financing" to an investee until they can find new investors, and the "financed" capacity reported includes any new capacity funded by these new prospective investees, if they materialize. The measurement in this case exaggerates the impact of Norfund's funding (further complicated by a lack of attribution in reporting), which makes reporting on aspirational outcomes even more complicated. In the case of Fourth Partner, the development effect reporting team manually overwrote the previous expected capacity in order to solve this challenge. It is not clear why the aspirational outcome funded (input) would be a better measure of Norfund's objective than measuring the actual MW constructed financed by Norfund (output).

Over the period 2019-2023, DIM financed 5 GW of new renewable capacity, with CIM financing another 6.7 GW. The DIM strategy 2019-2022 objective was to finance 5 GW new capacity, which was achieved by financing 5.2 GW (Figure 12). Of this, 4.4 GW was from renewable sources, compared to a target of 4 GW (the non-renewable capacity was from gas-powered plants). Since 2021 all new capacity financed has been in renewable energy. CIM has financed 6.7 GW in its two years of operations, and is well on course to reach its target of 9 GW by 2026.

FIGURE 12

New capacity financed, DIM and CIM 2019-2023



Source: *Norfund Development Effects data and Annual Reports and Reports on operations 2019-2023*

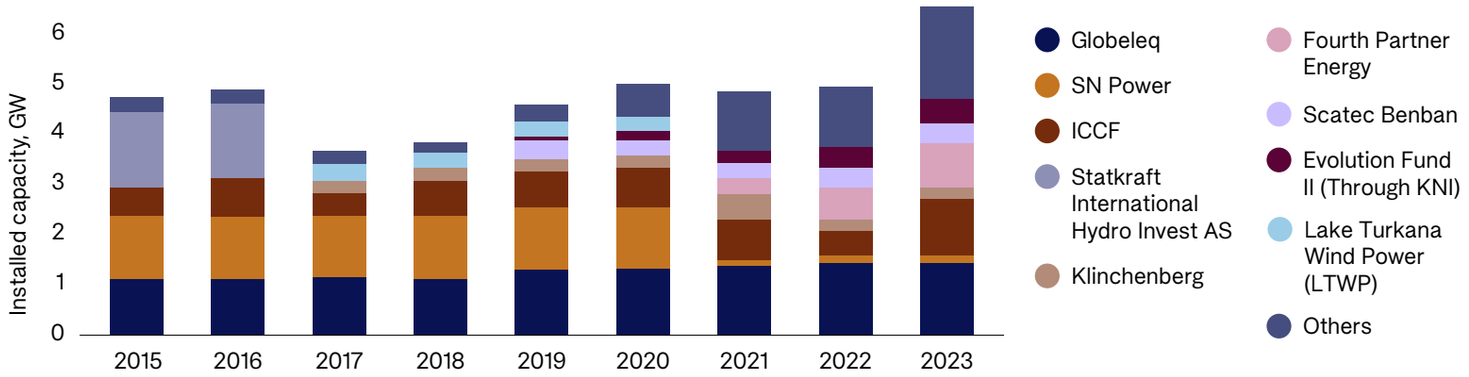
37 The development effect data collection and operationalization of indicators has changed over the period, with sometimes varying definitions and granularity in data collection. This makes comparisons over time somewhat difficult. The varying approaches to indicators, combined with ad hoc corrections over the nine years, also means that the raw data received from Norfund does not always add up to aggregated numbers reported by Norfund in for example annual reports. The evaluation team has attempted to use disaggregated investment-level data where possible, but this has not been possible for every analysis.

38 An example from the case studies, Enel Coral, shows that there is indeed a risk that construction projects do not always materialize as expected. In the Enel Coral, the initial expected project of 285MW was scaled down to 168MW due to challenges with suppliers. It should be noted that the Norfund investment that was signed was for the eventual 168MW (because the Norfund investment was signed later in the process), but the case illustrates the risk that projects funded by Norfund and accounted for in the results framework might not ever perform to the aspirational targets.

Large parts of Norfund's investees' installed capacity tends to be concentrated in a small number of investees (Figure 13), especially in earlier years (until sale of SN Power in 2021). This reflects the dominance of the three large platforms (Statkraft, SN Power, Globeleq) in Norfund's renewable energy portfolio. Any analysis of capacity installed by instrument, region, modality, etc. will therefore just reflect these three. It is natural that large platform companies will appear as large sources of installed capacity, as they are more rarely 'recycled', or funds are recycled internally, and (ideally) contain an increasing number of assets (and therefore capacity) within them.

FIGURE 13

Installed capacity by investee



Source: *Norfund Development Effects data*

2.2.3.1.2 Impacts

The link between supply of energy (output) and economic growth (impact) is well documented.[39] At a general level, there is reason to believe an investment in energy supply would lead to the impacts of economic growth and job creation (see theory of change in Figure 14). However, this causal effects might be tampered by factors related to the grid (as highlighted in Norfund's theories of change); there can be bottlenecks with evacuation of power,[40,41,42,43,44] and grid absorption capacity (for instance Klipheuwel Wind Project in South Africa). Further, there are regulatory challenges[45] for example with the utility companies[46], with energy subsidies[47], or with cross-border or intra-state energy trade[48]. These are challenges that limit the effect of injecting capital into energy supply, and are documented in some of the case studies (see full case studies in Annex 3). In short, the linkage between energy capacity installed and actual consumption of electricity is reliant on many factors outside of Norfund's control, and there could be cases where the assumptions do not hold. As an investor, Norfund does strive to make investments where the challenges are lower, which means that the impact of Norfund's actual investments would be relatively less hampered by these issues. However, they might reduce the universe of investment opportunities available.

39 See overview at https://blogs.worldbank.org/en/energy/how-much-do-we-know-about-development-impacts-energy-infrastructure

40 https://www.researchgate.net/publication/347762218_Electricity_transmission_distribution_losses_and_economic_growth_in_South_Africa

41 See South Africa case studies

42 https://www.mercomindia.com/renewable-projects-bogged-down-by-transmission, https://www.sciencedirect.com/science/article/abs/pii/S1040619019302763

43 See Fourth Partner Energy case study in India

44 https://www.wits.ac.za/news/sources/scis-news-and-opinion-pieces/grid-capacity-a-significant-obstacle-to-renewables-transition-and-fixing-load-shedding.html

45 https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2024/Jul/IRENA_SS_Africa_policies_finance_RE_2024.pdf

46 See South Africa case studies

47 https://link.springer.com/book/10.1007/978-3-319-92219-5

48 https://www.usaid.gov/sites/default/files/2022-05/PA_Transmission_Roadmap_508.pdf

FIGURE 14

Norfund's Theory of Change (Development Mandate): Supply

Problem

- The power sector in low-income regions remains largely underdeveloped
- Installed capacity is insufficient to meet demand and is holding back growth
- Reliance on emergency power provision is draining utility resources
- Reliance on state utilities drains public resources and is less efficient
- Inadequate supply of "bankable" projects available to investors
- The power sector is the largest global emitter of greenhouse gases

Input

Sphere of control

- Funding for early-stage project development
- Capital
- Mobilisation of industrial expertise
- Mobilisation of other financing
- ESG advice and requirements
- Active ownership

Output

Sphere of control

- Construction of power plant
- Increased demand for input from suppliers
- Efficient and compliant operations
- Energy generation
- Jobs creation in construction and operations
- Payment of taxes and fees

Short-term outcome

Sphere of direct influence

- Reduced power outage time and lost sales
- Reduced electricity price
- Lower energy costs
- Avoided GHG emissions

Medium-term outcome

Sphere of indirect influence

- Increased business production
- Job creation in businesses
- Increased taxes and fees paid by businesses

Impact

Sphere of interest

- Economic growth
- Job creation
- Climate change mitigation

Who experiences the impact?

- Investee
- Businesses
- Workers
- Government
- Environment

Assumptions

- Com. and fin. arrangements in place
- Broad community support
- Off-taker honours obligations
- Stable pol. and sec. situation

Assumptions

- Transmission line exists
- Grid can absorb power
- Production replaces power generated by fossil fuels

Assumptions

- Environmental is conductive to business growth
- Demand growth facilitated

2.2.3.2 DIM: Energy access

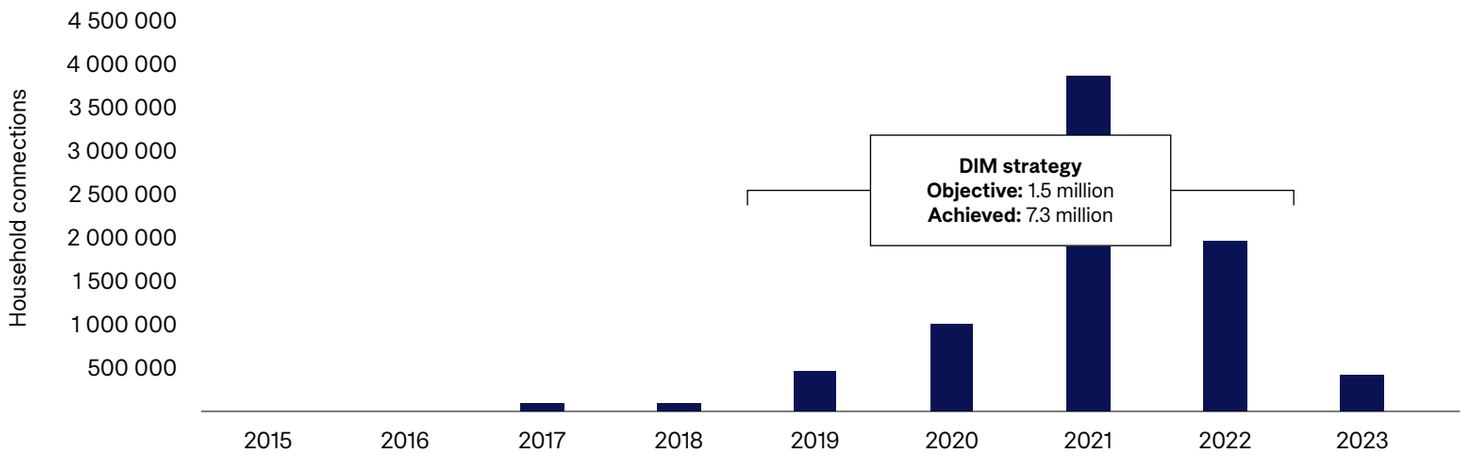
2.2.3.2.1 Outputs and outcomes

Over the evaluation period, Norfund investees have provided access to energy to 7.9 million households. From 2019 onwards, Norfund adapted its investment strategy to include distributed energy projects that provide direct connections to households and businesses. The objective for access to energy was significantly exceeded in the 2019-2022 strategy period, with 7.6 million households provided with electricity, far outreaching the target for the period (1.5 million), which appears conservatively set. For the new strategy period, the level of ambition for this objective has been increased to 6.5 million households.

Contributions towards providing access to energy is heavily concentrated among a small number of investees. The ACPF fund is responsible for 48% of the reported connections, and together with the second (Greenlight Planet) and third largest (d.light) contributors, the top three investees account for 80% of connections.

FIGURE 15

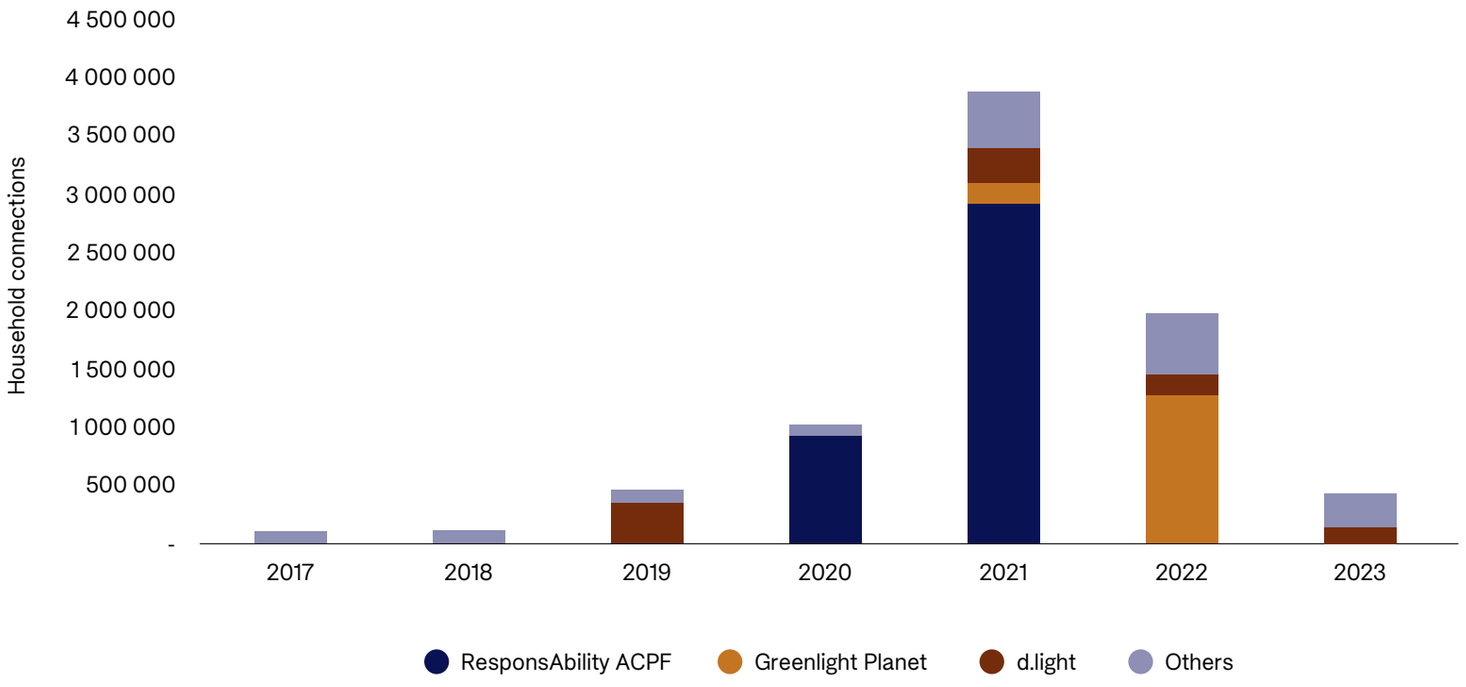
Households provided with electricity access (new household connections + Household Solar Home Systems)



Source: *Norfund Development Effects data*

FIGURE 16

Breakdown of household connections provided by investee



Source: *Norfund Development Effects data*

2.2.3.2.2 Impacts

The literature shows that increased supply of off-grid energy solutions (output) or access to energy is generally associated with benefits such as those listed in the ToC (Figure 17) – educational benefits, security, reduced indoor air pollution, etc.[49], which arguably amounts to "improved standard of living" (which is not further defined by Norfund). However, there are challenges with pricing and affordability, as seen in the Madagascar case studies, and in the wider research: while off-grid access can be important for customers, customers are very price sensitive, and it is difficult to reach the "bottom of the pyramid" with a sustainable commercial model that does not involve subsidies (e.g. grant schemes that cover some of the costs for consumers)[50,51,52].

49 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2367084

50 https://www.journals.uchicago.edu/doi/full/10.1086/705417
51 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2367084
52 https://www.esmap.org/Designing%20Public%20Funding%20Mechanisms%20in%20the%20Off-Grid%20Solar%20Sector

FIGURE 17

Norfund's Theory of Change (Development Mandate): Access

Problem

- The power sector in low-income regions remains largely underdeveloped
- Low levels of access to electricity, over 800 million worldwide
- Dependence on expensive and pollutive alternatives
- Rural development and service provision constrained

Input

Sphere of control

- Funding for business development
- Capital
- Mobilisation of industrial expertise
- Mobilisation of other financing
- ESG advice and requirements
- Active ownership

Output

Sphere of control

- Increased supply of off-grid energy solution
- Creation of jobs and income opportunities
- Payment of taxes and fees

Short-term outcome

Sphere of direct influence

- MSMEs pay less for electricity
- MSMEs have more stable electricity access
- Households get access to electricity
- Social services providers gain access to electricity

Medium-term outcome

Sphere of indirect influence

- Growth and improved sustainability in local MSMEs
- Increased study time
- Improved security
- Reduced indoor air pollution
- Connectedness improved
- Social infrastructure improved

Impact

Sphere of interest

- Improved standard of living

Who experiences the impact?

- Investee
- Businesses
- Workers
- Government
- Environment
- Households

Assumptions

- Com. and fin. arrangements in place
- Broad community support
- Sound business model
- Stable pol. and sec. situation

Assumptions

- Energy solution provider able to provide quality products and services at affordable prices
- Appropriate interventions undertaken to facilitate uptake

Assumptions

- Off-grid solutions are managed well by customers
- New product is utilized by locals to increase consumption or replace hazardous practices

Findings from the case studies illustrate the type of impact that can be achieved from supporting access to energy firms such as WeLight and Baobab+ in Madagascar. These include:

- Electrification of schools allows for extended study hours, the use of electronic learning tools, and a more comfortable learning environment. At home, improved lighting has enabled children to study in the evening
- Improved lighting in households and public spaces enhances the feeling of safety in general and more specifically for women, while potentially reducing the risk of accidents and crime.
- Reliable electricity in health facilities enables better maternal health services, such as childbirth and emergency services by night.
- WeLight has connected 2,525 SMEs and microbusinesses to reliable energy supply to sustain business operations, enabling extended operating hours and increased productivity. It has installed 2,000 streetlights, and connected 660 public buildings to electricity.

2.2.3.3 CIM: Avoided CO_2 emissions

2.2.3.3.1 Outputs and outcomes

Like with energy supply, some of the avoided CO_2 emissions indicators measure ex-ante expected emissions rather than emissions estimated based on actual production. For example, in the 2023 annual report, Norfund reports "expected annual avoided emissions from projects financed" that year, which again is an input indicator based on the funding going into a project, and estimates avoided emissions based on expected production once construction is complete. It should be noted that the owner's instructions for CIM does ask for reporting on both ex ante and ex post results, but the presentations in the two annual reports so far (2022 and 2023) containing information on CIM could do a better job clarifying what is being reported (the headline key figure of 8.5 million tons is the input indicator, but in the main text the 2.2 million tons of ex post avoided emissions can be found).

Already in its second year of operations (2023), CIM recorded estimated avoided emissions of 5.8 million tons of CO_2 from six active investments, based on a production of 5,665 GWh. Of these estimated avoided emissions, 2.2 million tons are from greenfield capacity; in other words, 3.6 million tons already existed before Norfund's investment. Out of the 5.8 million tons, 2.7 million tons come from a single investment in H1 Capital, which is a platform investment company. From launching the CIM in May 2022, production has been fast to come online, which is a result of Norfund moving pipeline investments into CIM immediately after its launch, as opposed to starting from scratch (see case study Enel Coral for an example).

2.2.3.3.2 Impacts

CIM is well situated to reach its objective of annual CO_2 emissions avoided of 14 million tons. However, this depends on the measurement used. After two years of operations, CO_2ex ante expected annual avoided emissions from CIM investees are 14.7 million tons compared to target of 14 million tons. The estimated avoided emissions from actual production as of 2023 was 2.2 million tons. According to the CIM Strategy document, the ambition is to have "contributed to >14 million tons CO_2 avoided", while according to Norfund's 2023 annual report, Norfund has already "surpassed the ambition for the current strategy period 2022-2026 to avoid 14 million tons of CO_2 emissions annually." This might suggest the CIM may have set its 2022-2026 strategic ambitions too conservatively. Additionally, these achievements required only about 3.8 billion NOK, well below the allocated 10 billion NOK over the strategic period. This efficient use of capital and progress suggests that the initial targets could have been more ambitious, especially in light of rapid advancements in renewable energy technologies. A reevaluation and potential increase of these targets could better align Norfund's efforts with the accelerating pace of renewable energy adoption and enhance its impact on global carbon reduction efforts. Finally, it remains to be seen whether the funding leads to the actual ex post production and thus emission avoidance.

While it is straightforward to say that producing one MWh of electricty from renewable sources emits less CO_2 than e.g. coal, the theory of change behind *avoiding emissions* is more complicated. First, energy capacity installed does not lead to avoided CO_2 emissions unless that electricity is *consumed*, which is potentially dependent on other bottlenecks in the system (grid, regulations, etc.), as described under the discussion on the *energy supply* theory of change above (Section 2.2.3.1). Secondly, is that renewable energy consumed instead of or in addition to the existing electricity? Some research indeed does suggest that increased renewable energy consumptions is linked to lower emissions, and that this effect is larger in lower income countries than higher.[53] but it is hard to determine causality. Norfund's theory (Figure 18) is that (i) producing renewable energy capacity will, on the margin, reduce the construction of new non-renewable energy plants in the long run[54] and (ii) learning curve effects on new technologies, i.e. making emerging technologies cheaper by testing them or scaling them. Most countries relevant for Norfund are adding great amounts of *new* capacity to meet increasing demand, so decommissioning existing non-renewable plants is generally not relevant. Assuming that Norfund invests in renewable technologies that are sufficiently cheap to compete with non-renewable sources (which seems a fair assumption), the marginal effect of Norfund's investments is likely to ultimately be avoiding potential CO_2 emissions, but not replacing current.

One additional issue with solar and wind power is *intermittency*; without sufficient storage options, wind and solar power are only able to replace non-renewable electricity intermittently, and there is a lower bound for how much non-renewable can be replaced (currently and in the future) with wind and solar in order to ensure a baseline generation.[55,56] The intermittency issue and lack of storage reduces the elasticity of substitution between renewable and non-renewable energy.[57] High penetration of intermittant renewable energy could therefore require further investments in storage technologies.

53 https://www.sciencedirect.com/science/article/pii/S2211467X23000718
54 This of course assumes that the renewable energy is able to compete with non-renewable sources on price.
55 https://www.sciencedirect.com/science/article/abs/pii/S0306261917308346
56 https://www.iea.org/reports/integrating-solar-and-wind
57 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4665589

Photo: **Green Roof**

FIGURE 18

Norfund's Theory of Change: Climate Investment

Problem

- Emerging markets account for more than two-thirds of global GHG emissions
- To reach climate goals, it is estimated that emerging markets will require 50-60% of the total investment needed
- The power sector accounts for a large share of GHG emissions in these markets driven by high share of coal in the electricity mix
- There is currently a huge funding gap investment in clean energy in emerging markets need to increase more than 7 times from USD ~150bn to over 1tn per year

Input

Sphere of control

- Funding for early-stage project development
- Capital
- Mobilisation of industrial expertise
- Catalyse private capital
- ESG advice and requirements
- Active ownership

Output

Sphere of control

- Construction of power plants and enabling technologies
- Renewable energy generation
- Efficient and compliant operations
- Increased demand, job creation and taxes

Short-term outcome

Sphere of direct influence

- Higher grid capacity
- Replaces current or future fossil power generation
- Learning curve effects on next wave technologies [1]
- Reduced power outage time and lost sales

Medium-term outcome

Sphere of indirect influence

- Higher renewable penetration
- Avoided or reduced GHG emissions
- Lower costs of future energy projects
- Increased production job creation and taxes paid by businesses

Impact

Sphere of interest

- Climate change mitigation
- Economic growth
- Job creation

Who experiences the impact?

- Investee
- Businesses
- Workers
- Government
- Environment

Assumptions

- Com. and fin. arrangements in place
- Broad community support
- Off-taker honours obligations
- Stable pol. and sec. situations

Assumptions

- Transmission line exists
- Grid can absorb power

Assumptions

- Environmental is conductive to business growth
- Demand growth facilitated
- Government supports renewable energy growth

Notes:
1. Less mature clean technologies such as green hydrogen, floating solar, offshore wind etc.

2.2.3.4 Cross-cutting objectives

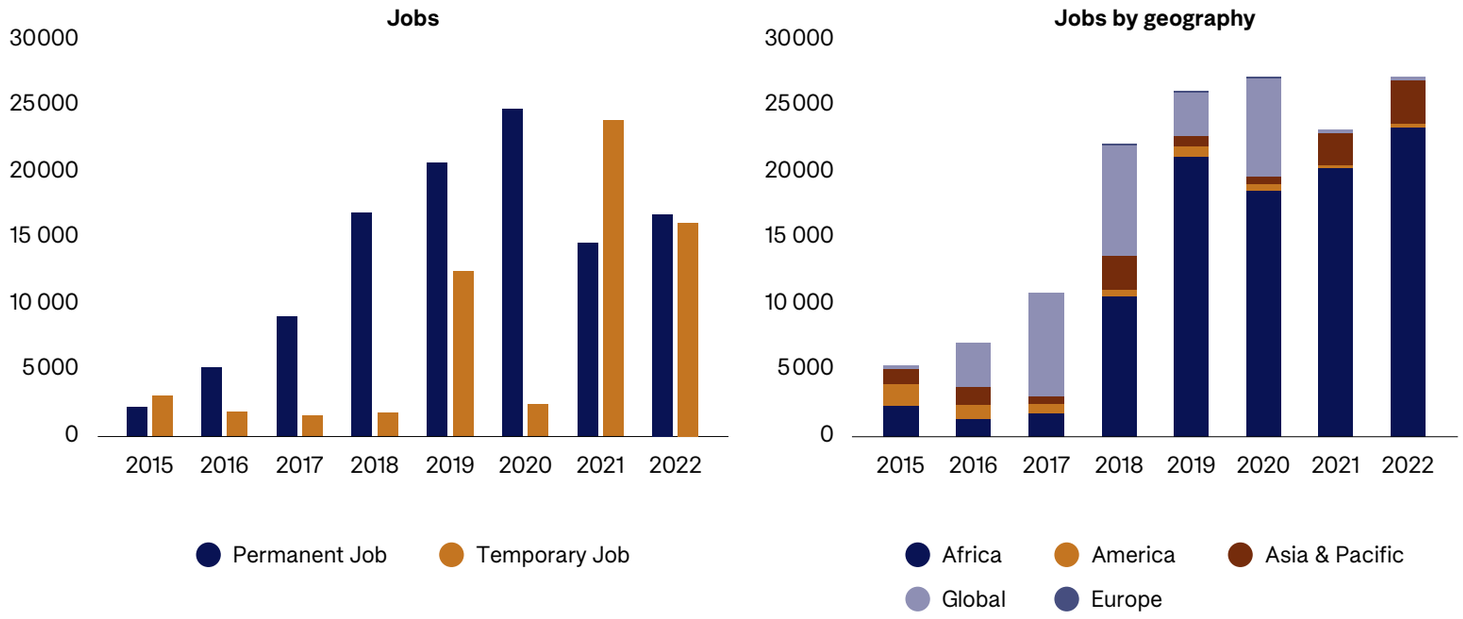
Norfund's investees in the renewable energy portfolio from 2015 to 2022 on aggregate employed between 5,000-40,000 people over the period (Figure 19). It should be noted that direct job creation is not an objective of the renewable energy portfolio per se, but every Norfund investment reports on it. For scale, in 2023, the renewable energy portfolio accounted for 33,000 out of 625,000 total jobs in Norfund portfolio companies.[58] Of the total jobs 2015-2022, 61% were permanent jobs, primarily generated from O&M activities, while 39% were temporary positions associated with the construction phases of projects. This distribution reflects the nature of renewable energy projects, where construction creates short-term employment, and ongoing Operations and Maintenance (O&M) provides sustained job opportunities.

Gender distribution between 2015 and 2022 was relatively balanced, with 56% of jobs held by men and 44% of jobs held by women, particularly evident in Africa, where inclusive hiring practices were more prominent (Figure 20). In other regions like Asia and the Pacific and Latin America, gender representation varied, reflecting regional labor market conditions or specific project characteristics. Youth employment grew significantly from 2019 onwards, with 9,798 youth jobs in 2022, mainly in Africa, reflecting the focus on addressing youth unemployment. In contrast, adult employment was 6,937 in 2022, suggesting a strategic shift towards youth engagement. This focus may require further adjustments to balance employment opportunities across different demographics and regions, ensuring that Norfund's investments continue to support inclusive and diverse job creation outcomes.

58 Indirect jobs created through the supply and access to energy is more significant, but this is difficult to attribute to specific investments, see Box 1.

