New Development Bank

INDEPENDENT EVALUATION OFFICE

Republic of South Africa

GREENHOUSE GAS EMISSIONS REDUCTION AND ENERGY SECTOR DEVELOPMENT PROJECT

PROJECT PERFORMANCE EVALUATION

FINAL REPORT | DECEMBER 2023

Cover photo by ©Chao Sun

New Development Bank

INDEPENDENT EVALUATION OFFICE

Republic of South Africa

GREENHOUSE GAS EMISSIONS REDUCTION AND ENERGY SECTOR DEVELOPMENT PROJECT

PROJECT PERFORMANCE EVALUATION

FINAL REPORT | DECEMBER 2023


M1-1
34,2N
@Chao Sun

PREFACE

This report presents the findings of the project performance evaluation by the Independent Evaluation Office (IEO), of the NDB-financed Greenhouse Gas Emissions Reduction and Energy Sector Development Project in the Republic of South Africa. This is the first project evaluation done by the IEO in South Africa.

The project aimed to facilitate investments in renewable energy, contributing to the nation's power generation mix and carbon dioxide emission reduction, in line with the Government's Integrated Resource Plan 2010. The project entailed a loan of USD 300 million by NDB to the Development Bank of Southern Africa. The project mobilised co-financing of approximately USD 2.2 billion, supporting 15 renewable energy sub-projects across four provinces of South Africa.

Overall, the evaluation found that the project achieved its objectives and had a positive impact. It contributed to the national strategy of expanding power generation through renewable energies. It also brought additionality in terms of crowding in private sector financing and extending access to long-term funds for renewable energy activities in South Africa. Most importantly, the project benefited from the Renewable Energy Independent Power Producer Procurement Programme's mandatory requirement for socio-economic inclusion and black economic empowerment, even though such aspects were not explicitly considered as part of the original project design.

The evaluation makes a number of recommendations for the way forward, such as the need to incorporate social development activities as part of projects that focus on renewable energy, strengthen project results frameworks for deeper impacts, and proactively explore options for local currency financing. Moreover, the evaluation emphasised the urgency of introducing a South Africa NDB country strategy that would serve as a comprehensive framework for the Bank's engagement and investments in South Africa.

I trust this report will be helpful to readers seeking to understand better the support NDB is providing to South Africa, including what has worked and what has not, and in prompting wider discussions on the importance of investments in renewable energy activities.

Ashwani K. Muthoo
Director General
Independent Evaluation Office

ACKNOWLEDGEMENTS

The Independent Evaluation Office (IEO) of the New Development Bank (NDB) would like to thank all those who have contributed to this evaluation. Specifically, IEO is grateful to the project's borrower, sub-borrowers, and co-investors under this evaluation, including the Development Bank of Southern Africa, African Rainbow Energy and Power, H1 Holdings (Pty) Ltd., and Mainstream Renewable Power, etc.

Deep appreciation is also due to the Government of the Republic of South Africa – particularly the Ministry of Finance (the Department of National Treasury), the Department of Mineral Resources and Energy, the Department of Planning, Monitoring and Evaluation, the Independent Power Producers office, and the South African National Energy Development Institute.

IEO is also thankful for the assistance and support of NDB officials at headquarters and the Africa Regional Centre. NDB operations and loan back office staff, including officials associated with the project, were highly forthcoming and helpful.

The evaluation was conducted under the broad responsibility of Mr. Ashwani K. Muthoo, Director General, IEO. Mr. Chao Sun, Senior Professional, IEO, was the lead evaluator and was ably supported by: Mr. Mohammad Nurul Alam, Senior Evaluation Expert; Ms. Lungile Mashele, Energy Expert; and Mr. Heng Zhao, Evaluation Analyst. Ms. Jaqueline Rabelo Souza, IEO Knowledge and Communication Specialist, provided critical inputs. The South African Monitoring and Evaluation Association was the designated peer reviewer for this evaluation, and their comments on the draft approach paper and draft final evaluation report were highly appreciated and carefully considered.

IEO is exclusively responsible for the contents and quality of the evaluation report and related outputs.

TABLE OF CONTENTS

List of Annexes

List of Tables

List of Figures

ABBREVIATIONS AND ACRONYMS

ARC	Africa Regional Centre (NDB)
BEE	Black economic empowerment
BoD	Board of Directors
BW	Bid Window
CSP	Concentrated solar power
CO_2	Carbon Dioxide
DBSA	Development Bank of Southern Africa
DMF	Design and monitoring framework
DMRE	Department of Mineral Resources and Energy
E&S	Environmental and social
EIRR	Economic internal rate of return
ESF	Environmental and social framework
ESG	Environmental and social governance
FIRR	Financial Internal Rate of Return
GHG	Greenhouse gas
IEO	Independent Evaluation Office
IRP	Integrated Resource Plan
IPPs	Independent Power Producers
LTA	Lenders Technical Advisor
NDP	National Development Plan
NDB	New Development Bank
NDC	Nationally Determined Contribution
NFI	National Financial Intermediary
MDB	Multilateral Development Bank
M&E	Monitoring and Evaluation
PDB	Project Document to the Board
PPA	Power Purchase Agreement
PPR	Project Progress Report
PV	Photovoltaic
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
SAMEA	South African Monitoring and Evaluation Association
SDG	Sustainable Development Goal
ZAR	South African Rand

CURRENCY EQUIVALENTS AND MEASURES

Currency Equivalents

Currency Unit = South African Rand (ZAR)
USD 1 = ZAR 12.76 (As per the Project Document to the Board on May 18, 2018)
USD 1 = ZAR 15.71 (As per the Project Performance Assessment on September 30, 2021 and 2022)
USD 1 = ZAR 18.84 (As on June 30, 2023)

Measures

GW	Gigawatt (1,000 megawatts)
GWh	Gigawatt-hour (1,000 megawatt-hours)
kV	Kilovolt (1,000 volts)
KWh	Kilowatt-hour (1,000 watt-hours)
MVA	Megavolt-ampere (1,000,000 volt-amperes)
MW	Megawatt
MWh	Megawatt hours
MWp	Megawatt peak (DC capacity of the solar array/total rated capacity of all solar modules in the system)

EXECUTIVE SUMMARY

Background

The Greenhouse Gas Emissions Reduction and Energy Sector Development Project (NDB Project ID - Loan 18ZA02) is the first project in South Africa evaluated by the Independent Evaluation Office (IEO) of the New Development Bank (NDB).

Eskom's large power stations predominantly serve the South African power system, and coal continued to dominate the country's energy mix. As one of the world's top 15 greenhouse gas (GHG) emitters, renewable energy is enlisted as a conscious choice in the country's power generation mix and reduction in carbon dioxide (CO_2) emissions.

Project Design

The NDB Board of Directors (BoD) approved this project in July 2018 for a total anticipated investment of over USD 600 million, of which NDB financing represented USD 300 million. NDB loan financed no more than 50% of the sub-project costs. The Development Bank of Southern Africa (DBSA) was the project's borrower and overall executing agency responsible for identifying, appraising, financing, and monitoring sub-projects eligible for NDB funding. The project's main objectives were to facilitate investments in renewable energy that can contribute to the power generation mix and reduce CO_2 emission in South Africa, in line with the Government's Integrated Resource Plan (IRP) 2010 and its target of reducing GHG emissions as articulated in the National Development Plan (NDP) 2030.