FIGURE 19

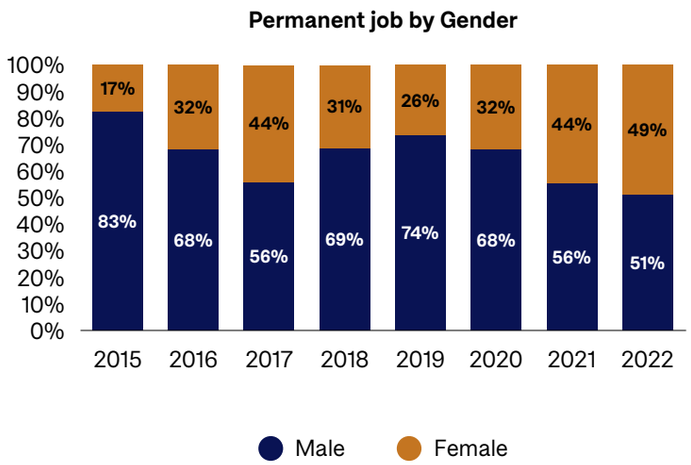
Aggregate jobs in Norfund investees (renewable energy) 2015-2022



Source: *Norfund development effects data by investment (2015-2022)*

FIGURE 20

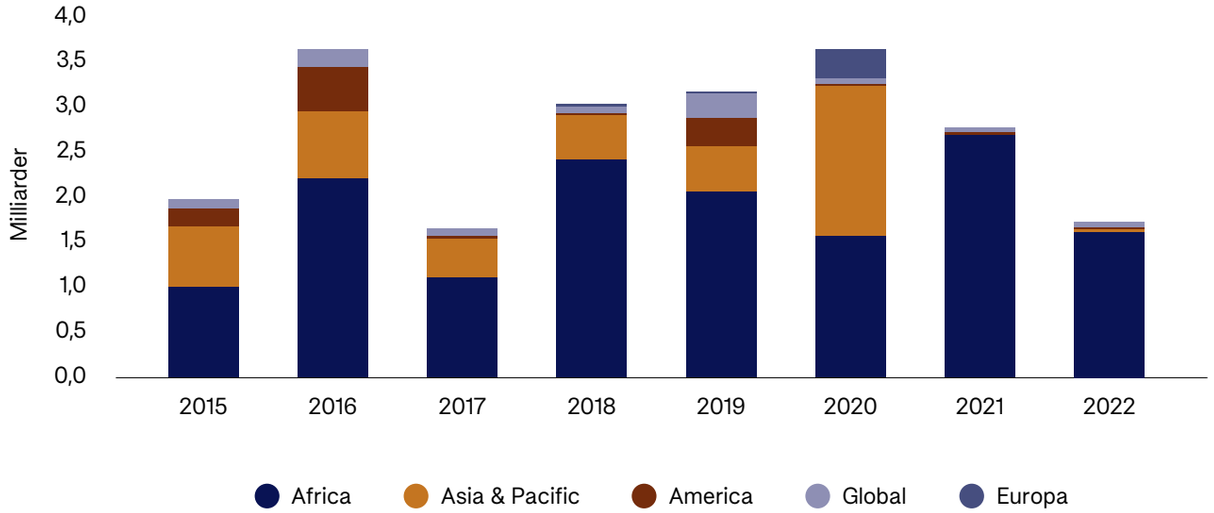
Aggregate jobs in Norfund investees (Renewable energy) 2015-2022, gender shares



Source: *Norfund development effects data by investment (2015-2022)*

FIGURE 21

Total taxes paid by Norfund renewable energy investees annually, by region



Source: *Norfund development effects data by investment (2015-2022)*

From 2015 to 2022, Norfund's renewable energy investments resulted in total tax contributions of approximately NOK 17.2 billion across its operating regions. This tax revenue was primarily generated from Africa, which contributed NOK 12.8 billion (74% of total taxes), aligning with Africa's dominant share of investments and installed capacity. The tax contribution from Africa correlates with the region's high level of job creation, particularly in O&M, which tend to provide sustained tax revenues through ongoing business activities and employment.

2.2.4 The distributional impacts of Norfund's investments

For two of the three objectives (energy generation and reduced emissions), distributional impacts are largely outside of Norfund's control. First objective, energy generation (supplied to the grid), has distributional impacts which are difficult to assess, and which are characterized at a country/grid-level rather than investment level. In other words, every investment providing energy to the South African grid will have approximately the same distributional impacts. To be sure, a unit of energy added to the grid in South Africa might have differential impact on various groups within the country, based on their current consumption of electricity, their income level and affordability of electricity, if they are even connected to the grid, etc., but the unit of electricity added to the grid does not have an impact on this distribution. This is also the rationale behind the JIM calculations of indirect jobs from produced energy – the model takes as an input

amount of electricity produced and various factors related to the context, and can based on this calculate how many jobs were created. The second objective – avoided CO_2 emissions – has an even broader scope of beneficiaries, and the distributional impact of any unit of CO_2 emissions can arguably be considered similar.

The third objective – energy access – offers clearer impact measurement of distributional impacts since investments directly serve local communities and individuals. Investments in off-grid energy solutions, such as those by WeLight and Baobab+ in Madagascar, have expanded access to electricity for rural communities that are not served by the national grid. These projects have produced outcomes and impacts such as jobs created, increased revenues for businesses by providing productive energy, allowing them to extend their working hours and utilize electric machinery, increased study hours for children in households, provided electricity to public institutions, including health centers, thereby extending service hours, and enhanced safety, particularly for women, through the installation of streetlights. However, there is a distributional aspect to the investments.; the services provided may not have reached the poorest populations due to profitability concerns for the investees and affordability for households. For example, WeLight only invests in villages with an average population of 3,000 to 6,000, high population density, and strong economic activity. This approach minimizes the cost of reaching the largest number of households and ensures profitability. However, the cost of connection and consumption prices remain unaffordable for the poorest households.

Norfund does not have an explicit policy on distributional impact, nor is this a part of its mandate. Norfund's mandate does not contain any specific guidance on distributional impact of investments (see Section 2.1.1). There is also no guidance in Norfund's strategies on the distributional impact of renewable energy investments. Gender equality is raised as a cross-cutting issue in the DIM strategy, and equal opportunities for men and women in *access to finance* is explicitly mentioned, but not for access to energy. There is no evidence that distributional impacts such as the ones described in Madagascar above have been considered in either reporting or investment decisions. In terms of reporting, the only disaggregated measurement is on employment outcomes, which are measured separately for men and women. Something similar could perhaps be implemented for access to energy.

On the investment level, minor distributional aspects of effects outside of the targeted objectives were noted in the case studies. These are areas where the investments technically have had differential distributional effects on various segments, but on secondary effects such as job creation, Corporate Social Sustainability (CSR) projects, or other interactions with local stakeholders. Box 3 summarizes the main highlights from the case studies; for a more detailed assessment, please see the case studies in Annex 3. Note also the gender-disaggregated jobs figures in Section 2.2.3.4.

BOX 3

Case study findings on distributional secondary impacts

Gender Equity

Norfund's investments across South Africa, Madagascar, and India highlight challenges in achieving gender inclusivity, particularly in technical and leadership roles within traditionally male-dominated sectors like renewable energy. In South Africa, the Bronkhorstspruit Biogas Plant created 25 direct jobs, with only two filled by women, reflecting underrepresentation in the workforce. Similarly, the Stortemelk Hydropower project lacked female representation in senior management. These issues stem from a limited pool of women with Science, Technology, Engineering and Mathematics (STEM) backgrounds, though efforts like Scatec's training of women in solar energy at Upington are addressing this gap. In Madagascar, the WeLight Off-grid project has indirectly improved conditions for women by enhancing safety, maternal health, and education, though these benefits do not directly translate into economic empowerment.

Racial Equity

In South Africa, Norfund's investments align with Black Economic Empowerment policies aimed at benefiting historically disadvantaged racial groups. While Norfund's alignment with BEE policies is a positive step, there is a need for more effective strategies to ensure that investments contribute to broad-based racial equity.

Youth Employment

Norfund's investments have had mixed impacts on youth employment across the three countries. In South Africa, the Bronkhorstspruit Biogas Plant and Globeleq's renewable energy traineeship program have supported youth employment, with over 74 young people participating in internships since the program's inception. However, these initiatives often do not lead to long-term career advancement, especially in sectors dominated by older workers.

Local Communities

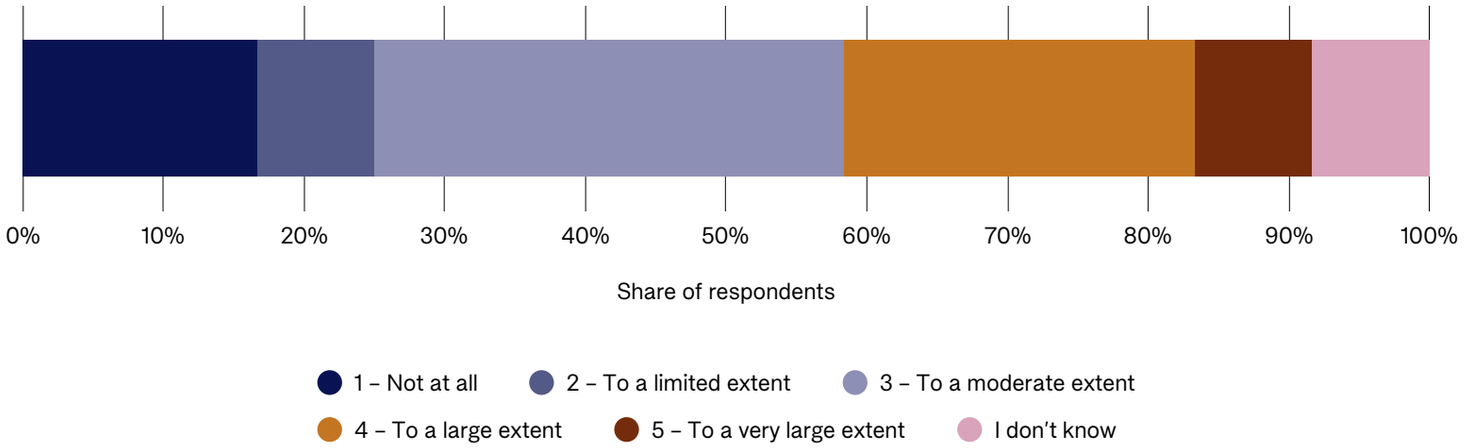
Norfund's investments have varying impacts on local communities in South Africa, Madagascar, and India. In South Africa, compliance with local policies has led to significant community support initiatives, such as the H1 Upington solar project, which allocates revenue to local business support and socio-economic development in education and healthcare. For example, the Ubunele Primitive Co-operative, a Black women-run business, received support to produce masks during COVID-19 and supply eco-friendly sanitary products. Similarly, the Bronkhorstspruit Biogas Plant launched the Renewable Energy Technologies (RET) skills program in 2022, training 22 community members in solar photovoltaic system design. In Madagascar, the WeLight Off-grid project has improved access to electricity, enhancing safety, healthcare, and education while supporting local economic growth. In India, projects like Enel Coral provides a fixed amount of funding to local CSR activities, such as sewing workshops and skills training.

2.2.5 Unintended outcomes

Unintended consequences refer to outcomes that are not foreseen or intended during the planning and execution of a project, and they can be either positive or negative. Norfund's renewable energy investments generally report few unintended effects, with most case studies showing alignment with their developmental and environmental goals. It should be noted that because the stated development effects of investments are quite narrow, typically maximum 2-3 indicators, it is difficult to define what unintended outcomes are, compared to intended (Figure 22).
It is clear that most investments provide ancillary benefits and outcomes that are not the *objective* of the investment, but that are also not *unintended*, like for example reducing emissions (in the case of DIM), or creating jobs (in the case of both portfolios).

FIGURE 22

Investment manager survey: To what extent is the investment expected to achieve outcomes/impacts beyond what is being captured by the results framework/established development targets? (i.e. Are there targeted outcomes/impact that are not tracked in the results framework/established development targets?)



A notable example of negative unintended consequences is the Kinangop Wind Park in Kenya, where Norfund faced severe challenges. Initially aimed at providing renewable energy to 150,000 homes, the project was marred by community opposition, inadequate land compensation, and legal issues. Protests disrupted operations, and in 2018, a court ruling went against Norfund, leading to the project's shutdown and a write-off of its value by the end of the year.[59] The Kinangop project highlights several lessons for Norfund: the critical importance of thorough community engagement and accurate environmental assessments, as well as ensuring compliance with local legal and regulatory frameworks. The lack of proper stakeholder management and the failure to fully address community concerns about land use and compensation contributed to the project's downfall. This case underscores the potential for unintended negative social and developmental impacts, even in projects with strong environmental intentions. It serves as a reminder of the need for robust risk management strategies that include transparent communication and building trust with local communities to avoid conflicts that can jeopardize project success.[60]

An example of a positive unintended consequences is found in India, where construction of renewable energy plants led to improved electricity connections in local villages. Under the Fourth Partner Energy investments, local villages experienced more stable electricity connections after the construction of nearby wind and solar plants. Although the electricity was 'wheeled' to commercial and industrial consumers, the stability of electricity connections improved because the electricity from the plants were provided to a local substation (See Fourth Partner Energy case study).

2.2.6 Factors influencing success

A number of factors can influence investment projects, and it is difficult to systematically identify factors influencing success. The case studies illustrate how challenges can come from a number of key factors, such as strategic partnerships, regulatory frameworks, financial structuring, commercial engagements, technological choices, and location (see Box 4 below). What 'success' means, on the other hand is more ambiguous. Generally, Norfund investments tend to be commercially successful (see Section

59 Why Sh15 billion Kinangop power mill burned out like a candle in the wind, Nation, 2018

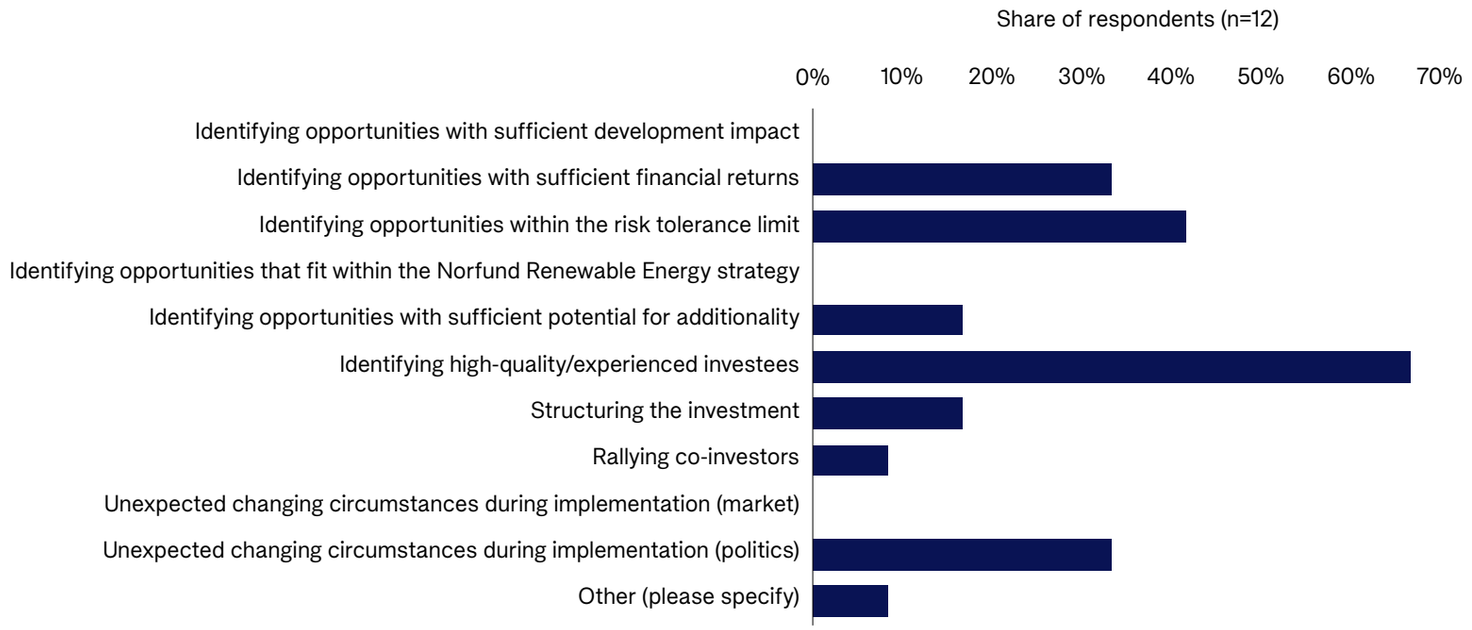
60 Firm pulls the plug on Sh15bn Kinangop wind farm project, 2020

2.5.2), however as seen above, the development effect results framework has been lacking project level objectives for a long time, which makes it difficult to assess the success in terms of meeting development objectives. From documentation and interviews with Norfund stakeholders, however, there appears to be a strong conviction that commercial success leads to development effects.

The factors influencing success and challenges vary between investments, but a general trend is that finding the right investee/partner is the most important factor. A survey of Norfund investment managers illustrate their largest concerns regarding challenges in investments, notably identifying high-quality or experienced investees (Figure 23). This is also echoed in the case studies (see summary below), where investment managers highlighted the importance of finding the correct opportunities. Notably, none of the respondents viewed identifying opportunities with sufficient development impact to be a main concern. The findings could of course also be interpreted to mean that these are the areas where investment managers are 'feeling the pressure', for example that there is less scrutiny of development effects (or additionality) compared to commercial viability, which is why investment managers view the commercial aspects as the largest challenges (it is certainly the case that investment committee documents and discussions to a much larger degree revolve around commercial aspects such as "high quality investees", "risk tolerance limit" and "financial return" than development effects or additionality). Or it could be an expression of the sentiment discussed above, that Norfund views development effects as following automatically from commercial success.

FIGURE 23

Investment manager survey: What are the main challenges to conducting, planning and implementing a successful project (successful as in reaching development effect targets)(select maximum 3)



In investigating relative performance across projects, equity investments appear to have more success. In a statistical analysis, we try to answer, quantitatively, which factors of investments are associated by success, defined as meeting development objectives. This was done by identifying factors that explain variation in MW financed, relative to aggregate commitments.[61] This analysis shows (see Annex 4) that a higher share of loans is negatively associated with MW financed, relative to aggregate commitments. Other factors, such as sector and size of commitment did not show significant effects.

Photo and rights: **Copperbelt Energy Corporation Plc** →

61 This is to account for the size of investment likely being a driver of the overall MW financed.

BOX 4

Case study findings on success factors and challenges

Strategic Partnerships

In South Africa, Norfund benefited from a strong partnership between Norfund and local entities, crucial in meeting South Africa's Black Economic Empowerment (BEE) requirements, ensuring both compliance with local policies and community support. However, the Bronkhorstspruit Biogas Plant highlighted the risks associated with poor partnerships, where the selection of an inexperienced EPC contractor, led to operational inefficiencies and compromised the project's success.

In Madagascar, the success of WeLight was driven by a strategic partnership between Norfund, Axian, and Sagemcom, combining government relations, technological expertise, and capital, allowing Norfund to navigate Madagascar's complex regulatory environment. On the other hand, Baobab+ faced challenges due to its expansion into other African markets, which strained its resources and negatively impacted its operations in Madagascar.

Regulatory Frameworks (Enabling Environment)

In South Africa, the renewable energy program (REIPPP) provided a favorable environment for projects like the H1 Upington Solar Project and Klipheuwel Wind Farm, ensuring financial stability through competitive bidding and long-term Power Purchase Agreements with Eskom. However, the Bronkhorstspruit Biogas Plant's failure, despite the regulatory support, highlights that regulations alone are insufficient without effective execution.

In Madagascar, WeLight thrived under a favorable regulatory framework that allowed flexible tariffs, enabling the project to cover both operating and capital expenses. However, Baobab+ faced risks from government-led distribution of free solar home systems (SHS), which threatened the sustainability of private sector investments, indicating the critical need for consistent regulatory policies.

In India, the regulatory environment has been highly supportive, with government policies promoting renewable energy through competitive bidding and a reliable off-taker in the Solar Energy Corporation of India (SECI). This stable environment reduced investment risks and ensured Norfund's projects were secure and profitable.

Financial Structuring

WeLight in Madagascar implemented a business model that ensured financial sustainability without relying on subsidies, supported by digital monitoring and a pay-as-you-go system. In contrast, Baobab+ faced financial challenges due to its reliance on small-scale kits and external factors like currency devaluation and political instability, highlighting the importance of market positioning and financial resilience.

Commercial Engagements

The Klipheuwel Wind Farm in South Africa benefitted from high electricity tariffs and strong demand for wind energy, supported by a 20-year PPA with Eskom, ensuring its commercial success. In contrast, the Bronkhorstspruit Biogas Plant suffered due to operational inefficiencies, which hindered its ability to meet commercial expectations.

WeLight's strategy in Madagascar, focusing on villages with 3,000 to 6,000 inhabitants, ensured the viability of its mini-grids by maintaining high levels of customer engagement and consumption. Baobab+, however, struggled with low customer satisfaction and operational costs, underscoring the need to align business models with local market conditions.

In India, the booming C&I renewable energy market provided a stable revenue stream for Norfund's projects. The alignment with market trends and strategic investment in FPEL positioned Norfund's projects for long-term success, demonstrating the importance of understanding and capitalizing on market dynamics.

Technological Choices

The Stortemelk Hydroplant uses run-of-river hydroelectric technology, which facilitated smoother project execution. Similarly, the H1 Upington Solar Project's choice of advanced photovoltaic technology optimized energy capture and efficiency. However, the Bronkhorstspruit Biogas Plant's technological choices were undermined by poor execution, where the inexperienced contractor's cost-cutting measures led to suboptimal plant performance.

In Madagascar, WeLight's use of digital technology for monitoring consumption was critical for the sustainability of its mini-grids. Baobab+, however, struggled to diversify its product offerings and leverage data for better market targeting, limiting its scalability. This underscores the importance of integrating technology with operational strategies.

In India, strategic site selection in high solar irradiance and wind conditions areas were critical to maximizing energy production and efficiency in Norfund's projects. However, a concern is that the availability of such sites is running out, posing challenges in the future.

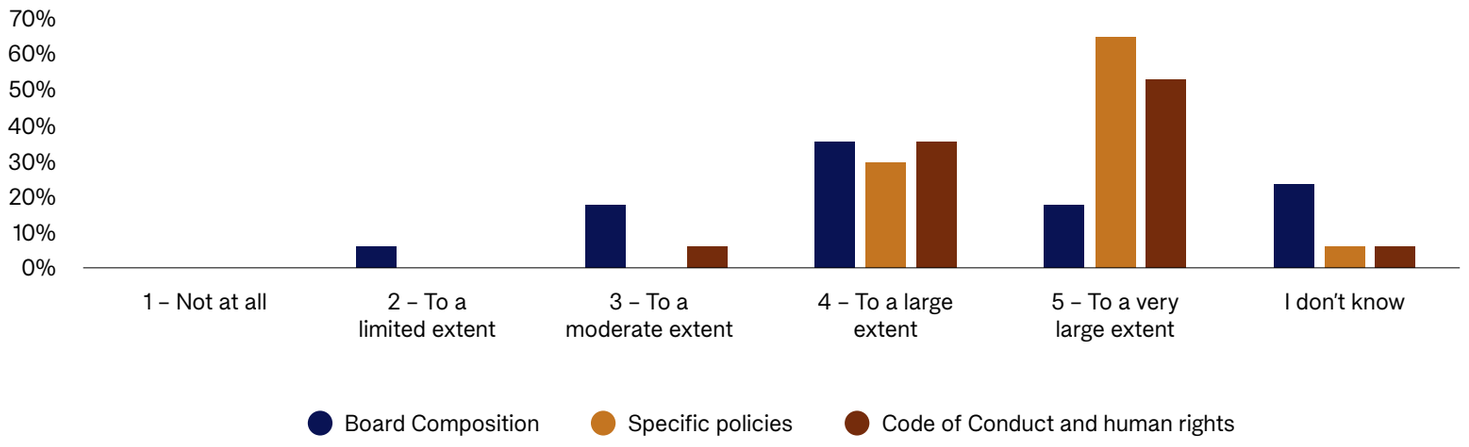
2.2.7 Effect on corporate governance

The case studies conducted for this evaluation indicate that Norfund's effect on the corporate governance of its investees varies across different projects and locations, often shaped the regulatory landscape and its stakeholder position within the investee companies. For example, according to interviewees, South Africa's Renewable Energy Independent Power Producer Procurement Programme imposes rigorous standards on corporate governance which Norfund's investees must comply with. In these cases, Norfund's representation in the board emphasizes the importance of compliance with the regulations. Conversely, in the context of Madagascar, where the regulatory environment is less stringent, according to interviewees, Norfund has played a more proactive role. For example, in the case of We Light, Norfund has pushed the company to adhere the IFC Performance Standards on Environmental and Social Sustainability which has influenced its governance. These standards are designed to help businesses manage environmental and social risks and impacts responsibly.

The survey results from Norfund's investees reflect a nuanced view of its influence on corporate governance. Firstly, according to the survey results, Norfund's expectation from its investees seem to be more focused on issues related to specific policies including anti-corruption, child labor, responsible supply chain, code of conduct and E&S related responsibilities. Expectations regarding board composition are less pronounced. As Figure 24 shows, there is more uncertainty related to Norfund's expectations related to composition of the boards than other issues, indicated by nearly a quarter of the respondents selecting "I don't know." Furthermore, for those who did respond, nearly a quarter chose moderate to a limited extent for the question.

FIGURE 24

Investee survey: To what extent is/has Norfund expressed investor expectations vis-à-vis corporate governance in the following areas: Board Composition (men vs women, compensation, independence, etc.), Specific Policies (anti-corruption, child labor, responsible supply chain, ESG, etc.) and code of conduct and human rights. (Number of Respondents = 17)

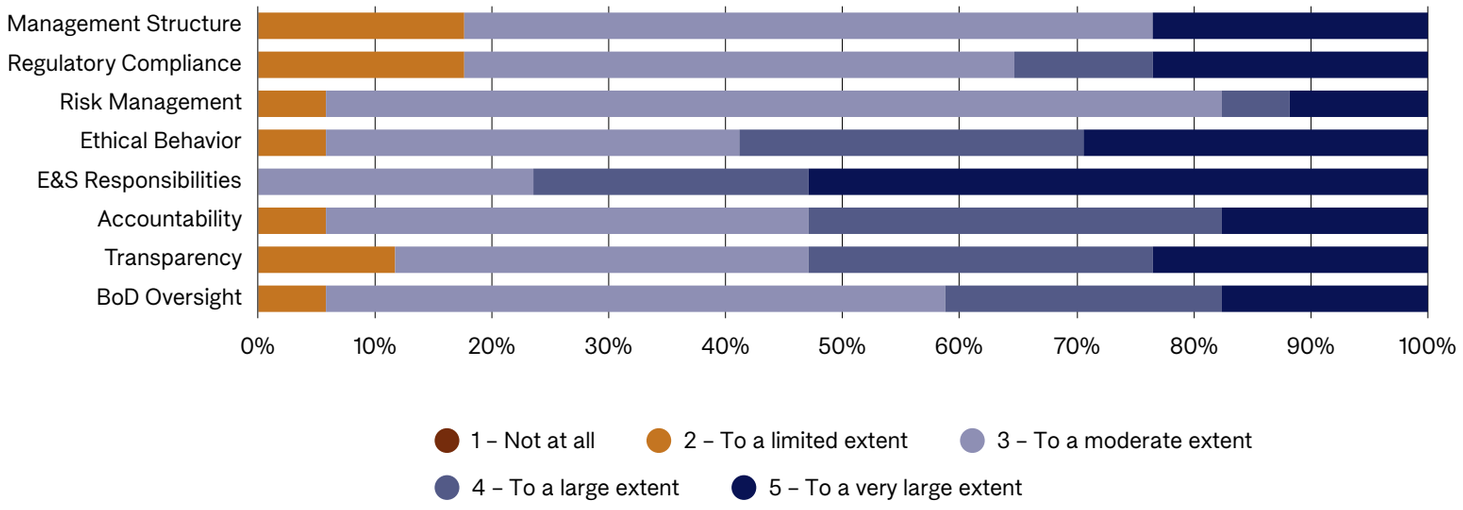


Secondly, Norfund's influence on corporate governance of its investees has had mixed results. The survey results in Figure 25 generally indicate positive impact on all the indicators, and show that Norfund has been effective in promoting good practices including environmental and social responsibilities and ethical behavior. However, impact on other areas like risk management, regulatory compliance, Board oversight, and management structures received comparatively lower scores, indicating that while there is perceived progress, it might not meet the same level of effectiveness observed in other governance aspects.

The survey results indicate a correlation between Norfund's explicit expectations and the perceived impact of its investments on corporate governance. Norfund has established firm expectations for its investees concerning environmental and social responsibilities, as well as specific policies on anti-corruption and human rights, which correspondingly show more significant impact and progress. In contrast, the ambiguity in Norfund's expectations regarding board composition, oversight, risk management, and internal controls is mirrored by less discernible impact in these areas. This suggests that clearer expectations from Norfund could potentially enhance governance outcomes in the less impacted domains.

FIGURE 25

Investee survey: To what extent has Norfund investment helped improve the governance of your company, related to: (Number of Respondents = 17)



Norfund's has greater emphasis on E&S responsibilities than corporate governance. The results provided above provide a good overview of Norfund's approach to corporate governance. Corporate Governance is component of Norfund's ESG policy. However, asides from Norfund's commitment to the Corporate Governance Development Framework (CGDF), which is joint initiative adopted by 33 DFIs, and developed specifically for development finance, the corporate governance section of Norfund's ESG policy reverts back to ensuring that Norfund "works with governance to ensure that the E&S undertakings are addressed in an accountable manner as well as with general governance arrangements of the investee." According to Norfund, According to Norfund, its expectations on Corporate Governance depends on the sector and underlying activities, investment instrument (and thereby influence), other investors/shareholders, contextual aspects and sophistication of the investee. As a key metric for successful investment, sound Corporate governance is carefully assessed and bespoke requirements

set out in its legal agreements for the investees. For example, board composition, reserved matters and specific governance rights as well as expectations for investees to comply with specific Business Integrity, Environmental and Social etc. provisions are normally part of Norfund's shareholder agreements.

Compared to other investment institutions, Norfund's approach to corporate governance in its investment strategy appears less defined. Although Norfund is committed to responsible investment practices, evidenced by its adherence to various sustainability frameworks and due diligence in assessing potential projects and partners, it lacks a specific framework for evaluating the corporate governance of its investees. The term 'Corporate Governance' is broadly defined by Norfund as 'the structures and processes for the direction and control of companies,' yet this definition lacks the specificity seen in other organizations. For instance, the Corporate Governance Development Framework offers a detailed Progression Matrix that allows organizations to assess their investees' governance maturity across multiple dimensions. Similarly, institutions like British International Investment (BII) employ tailored versions of this matrix to evaluate specific governance areas, and Norges Bank Investment Management publishes position papers on key governance issues such as board diversity and executive compensation. This disparity in clarity and methodology may hinder Norfund's ability to enforce effective governance practices compared to its peers, underscoring the need for more explicit governance criteria. Norfund acknowledges that it does not have as pronounced and dedicated framework for corporate governance as some of its peers, but emphasises that a thorough assessment of corporate governance and continued improvement efforts is an essential part of the investment process and through the holding period. According to Norfund, what constitutes sound corporate governance must be determined on a case-by case basis and tailored to the investment in question.

2.2.8 Effect on financial value

The financial value of Norfund investees appears to be increasing over time. Since companies that Norfund invests in are not publicly listed, it is difficult to provide an accurate valuation of them. As an approximation, this study has looked at Norfund's internally used value of equity investments and ownership stake to approximate what companies would be valued at, if publicly traded. Importantly, this isolates the analysis to those where Norfund has made equity investments in ordinary shares. Because this evaluation is concerned about the extent to which Norfund contributes to creating value locally, a fixed conversion rate to 2024 NOK is used to remove any effects arising from currency fluctuations.[62]

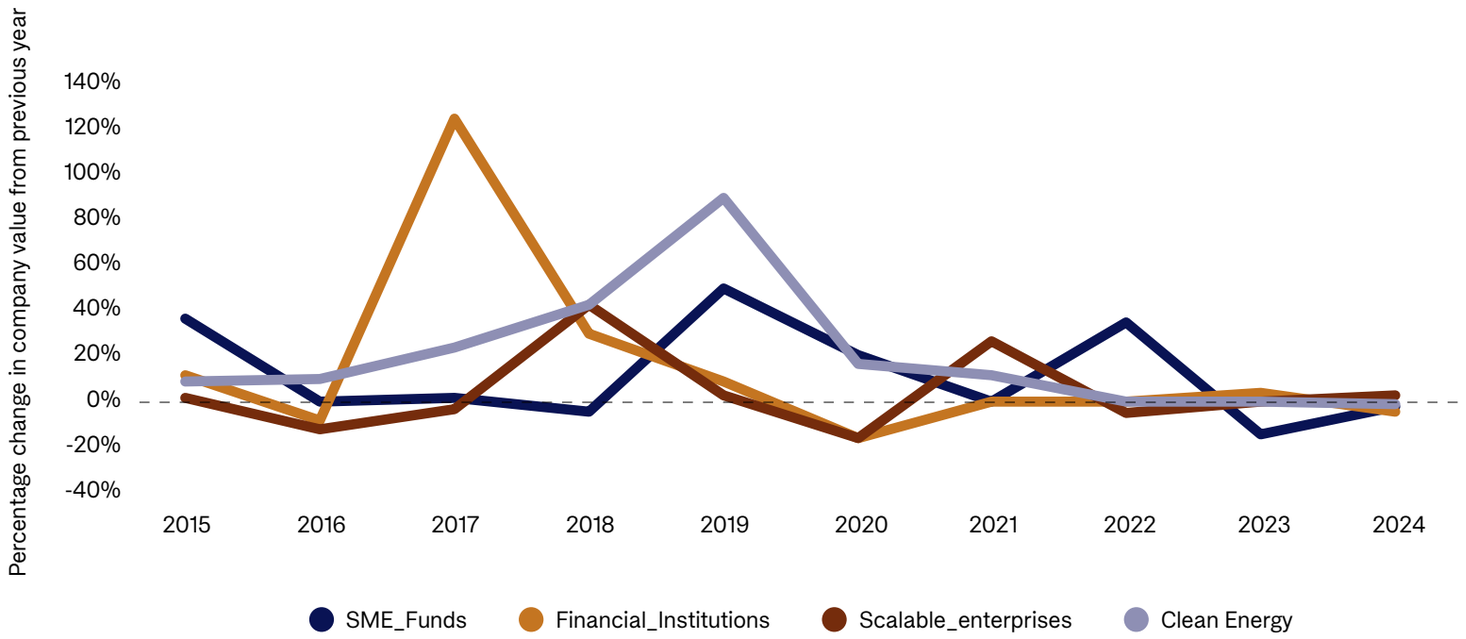
The annual increase in valuation of companies in Renewable Energy is generally positive, and on average higher than for other departments. To eliminate the influence of new investments on value, the percentage change in valuation from one year to the next was analyzed. In the figure below (Figure 26), the average increase in company value is compared across departments. While there are large variations (not displayed) within each department, the figure shows that, on average, the increase in company value is positive through 2022 for Renewable Energy.[63] Moreover, the annual increase is also generally higher than for other portfolios.

62 I.e. a weaker Norwegian kroner over time, would increase Norfund returns in NOK even for a fixed company value.

63 Because the methodology is based on few observations, single investments may cause high volatility in the underlying data

FIGURE 26

Annual increase (average) in valuation of companies, across departments



It is, however, difficult to assess whether increases in company values are due to Norfund's investments. The results of a quasi-experimental quantitative analysis could not establish any such causal relationship (see Annex 4 for detailed analysis). This does not mean that there is not an impact of Norfund investments on the value of the investee firms, only that it cannot be identified with the data available.

Section 2.5.2 assesses the financial performance of the renewable energy portfolio in further detail.

2.3 Additionality

Evaluation questions

6. How additional has Norfund been in its renewable energy investments? What is the degree of financial, value and development additionality achieved through those investments?

6.a How estimated and actual additionality of Norfund and its investments is assessed

6.b Circumstances in which Norfund's investments are likely to be highly additional – and when less so.

6.c Estimated (ex-ante) additionality of Norfund in its investments

6.d Actual (ex-post) additionality of Norfund in its investments

6.e The sources of additionality and relationship between different types of additionality.

Key findings

+	Additionality as a concept and objective has become considerably **more formalized** in Norfund's operations in the period under review (2015-2023)
−	At strategic level, the **CIM portfolio is not guided as clearly by additionality** in its selection of core countries (and therefore investments) as the DIM portfolio
−	There is still **room for improvement in the additionality framework and its operationalization**. Clear guidance needs to be provided on tradeoffs between additionality, impact and risk, especially under CIM.
~	**Ex-post additionality** is difficult to determine, but investments in India are of questionable financial additionality considering the crowded market and large investment flows

+ = Positive finding − = Negative finding ~ = A noteworthy finding not clearly positive or negative

2.3.1 Additionality

Additionality refers to the extent to which the benefits of Norfund's investments would not otherwise occur without Norfund's involvement. Additionality is a key concept for DFIs, because their business model involves doing activities that are similar and tangential to private investors, while not duplicating or replacing these. Generally, if investments are not additional they could have been funded and implemented by private investors for commercial gains, and would not require government intervention, which would imply that scarce public ODA funds are potentially wasted. A second concern is that the government could potentially be 'picking winners' and distorting markets, crowding out private investments, i.e. distorting the market's allocation of funds by funding certain firms over its competitors.[64,65] Additionality is defined in several ways, but the way it will be used in this report distinguishes between two types:

- **Financial additionality:** Provision of financial resources by DFIs that would not have been available from private sector sources without their intervention (either in scale, terms, speed, or other factors)
- **Non-financial additionality** (which is sometimes divided into value additionality and development additionality): Involves broader benefits DFIs bring to a project beyond the direct funding. This could include a wide array of factors, such as requiring and/or setting E&S standards, using connections and networks, non-financial risk mitigation[66], providing technical support/capacity building, etc.

Anticipating or even measuring additionality is difficult, and no clear optimal industry standard exists. Additionality deals with the counterfactual of "what would have happened without the DFI investment?", which is impossible to answer. Thus, DFIs and other practitioners and academics have wrestled with both how to anticipate additionality *ex ante* to an investment (in order to determine which investments to make), and how to measure *ex post* the actual additionality of the investment (for accountability and evaluation purposes).[67]

2.3.2 Norfund's additionality framework

Norfund is mandated to make investments that are additional. One the one hand, additionality is enshrined in the Norfund Act (for DIM), which states that *"The aim is to establish viable, profitable activities that would not otherwise be initiated because of the high risk involved,"*[68] and in the CIM instructions: *"The Fund is intended to promote investment in renewable energy that would not otherwise take place"* (see Section 2.1.1).[69] The wording of these mandates is aligned with the formulation of financial additionality as described above. Formally under OECD DAC rules, additionality is a requirement for ODA eligibility of financing DFIs; only DFI investments that are reported as being additional can count towards a donor country's ODA. This OECD definition was adopted in 2023, and requires that investments exhibit at least one of either financial or non-financial additionality.[70] In other words, this definition is broader than the requirements of the two mandates.

64 Although Norfund offers investments on commercial terms (nominally), there are certain implicit subsidies in Norfund's activities that make them 'better' than what commercial investors would have offered, or some risks that Norfund is taking that is not priced in to the same extent a commercial investor would have. This includes for example willingness to hold minority share positions, providing long tenor loans and long-term investments, taking political risks, or taking currency risks, without these being properly reflected in the "prices" Norfund offers.

65 See for example Krugman, P. R. (1983). Targeted industrial policies: Theory and evidence. *Industrial change and public policy*, 123-155.

66 For example, in the case of IFC, the mere presence of IFC as a shareholder can reduce the risk of 'host state aggression' because it has global political clout. See for example Gamso & Nelson 2019.

67 See for example https://ieg.worldbankgroup.org/sites/default/files/Data/Evaluation/files/ifc-additionality-middle-income-countries.pdf ; https://www.sheffield.ac.uk/media/7134/download?attachment ;

68 MFA (1997) Act relating to the Norwegian Investment Fund for Developing Countries

69 MFA (2022) Instructions for Norfund's management of the Fund for Investment in Renewable Energy in Developing Countries

70 https://one.oecd.org/document/DCD/DAC/STAT(2023)20/REV1/en/pdf

Norfund uses two levels of instruments to ensure additionality of its investments:

1. **Portfolio level: Portfolio KPIs and strategic core countries.** From a strategic perspective, the DIM and CIM portfolio strategies and compositions are geared towards achieving additionality in their investments from the top down. By actively targeting certain proxy measures for additionality, such as low income countries or the use of equity instruments, Norfund ensures a top-down targeting of likely additional investments (such investments are assumed to be more likely to be additional because investments in low income countries or in the form of equity are more scarce than in middle income countries or non-debt instruments). For example, as seen in Section 2.1.1, under the DIM strategy Norfund has KPIs on allocation of investments which are assumed to by proxy reflect investments with likely additionality; *"To ensure that we are additional we have KPIs on a portfolio level to focus our investments where other investors shy away"* (DIM strategy 2023-2026). Notably, the CIM strategy does not have the first two geography-based KPIs, despite its similar mandate of additionality (as discussed in Section 2.1.1.2).
2. **Investment level: An additionality calculator for assessing the anticipated additionality of investments before approving them in investment committee.** A 2015 evaluation of Norfund noted that *"Measuring leverage and additionality aspects in a more systematic manner would help Norfund to understand and develop its leverage capabilities, and showcase its achievements in line with its mandate."* As a response to this and to better ensure additionality in its investments, Norfund designed an additionality framework, the latest update of which is from January 2023. The framework is used for both DIM and CIM investments. Anticipated additionality is assessed through seven 'ambitions' on financial additionality and three on non-financial additionality. Table 6 lists the ten ambitions. Proposed investments are scored 0-10, where a score at 3 or below requires additional justification, while above 3 is considered likely additional. According to the DIM Strategy 2023-2026, "Additionality is evaluated in each investment against Norfund's additionality framework and a narrative assessment." Under the framework, the investment committee takes the scores and the narrative assessment of additionality into account when approving/rejecting proposed investments. Finally, on exit of investments, the DIM strategy notes that "the overall principle for exits is that we shall exit when we have outplayed our role, that is when we are no longer additional." The framework does not explicitly include ex-post measurements of 'actual' additionality.

Photo: **Green Roof**

TABLE 6

Norfund's additionality framework

	Ambition	Indicator	Source	Type
1	Investing in the poorest countries	Country income group LDC = 1.0 LMIC = 0.5 UMIC = 0.0	World Bank	Objective/Category
2	Investing in the most capital constrained markets	Domestic credit to private sector 0-50% = 1.0 51-75% = 0.5 >75% = 0	World Bank	Objective/Category
3	Investing in the riskiest markets	Country credit rating BB+ or below = 1.0 BBB- or above = 0.0	Moody's Ratings	Objective/Category
4	Investing in sectors with high development needs	Norfund internal sector need index (country specific) based on: - Electricity consumption/capita - Reliability of power supply - Electrification rate - Low-carbon electricity (% electricity)	- IEA World Energy Balances - Climate Scope - IEA Energy Access Outlook - Our World in Data	Objective/Category
5	Investing in high risk instruments	Instrument used Equity/Fund = 1.0 Subordinated/local currency/convertible/long term debt = 0.5 Debt/Guarantees = 0.0	Internal	Objective/Category
6	Targeting underserved segments	Segment of sector **RE** Off-grid = 1.0 C&I = 0.5 IPP = 0.0 **CIM** Next wave techs = 1.0 C&I / Transmission = 0.5 IPP 0.0	Internal	Objective/Category
7	Mobilizing private investors	Qualitative 3-scale indicator	Internal	Self-rated
8	Taking an active role in investments	Engagement level 3-scale indicator	Internal	Self-rated
9	Improving social and environmental performance	E&S standards in DD and during project 3-scale indicator	Internal	Self-rated
10	Supporting enterprise development	Business support facility support 3-scale indicator	Internal	Self-rated

Source and Type: *Added by evaluation team*

2.3.3 Assessment of Norfund's additionality framework

2.3.3.1 Framework

Additionality as a concept and objective has become considerably more formalized in Norfund's operations in the period under review (2015-2023). Earlier strategies emphasized additionality but lacked formalization. The current framework, with its additionality calculator, provides a more structured approach to documenting decisions. Indeed, Norfund is one of very few DFIs scoring on the additionality statement indicator on the Publish What you Fund DFI Transparency Index.[71] However, there is still further room for improvement on this path to formalizing additionality as a key objective in Norfund's investment strategy.

At the strategic level, the CIM portfolio is not guided as clearly by financial additionality as the DIM portfolio. The DIM and CIM mandates both require that Norfund needs to make investments that would otherwise not happen, *in addition* to their respective mandates of "developing sustainable business and industry" and "avoiding emissions". As described above, the DIM has operationalized this explicitly by (i) selecting core countries that are aligned with additionality (although not perfectly; see section 2.1.1.1), and (ii) setting KPIs on portfolio composition, such as instruments (equity), greenfield investments, or the geographical distribution of the portfolio (focusing on LDCs and Sub-Saharan Africa). With CIM, the geographical component of this is not implemented, and a different approach to selecting priority countries has been adopted. This leads to a de facto de-prioritizing of financial additionality[72] (relative to in DIM), while "climate impact" is the main driver of geographical allocations (see Section 2.1.1.2). In practice, this means countries with high coal usage[73], mainly Asian Middle Income Countries (MICs) and South Africa. This in turn would imply either:

- The specific objective of CIM (reduce emissions) compared to DIM (provide people with energy) affects the financial additionality of individual projects, for example that investments in India with the aim to reduce CO_2 emissions are inherently more additional than investments in India that aim to provide energy

OR

- The CIM strategy accepts that higher risk of financial non-additionality is a trade-off worth taking in order to provide funding to countries with larger "climate impact"

The first is doubtful, as it does not make logical sense for the objective of the investment to affect the financial additionality. The second is a political trade-off, and one that does appear to be in line with the instruction of the CIM by the MFA[74] which directs CIM towards *"developing countries with extensive emissions from coal-based and other fossil-fuel power generation"*, but which might be in contradiction to the instructions from the same document that CIM should be used to make investments that would not otherwise have taken place. A third option is that the safeguards put in place for DIM are in fact not necessary to ensure additionality, contrary to Norfund's statement *"To ensure that we are additional we have KPIs on a portfolio level to focus our investments where other investors shy away"* (Norfund DIM Strategy 2023-2026). Table 7 summarizes the differences in approaches to additionality across the two mandates.

71 https://www.publishwhatyoufund.org/dfi-index/dfis/norfund/

72 Based on a 0-4 score on the country and sector-specific additionality scores of the Norfund Additionality Framework as of Dec 2022.

73 More specifically countries with high "coal in pipeline" as per the Global Energy Monitor, as well as countries with high "grid emission factor" as per UNFCCC

74 MFA (2022) Instructions for Norfund's management of the Fund for Investment in Renewable Energy in Developing Countries

TABLE 7

DIM and CIM approaches to additionality, comparison

	DIM	CIM
Mandate includes additionality	✓ "The aim is to establish viable, profitable activities that would not otherwise be initiated because of the high risk involved"	✓ "investment in renewable energy that would not otherwise take place"
Core country selection reflects likely additionality	✓	
KPIs on geographical allocation as proxy for likely additionality	✓	
KPIs on equity allocation as proxy for likely additionality	✓	✓
Focus on greenfield investments as proxy for likely additionality	✓	✓
Targets on technology segments as proxy for likely additionality		✓
Additionality framework assessment on investment level	✓	✓

At the operational level, the extent to which the additionality framework is making a difference in the selection or filtering of individual investments is less clear, which further emphasizes the importance of the portfolio-level strategies for ensuring additionality. While the additionality framework has to a large extent succeeded in creating an objective and standardized platform for benchmarking proposed investments, it is not clear how important this quantitative score is for the actual selection and/or approval of investments. Based on interviews with internal stakeholders in Norfund, there appears to be a large extent of subjectivity and "gut feeling" in determining the "actual" additionality of an investment. In some cases, this discretion might be a benefit; allowing for exceptions to the broad rules reflects the 'messy' universe of investment opportunities (see below). At the same time however, this might also reflect a distrust of the framework by decision makers or investment teams, where the "actual" additionality of an investment is something intangible and tacit that cannot be measured by a framework or be reduced to indicators, and thus the discretionary selection squeezes out the formalized framework. Put differently, the bottom-up instruments allow for a discretionary decision making that is sometimes beneficial to allow for a nuanced assessment of the potential additionality of an investment (and avoid ruling *out* investments with additionality), but without top-down KPIs and allocation targets, there is a risk of ending up with too many 'exceptions'. In this sense, the overall likelihood for additionality in a portfolio is best ensured when both approaches are used at the same time, which is the case for DIM, but not for CIM. This further exacerbates the risk of CIM investments being relatively less additional than DIM investments as discussed above.

In Norfund's additionality framework, non-financial additionality can substitute for financial additionality, but this might ultimately reduce alignment with the requirement of the two mandates. As mentioned, the impetus behind the focus on additionality is, put succinctly, that it's a waste of scarce development resources for a DFI to fund projects that would have been funded by the private

sector anyway. Non-financial additionality, as presented in Norfund's additionality framework, is concerned with *how* the projects would have been implemented if not for the DFI. In other words, the same jobs would have been created, or the same CO_2 emissions would have been achieved, except now the DFI has played an active role in for example strengthening E&S standards, governance or operations. While E&S standards and improved operations can be of value, doing large scale investments into renewable energy projects appears a round-about and inefficient way of achieving improvements, unless there is also financial additionality. This debate is not new. Non-financial additionality has been argued at the OECD, where bilateral donor countries unanimously opposed a proposal for excluding non-financial additionality from the OECD definition of additionality[75] – the adopted OECD rules since 2023 allow for *either* financial or non-financial additionality (or both) in order to be eligible for ODA status. However, not all DFIs are content with simply meeting this minimum standard; for example at the UK DFI, British International Investment (BII), projects with only non-financial additionality and no financial additionality are not approved (see 2.3.4). While Norfund is technically within the OECD rules to count non-financial additionality as additionality, this could lead to Norfund making investments with minimal additional impact (beyond better E&S standards and operations). A reading of the mandates of DIM of CIM (*"activities that would not otherwise be initiated"* and *"promote investment in renewable energy that would not otherwise take place"* respectively) does not suggest that the owners intended Norfund to carry out investments without financial additionality as long as they provided some non-financial benefit to investments.

75 See https://one.oecd.org/document/DCD/DAC/STAT(2023)20/REV1/en/pdf

2.3.3.2 Operationalization – Qualitative descriptions

Qualitative descriptions accompanying investment documents are limited. From the nine investments examined in detail for the case studies, only three included any form of qualitative description, with missing descriptions even in more recent investment documents using the updated additionality framework. Note that the updated additionality framework is used from around 2019 only. The few existing descriptions are limited to very brief descriptions, often not very relevant for the assessment of financial additionality.

TABLE 8

Qualitative information on additionality in investment documents, case study investments

	India			Madagascar		South Africa			
	Respons-Ability ACPF	Fourth Partner Energy	Enel Coral	WeLight	Baobab+	Bronhorst spruit Bio-gas Plant	Globeleq	Renewa-ble Energy Holdings	H1 Upington
Commitment year	2019	2023	2022	2019	2021	2011	2014	2014	2015
Uses Additionality Framework indicators	No	Yes	Yes	Yes	Yes	No	No	No	No
Qualitative justification	None	None	Limited	None	Limited	Limited	None	None	Limited

2.3.3.3 Operationalization – Additionality calculator

Broadly, a strength of the indicator-based additionality calculator is that it reflects the fact that additionality can come from multiple sources. Depending on the nature of the investment, two investments in the same country or same sector or using the same instrument can exhibit different degrees of additionality. Because the framework has multiple indicators, this allows investments to score high on additionality despite being in an otherwise 'non-additional' (or crowded) market, if it is targeting certain strata that are not crowded, such as using instruments or targeting specific segments that are not receiving the same amount of investments. The more specific the assessment of each investment is, the more accurate it can be. This type of ex-ante assessment is in line with the OECD classification of additionality types[76], and in line with academic propositions such as Carter et al. (2019)[77] who propose a sliding probabilistic scale for assessing additionality, as opposed to a binary assessment. The ability to overrise the additionality calculator score in cases with low quantitative scores allows for a more nuanced assessment and identification of rare additional opportunities in otherwise 'non-additional' market. However, as argued above, there is also a risk that informality can lead to lowering the threshold for what passes.

The specificity of the framework could, however, be improved to produce an even more detailed assessment. The framework is generally good at distinguishing between sources of additionality, however some of the indicators are not nuanced enough to support this. For example, the degree of 'underservedness' of a segment, or the gap in financing instruments, can vary between countries, where e.g. IPPs might be a more underserved segment in some countries than in others. The framework could be further strengthened by including more of this type of country/market specific information. The latest developments on the additionality framework of the Danish DFI, IFU, developed together with the University of Copenhagen takes this much further, by adding a myriad of information on each country (see 2.3.4). Further, there is a risk that (i) the indicators are highly correlated and so scores tend to be 'clustered', and (ii) the 3-score point system hides significant diversity within the groups. Out of the 102 eligible countries[78], 10 are 0 on Credit score, 13 are 0 on domestic credit score, and 34 are 0 on ODA score. In total, 4 countries are 0 on every indicator (like China and Thailand), while 38 countries are 1 on every indicator (like Madagascar and Somalia; see Table 9). This poses several challenges:

a. **The lack of nuance behind the 3-point indicators obscures differences between countries.** Countries like Burundi and Bhutan have the same ODA score, despite widely differing income levels (GNI per capita of USD 230 and USD 3,590 respectively). One solution could be to offer a more granular 0-1 score based on the raw GNI data.

76 Financial additionality: Targeting underserved geographies; targeting underserved sectors or segments; providing investment terms unavailable on the market; highly concessional finance in response of market failure; aims to mobilize private finance; other
Non-financial additionality: Mitigation of non-financial risks; promotion of ESG standards; promotion of knowledge transfer and generation; other. See https://one.oecd.org/document/DCD/DAC/STAT(2023)20/REV1/en/pdf

77 https://www.sheffield.ac.uk/media/7134/download?attachment

78 The additionality framework includes all ODA eligible countries as of December 2022.

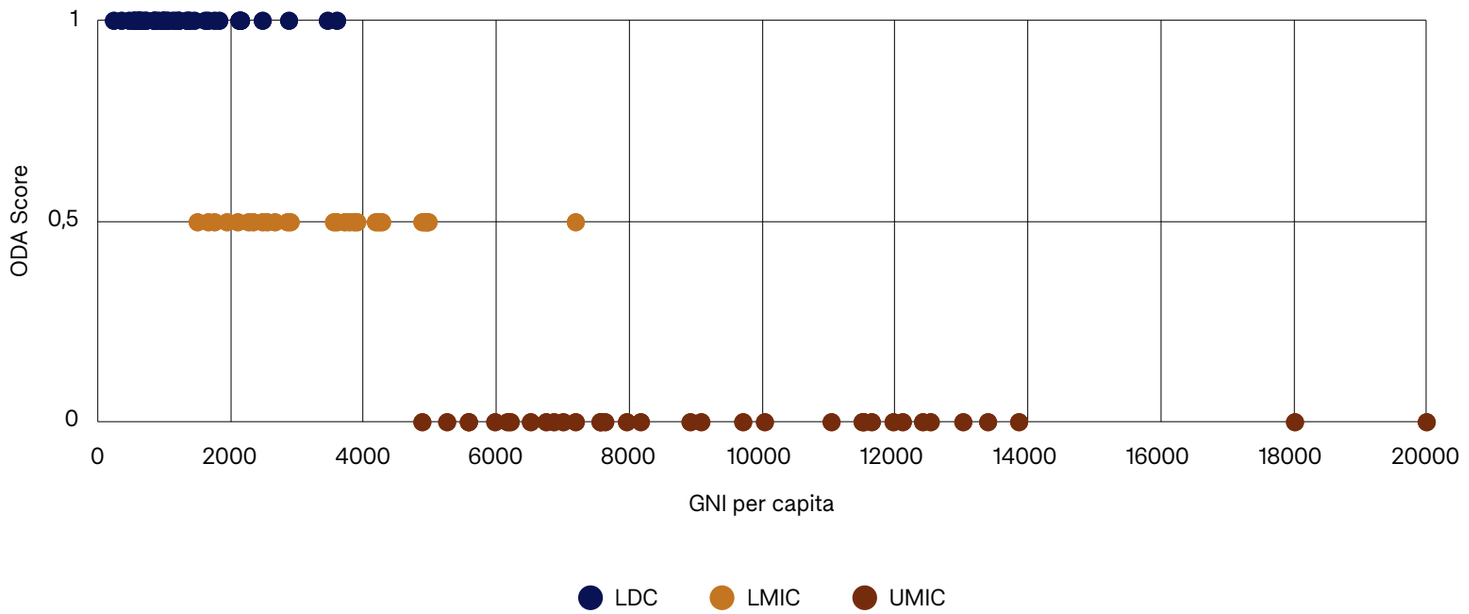
TABLE 9

Additionality calculator score categories (countries)

ODA Score	# of Countries	Example countries	Domestic credit score	# of Countries	Credit score	# of Countries
0.0	34	Indonesia, Costa Rica	0.0	13	0.0	10
0.5	26	Lesotho, Jordan	0.5	23	1.0	92
1.0	42	Burundi, Bhutan	1.0	66		

FIGURE 27

GNI per capita and ODA Score



Source: *World Bank and Norfund additionality framework*

b. **A weighting of indicators would likely better reflect likelihood of additionality.** In the current framework, the difference between a similar investment in Nepal and Albania is 0.5 points out of 10[79]. One solution could be to introduce weights, for example having a 0-2 or 0-3 scale for income level. Another solution could be to have more indicators, which would allow for further refinement of markets (as opposed to using income as a proxy).

Other minor points are worth noting on the framework:

- **Self-reported indicators are relatively less objective and less suited for creating a quantitative score than the standardized scores** (such as country income classification). The non-financial indicators, in particular, are to a large extent based on self-reporting. For example, "8 - Taking an active role in investments" is graded on a 3-point scale depending on the "intended engagement/ resource use by Norfund", which is not clearly defined. As it is in investment managers' interest to score high on the framework (for the investment to pass the committee), any subjective indications should be removed if the idea is to produce an objective quantitative score.
- **Indicator 4 on development needs is based on access to energy, which is unsuitable for CIM.** The indicator is based on countries' needs in terms of population with access to energy, but countries with low scores on these have explicitly been excluded from CIM, and are in any case not relevant for the objective of CIM, which is to reduce or avoid emissions.
- **It is not clear how indicator 7 – Mobilizing private investors is a measure of additionality.** The fact that other private investors were involved in the deal is neither sufficient nor required to prove additionality. Mobilization is only additional if that mobilized private investment would not have happened without the investment, which is exactly what the question of additionality is assessing; thus, it cannot be used to answer the question. Mobilization might be a worthy objective in itself,

79 Source: Norfund Additionality Framework Updated Dec 2022

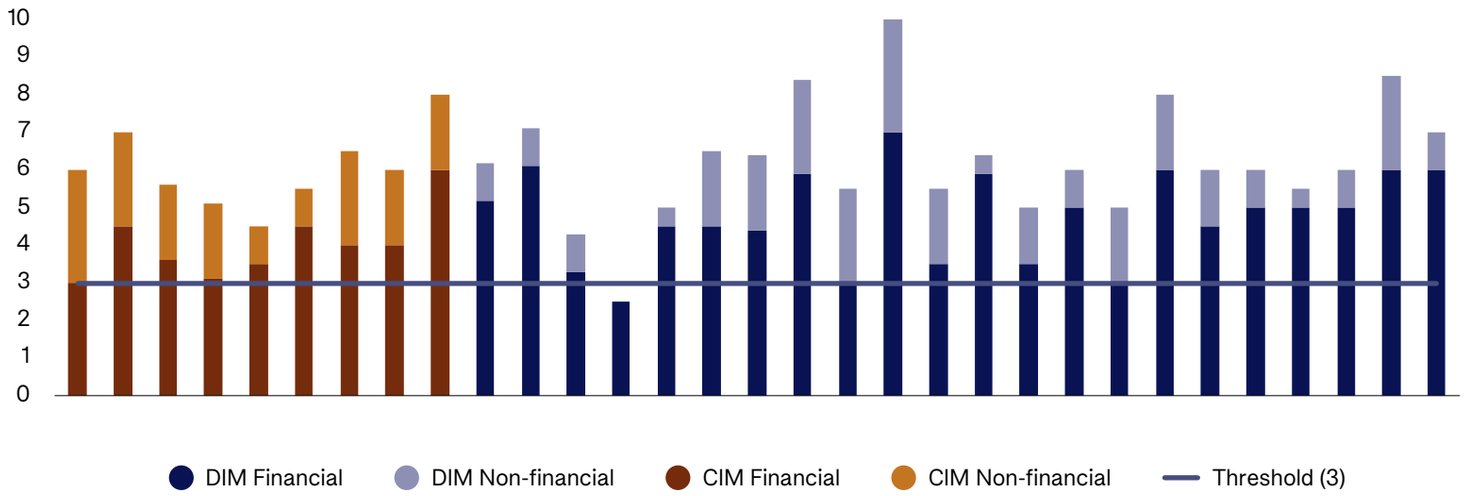
as a means to amplify developmental outcomes, but it should not be conflated with additionality. It should be noted that the OECD rules technically allow for mobilization to count as additionality when determining ODA eligibility.

- **As argued above, non-financial additionality should not be able to make up for the lack of financial additionality.** Some projects have minimal evidence of financial additionality, but can in theory make the three-point threshold because they can get three points from non-financial indicators alone. Financial and non-financial additionality should be treated as two separate scores, with a separate threshold for financial additionality. Figure 28 shows an excerpt from the portfolio analysis below based on Norfund's internal additionality scores of recent projects. Three projects would be at or below 3 if excluding the non-financial scores.
- **Other indicators acting as proxies for additionality could be added.** These include for example whether an investment is a greenfield project or not, whether Norfund is the first investor in the project, FDI data for the country, etc.

Ex post assessments of investments could strengthen the framework and ensure continuous improvements over time. Especially for spirational indicators such as mobilization or improving social E&S performance, it would be worthwhile to track what indeed happened after the fact. But even for financial additionality, an ex-post, preferably independent objective assessment of the investment would help keep the framework relevant, as this would allow for adjustments, for example because it revealed investments that are not additional are still being approved. The converse – investments that *were* additional but were rejected – is more difficult to assess.

FIGURE 28

Financial and non-financial additionality scores for recent projects



Source: *Norfund investment documents*

Certain aspects of additionality, such as investing in the poorest countries and targeting underserved segments are rarely achieved. An analysis of 32 recent investments shows the breakdown of additionality calculator scores.[80] Additionality is most commonly justified in terms of the indicators 'promoting social and environmental standards',

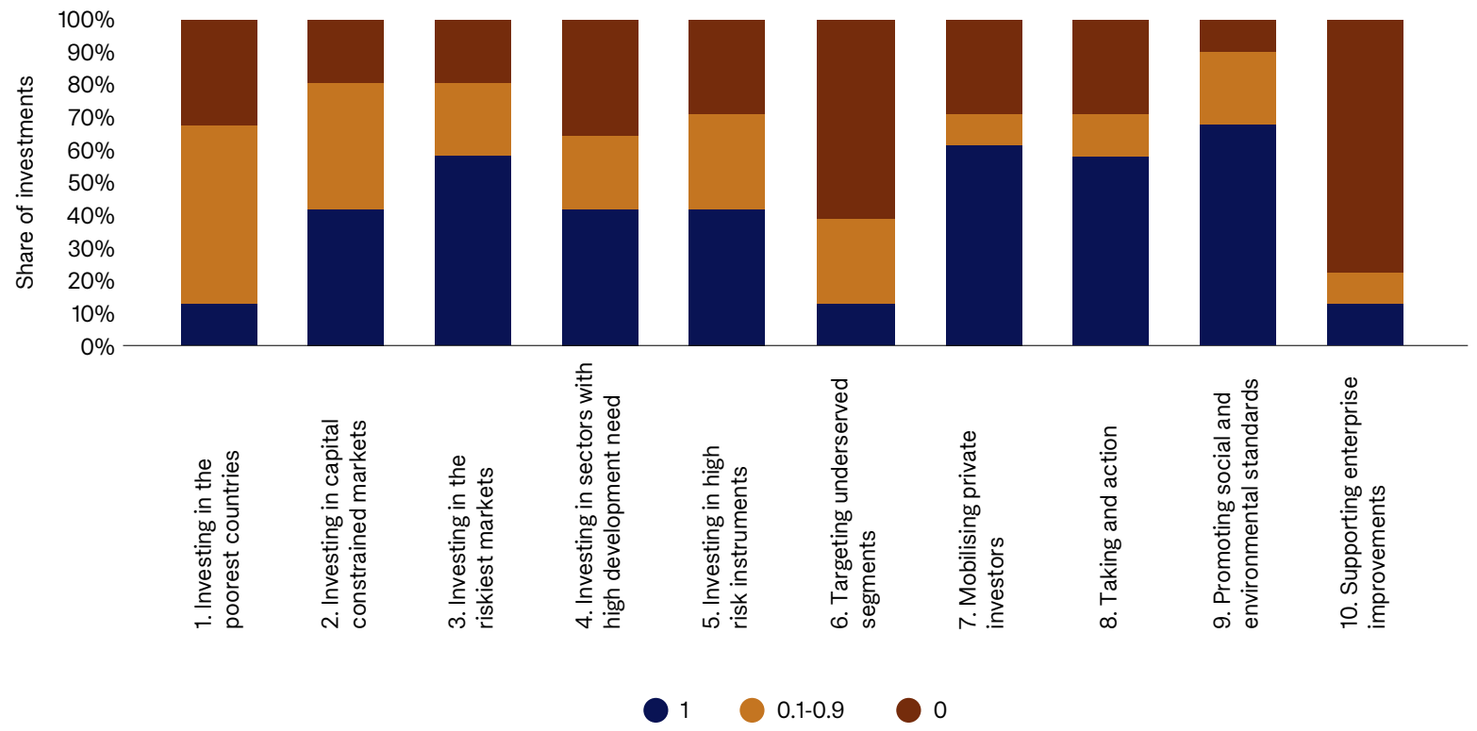
80 Before the adoption of a new 'data warehouse' in 2024, there has been no aggregated information from the additionality calculator. This dataset was therefore collated by the evaluation team from individual investment documents received from Norfund (final approvals). Of the 81 investments, 60 had investment documents shared with the evaluation team, of which 32 used the additionality calculator and thus had scores. Note that the calculator has gone through revisions over the years, so some manual mapping was done to align older indicators. The data is presented in the form of the most recent additionality calculator, but the data is not fully comparable, as the classification or scoring might have changed over the iterations.

and least commonly through 'supporting enterprise improvements', but 'investing in the poorest countries' has the fewest projects achieving maximum score. In fact, of the 32 investments assessed, only 4 scored 1.0 on the indicator, one project each in Cambodia and Myanmar (which are both LMICs but also classified as LDCs), and two regional projects in Africa, one in Liberia/DRC/Sierra Leone and one in Madagascar and Mali (all of which are firmly in LIC category).

The renewable energy portfolio is largely in less 'additional' countries according to the calculator than Norfund's other portfolios. For some of the indicators, we can apply the scores to the countries investments were made in to get a sense of the portfolio beyond the 32 for which we investigated the investment documents.[81] This analysis shows that CIM is generally less in 'additional' countries (score 1) across all indicators (ODA status, domestic credit score and credit rating score), and more in the non-additional countries (score 0)(Figure 30-32). The same is true for DIM investments in renewable energy portfolio compared to the rest of DIM investments.

FIGURE 29

Norfund additionality calculator scores, selected renewable energy investments (n=32)



81 The analysis incorporates 9 investments under CIM, 72 DIM – Clean Energy, 122 DIM – Financial Institutions, 78 Scalable enterprises, 90 SME Funds

FIGURE 30

ODA status across Norfund portfolio investments (Q4, 2023), as per Norfund additionality framework

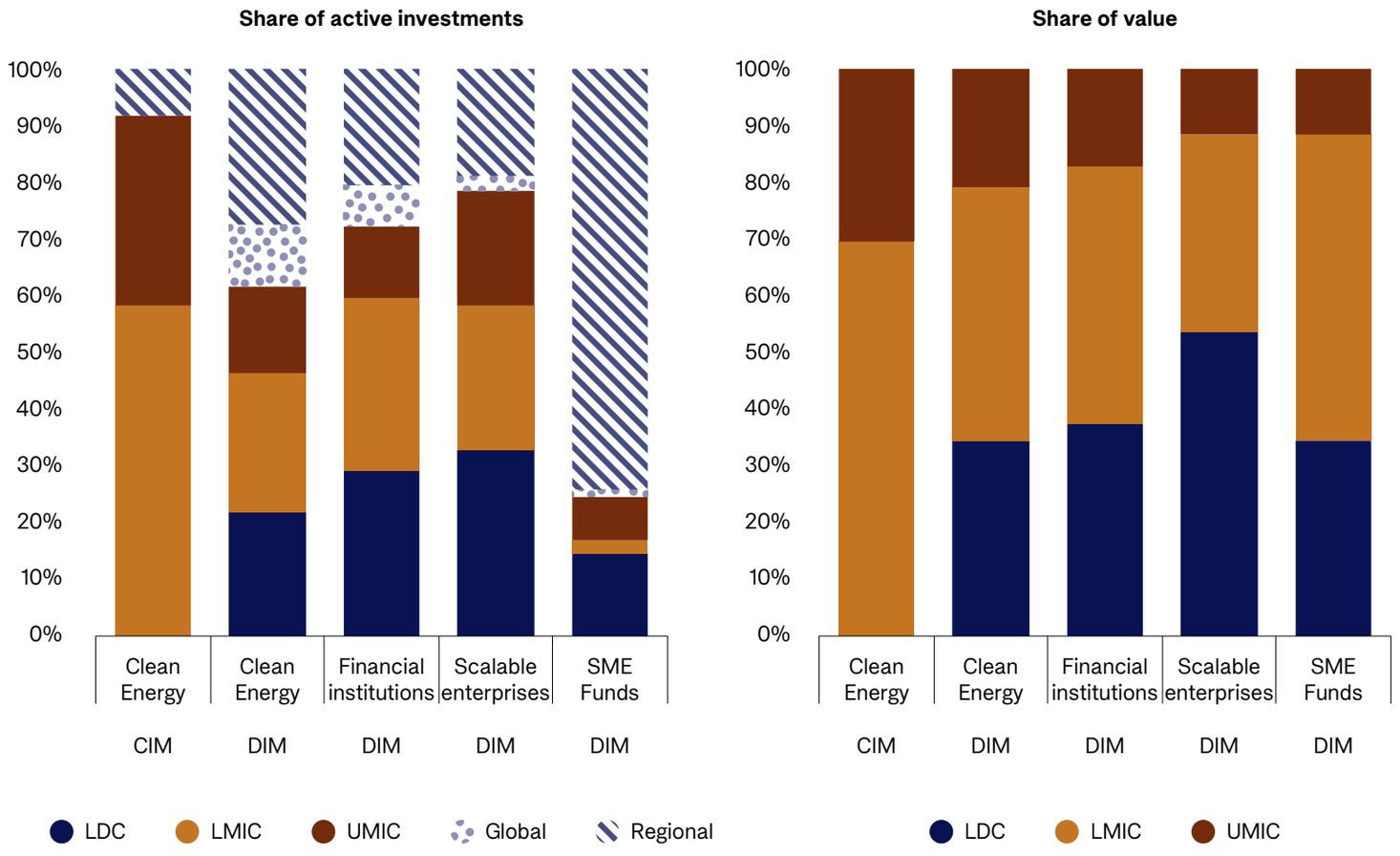


FIGURE 31

Domestic credit score across Norfund portfolio investments (Q4, 2023), as per Norfund additionality framework

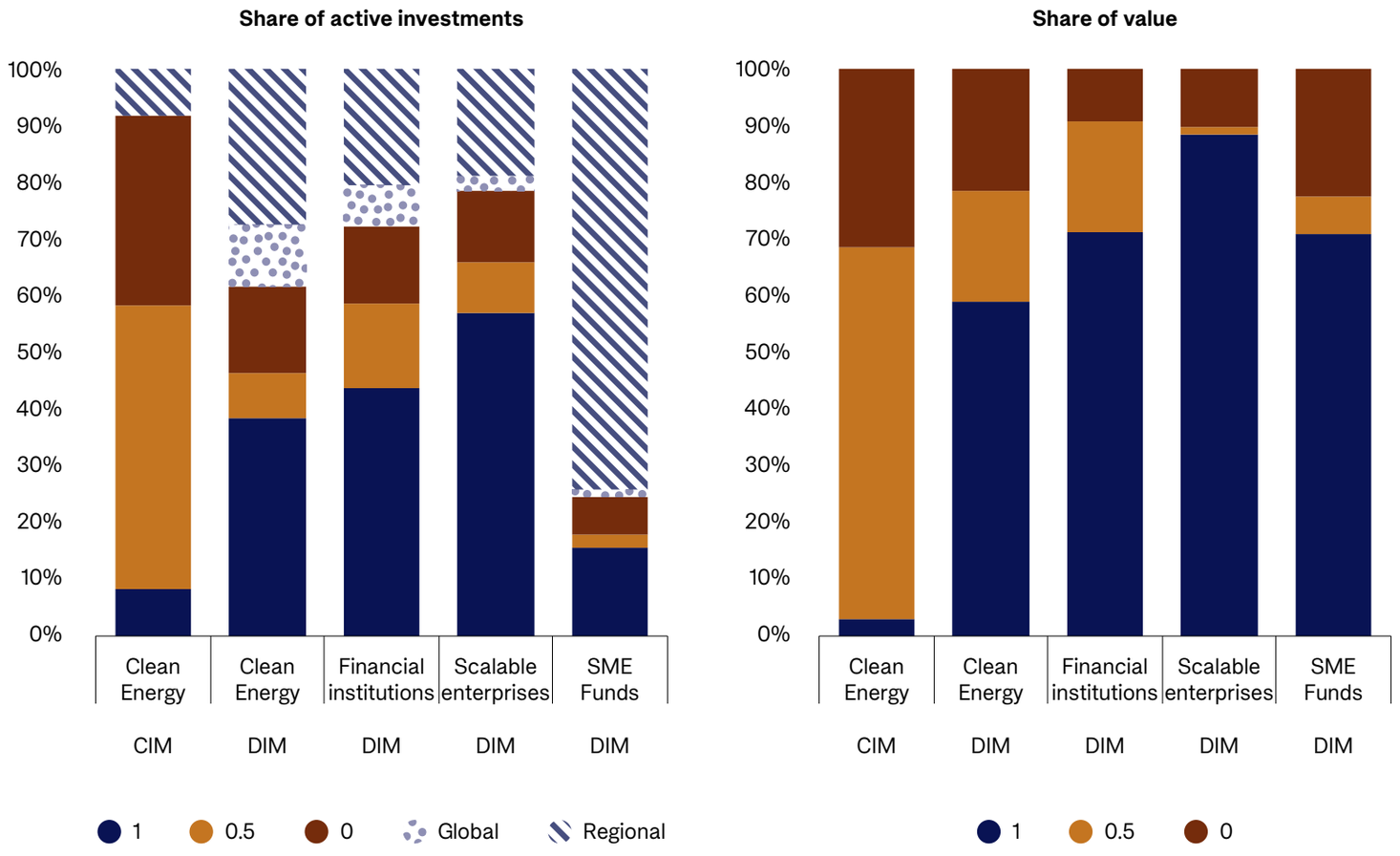
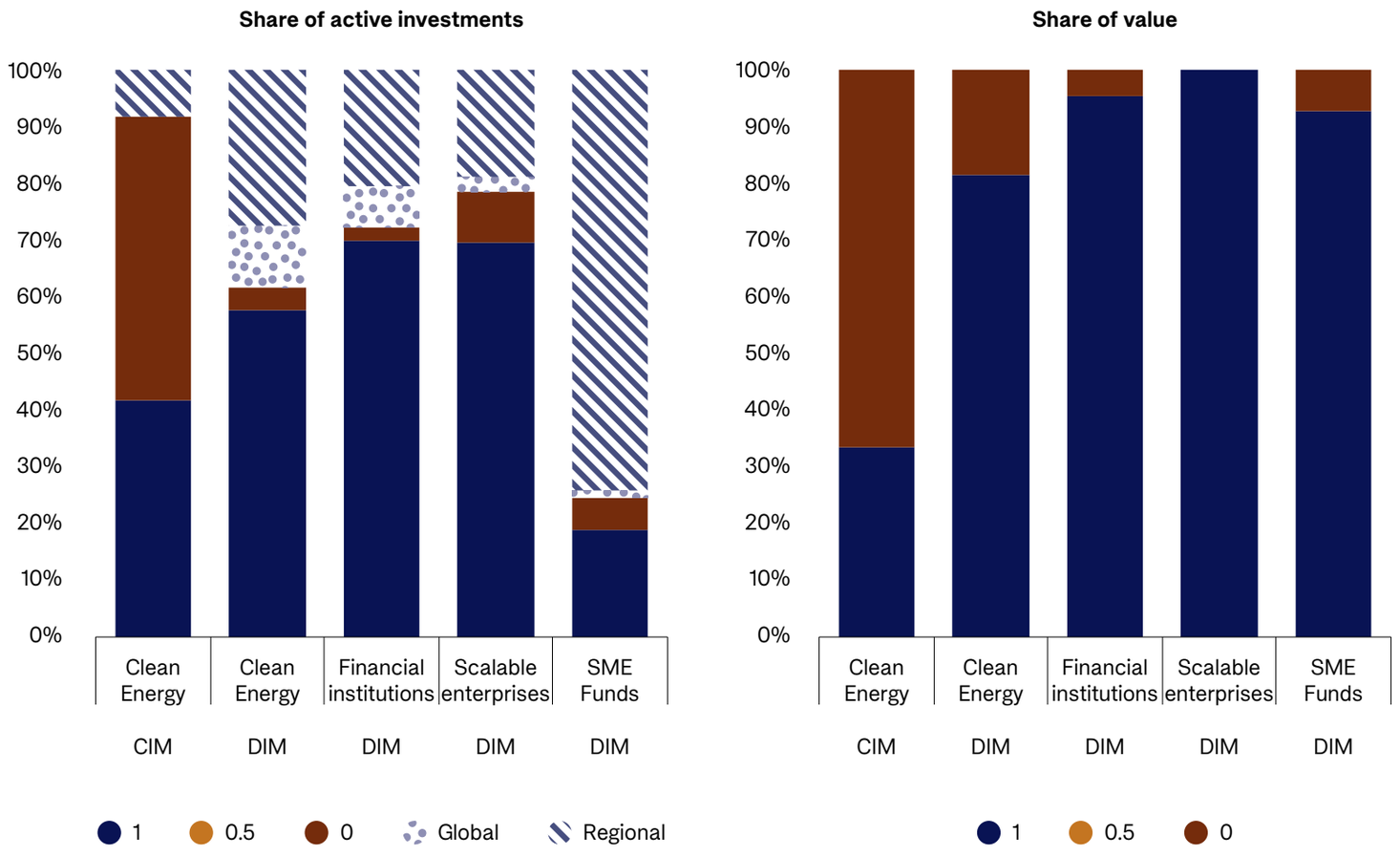


FIGURE 32

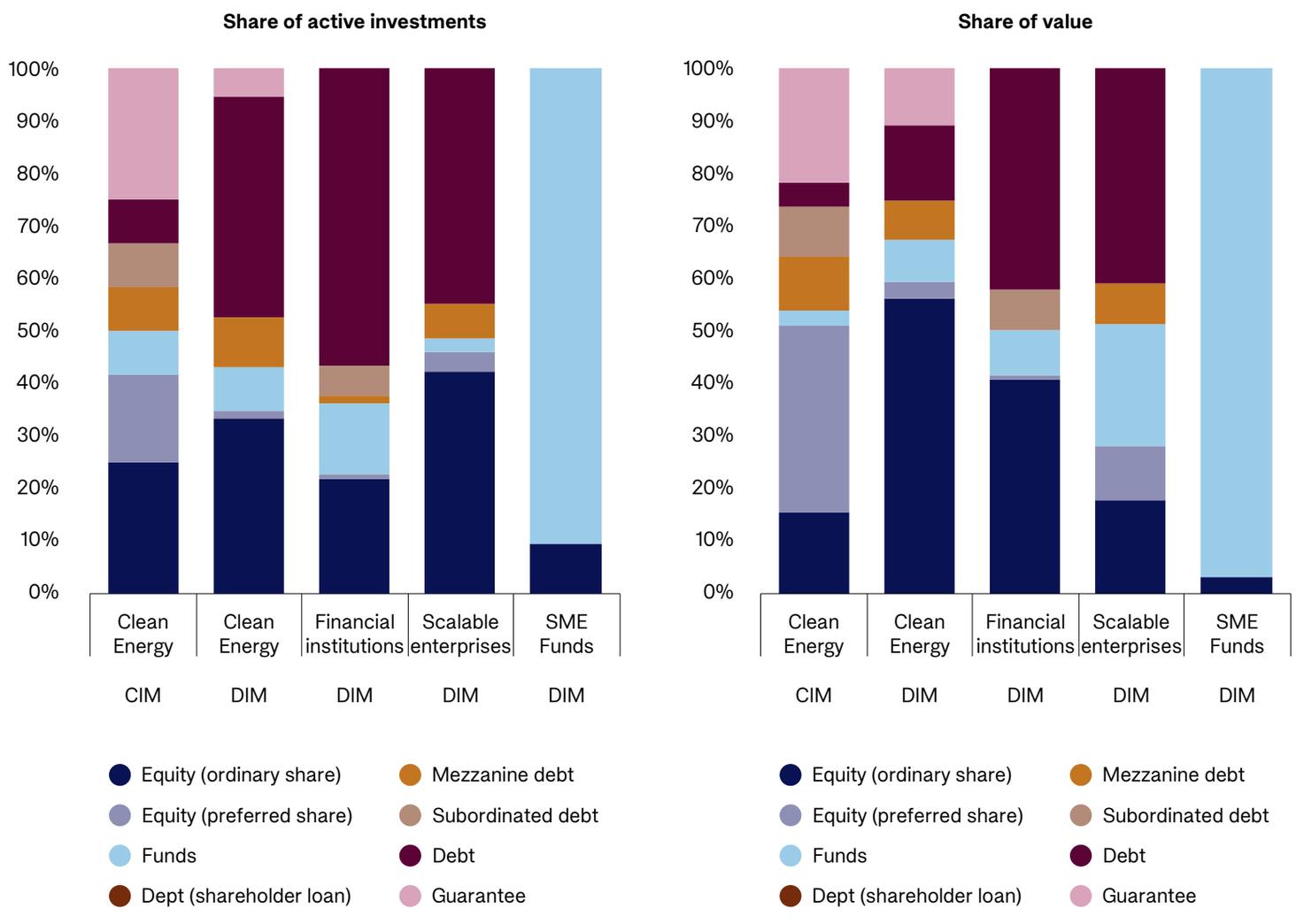
Credit rating score across Norfund portfolio investments (Q4, 2023), as per Norfund additionality framework



Conversely, the renewable energy investments are *more* likely to be using equity, which is considered more likely to be additional. Norfund generally has a mandate to do more equity than many other DFIs[82], and as seen in 2.1.1, both the DIM and CIM strategies include KPIs on share of equity. The renewable energy portfolios perform quite well on the use of equity instruments, but this is more so in value terms than in general over the DIM portfolio (Figure 33). This is caused by a small number of very large equity investments (such as Globeleq at NOK 2 billion). Compared to many DFIs, Norfund is also relatively good at using equity even in the most difficult countries (Figure 34), which is a particularly difficult challenge (which also makes the investments relatively more likely to be additional).[83]

FIGURE 33

Norfund portfolio by instrument, by USD commitments Q4 2023

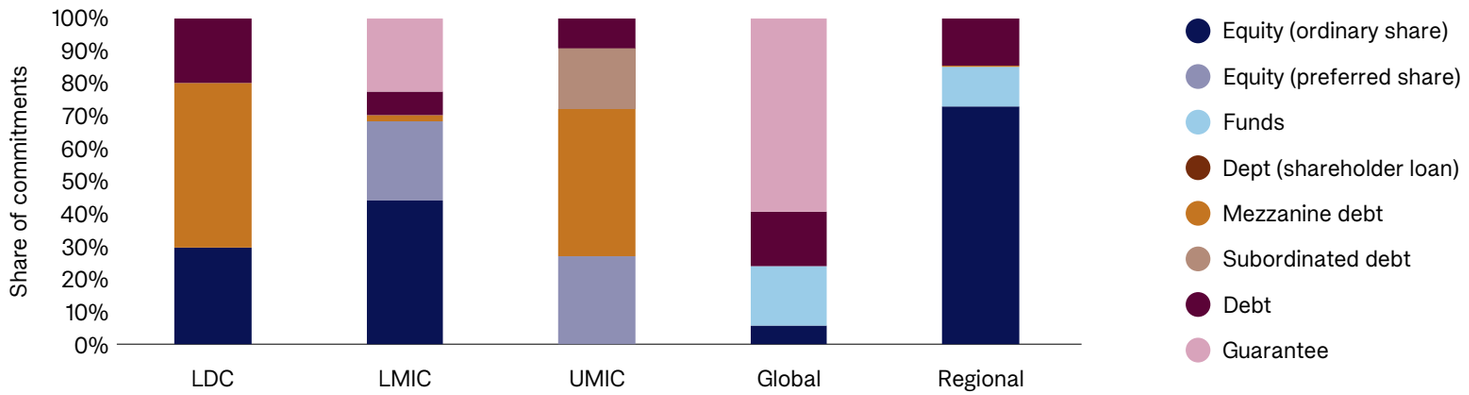


82 See https://publications.iadb.org/en/comparative-study-equity-investing-development-finance-institutions, or https://www.cgdev.org/sites/default/files/comparing-five-bilateral-development-finance-institutions-and-ifc.pdf

83 https://media.odi.org/documents/12666.pdf

FIGURE 34

Renewable energy portfolio by instrument and income classification, by USD commitments Q4 2023



2.3.4 Comparator organizations

Swedfund's approach to additionality is very similar to Norfund's. According to Swedfund's operating principles, "[a] prerequisite for all Swedfund's investment operations is the demonstration of additionality. This is assessed through an additionality assessment based on OECD's definition of additionality"[84]. This assessment acts as an internal screening stage that all investments have to go through before going to the IC, and is conducted by "dedicated impact experts"[85]. Unlike Norfund, there is no portfolio-level geographical targets for proxying additionality, but the SwedFund strategy reportedly does contain target shares on country categories based on income.

IFU's approach to additionality has many similarities with that of Norfund, and is currently in the process of being updated and modernized. The additionality approach includes a combination of portfolio-wide KPIs including on geography (50% of investments must go to countries below a certain income level threshold), as well as an investment-specific ex-ante assessment. This investment-specific assessment is currently in the process of being updated to include a richer set of data[86]. It includes quantitative data on the country, in addition to a qualitative assessment of the investment and investee, such as whether other investors are present, whether other financing on the same terms are available, etc. The ex-ante assessment of additionality serves only as a guidance or filter, and aims to limit investments to those meeting the thresholds, rather than attempting to maximize the additionality "score" for each individual investment. In broad terms, the approach is similar to that of Norfund, described above.

The IFU approach also has certain divergence from Norfund's approach, which could present inspiration and lessons learned. At IFU, ex-ante assessments are made by the investment teams, which include representatives from the "strategy" unit, unlike in Norfund, where the "strategy" unit is only responsible for creating the tools, and investment teams are fully responsible for its own self-assessment. Further, the assessment is made at an explicit screening stage before the full project preparation/due diligence takes place, as opposed to in Norfund where the assessment of additionality is made at the Clearance in Principle (CIP) stage and revisited again before final approval. Of course, some self-filtering by Norfund investment teams are made internally by culling investments that

84 https://www.swedfund.se/media/2763/annual-disclosure-swedfund-operating-principles-for-impact-management-2024.pdf

85 Ibid. (https://www.swedfund.se/media/2763/annual-disclosure-swedfund-operating-principles-for-impact-management-2024.pdf)

86 The tool itself is not publicly available and was not shared with the evaluation team.

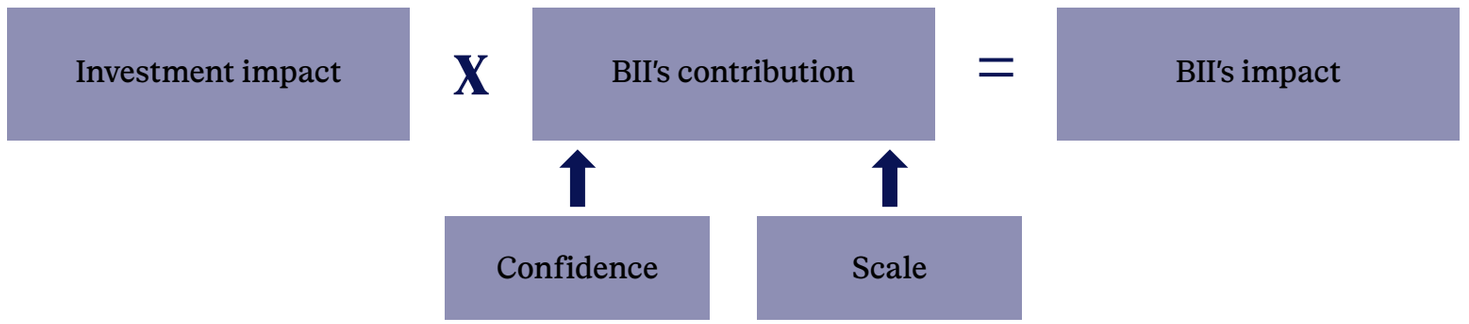
would clearly not have passed the clearance stage which represents a similar form of screening, albeit less formal and standardized.

BII considers additionality a part of a larger factor, "contribution." The impact of BII, which guides investment decisions, is seen as a factor of the potential impact of the investment and BII's contribution in the investment – if BII does not offer any contribution to the project, the impact of BII is none (Figure 35).[87] This contribution can exist of financial additionality, value additionality and/or mobilization of private capital. The contribution is assessed in terms of *confidence*, i.e. the confidence BII has that their contribution is actually additional, and the scale, i.e. the magnitude of the change that BII is contributing to. Scale can to some extent compensate for confidence, in order to make sure they do not pass on very large opportunities in case of uncertainty. As the "contribution" umbrella includes both additionality and mobilization, these can also to some extent compensate for each other; a project with low 'confidence' in the additionality can be selected because of the large potential mobilization or impact. However, BII explicitly states that projects with no financial additionality will be rejected, even if they make up for it in value additionality. Furthermore, value additionality has to be closely aligned with the investee's core business, and not some tangential CSR scheme. The contribution and impact is assessed by a separate panel, early in the development process, before due diligence, in order to ensure that resources are not spent developing projects that do not pass the contribution or impact thresholds. Figure 36 shows a stylized version of a checklist used by BII investment managers for impact and contribution assessments.[88] Finally, according to BII, "[a]ll investments made under BII's current strategy will receive an ex-post assessment of their impact score biennially to measure performance against initial impact expectations".[89]

87 https://assets.bii.co.uk/wp-content/uploads/2022/05/19141040/Our-approach-to-investor-contribution.pdf

FIGURE 35

BII 'contribution' framework



Source: *https://assets.bii.co.uk/wp-content/uploads/2022/05/19141040/Our-approach-to-investor-contribution.pdf*

88 https://impactfrontiers.org/wp-content/uploads/2023/02/Impact-Frontiers-BII-Case-Study.pdf

89 https://committees.parliament.uk/publications/42451/documents/211015/default/, see also https://assets.bii.co.uk/wp-content/uploads/2022/02/24121022/British-International-Investment-Impact-Score-2022-26.pdf

FIGURE 36

BII 'contribution' framework checklist

Summary:
Summarize the overall contribution assessment including the basis for the rating.
This should highlight the areas of BII's contribution which are most significant in achieving impact that would not otherwise occur.

Rating:
None/Low/Medium/High

Nature	Confidence	Scale
Financial Additionality: ☐ Capital is not offered at all ☐ Capital is not offered in sufficient quantity ☐ Capital is not offered on the same terms	• Describe and explain our confidence that we are doing something other investors would not.	• Describe the difference this contribution makes to the impact of the transaction.
Value Additionality: ☐ Knowledge and advice ☐ Improvement of processes, practices or standards ☐ Job quality ☐ Women's economic empowerment ☐ Climate change ☐ Support for developmental strategies ☐ Reputational improvement	• Describe and explain our confidence that we are doing something other investors would not.	• Describe the difference this contribution makes to the impact of the transaction. • This should include a consideration the likelihood of success of the value addition activities.
Mobilization: • Describe what we are doing to mobilize capital into this transaction.	• Describe and explain our confidence that we are mobilizing capital into this transaction which would not otherwise be available to the investee/fund.	• Describe the difference this contribution makes to the impact of the transaction.

Source: *https://impactfrontiers.org/wp-content/uploads/2023/02/Impact-Frontiers-BII-Case-Study.pdf*

The BII approach offers good ideas for Norfund, but it is not clear how different the investment selection ultimately ends up being. The 'contribution' framework accomplishes multiple things that could be strengthened in Norfund's framework. First, valuing mobilization without getting it mixed into assessments of additionality makes it possible to assess them both independently. Secondly, formalizing the trade-off between development impact and additionality. Like Norfund, BII also does renewable energy investments in India and South Africa, but these projects have to prove very high potential for impact (like emissions avoidance), mobilization[90], or some other niche market with funding gaps to prove contribution. This, in effect, formalizes the trade-off Norfund has done under the CIM, where additionality is in contrast to "where it is easier to achieve impact", as discussed above (see section 2.3.3.1). However, it should be noted that BII has been criticized for investing too heavily in MICs, including an 2023 report by the UK Independent Commission for Aid Impact.[91] Thirdly, by having a formalized assessment of contribution by an independent panel which is not the Investment Committee, BII presumably obtains more objective

90 See https://assets.bii.co.uk/wp-content/uploads/2024/03/19095126/Analysis-of-mobiliation-in-BII-renewable-energy-investments.pdf for a synthesis of studies on mobilization of renewable energy projects including in India and South Africa

91 Which for example found that *"BII invests 28% of its global portfolio by value in India, but much of its portfolio lacks strong 'financial additionality' (given India's relatively mature financial markets) and does not have a clear link to inclusive growth and poverty reduction"* https://icai.independent.gov.uk/html-version/uk-aid-to-india-review/

assessments of proposed projects, and the trade-off between impact, additionality, risk and returns becomes more explicit. Even if many of the indicators, such as the table in Figure 36 above is largely based on subjective self-assessed indicators. Fourthly, standardized ex-post assessments compared against the ex-ante predictions would be a valuable tool for calibrating and adjusting the predictions, in order to make sure that the framework is well suited to predict additionality. Unfortunately no public documents of this type were found.

2.3.5 Ex-post additionality

It is very difficult to say with certainty whether individual investments actually *are* additional. The counter-factual of what would have happened without Norfund's investment is impossible to prove, which makes it difficult to determine with any certainty whether an investment was additional or not. The evaluation team has identified evidence for and against additionality for the nine case study investments in order to illustrate the factors at play, but we do not provide a definite answer to the question of additionality. Evidence from stakeholder interviews is likely to be biased. For example, Norfund investment managers are likely to exaggerate the importance of Norfund, while investees might be likely to overstate their own company's ability to secure funding elsewhere.

The following summarizes the broad findings from the case studies, but are not intended to amount to representative findings applicable for the full portfolio (see Annex 2, 5.1.5). Further detail on each investment can be found in Appendix 3. Section 2.2.7 describes in further detail specific effects on corporate governance.

Financial additionality

- **Overall market conditions and country selection appear correlated with evidence of financial additionality.** Very broadly (as we have only examined three countries), the investments examined in India and South Africa exhibit more signs suggesting lower additionality than the investments in Madagascar, which is correlated with country level effects. South Africa and India receives many orders of magnitude larger investment flows in renewable energy than Madagascar, and only carefully selected pockets of low investments in the former would show signs of additionality. While the investments in India may have contained certain elements that made them marginally more likely to be additional, in general such investments run higher risk of being non-additional than ones in the most difficult markets such as Madagascar. In South Africa, the timing of investments is critical, as the market has developed quickly – when most of the investments were made in the mid-2010s the market was less developed than it is now, and thus investments made then are more likely to be additional than similar investments being made today.
- **Additionality at the investment level should be considered separate from additionality at the asset level.** An investment in a specific investee or with a specific partner might appear additional insofar as that specific investee or partner would not be able to secure other funding. However, this does not mean that the outcomes achieved from the asset resulting from the investment would not have materialized without the investment, as other competing companies might have constructed the same assets. This is likely the case in two cases in India, where investments are done in highly competitive markets (Enel Coral, Fourth Partner Energy). In other words, even if it could be proven that the investment in the Enel-constructed Coral wind power plant in Gujarat would not have happened without Norfund, it is very likely that a wind power plant providing the same renewable energy would still have happened (as evidenced by the competitive bidding round for the concession).
- **In fund investments with large numbers of other investors (including DFIs), the additionality of a non-junior tranche investor is questionable.** As seen in the Access to Clean Power Fund (ACPF) case study (6.3.3), funds find it more difficult to attract junior tranches which carry more risks.[92]

92 First loss concessional financing provided by donors, such as Norad (See related note in section 2.1.3.1)

The relatively less junior investment provided by Norfund (as well as a large number of other DFIs) is likely to be relatively less additional than more junior investments.

Non-financial additionality

- **Norfund has been instrumental in providing non-financial support to many of its investees.** In most of the case study investments, we found evidence of Norfund providing some extent of additional value to the investee, including: improving E&S standards (e.g. Fourth Partner Energy, India), improving business plans (e.g. WeLight, Madagascar), or providing technical expertise (e.g. Renewable Energy Holdings, South Africa). Norfund is appreciated as an active owner (in the case of equity investments), who is quite hands-on compared to other DFIs.
- **The exact influence of Norfund compared to other investors is difficult to determine.** As Norfund always operates as minority investor, it is always in investments with other shareholders (most often other DFIs). These other shareholders typically have many of the same objectives in terms of non-financial additionality. What improves in for example E&S standards are attributable to Norfund compared to the other shareholders is difficult to determine. This is seen for example in the investments in ACPF (other DFIs), Enel Coral (established global firm) and Fourth Partner Energy (global investment firm) in India.

Surveys of investment managers and investees indicate that the two groups have both similar and different views on the additional value of investments.

- While Norfund investment managers are generally convinced of financial additionality, investees are more varied in their response, and on average less convinced of financial additionality (Figure 37; note the inverse options).
- In terms of alternative sources, some investees report being able to get funding from other DFIs, but other sources are more rare. For the most part, investees are relatively optimistic about getting funding from elsewhere. "Other sources" include for example equity platforms.

FIGURE 37

Investee managers (n=12) and investees (n=16) survey: financial additionality

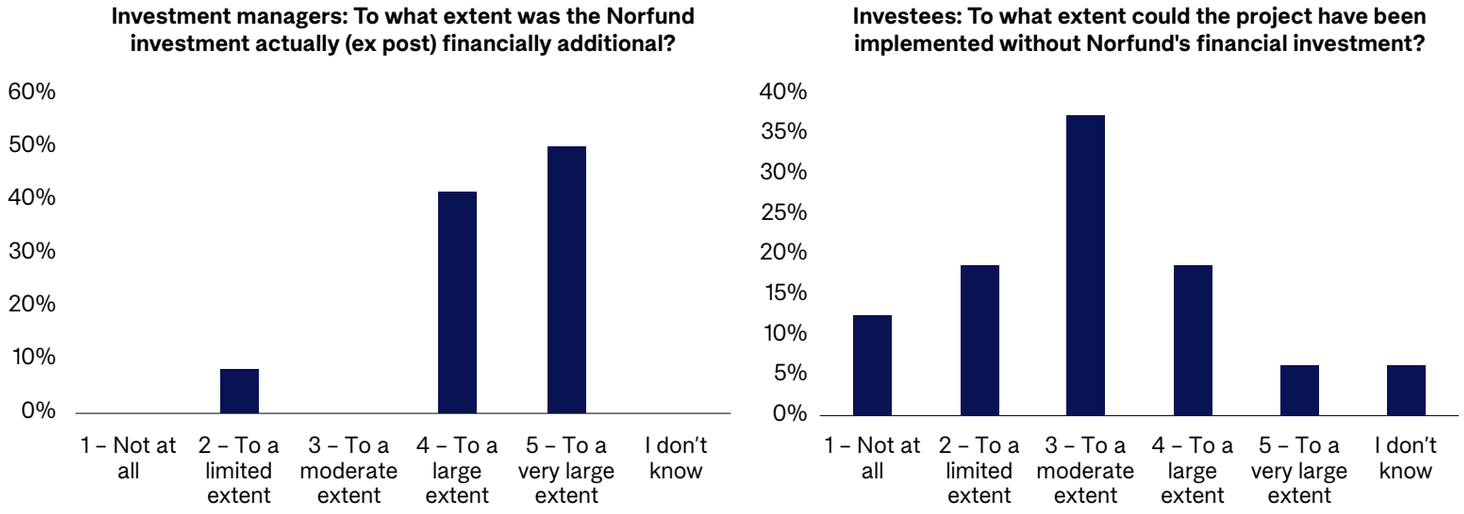


FIGURE 38

Investee survey: To what extent were other sources available for raising funds for your company/project (with the same instrument and similar terms as the Norfund investment)? (n=16)

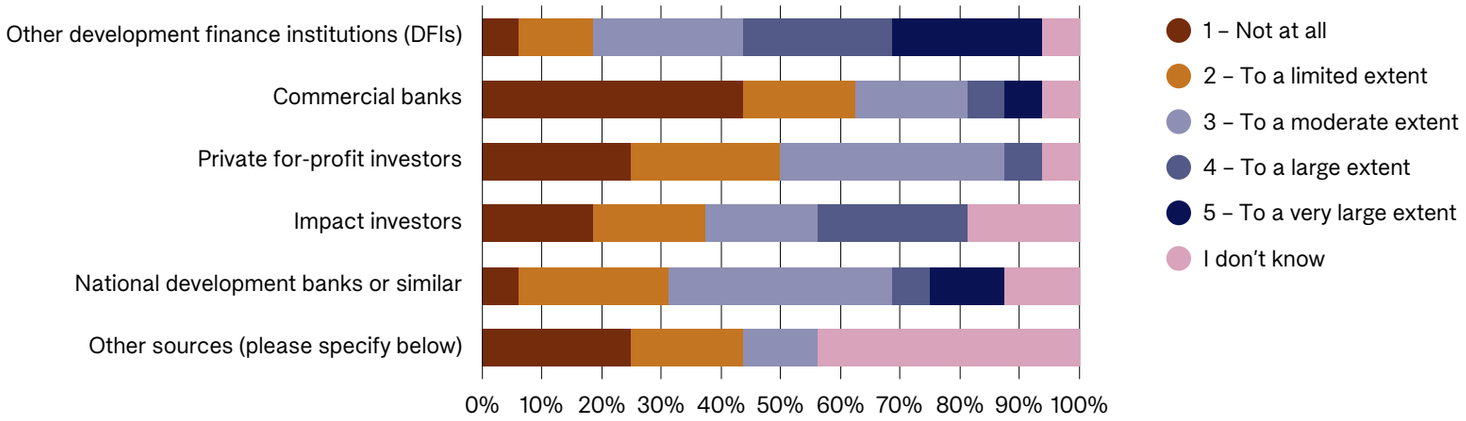
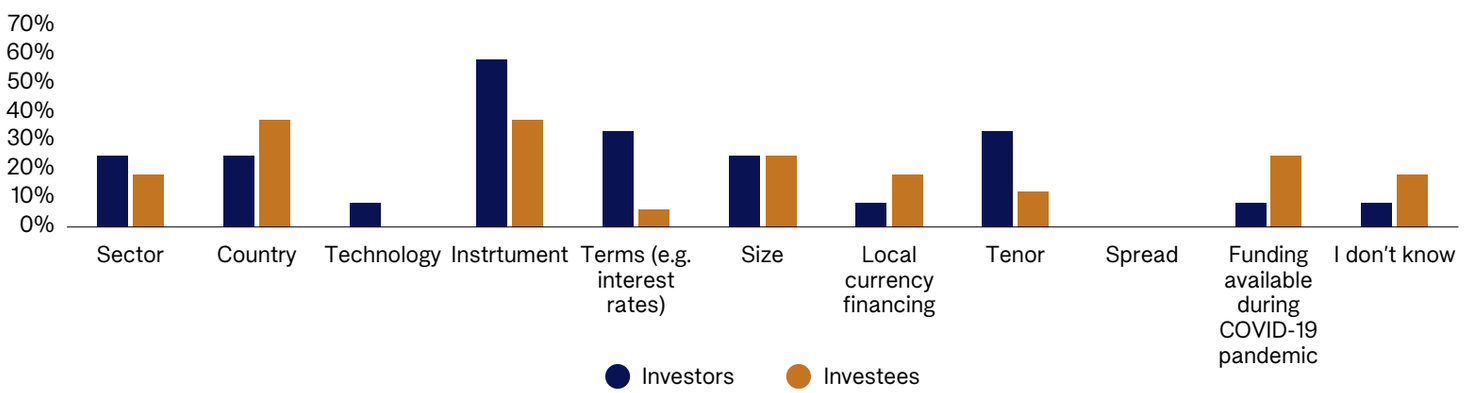


FIGURE 39

Investee and Investment manager survey: Which aspects of the Norfund funding for this investment were most difficult to find from other sources? (select maximum 3) (n=16 investees, 12 investment managers)

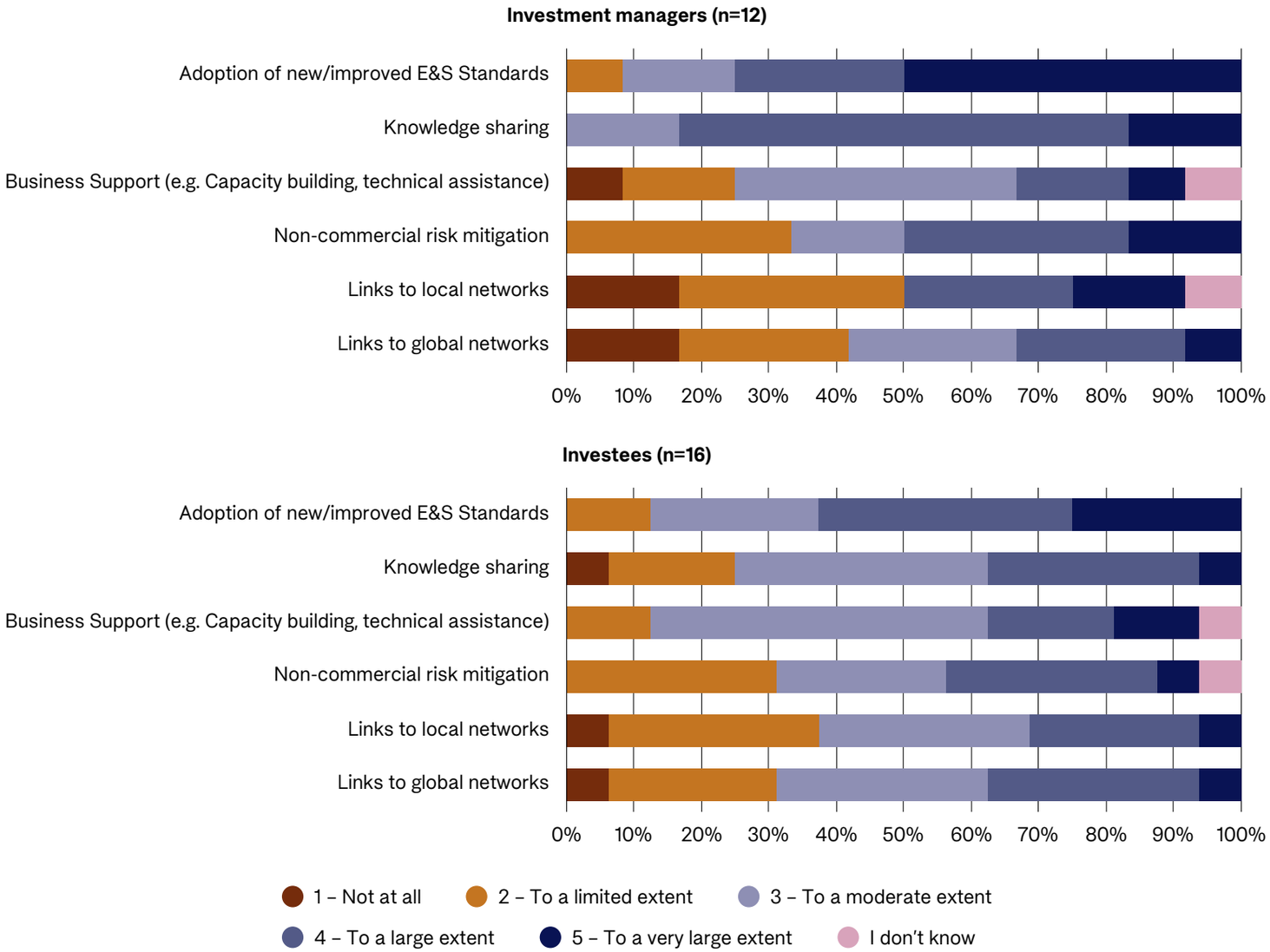


- Investees see instrument, terms and tenor as less important than investors do, while emphasizing funding available during COVID, the country and local currency more.

- **In terms of non-financial additionality, the answers are quite varied, which reflects the different focus areas investment projects have on improving value.** While many respondents saw little improvement in various areas, this is likely because the investment project did not emphasize that particular area. Of the investees, only 3 investees reported that they had not improved any single area to a large or very large extent. Between investment managers and investees there are some different views on importance of knowledge sharing, which investees appear to value less than investment managers overall.

FIGURE 40

Survey: To what extent did the Norfund investment bring the following non-financial benefits:



2.4 Sustainability

Evaluation questions

7. To what extent will the outcomes the Norfund's renewable energy investments (if any) continue or are likely to continue?

   7.a The ex-ante conditions for sustainability created in the design of the investment.

   7.b The ex-ante conditions for sustainability and suitability of the set-up for CIF investments.

Key findings

+	Evidence from case studies and surveys of investment managers suggest that Norfund investments are generally **designed with strong conditions for sustainability**, mainly reflecting the inherent focus investments have on supporting commercially viable investments, alignment with government priorities and reducing political/regulatory risks.
~	Some aspects of Norfund's strategy and operations are inherently **conducive to sustainability**, such as targeting commercially viable projects, but other priorities such as taking risks and additionality run counter to sustainability.

+ = Positive finding − = Negative finding ~ = A noteworthy finding not clearly positive or negative

Inherent aspects of Norfund's mandate and strategy makes it more and less conducive to provide sustainable impacts. Sustainability here refers to "the financial, economic, social, environmental and institutional capacities of the systems needed to sustain net benefits over time." In the case of DFIs, this relates to the extent to which the companies and/or projects they have invested in will continue providing benefits after their exit. In theory, this could hinge on a number of factors:

- **Commercial viability of investees/projects.** Commercially unviable companies or projects will not be able to sustain impacts. If investee companies are commercially viable, this means they can continue offering services, constructing renewable energy projects, etc., and if specific renewable energy projects are commercially viable they can continue providing electricity. The likelihood of commercial viability can be summarized as financial risks. This risk is affected by various financial aspects on the investment itself, but also external factors such as market factors.

  This element of sustainability is mostly aligned with other forces in Norfund driving for commercial viable investments (such as project level return requirements, or desire to reinvest profits), which makes Norfund's strategies and portfolio naturally seek sustainable projects. However, other strategic priorities, such as additionality might be counter to the desire to obtain commercial viability and minimize risks (including through investing in existing markets, using proven technologies, etc.); by definition, taking risks means there might be investments in unsuccessful companies or assets.
- **Improving management quality of projects.** Norfund can provide business support to investees, including both through active ownership and more explicitly through the business support grant facility financed by MFA. Improving management quality can in theory increase likelihood of commercial viability, and thus benefit potential for sustainability.

  This element of sustainability is aligned with other priorities of Norfund, including providing non-financial additional value to investees.
- **Non-financial risks.** Various elements of risk to sustainability beyond the financial risks mentioned above can be present in a Norfund investment, such as risk of political or regulatory changes. This type of risk can be mitigated through aligning investments with government priorities.

  This element of sustainability possibly goes against the priority of additionality, as Norfund is more likely to be additional precisely in markets where non-financial risks are higher.
- **Demonstration effects.** Broader than just the scope of the specific investment, Norfund's investments could potentially also involve demonstration effects such as opening new markets, proving the viability of technologies/models, etc., which could make investments have an impact in the long term. This is for example illustrated in the case of WeLight (Case study WeLight Annex 3), which has demonstrated that mini-grids can work is contexts like Madagascar, while being profitable.

  This element of sustainability is aligned with other priorities such as additionality, as investments with additionality would tend to be in contexts with fewer other similar projects already made. Innovative new investments in untested areas or technologies would be both likely to be additional and to have demonstration effects.

Norfund investments are not generally made with sustainability explicitly in mind, but this tends to be a side effect of the other priorities and objectives. The long-term sustainability of development effects is not something explicitly mentioned in the CIM or DIM strategies. However, in practice the other priorities such as commercial viability, which is arguably the strongest priority in any Norfund investment, implicitly ensure sustainability as discussed above.

Norfund investment managers generally have a confident view of investments' conditions for sustainability. Survey responses show overwhelmingly positive outlooks on sustainability factors being

included in project design (Figure 41). Improving management quality of the project by providing technical assistance is the only outlier, which is somewhat lower than expected from investment managers responses to non-financial additionality (possibly because the option explicitly includes TA).

Norfund investment managers are generally more optimistic about the demonstration effects of investments than investees. Survey responses show no clear trends in what kind of demonstration effects were achieved. However, generally investment managers are generally more positive on developments in the markets. Of course, increased investments following the investment does not necessarily imply causality.

FIGURE 41

Investment manager survey: To what extent were these sustainability factors included in the project design

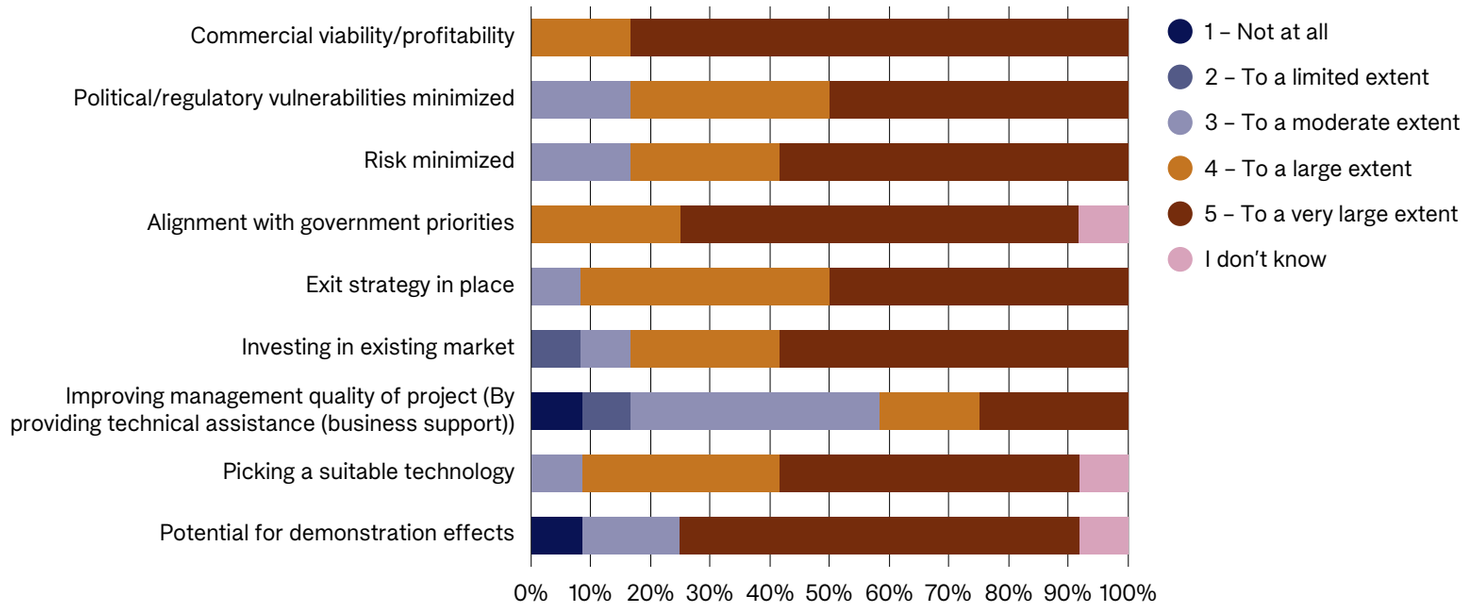
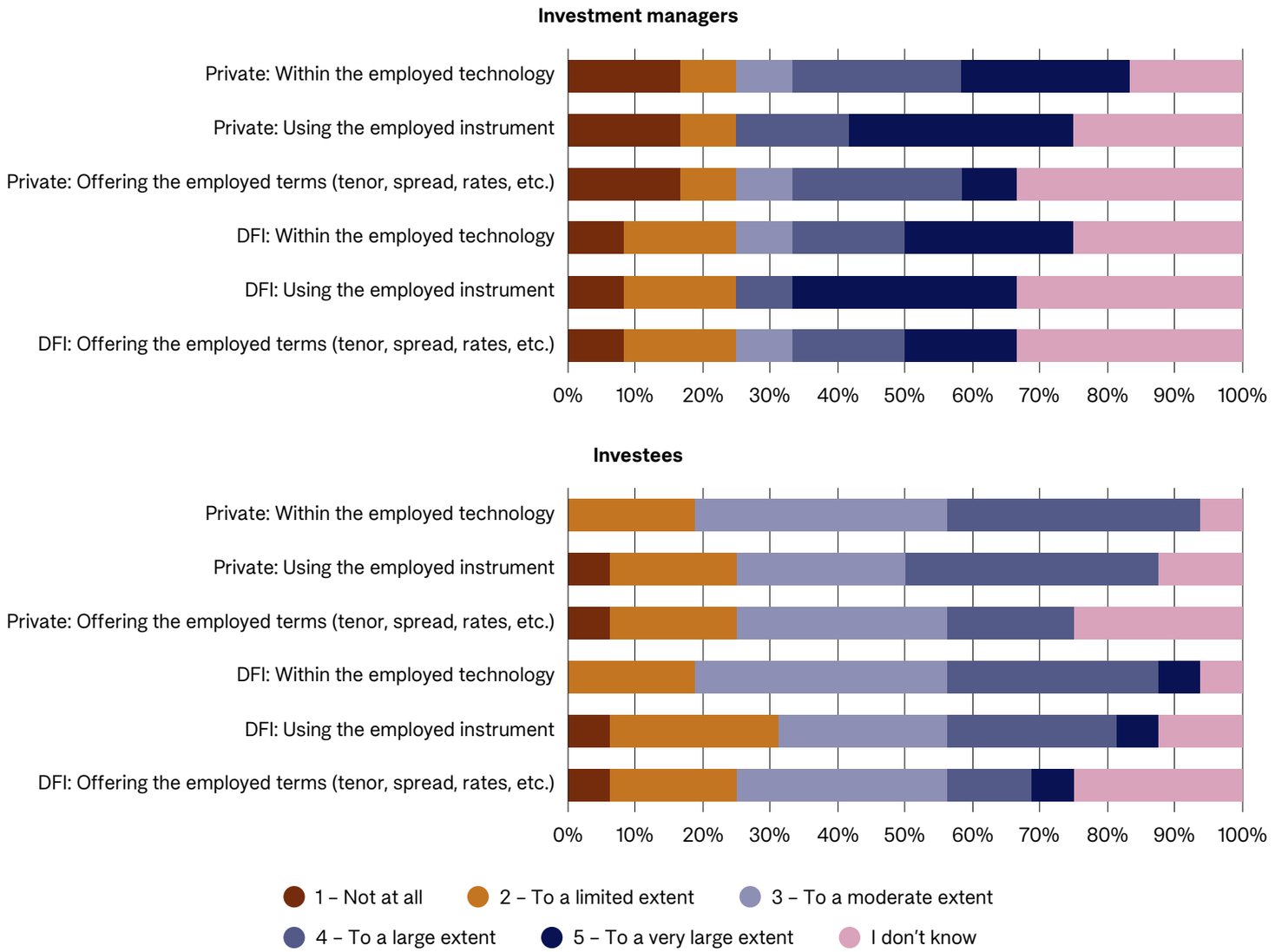


FIGURE 42

Investment manager and investee surveys: Have there been any signs of increased private investments in the market following the Norfund investment?



Findings from the case study investments suggest that investments to a high degree are sustainable through commercial viability, alignment with government priorities and reducing political/ regulatory risks. Overall, the prospect for most of the case study investments in terms of sustainability is positive, and a high extent of sustainability conditions were baked into the investment designs, albeit not typically explicitly, but rather as a side effect of maximizing for commercial viability and/or minimizing commercial risks (Table 10). The potential for demonstration effects is mixed.

TABLE 10

Summary of case study findings on sustainability conditions

	India			Madagascar		South Africa			
	ResponsAbility ACPF	Fourth Partner Energy	Enel Coral	WeLight	Baobab+	Bronhorstspruit Biogas Plant	Globeleq	Renewable Energy Holdings	H1 Upington
Commercial viability	High	High	High	High	Medium	Low	High	High	High
Political/regulatory vulnerabilities minimized	Medium	Medium-High	High	Medium	Medium	High	High	High	High
Risks minimized	High	Low	Medium	Low	Low	Low	High	High	High
Alignment with government priorities	Medium	High	High	Medium	Medium-Low	High	High	High	High
Have an exit strategy	High	Medium-High	Medium	High	Medium-Low	High	Medium	N/A	High
Investing in existing market	Medium	High	High	Medium-High	Medium	Low	High	Medium	High
Improving management quality of project (By providing technical assistance (business support))	High	Medium	Medium-High	Medium-High	Medium	Low	High	High	Low
Price vs alternative technology/energy sources	Medium	High	Medium	High	Medium	Low	High	High	High
Potential for demonstration effects	High	Low	Low	High	Low	High	High	Medium	Medium

2.5 Efficiency

Evaluation questions

8. How efficient is Norfund in managing its renewable energy investments?

   8.a The economic and operational efficiency of Norfund's renewable energy investments.

   8.b The financial performance of the renewable energy portfolio.

   8.c Risk exposure and risk management.

Key findings

+	Norfund is managing its growth well in terms of maintaining **efficiency ratios** across key economic and operational efficiency metrics.
+	Norfund **routinely evaluates its investment manual** every quarter to consider necessary adjustments to its processes.
+	The renewable energy portfolio is **contributing positively towards the overall financial performance** of Norfund.
+	Overall, the Renewable Energy portfolio demonstrates a **combination of returns close to Norfund's targets** and notable volatility.
~	Norfund's renewable energy investments highlights a **decrease in committed portfolio size despite increasing operational costs**.
~	With a Sharpe Ratio of 0.14, the renewable energy portfolio shows **less desirable risk-adjusted returns** when compared to the financial institutions portfolio (Sharpe Ratio of 0.63).
−	The **risk assessment details** provided in Investment Committee (IC) approval documents often vary.
~	The **limited use of Norfund's country risk assessment tool** in individual investment decisions suggests areas for enhancement in portfolio risk management.

+ = Positive finding − = Negative finding ~ = A noteworthy finding not clearly positive or negative

2.5.1 Economic and operational efficiency

2.5.1.1 Economic Efficiency:

Norfund has seen substantial growth recently, marked by higher investment volumes, an expanding portfolio, and an increased workforce. In 2023, the focus was on bolstering corporate roles in finance and legal departments and enhancing the Renewable Energy department's capacity. Growth in regional offices aligns with the strategy to expand closer to investment markets, with increasing number of hires joining regional offices. About two-thirds of the total Norfund's staff (ca. 89 out of the current total of 134) are directly involved in investment activities, with the remainder in corporate roles.

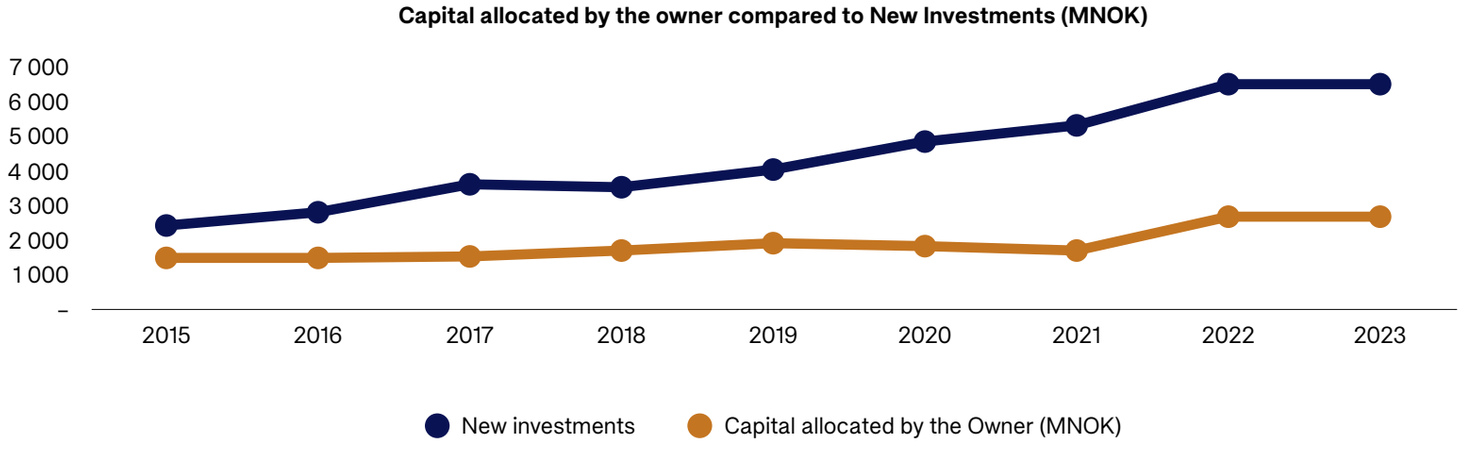
Overall, Norfund exhibits operational efficiency across several metrics. According to independent and internal comparative assessments to other DFIs, conducted by organizations like The Association of Bilateral European Development Financial Institutions (EDFI),[93] Norfund has some of the lowest cost ratio among similar organizations.[94] The organization also ranks high in initiating new projects per Full-Time Equivalent (FTE) and in the total number of projects per FTE. Furthermore, it operates with the fewest FTEs per EUR 100 million invested and employs a higher percentage of investment staff compared to most of its peers.

Following are key metrics which indicate that Norfund is managing its growth well in terms of maintaining efficiency ratios:

1. **Growth of Norfund's Committed Portfolio:** Norfund's committed portfolio has consistently grown, as evidenced by an increase from 15,127 MNOK in 2015 to 36,225 MNOK in 2023. This trend demonstrates a significant expansion in the size of Norfund's investment portfolio over the years. The growth in the committed portfolio is supported by substantial new investments, which have also seen a steady rise—from 2,395 MNOK in 2016 to 6,487 MNOK in 2023. Over this period, allocations from the Norwegian government have represented on average, roughly 40 percent of the new investments while the rest are capital reflows, as indicated in Figure 43.

FIGURE 43

Comparison of Norfund's new Investments to capital allocated by the Owner



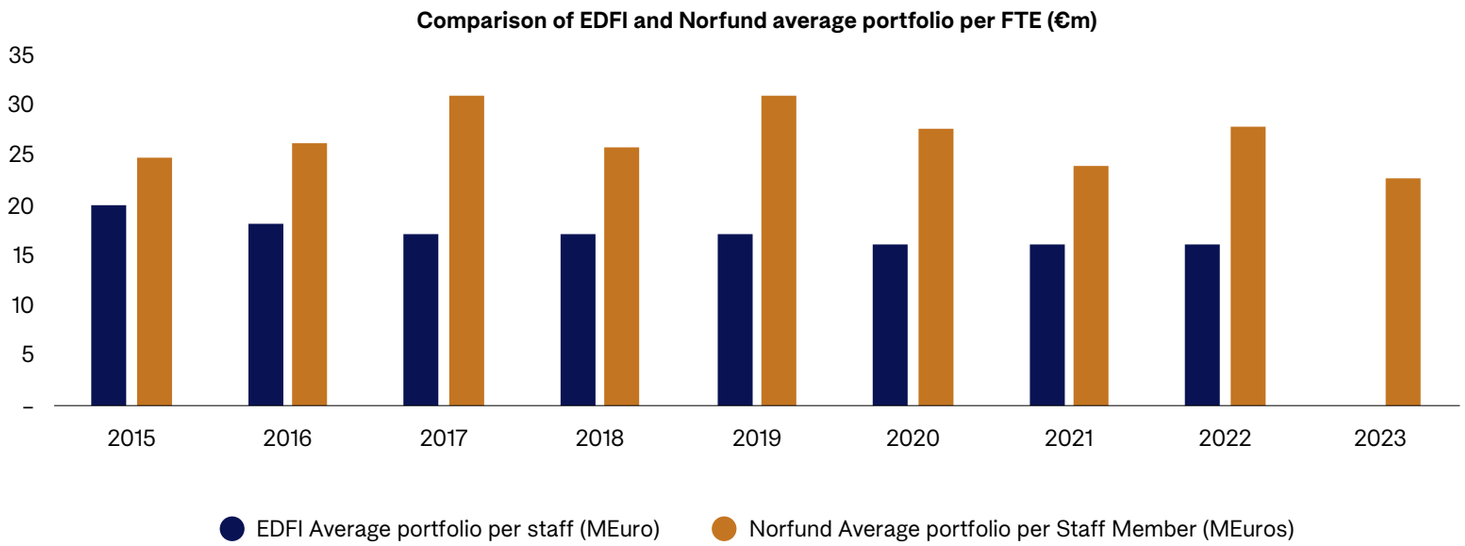
Source: *Norfund Annual Reports*

93 EDFI Comparative Analysis 2015-2022
94 A Comparative Assessment of DFI Cost Efficiency, PwC 2023

2. **Trends in Total Operating Expenses:**
   While operating expenses at Norfund have risen from 173 MNOK in 2015 to 369 MNOK in 2023, it is essential to consider these costs in relation to the growing size of the committed portfolio. This contextual understanding highlights the scale of operations in line with portfolio expansion.
3. **Operational Expense Ratio Stability:**
   The operational expense as a share of the portfolio has maintained an average of approximately 1.0 percent from 2015 to 2023. This stability indicates that Norfund has effectively managed its operational costs in proportion to its portfolio growth.
4. **Increasing Productivity Per Employee:**
   The average portfolio managed per employee has risen from 219 MNOK in 2015 to 263 MNOK in 2023. This increase suggests a growing efficiency, as each employee handles a larger segment of the portfolio, potentially indicating either enhanced productivity or an increase in employee responsibilities. EDFI also uses this metric in its annual Comparative Analysis to show the average portfolio per staff member (€m) across all European DFIs.

FIGURE 44

Average portfolio per FTE, Norfund vs EDFI average

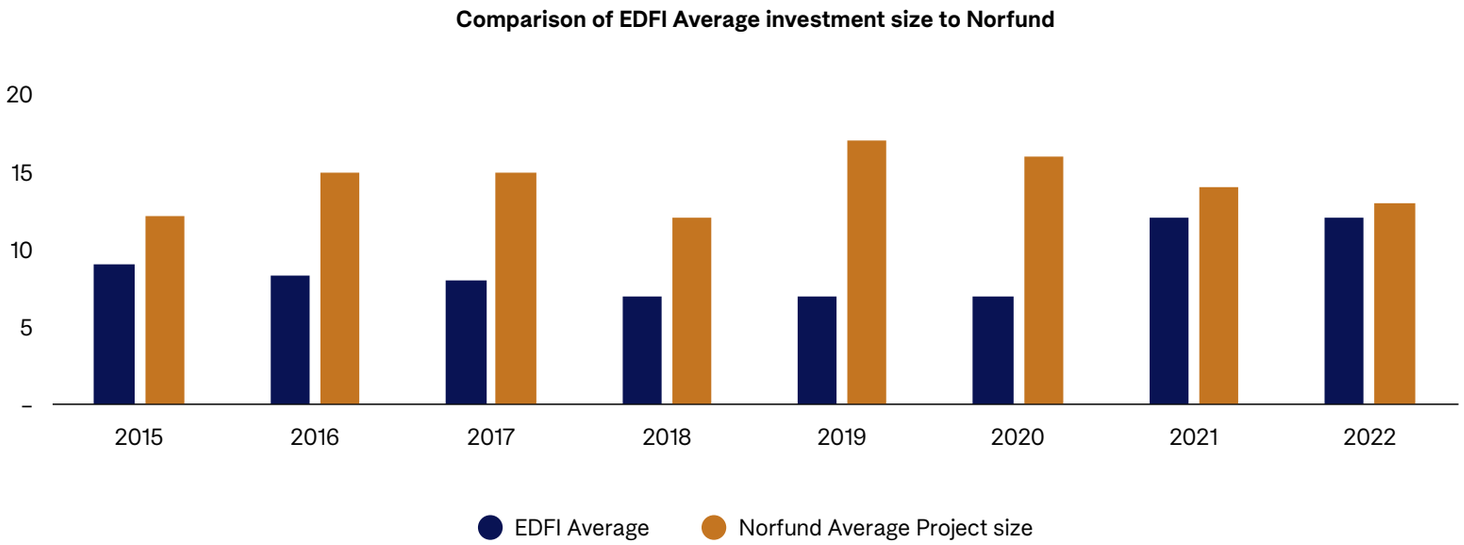


Source: *EDFI Comparative Analysis 2015-2022 and Norfund data on number of staff and overall portfolio size*

As shown in Figure 44, Norfund's average portfolio per FTE is notably higher, particularly in years like 2017, 2019, and 2021. This may be partly because of a more efficient use of human resources in managing larger portfolios, however comparative assessment of other EDFI's indicate that Norfund's strategic focus on fewer, larger projects maybe a bigger reason. Figure 45 shows that Norfund's average project size has been generally significantly higher than that of the global portfolio. Since 2021 (with the sale of SN Power), however this gap has been considerably reduced.

FIGURE 45

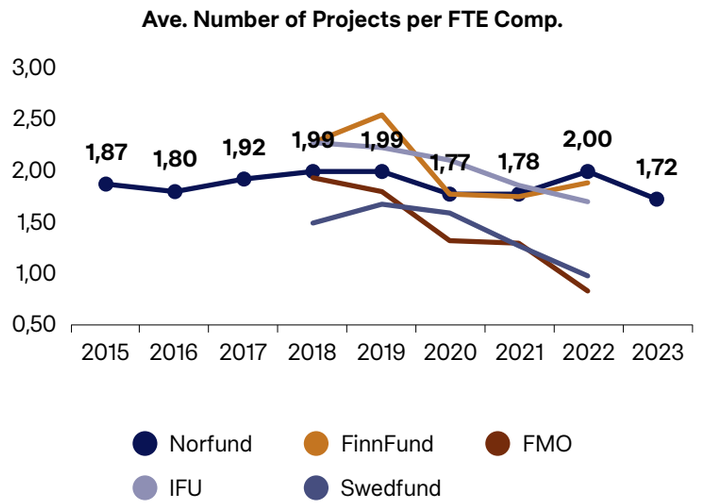
Comparison of the EDFI average to Norfund's, average investment size



Source: *EDFI Comparative Analysis 2015-2022*

FIGURE 46

Comparison of average number of Projects per FTE



Source: *EDFI Comparative Analysis 2015-2022 and Norfund data on number of number of projects per FTE*

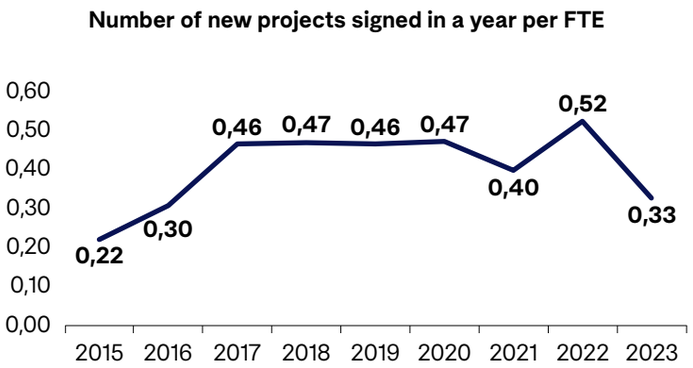
5. **Employee Growth Parallel to Portfolio Expansion:** Norfund's workforce has expanded from 69 employees in 2015 to 138 in 2023, nearly doubling in size. This growth aligns with the increase in the portfolio size, demonstrating a strategic scale-up of human resources to support financial expansion while maintaining a consistent investment to corporate staff ratio of 2:1.

6. **Generally stable ratio of the average number of projects in the portfolio per FTE.** This measure of efficiency relative to the number of FTEs has shifted slightly from 1.9 in 2015 to 1.67 in 2023. Figure 46 indicates that the growth in the number of employees is aligned proportionately with the number of projects, thus maintaining a consistent workload per employee. KPMG comparative analysis of this metric for the years 2018-2022, also suggests that Norfund generally ranks high compared to other DFIs in this category.

7. **General increase in the number of new projects signed per employee from 2015 to 2023.** This ratio, which measures new projects per employee, has risen from 0.22 in 2015 to 0.33 in 2023, despite experiencing some fluctuations. The upward trend in Figure 47 suggests that employees are taking on more new projects annually, which could reflect an organizational push toward growth or an expansion of market opportunities. According to an internal assessment, in 2021, Norfund had the highest rate for new projects per employee when compared to five other EDFIs.

FIGURE 47

Norfund's number of new projects signed per FTE



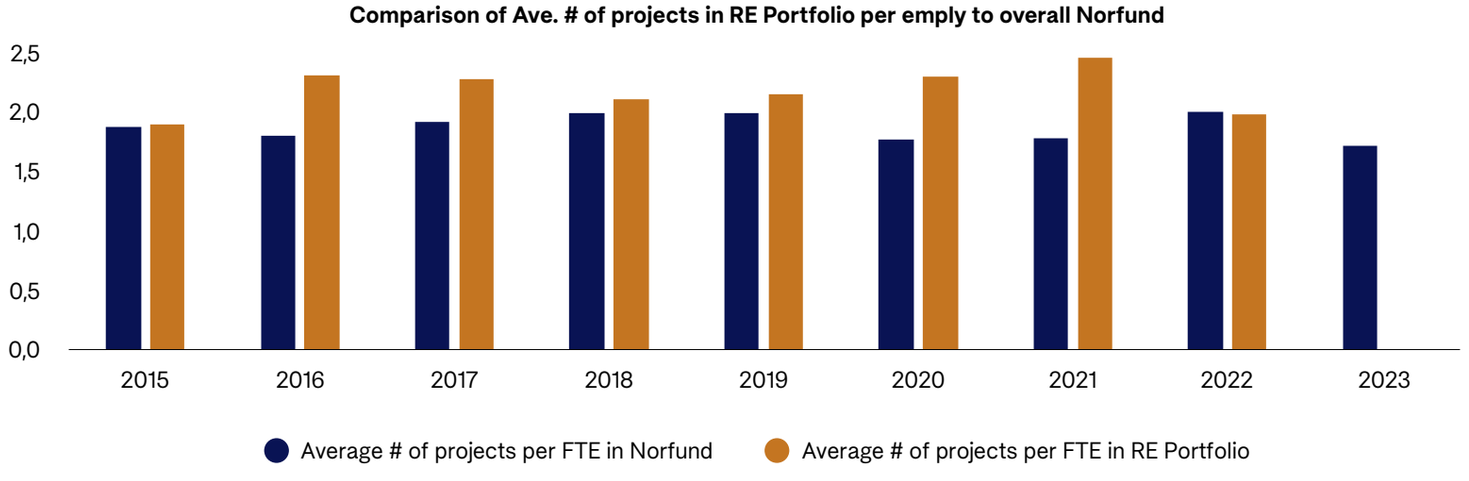
Source: *Data from Norfund*

Norfund maintained its existing renewable energy staff to manage the additional investments from the CIM, without significantly increasing staff numbers. In 2022, Norfund was given the additional investment mandate for the Norwegian Climate Fund for Renewable Energy, and a strategy for this mandate was adopted by the Board in early 2022. The renewable energy team now manages both investment mandates. This was possible partly because following the sale of SN Power, Norfund redeployed some of the proceeds toward CIM projects. Furthermore, there are many similarities between the strategies for the two investment mandates, with both focussing on deployment of renewable technologies in infrastructure investments, a focus on equity rather than debt or funds, and building on partnerships and platform type investments which also allows for the using the same renewable energy team. Besides the CIM's goal of contributing to reduction or avoidance of GHG emissions compared to DIM's development impacts, the key differentiator between the two mandates is the geographical choices, withCIM focussing on countries with high use of coal in the power sector (essentially middle-income countries), and more flexibility on utilising new technologies for Norfund. Furthermore, since the reporting needs and procedures for both mandates are similar, the addition of CIM has not required Norfund to invest in more resources.

Examination of some key metrics indicates that Norfund's operational efficiency within its renewable energy portfolio is consistent with its broader performance analyzed earlier against other comparators. The analysis in Figure 48 shows a steady increase in both the total number of projects and the number of FTEs. Furthermore, the average number of projects per FTE in the renewable energy portfolio is in line with Norfund's overall average. This consistency highlights that Norfund has effectively maintained its efficiency standards in renewable energy, paralleling its general operational practices.

FIGURE 48

Average number of projects per FTE (Overall Norfund vs. RE)



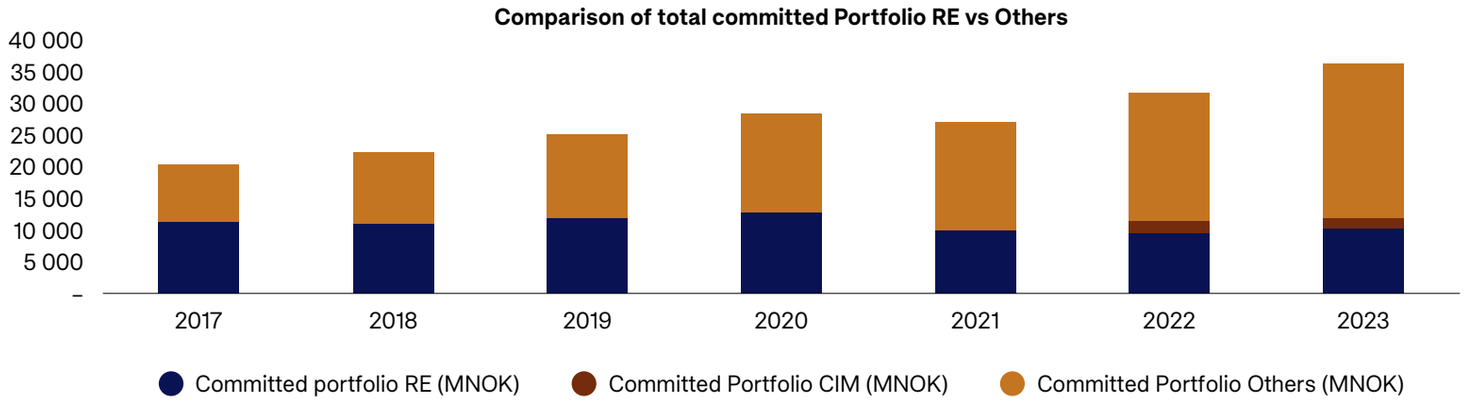
Source: *Data received from Norfund and collected from Norfund Annual Reports*

On the other hand, the total committed portfolio for renewable energy investments has shown fluctuations and a decline as a percentage of the overall portfolio throughout the review period. Initially, investments in renewable energy were higher than other areas in 2017, but this ratio significantly dropped after peaking in 2020, partly due to the sale of SN Power. Concurrently, operational expenditures for the renewable energy sector have also varied, ultimately rising significantly in 2023.

Analysis of Norfund's renewable energy investments highlights a decrease in committed portfolio size despite increasing operational costs. Norfund's renewable energy investment trends indicate that while the overall size of the committed portfolio for renewable energy peaked in 2020, it has since seen a relative decline compared to other sectors. As shown in Figure 51, the ratio of renewable energy investments within the broader investment portfolio has steadily decreased since 2017. However, despite this reduction in the committed portfolio size, the operational expenditures associated with managing these investments have not followed the same downward trend. In fact, as illustrated in Figure 52, operational costs have fluctuated, culminating in a marked increase in 2023.

FIGURE 49

Committed Portfolio RE vs Committed portfolio for other investments



Source: *Data extracted from Norfund Annual Reports*

FIGURE 50

Operational Expenditure for RE investment team compared to the Operational Expenditure of other investment teams

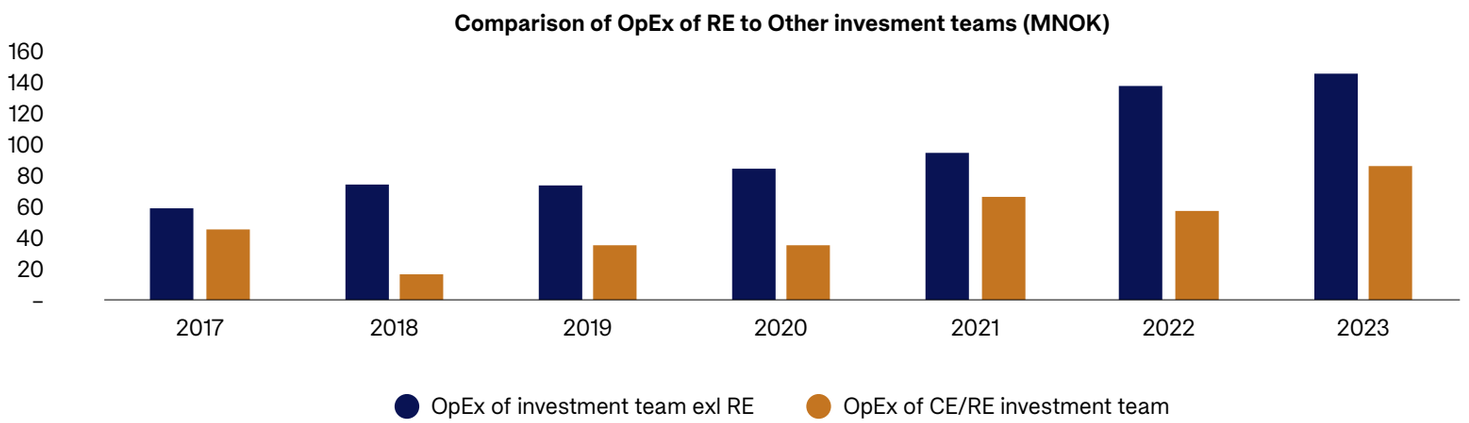
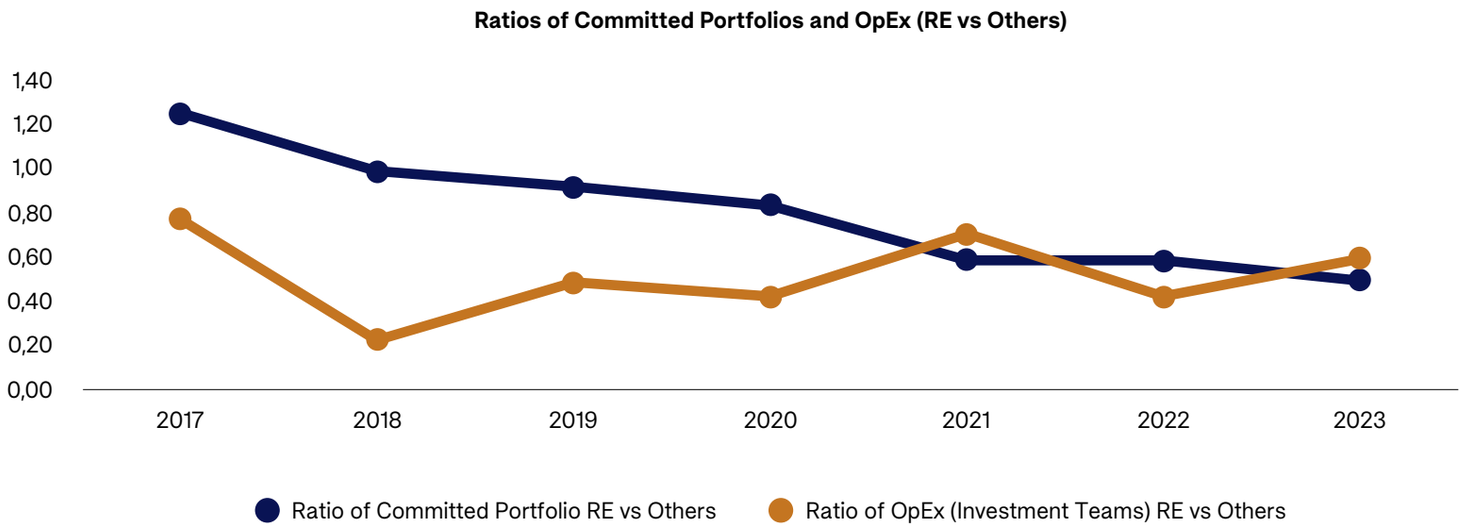


FIGURE 51

Comparison of operational expenditures relative to committed portfolios between renewable energy (compared to the size of RE committed portfolio) and other investments

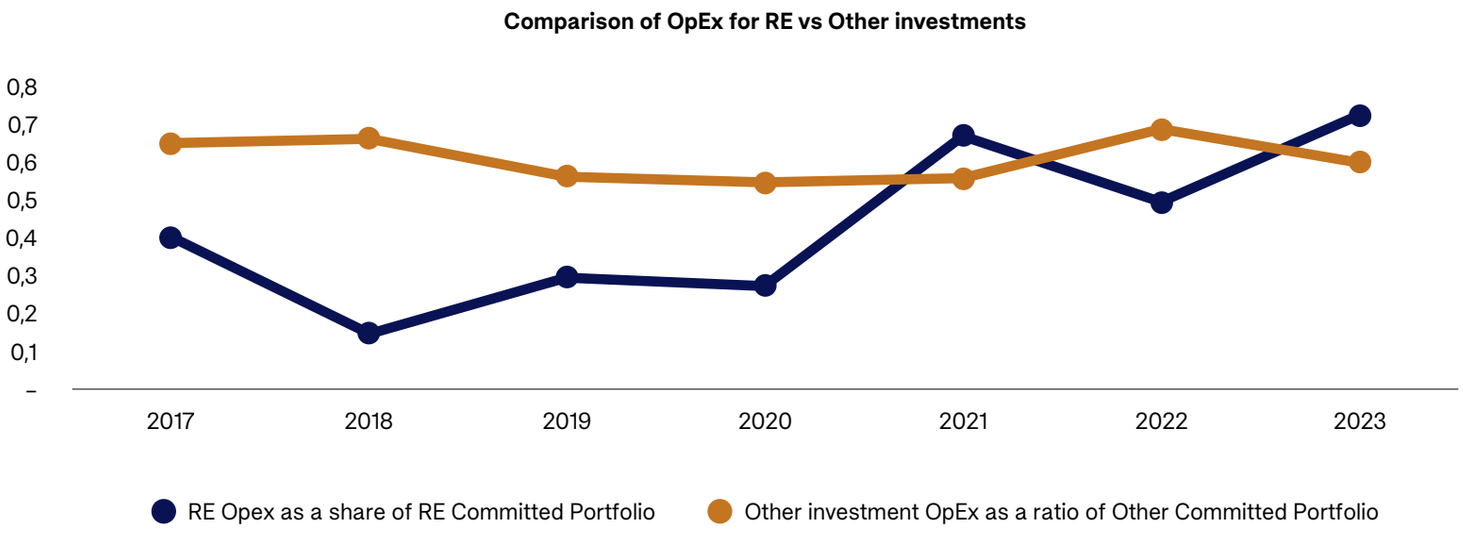


Source: *Data extracted from Norfund Annual Reports and OpEx Data received from Norfund*

The contrast between decreasing committed portfolio size and rising operational costs suggests that renewable energy investments face unique cost drivers. This divergence—where the committed portfolio for renewable energy has decreased while operational expenditures have grown, as illustrated in Figure 52—suggests that the cost dynamics for managing renewable energy investments differ from other sectors. Unlike other areas where operational costs are closely aligned with portfolio size, renewable energy expenditures have shown volatility, with a notable rise since 2021 and peaking in 2023. Figure 52 further highlights that, while operational expenditures for other sectors have maintained a relatively stable trend, renewable energy's OpEx has shown more pronounced shifts.

FIGURE 52

Comparison of operational expenditures relative to committed portfolios between renewable energy (compared to the size of RE committed portfolio) and other investments



Source: *Operational Expenditure data provided by Norfund*

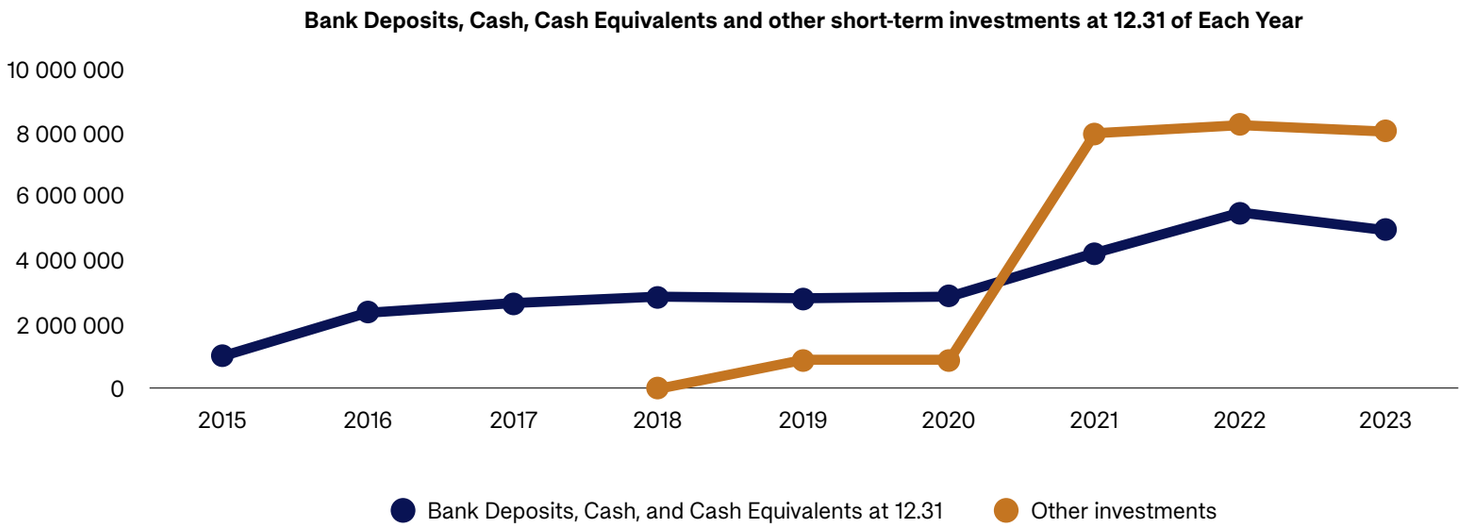
According to Norfund, the increase in operational costs is primarily due to investment activities and project-specific factors, rather than the size of the committed portfolio. According to Norfund, operational expenditures in renewable energy are driven by factors such as, the number of new investments, the development of the investment pipeline, the share of activities conducted through platforms (effectively outsourcing part of Norfund's workload), and the scale of individual projects. These elements contribute to operational demands that may not directly correlate with the size of the committed portfolio but reflect Norfund's approach to managing and expanding project pipelines, even as exit activities have reduced the portfolio's total value.

2.5.1.2 Utilization of funds

Since the sale of SN Power, Norfund has experienced a significant surge in liquidity. Norfund's annual reports show a significant rise in liquidity, evidenced by the sharp increase in bank deposits, cash, and cash equivalents from 2020 onwards. According to Norfund, this liquidity spike is caused by Norfund's exit from SN Power and Klinchenberg, leading to substantial temporary investments. Figure 53 indicates that a large portion of this liquidity remains in cash or near-cash instruments, with an increase in other investments. According to Norfund, around NOK 8.3 billion of it current liquidity is already committed but not disbused, while NOK 3 billion is reserved for the Climate Invesment Fund.

FIGURE 53

Norfund's bank deposits, cash, and other short-term investments

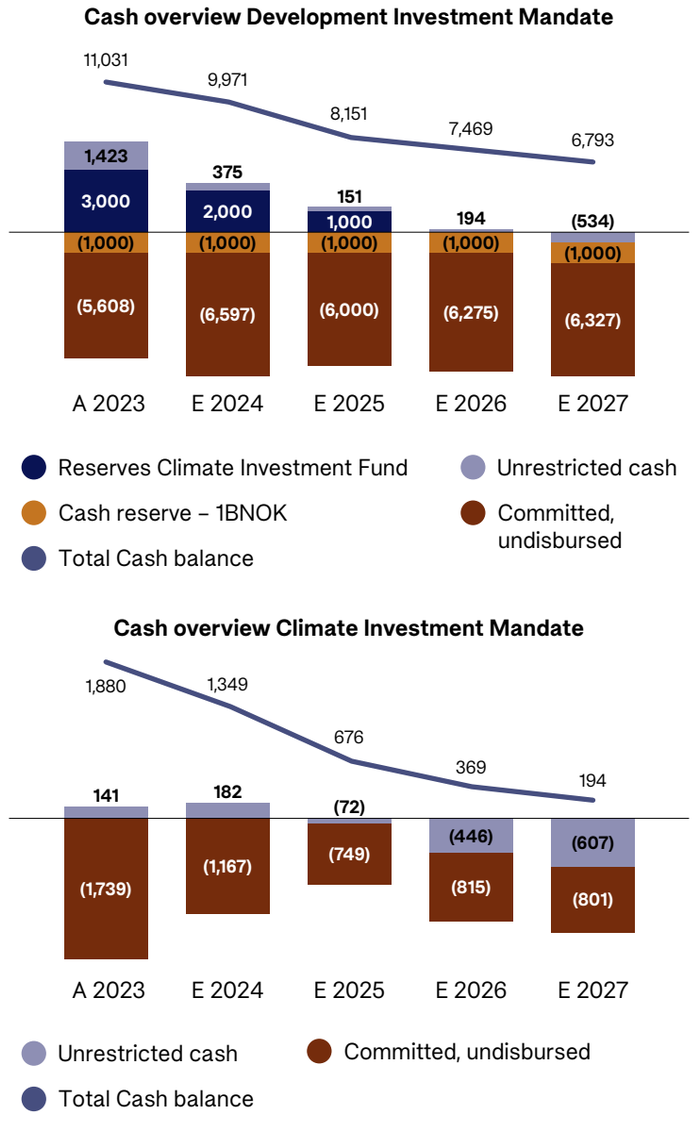


Source: *Figures are taken from Norfund Balance Sheets included in the Annual Reports*

According to Norfund liquidity strategy, the proceeds from the sale of SN Power is expected to be fully reinvested by 2027. Following the sale of SN Power, the Norfund Board, which coorperation with the administration, developed a mandated to guide its liquidy management, based on which Norfund has developed a liquidity strategy. Under the liquidity strategy Norfund's aim is to minimize macroeconomic risks that are inherent in the market and adopt a more risk-averse approach by placing liquidity in more secure instruments, including bonds, deposits, loans to banks, and Norges Bank. The unrestricted cash is incorporated in the investment strategies, and is expected to have fully redeployed by 2027. Assuming that the capital replenishments from the Norwegian government remains at the same level as today, Norfund's annual commitments is expected to drop from 2027 as CIM will be fully capitalized and all proceeds from the SN Power exit will be reinvested.

FIGURE 54

Cash Reserve Outlook Year End



Source: *Norfund Liquidity Strategy*

2.5.1.3 Oversight of operational efficiency

Norfund routinely evaluates its investment manual every quarter to consider necessary adjustments to its processes. Investment management, being central to Norfund's operations, is subject to scrutiny not only internally but also by Norwegian Financial authorities. These authorities recommend that internal auditors of financial institutions thoroughly assess their core processes annually to ensure the efficiency and effectiveness of internal controls. In alignment with this guidance, Norfund's internal auditor has undertaken or is planning several internal audits of the investment process, maintaining a continuous focus on improving process integrity and operational efficacy. According to Norfund's internal auditor, in 2022, an internal audit of the pre-investment phase of the investment managed was conducted which found that Norfund has sufficient management and oversight during the pre-investment phase. The audit conclusions were drawn based on a review of the established framework, reporting to management and the board, and sample testing of selected investments. According to Norfund's annual internal audit plan, another audit of the post-Investment phase is scheduled to begin next month. The audit will review the extent to which Norfund has sufficient internal controls in the post investment phase. Additionally, a potential project for 2026 is slated to examine the management and control mechanisms during the exit process, highlighting Norfund's comprehensive approach to scrutinizing every stage of the investment lifecycle.

2.5.2 Financial performance

2.5.2.1 Analysis of financial performance of Renewable Energy Portfolio over time

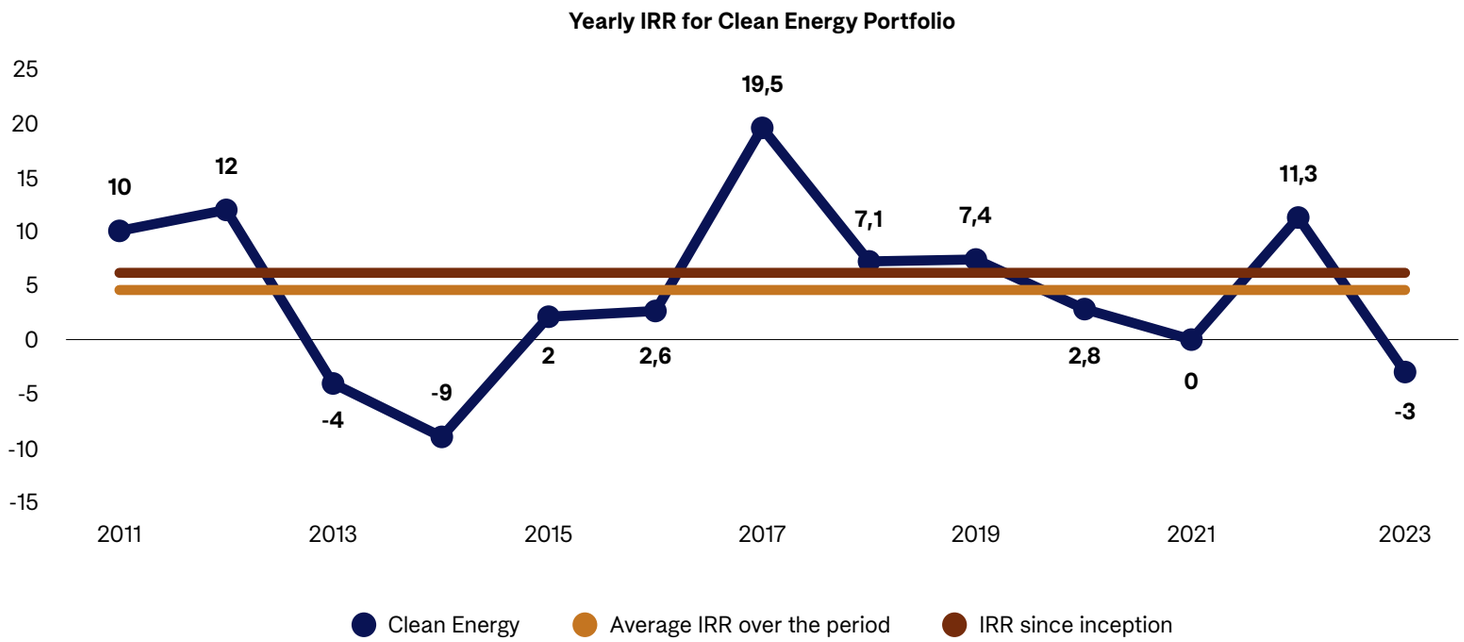
Overall, the Renewable Energy portfolio demonstrates a combination of returns close to Norfund's targets and notable volatility, characteristic of a sector that is still evolving and due to modifications to discount rates due to altered risk perceptions from year to year.
The financial analysis of the Renewable Energy portfolio from 2011 to 2023 offers insights into its performance dynamics and risk profile. Calculating the average annual IRR[95] and the standard deviation of the IRR and analyzing the yearly trends for the renewable energy portfolio provides a clearer view of its performance over the years. The analysis indicates the following:

- **Resilience in market variability:** The average annual IRR for the Renewable energy portfolio over the analyzed period (2011-2023) is approximately 4.52 percent. This figure is indicative of the general profitability of investments within the Renewable energy sector managed by Norfund. The IRR for the portfolio since inception is 6.1 percent which meets Norfund's internal targets and above the IRR for Norfund's overall performance which is 4.8 percent over the same period. The IRR figures for the renewable energy suggests that the portfolio has managed to yield a reasonable return despite market fluctuations as shown in Figure 55. This resilience in profitability, especially when it exceeds the broader Norfund's average performance, underscores the potential strength of renewable energy investments in navigating economic cycles.

95 Norfund uses the Internal Rate of Return (IRR) metric for reporting its financial performance, focusing solely on this comprehensive measure to evaluate and communicate the profitability of its investment portfolios. Norfund emphasizes IRR in investment currency since this gives the best picture of how the investments are preforming. Norfund also calculates the IRR in NOK, however IRR in NOK tends to fluctuate more since the valuation in NOK is heavily influenced by the FX-rate at the time of valuation and cashflow.

FIGURE 55

IRR for Clean Energy Portfolio 2011-2023



Source: *Data extracted from Norfund Annual Reports 2011-2023*

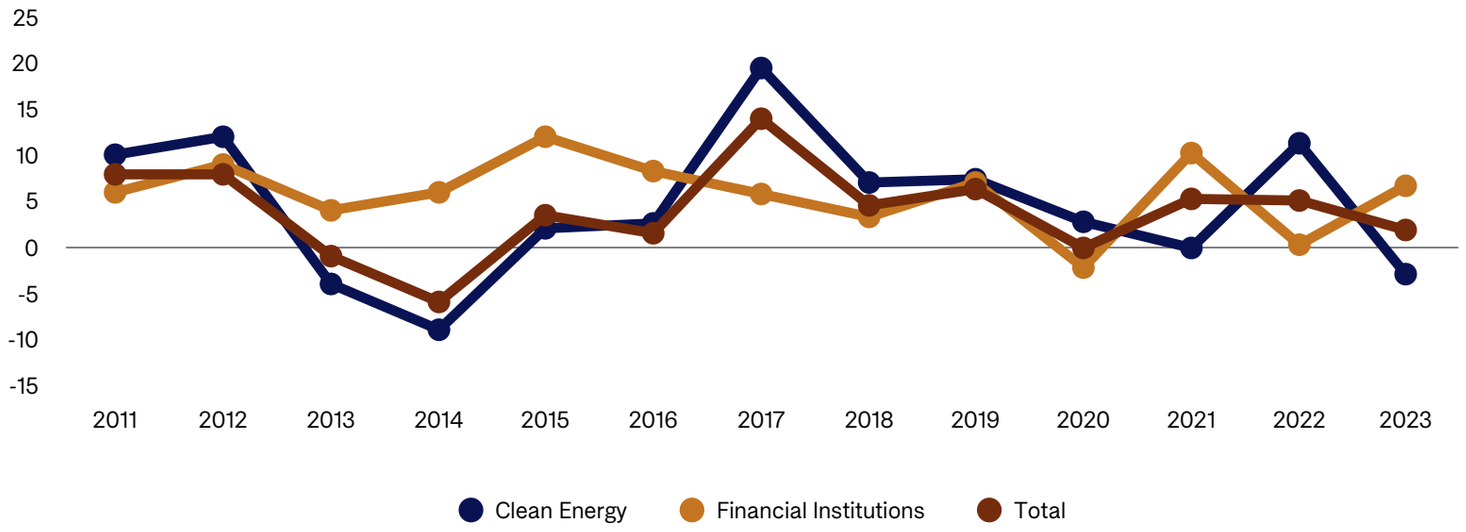
- **Considerable risk profile:** The renewable energy portfolio's performance has been marked by considerable fluctuations, as evidenced by a standard deviation of 7.73% in annual returns, which measures the volatility of the IRR. This volatility indicates that the investments within this portfolio are susceptible to market conditions, which can result in significant fluctuations in performance from year to year. Furthermore, it's important to note that many of the investments are still held as book values, not yet realized through exits or sales, which means that changes in valuation assumptions could further influence the reported performance of the portfolio. According to Norfund, this volatility is to be expected and factored into Norfund's risk management strategy.
- **Cyclical performance trends:** The line chart demonstrates notable fluctuations in performance. After a peak in 2012, there was a sharp decline leading to negative returns in 2013 and 2014. This was followed by a recovery, with a significant spike in 2017. Post-2017, the performance shows a mix of positive and negative years, culminating in another decline in 2023.

2.5.2.2 Comparative Analysis of Renewable Energy Portfolio

The renewable energy portfolio is contributing positively towards the overall financial performance of Norfund. Comparing the Renewable energy portfolio against Norfund's other portfolios and its overall performance indicate that the Renewable energy portfolio is performing better than the total portfolio's average. As shown in Figure 56, in nominal terms, the renewable energy is outperforming the average of Norfund's overall portfolios. The financial institutions portfolio has consistently performed well, however the Renewable energy IRR since inception is slightly better than the financial institutions.

FIGURE 56

IRR for Clean Energy Portfolio compared to financial institutions and overall Norfund IRR



Source: *Data extracted from Norfund Annual reports 2011-2023*

To analyze financial performance of the Renewable energy portfolio relative to other portfolios and Norfund's overall financial performance, we adjusted each portfolio's annual IRR by subtracting a risk-free rate of 3.5% (Secured Overnight Financing Rate or SOFR)[96] to calculate excess returns. We then computed the average excess returns and their standard deviations to evaluate the volatility and risk associated with each portfolio. Using these metrics, we calculated the Sharpe Ratios to assess the risk-adjusted returns, providing a comparative analysis of how the Renewable energy portfolio performed against others within the DFI.

Utilizing the Sharpe Ratio allowed us to conduct a better comparative analysis of Norfund's investment portfolios. This metric facilitated a clearer understanding of how the returns of different investments compare when adjusted for their risk levels. The ration offers a better view of returns and associated risks. The results of the analysis are highlighted in Table 11.

<u>Relative Performance:</u> The Renewable energy portfolio, with an average excess return of 1.02 percent is performing better than Norfund's total portfolio's average of 0.42 percent. This suggests a significant positive contribution to Norfund's financial performance. However, when compared to the Financial Institutions portfolio, which has a high average excess return of 2.36 percent, Renewable energy is underperforming. This indicates that investments in financial institutions are currently more profitable, considering the risk-free rate, than those in renewable energy. According to Norfund, when applying an identical risk-free rate, it is natural for the financial institutions portfolio to perform better as the investments are generally in more established institutions compared to the high-risk projects that renewable energy invests in.

<u>Volatility and Risk:</u> The Renewable energy portfolio has a relatively high standard deviation of 7.42, indicating higher volatility compared to Financial Institutions (3.73) but comparable to the Scalable Enterprises (Fund) (7.32). The higher volatility indicates greater fluctuations in its returns which according to Norfund is driven by factors such as market

96 For the purposes of this analysis, we relied on the 5-year SOFR swap rate which Norfund used in its 2023-2026 strategy. According to Norfund, the 5-year base rate is chosen to reflect the holding period for Norfund as an investor, which has historically averaged 5.6 years (excluding funds) on a portfolio level. The 5-year SOFR swap rate of 3.5 percent was chosen as of end 2022, which also the current rate.

sensitivities, as regulatory changes, technology risks, and economic conditions impacting renewable energy projects.

Risk-Adjusted Performance (Sharpe Ratio): With a Sharpe Ratio of 0.14, the Renewable energy portfolio shows less desirable risk-adjusted returns when compared to Financial Institutions (Sharpe Ratio of 0.63). This lower ratio suggests that the additional risks taken in the renewable energy sector are not compensated proportionately by the returns. However, it should be noted that the Sharpe Ratio of 0.14 still indicates that the portfolio is achieving positive risk-adjusted returns. This corresponds with Norfund's risk appetite which commits Norfund to undertakings that, while present higher risks, contribute to broader impacts such as environmental sustainability.

The detailed examination of the Renewable energy portfolio's performance relative to other portfolios within Norfund highlights its unique position and future potential. Despite current challenges in volatility and risk-adjusted returns, strategic adjustments and a focus on long-term trends may enhance its contribution to Norfund's goals and profitability.

TABLE 11

Sharpe Ratio

	Average Excess Return (%)	Standard Deviation	Sharpe Ratio
Renewable Energy	1.02	7.42	0.14
Financial Institutions	2.36	3.73	0.63
Scalable Enterprises (Direct)	-5.15	6.08	-0.85
Scalable Enterprises (Fund)	-4.32	7.32	-0.59
Total	0.42	4.75	0.09

Source: *Calculation is based on data extracted from Norfund Annual Reports*

2.5.3 Risk exposure and risk management

The Norfund's Risk Appetite Statement forms the basis for the fund's approach to managing risks associated with its investments in developing countries. It highlights Norfund's focus on sectors and regions where the risk levels are inherently high, due to their mandate to promote sustainable development. The statement acknowledges the acceptance of various risks, including country and political, climate, financial, and currency risks, as well as those specific to investments like greenfield projects and new market ventures. It also emphasizes the need for strict management of business integrity, environmental, social, and governance risks. To mitigate potential negative impacts, Norfund employs a diversified investment strategy and robust risk management practices.

According to the Norfund Investment Manual, Norfund evaluates 3 key risks categories—financial, Environment and Social (E&S), and Business Integrity—for each potential deal, a practice that is aligned with other similar DFIs. Each risk is designating as low, medium, or high when projects are proposed. Each project also receives an overall risk rating that influences Norfund's degree of involvement, categorized into monitoring, managing, or active

engagement levels. This allows Norfund to tailor its management approach based on the risk profile and needs of each project. Regular assessments are conducted to update the status of each project, which is captured in a "health card" system, labeling projects as blue, green, yellow, or red based on their status. This method of continuous monitoring and categorization ensures that risk management is dynamic and responsive. Of the three risk categories, the financial risks and E&S are further emphasized with detailed policies or guidelines.

In terms of financial risks, Norfund is exposed to several different types of risk and its Investment Manual is adjusted regularly to reflect any changes to these risk limits. The financial risks include liquidity risk, credit risk, currency risk, interest-rate risk and other market risk, including political risk. According to interviewees and documents reviewed, Norfund has established a financial risk management function to identify and analyze these risks, and to establish appropriate risk limits and risk controls. Norfund regularly reviews the established risk management guidelines to ensure that changes in markets are reflected in the risk limits. According to Norfund, the investment manual is adjusted quarterly to reflect any changes in the risk limits.

E&S risk management are guided by the Norfund ESG Policy and is an integrated part of our investment process. Norfund requires specific actions for each step of the project cycle: initial screening, due diligence, legal agreements and monitoring. Furthermore, to facilitate E&S risk management, Norfund has established tools and templates which are outlined in its Environment and Social Management System (ESMS) which describes roles and responsibilities relating to E&S risk management, including governance, oversight, and E&S day-to-day working practices.

Despite these general guidelines, the details provided in Investment Committee (IC) approval documents often vary. This variability may stem from the fact that each department within Norfund is responsible for conducting its own detailed financial and E&S assessments. For example, the IC approval document for one of the cases included in our case study provided a detailed breakdown of different element of the financial risks including, credit risk, margin risk, funding risk, refinance/interest rate risk, and currency risks. The same document also presented detailed analysis of the E&S risks. On the other hand, another IC approval document within our case studies provided more details on the main risk of the project which was revenue generation and minimum explanation of the risk ratings for its financial, ESG, and reputational risks. According to Norfund, the risk assessment approach to risk has evolved with the introduction of new tools and methodologies which to some extent explains the variation. The explanation is supported by the fact that IC approvals from 2022 are more consistent in their presentation of risks assessment and appraisal. However, the evaluation team has not seen detailed guidance that specify the level of details that should be included as part of the investment approval process.

Norfund's country risk assessment tool, developed in 2021, is intended primarily for strategic portfolio risk management rather than individual investment decision-making. This tool assesses political, economic, environmental, social, and business integrity risks in specific countries using a tailored risk index composed of 49 indicators, each carefully weighted to reflect Norfund's operational priorities. While the tool is readily available to all employees and complements the detailed country-specific risk reports available through Norfund's Fitch BMI subscription, it is not compulsory for investment teams during project evaluations or due diligence phases. The review of IC approval documents from 2022 which were included in the case studies, indicates that the tool's application is limited, primarily serving as a strategic resource for managing country risks at the portfolio level rather than guiding individual project decisions.

The limited use of Norfund's country risk assessment tool in individual investment decisions suggests areas for enhancement in portfolio risk management. Currently, the tool's underutilization may prevent a comprehensive understanding of country-specific risks, which could lead to the underestimation

of potential threats affecting investment sustainability. Additionally, the tool's inconsistent application across investment teams, as indicated by its absence in investment committee documents, points to variability in risk assessments that could lead to inconsistent risk exposure across the portfolio. This disconnect between the tool and other risk management processes may result in fragmented evaluations, potentially overlooking critical risk factors. Such gaps in integration could also impact Norfund's ability to adapt to changing risk landscapes effectively and achieve its strategic objectives in higher-risk regions.

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Conclusions and recommendations

Mandate, positioning and operationalization

The DIM strategies have evolved and become better defined in terms of objectives and targets over the evaluation period, and strategies are, to a large extent, well-designed to meet the mandate. However, under the "supply of energy" objective, other bottlenecks than capacity exist, such as transmission and grid connection, which are de-emphasized in the strategies. Furthermore, the list of 30 core countries in the DIM strategy includes countries with relatively high income levels. These are less relevant choices when selecting core countries for a portfolio targeting additionality while addressing access to energy or energy generation.

Recommendation 1: Under the "supply" objective, more focus should be given to enabling technologies and other bottlenecks besides capacity (such as transmission and grid connection), which in many countries can be important factors in addition to generation capacity.

Recommendation 2: Norfund should change the DIM focus countries to more challenging countries with higher needs, where investments are more likely to be additional. Current focus countries such as Colombia, South Africa and Vietnam are considered more crowded markets with less needs for DFI investments.

The CIM strategy reflects the part of the mandate that concerns replacing coal in coal-intensive economies. However, the way this has been defined in terms of core countries is, to some extent, contradictory to the mandated objective of providing additionality in investments. The CIM has a dual objective structure like DIM (achieving impacts ***while*** making investments that would not otherwise have been made). However, compared to DIM, there are fewer safeguards to ensure additionality at the portfolio level.

Recommendation 3 (for owner): MFA should clarify the mandate for CIM in light of the trade-offs between targeting countries with high coal-intensity and targeting "investments that would not otherwise have been made". In the current iteration, the strategy built on the mandate is designed more around the former than the latter, potentially leading to less additional investments.

Most of the market segments selected under the CIM strategy fit within its mandate, but less evidence is found to support the alignment of large-scale independent power producers (IPPs) with the mandate of additionality. There is a large need for investments in new or enabling technologies (including grid, transmission, evacuation), whereas comparatively, the IPP segment (especially in CIM countries) is relatively crowded and in less need of DFI funding.

Recommendation 4: Norfund should consider balancing CIM investments in IPPs in large middle income countries with investments in enabling technologies or in more challenging country contexts.

Business model

The renewable energy portfolio is a good fit with Norfund's overall business model. This is largely a reflection of the large role of renewable energy investments in shaping Norfund's business model, policies and procedures. Aspects of Norfund that are conducive to the renewable energy sector include: the right menu of instruments and tools, an experienced team of sectoral experts, and strong networks, partnerships and platforms in the sector.

Complementarity

Norfund activities are rarely aligned with or feature complementarity with other Norwegian development efforts with similar objectives. Complementarity is considered outside the Norfund mandate, and neither Norfund nor MFA/Norad actively pursue opportunities to achieve synergies with each other, despite the similar objectives.

Impact and Effectiveness

Development effects

Norfund has improved the extent to which they track indicators on output and outcome level, as well as setting targets at both individual investment level and portfolio level, over the evaluation

period. Tracking of development effects is largely done through collecting indicator data directly from investees. Achievement of outcome and impact objectives is estimated from models based on this data. The theories of change linking results at output level with impact are reasonable, with important assumptions made explicit, such as grid connectivity and transmission for energy supply. The validity of these assumptions might affect the impact of Norfund's investments. Some potential issues are observed in case studies, such as subsidies needed for energy access in off grid market.

Norfund has largely met the renewable energy targets set out in its strategy papers, as per Norfund's internal results monitoring. Under its two mandates, Norfund has financed more than 11 GW of renewable electricity capacity, companies in the DIM portfolio have provided electricity access to more than 7 million households, and investments funded under the CIM portfolio avoid an estimated 5.8 million tons of CO_2 through their renewable energy production every year. Norfund is well on track to meet the targets for the current strategies for both CIM and DIM and is, in fact, overshooting the target for CIM already - just two years into the mandate.

Recommendation 5: Norfund should reassess the targets for the current CIM period to reflect the rapid progress made to date.

Development effects reported by Norfund must be considered in the context of challenges with determining Norfund investments' causality, attribution and additionality. The development effect numbers used by Norfund reflect indicator values reported by investee companies, and they do not in and of themselves say much about the impact of Norfund's actions. Norfund's reporting on *financed* results (in addition to *achieved* results) makes processes complex and opaque.

Recommendation 6: Norfund should investigate how to measure development effects more accurately, particularly in terms of attributing development effects to Norfund's actions.

Effect on corporate governance

Compared to other DFIs, Norfund's approach to corporate governance in its investment strategy appears less defined. Although Norfund is committed to responsible investment practices, evidenced by its adherence to various sustainability frameworks and due diligence in assessing potential projects and partners, it lacks a specific framework for evaluating the corporate governance of its investees, and limits Norfund's ability to showcase its effects on corporate governance.

Recommendation 7: Norfund should develop and implement a specific corporate governance framework which adapts the framework developed by the Corporate Governance Development Framework but tailored to Norfund's unique position and objectives. This framework should include specific criteria and expectations for board composition, oversight, risk management, and internal controls.

Additionality

Additionality as a concept and objective has become considerably more formalized in Norfund's operations during the period under review (2015-2023), allowing a clearer insight into the decision-making behind investment decisions in the later period, through inter alia the additionality calculator.

Investment-level assessments of additionality (including the additionality calculator) are subjective and allow for finely detailed assessments, which are sometimes needed, reflecting the complexities of investments. However, the portfolio-wide tools for ensuring additionality, such as KPIs on geographical allocation, act as safeguards to ensure investment-level assessments do not go too far in providing exceptions. The CIM portfolio is not guided as clearly by such portfolio-wide targets of countries with high needs. Without these safeguards, the current focus on coal-intensive countries combined with the targeting of segments like IPPs means that investments with low likelihood of additionality can be done, which is not in line with the mandate.

Recommendation 8: Norfund should consider including geographical targets for the CIM similar to those employed for the DIM, in order to provide further safeguards to ensure investments are made with financial additionality.

There is room for further improvement in the additionality framework and its operationalization. Guidance should be provided on trade-offs between additionality, impact and risk, especially under the CIM.

Recommendation 9: Norfund should consider moving beyond the minimum standards set by OECD and stop considering non-financial additionality as a substitute for financial additionality. Financial and non-financial additionality should be treated as two separate scores, with a separate threshold for financial additionality.

Recommendation 10: Similarly, mobilization should be detached and separated from additionality, and be treated as a separate objective. Mobilization is neither necessary nor sufficient for additionality. Mobilization might be a worthy objective in itself, as a means to amplify developmental outcomes, but it should not be conflated with additionality.

Recommendation 11: Qualitative justifications for additionality should be strengthened in investment documents to strengthen accountability and make explicit the decision-making behind investment approval.

Recommendation 12: Internal ex-post assessments of additionality for investments should be conducted in order to provide feedback that can be used to improve the system.

Actual (ex-post) additionality is difficult to determine, but evidence suggesting that some investments were less likely to be additional has been identified. For instance, CIM investments in India appear less additional due to the booming market and a large influx of capital, particularly in the IPP and C&I sectors.

Sustainability[97]

Evidence from case studies and surveys of investment managers suggest that Norfund investments are generally designed with conditions for sustainability, mainly reflecting the inherent focus investments have on supporting commercially viable investments. Some aspects of Norfund's strategy and operations are inherently conducive to sustainability, such as targeting commercially viable projects, but other priorities such as taking risks and additionality run counter to sustainability.

Efficiency

Economic Efficiency

Overall, Norfund exhibits operational efficiency across several metrics, including operational expense ratio, productivity per full time equivalent (FTE), average number of projects per FTE, and number of new projects per FTE. However, the increasing workload per employee raises concerns about sustainable growth.

Over the review period, while the total committed portfolio for renewable energy investments initially exhibited growth, peaking in 2020, it has subsequently declined relative to the overall investment portfolio. However, despite this reduction in the committed portfolio size, the operational expenditures associated with managing these investments have not followed the same downward trend.

Norfund's post-*SN Power* sale liquidity boost has led to a strategic shift towards making secure liquidity placements, with a strategy to fully reinvest these funds by 2027. Norfund's annual reports show a significant rise in liquidity, evidenced by the sharp increase in bank deposits, cash, and cash equivalents from 2020 onwards. This liquidity spike coincides with Norfund's exit from SN Power, leading to substantial temporary investments. Norfund has developed a liquidity strategy to reinvest all the proceeds from the SN Power sale by the end of 2027.

Financial Performance

Overall, the Renewable Energy portfolio demonstrates a combination of returns close to Norfund's targets with notable volatility. The Renewable Energy portfolio,

97 Sustainability here refers to "The extent to which the net benefits of the intervention continue, or are likely to continue"

with an average excess return (on investment that exceeds what is expected based on risk and market conditions) of 1.02 percent is performing better than Norfund's total portfolio average excess return of 0.42 percent.

The Sharpe Ratio, which compares the return of an investment to its risk, is significantly lower for the renewable energy portfolio than for the financial institutions portfolio, implying that the additional risks taken in the renewable energy sector are not compensated proportionately by the returns.

Risk Exposure and risk management

Norfund evaluates three key risks categories, — Financial, Environment and Social (E&S), and Business Integrity—for each potential investment, a practice that is aligned with other European DFIs.

Norfund's country risk assessment tool, developed in 2021, is intended primarily for strategic portfolio risk management rather than individual investment decision-making.

Recommendation 13: Norfund should enhance integration and utilization of the Country Risk Assessment Tool in the initial screening and due diligence phases of every investment process. Norfund should ensure that all investment teams are trained and familiar with the tool's functionalities and methodologies.

Photo: **Volta**

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Annex 1:

Terms of References

Terms of reference
Evaluation of Norfund's investments in renewable energy

Background

The Norwegian Investment Fund for Developing Countries (Norfund) is a state-owned fund established by an act of the parliament in 1997.[98] The owner's formal governance of the fund takes place through the fund's statutes and general assembly resolutions. The Ministry of Foreign Affairs nominates Norfund's Board of Directors and oversees its state-ownership role through budgetary allocations, contact meetings, and the General Assembly. The rationale for this form of corporate governance is to attain a balance between the need of the company for independence in conducting its commercial operations and the need of the State to retain influence over the fund to promote its policy objectives. The State is not liable for Norfund's commitments.

Norfund is an integrated part of the Norwegian development assistance apparatus. The Norfund Act states that Norfund's purpose is to assist in developing sustainable business and industry in developing countries by providing equity capital and other risk capital, and by furnishing loans or guarantees. The aim is to establish viable, profitable activities that would not otherwise be initiated because of the high risks involved.

"Sustainable" is to be understood both in terms of commercial and social viability of the investees and management of environmental and social risk, abiding by the main principles of Norwegian development policy. Further, Norfund shall provide risk-capital which is additional to availability in the private capital market. It is expected that Norfund's investments shall have developmental outcomes and impacts in its target countries.

Norfund's statutes identify sub-Saharan African and Least Developed Countries (LDCs) as geographic priorities for Norfund. The 2019-2022 Strategy set a target of over 50% of investments being in Sub-Saharan Africa. As of the end of 2021, 40% of the portfolio of investments was in LDCs and 65% in Sub-Saharan Africa.

By year end 2021, Norfund had committed investments totaling 26.9 billion NOK across 195 projects.[99] The fund operates in four investment areas: renewable energy[100], financial inclusion, green infrastructure, and scalable enterprises. In 2021, renewable energy was the largest investment area, making up over a 36% of Norfund's total portfolio. During the same year, Norfund made 32 new investments and 13 follow-on investments in existing companies. Of these investments, renewable energy once again accounted for the largest share, with 2.7 billion NOK.[101]

The Climate Investment Fund

In 2022 Norway established a Climate Investment Fund (CIF) as part of the follow-up to the 2015 Paris Climate Agreement.[102] The purpose of the fund is to contribute

98 Act relating to the Norwegian Investment Fund for Developing Countries. ACT-1997-05-08-26.

99 https://www.norfund.no/annualreport-2021/year-2021/portfolio/

100 At the time referred as "clean energy".

101 Norfund (2022). Report on Operations 2021. p. 26.

102 Innstilling fra utenriks- og forsvarskomiteen om Endringer i Norfundloven (forvalteroppgaver). Innst. 346L, Prop. 99 L (2021 – 2022).

to reducing or avoiding greenhouse gas emissions by investing in renewable energy in developing countries with large emissions from coal and other fossil fuel production.[103] Norfund manages the CIF on behalf of the Ministry of Foreign Affairs.

NOK 1 billion was appropriated over the central government budget for 2022. The fund is to be built up to NOK 10 billion over a five-year period. Norfund is to contribute half of this funding from its surplus, with the other half coming from government grants. Investments made under the fund are to be managed separately from Norfund's other activities, but in Norfund's name. The board of Norfund will ensure that the management of the fund aligns with the fund's framework and will provide separate reporting and accounts for the fund, including contributions to expected and actual avoided greenhouse gas emissions.

Funds from the CIF can be used in all ODA-eligible countries. South Africa and seven countries in Asia have been identified as priorities for the fund.[104]

103 Instruks for Norfunds forvaltning av klimainvesteringsfondet for fornybar energi i utviklingsland.
104 https://www.norfund.no/the-climate-investment-fund-is-operative/

Rationale

Norfund has undergone evaluations by the Department for Evaluation (EVAL) in Norad twice, in 2003 and 2015.[105] In addition, EVAL has included selected activities conducted by Norfund as case studies in other evaluations, with the most recent being in 2020.[106]

Given the amount of time that has elapsed since the last comprehensive evaluation of Norfund and the scale of its operations, a new evaluation of its operations is justified. Furthermore, climate action development finance has emerged as a critical concern, including for Norfund, particularly with its new responsibility of managing the CIF. Regarding the CIF, the Norwegian government had decided to conduct an external evaluation of its achievements and function by the end of 2024.[107] This planned evaluation is now incorporated into this assignment. However, as explained below, assessing achievements will be limited due to the recent establishment of the CIF.

105 Department for Evaluation (2003). Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund). 1/2003; https://www.norad.no/om-bistand/publikasjon/2010/evaluation-of-the-norwegian-investment-fund-for-developing-countries-norfund/
Department for Evaluation (2015). Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund). 1/2015. https://www.norad.no/om-bistand/publikasjon/2015/evaluation-of-the-norwegian-investment-fund-for-developing-countries-norfund/
106 Department for Evaluation (2020) Norwegian Development Assistance to Private Sector Development and Job Creation. 2/2020. https://www.norad.no/om-bistand/publikasjon/2020/norwegian-development-assistance-to-private-sector-development-and-job-creation/
107 MFA (2022). Klimainvesteringsfondet. Regjeringens beslutning om innretning. Ref. 4. 12.01.2022.

Purpose

The overall purpose of the evaluation is to provide the Norwegian Ministry of Foreign Affairs (MFA) and Norfund with information that can be utilised to strenghten Norfund's current and future renewable energy investments.

The main users of this evaluation are the MFA and Norfund. The MFA refers to its political leadership, its officials and the Norwegian Embassies. Other users may include Norad, the Ministry of Climate and Environment, civil society organisations, donors and other Development Financing Institutions.

Objectives

The objectives of the evaluation are as follows:

1. To assess to what extent Norfund's renewable energy investments have generated, or are likely to generate, effects within its dual mandate.[108]
2. Where effects have been achieved, to assess whether those have been sustainable and will endure over time.

108 The term "dual mandate" refers to Norfund's investments with the purpose of generating development outcomes, and those than seek to contribute to reduce or avoid greenhouse gas emissions.

3. To assess the efficiency of Norfund's management of renewable energy investments.
4. To extract relevant lessons regarding Norfund's strategy, approaches, processes and allocations in the context of renewable energy, including CIF investments.

Scope

The scope of the evaluation will cover all Norfund's renewable energy operations from 2015 to 2023. Both investments made to build sustainable businesses in order to generate development outcomes and to reduce or avoid greenhouse gas emissions (i.e. the CIF's investments) are in scope.

The evaluation will be guided by the following evaluation criteria: impact, effectiveness, efficiency and sustainability. In this evaluation, the term 'efficiency' refers to economic efficiency (output efficiency) and operational efficiency (input efficiency). 'Sustainability' encompasses several elements for analysis – financial, social and environmental – and attention should be paid to the interaction between them.[109] Financial sustainability can be elucidated at two distinct levels: The first level assesses a project's or investment's self-sufficiency and commercial viability that allows for an exit strategy. The second examines sustainability at the market creation level, whether an investment has effectively laid the groundwork for private investors to engage without the need for future involvement from development finance institutions.

The evaluation criteria, questions and approach will be sensitive to the dual nature of Norfund's renewable energy portfolio. For instance, it is too early to measure the impact of investments from the relatively newly established CIF. Still, assessing the impact of Norfund's renewable energy portfolio more broadly could provide valuable insights for the CIF. Moreover, while it may be premature to evaluate the impact of investments in reducing or avoiding greenhouse gas emissions, the evaluation can provide insights into the additionality, unintended effects (if any), foreseeable sustainability and efficiency of CIF's investments.

Furthermore, the concept of additionality, as used in this evaluation, is aligned with the definition provided by the OECD DAC. It encompasses three types of additionality: financial additionality, value additionality, and development additionality.[110]

Geographically, the evaluation will have a global focus but pay special attention to investments in sub-Saharan Africa and in Asia. This is mainly due to the current geographic distribution of Norfund's renewable energy portfolio, the country prioritization under the CIF, and to maximize the opportunities for the evaluation to draw relevant lessons for future investments.

Evaluation questions

Regarding Objective 1: Impact and Effectiveness

1. To what extent (and eventually how) have Norfund's renewable energy investments generated, or are likely to generate, the results (development outcomes) they were set to achieve as per Norfund's mandate?
   - Issues to be examined may include:
     i. Extent and actual outcomes and impact of investments to build sustainable business, and factors influencing success in these engagements.
     ii. Impacts on corporate governance and/or value of the investee firms.
     iii. The distributional impacts (i.e. impacts across diverse groups of people) of Norfund's investments.

109 More broadly, for an understanding of how these evaluation criteria concepts are defined in this evaluation, please refer to the definitions provided by the OECD DAC Network on Development Evaluation. https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm

110 OECD DAC (2023). *Converged Statistical Reporting Directives for the Creditor Reporting System (CRS) and the Annual DAC Questionnaire Annex 23. Reporting methods for private sector instruments.* DAC Working Party on Development Finance Statistics. 27 April 2023.

2. How additional has Norfund been in its renewable energy investments? What is the degree of financial[111], value and development additionality achieved through those investments?
   - Issues to be examined may include:
     i. Estimated (ex-ante) and actual (ex-post) additionality of Norfund in its investments and how it is assessed.
     ii. The sources of additionality and relationship between different types of additionality.
     iii. Circumstances in which Norfund's investments are likely to be highly additional – and when less so.

3. Have Norfund's renewable energy investments had any unintended developmental, environmental and social effects, positive or negative?

Regarding Objective 2: Sustainability

4. To what extent will the outcomes the Norfund's renewable energy investments (if any) continue or are likely to continue?
   - Issues to be examined may include:
     i. The ex-ante conditions for sustainability created in the design of the investment.
     ii. The ex-ante conditions for sustainability and suitability of the set-up for CIF investments

Regarding Objective 3: Efficiency

5. How efficient is Norfund in managing its renewable energy investments?
   - Issues to be examined may include:
     i. The economic and operational efficiency of Norfund's renewable energy investments.
     ii. The financial performance of the renewable energy portfolio and its fit within Norfund's overall business model.
     iii. Risk exposure and risk management.
     iv. Assessments and positioning with respect to developmental, environmental, and economic priorities outlined in Norfunds's mandate.
     v. Complementarity/substitutability between Norfund and other renewable energy efforts supported by Norwegian development aid, and private sector financing.

Approach and methodology

The team will propose an outline of a methodological approach that maximizes the chance of producing evidence-based assessments. The team will follow rigorous research practices, documenting technical and methodological choices and steps to answer the analysis questions via a cross-section of data sources and mixed methods.

Data collection is expected to be undertaken in Oslo and in the countries sub-Saharan Africa and in Asia with investments selected as case studies for the evaluation.

The evaluation may include the following data collection methods and approaches:

- An in-depth document review of
  - the strategy, policies, processes, methods, and tools used to assess inter alia the commercial viability of projects, impact and additionality, theories of change, assessments of renewable energy and capital markets in targeted geographies to help inform assessments of additionality, the exercise of active ownership, and the due diligence of business partners.
  - project documents of investment and divestment in renewable energy projects undertaken between 2015 and 2023.
  - secondary documentation.
- A stakeholders' survey and in-depth interviews.
- A review of the composition of the renewable energy portfolio between the years 2015 – 2023, including time-series tracking key performance indicators and collecting and analyzing other type of quantitative

111 Including mobilization of capital from Norwegian and international private sources.

data as needed.

- A case study approach at the country level, involving field visits, to analyse a sample of investments to provide insight into the impact, effectiveness, efficiency, and sustainability of Norfund's renewable energy operations. These case studies should be written up in detail and appended to main report.

Three country cases (India, Madagascar and South Africa) have been chosen for this evaluation against specific criteria. The selection is based on factors such as the geographic variation (sub-Saharan Africa and Asia), geographic overlap between Norfund's development mandate and the identified country priorities for the CIF, type of instruments, renewable energy business models, and the presence of cases where Norfund has exited the investment or where the investment has been held for a sufficient duration to allow for an ex-post evaluation of above-listed issues. In selecting these three countries[112], the Department for Evaluation also sought and considered input from Norfund and the Norwegian Ministry of Foreign Affairs.

The utilization of artificial intelligence, machine learning, and natural language processing techniques can substantially enhance the efficiency and reach of some of the above-described methods.

Not all methods will necessarily be used for all evaluation criteria. Therefore, the analysis must be clear and explicit on how the proposed data collection methods will answer the evaluation questions, and how triangulations are being made. Moreover, whenever possible, the analysis should be conducted in a comparative mode. Relevant comparisons may be made across financing instruments (equity/loans/grants), business transactions, investee companies, and host countries.

To address issues related to the achievement of development results, the evaluation is expected to follow a rigorous approach to measure causality, resorting to quasi-experimental approaches as appropriate.

The evaluation will adhere to the evaluation quality standards and criteria of the OECD DAC, as well as recognized academic and ethical principles for the chosen methods. In addition, the evaluation will be utilization-focused, establishing a process that ensures the engagement of the primary intended users and increases the likelihood of the findings being used.

The assignment must be undertaken with integrity and honesty, ensuring inclusiveness of views, and protecting the rights, dignity, safety, and security of participants in the analysis. Throughout the evaluation, ethical risks must be considered, and safeguards suggested if risks are identified. Ethical risk assessments and safeguards must be documented in the inception and evaluation report.

Organisation of the evaluation

The evaluation will be managed by the Department for Evaluation, Norad.[113] The Department for Evaluation in Norad is governed under a separate mandate[114] from the ministries of Foreign Affairs and Climate and Environment, whereby the Department is tasked with planning, initiating, and carrying out of independent evaluations of activities financed by the Norwegian aid budget.

The contractor will report to the Department for Evaluation through the team leader. The team leader shall oversee all deliveries and will keep in regular contact with the Department for Evaluation throughout the process, to discuss progress - including any problems that may jeopardize the assignment - make adjustments to the evaluation design when required and shed light on actions to be taken to guarantee the high quality of the deliverables. Such regular communication will be especially important in the early stages of the assignment, to iron out the details of the approach.

112 For an overview of Norfund's renewable energy investments in these three countries, see Norfund's website: https://www.norfund.no/our-investments/all-investments/

113 For more information, see https://www.norad.no/en/evaluation

114 Available here (in Norwegian): https://www.norad.no/globalassets/filer/evaluering/evalueringsinstruks-januar-2022.pdf

In some evaluations, the Department for Evaluation participates in parts of the field work to gain a better understanding of the context of the evaluation - this could be the case for this evaluation.

The evaluation team will conduct the evaluation in accordance with the contractual requirements and the Guidelines for the evaluation process and for preparing reports for the Department for Evaluation.[115] The Department for Evaluation will provide feedback on draft reports. Stakeholders will be asked to comment on the draft inception report and the draft final report. In addition, experts or other relevant parties may be invited to comment on reports or specific issues during the process. The evaluation team shall take note of all comments received from stakeholders. Where there are significant divergences of views between the evaluation team and stakeholders, this shall be reflected in the final report.

Quality assurance shall be provided by the institution delivering the services prior to submission of all deliverables.

All decisions concerning the interpretation of these Terms of Reference, and all deliverables including the inception report and the final report, are subject to approval by the Department for Evaluation.

115 https://www.norad.no/en/front/evaluation/about-evaluation-department/evaluation-guidelines/

Evaluation Deliverables

- An **inception report** with detailed description of the methodological approach (including the operationalisation of key concepts) of maximum 5,000 words (approx. 10 pages) excluding figures, graphs and annexes. It must include an evaluation matrix to clearly explain how the proposed approach relates to evaluation questions and how triangulation will be conducted. The inception report will also lay out challenges, risks and limitations and possible strategies to mitigate those, and provide an outline of the structure for the evaluation report. The inception report needs to be approved by the Department for Evaluation before proceeding further.
- **Draft evaluation report** not exceeding 20,000 words (approx. 40 pages) excluding the executive summary, figures, graphs and annexes. Methodology and case study reports will be annexed. Supplementary statistics, dynamic or static visuals, data files / datasets are to be submitted together with the draft analysis reports.
- Workshop on draft findings and conclusions facilitated by the Department for Evaluation.
- **Final evaluation report** not exceeding 20,000 words (approx. 40 pages). Data files / Datasets are to be submitted, along with supplementary visuals (if any) and other visuals included in the report, as separate, high-resolution files.
- Presentation of the final report in a seminar in Oslo, with physical and digital participation from stakeholders.

Department for Evaluation

norad.no/evaluation