The loan agreement was signed in March 2019, and five amendments were made subsequently. The project was to be implemented from March 2019 to January 2024, including an extension to the closing date of 22 months. The project mobilised co-financing of approximately USD 2.2 billion to finance 15 renewable energy sub-projects in four provinces – North West, Northern Cape, Western Cape, and Mpumalanga. From 2020 to 2022, 14 sub-projects have begun commercial operations, including nine solar photovoltaic (PV) plants, one biomass power station, and four onshore wind farms. All sub-projects were awarded as preferred bidders in bid windows 3.5 and 4 of the South African Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

Evaluation Methodology and Process

The evaluation followed internationally recognised evaluation criteria of relevance, effectiveness, efficiency, impact, and sustainability. It also assessed NDB and borrower performance and NDB additionality. Mixed methods were used for data collection and analysis. They included reviewing secondary data, site visits, and collecting additional information and data from multiple national and local stakeholders using semi-structured questionnaires. Triangulation techniques were used to derive evaluation findings. The IEO evaluation team visited two sub-project sites to collect additional evidence (in the North West and Western Cape provinces). The team interviewed the private sector sponsors and co-investors of all 14 completed sub-projects. The draft evaluation approach paper and report were shared with NDB management, DBSA, the Ministry of Finance in South Africa, and the South African Monitoring and Evaluation Association (SAMEA) for comments.

Project Performance

Overall Performance: *Successful.*
Overall, the project has been successful, making a valuable contribution to generating renewable energy in South Africa and effectively reducing the country's overall CO_2 emissions. This success

can be predominantly attributed to the: (i) financial and operational strength of the borrower, (ii) technical and operational capacity of the sub-projects private sector developers, (iii) strong institutional framework of the REIPPPP and the sophisticated country systems in South Africa; and (iv) project monitoring and evaluation (M&E) activities by NDB Africa Regional Centre (ARC).

Relevance: *Moderately Successful.*
Aligned with the South African NDP 2012-2030, the IRP 2010-2030, and the NDB's General Strategy 2017-2021, the project contributed to the Sustainable Development Goals (SDGs), mainly with a focus on SDG7, SDG8, SDG9, and SDG13. On the other hand, the project design did not proactively leverage the REIPPPP for maximising NDB's development impact on gender, social and economic development for local communities. It is a missed opportunity, given that the REIPPPP has a distinguishing feature to promote job growth, domestic industrialisation, community development, and black economic empowerment. The lack of a dedicated country strategy to guide the project and the broader NDB-South African partnership constrained synergies with other NDB activities in the country and wider developmental results on the ground.

Effectiveness: *Successful.*
The project supported 15 Independent Power Producers (IPPs), surpassing the minimum financing requirement of three sub-projects. The completed 14 sub-projects exceeded expectations by creating an additional 1,147 MW of installed power generation capacity in 12 local communities, compared to the targeted 375 MW. They deliver around 3,540 GWh of renewable energy annually, compared to 887 GWh/annum expected at design.

The project leveraged co-financing of approximately USD 2.2 billion from the private sector. However, the evaluation concludes that sub-project selection criteria were not determined based on a highly sophisticated assessment of technologies to be funded by the project.

Efficiency: *Moderately Successful.*
One significant factor impacting project efficiency was the noticeable delays between project approval and the signing of the loan agreement. Furthermore, multiple amendments were made to the loan agreement during project implementation, including extending the implementation period by 22 months to January 2024. Consequently, this deferred the benefits that the operation would have otherwise generated.

Although NDB swiftly disbursed the project to DBSA within 13 months, from May 2019 to June 2020, DBSA spent five years to get NDB funds fully on-lent to sub-projects allocated by it. Delays and overruns on the sub-project level were mainly caused by unexpected factors such as the outbreak of the COVID-19 pandemic.

Impact: *Successful.*
The average plant availability for the completed sub-projects is over 98%. Power generated by them would supply the electricity usage of around 757,585 households across South Africa. The project plays a crucial role in reducing CO_2 emissions by over three million tonnes annually. Further, the four onshore wind farms financed play a crucial role during the evening peak, helping to prevent exacerbated load-shedding. The concentrated solar power (CSP) sub-project's storage capacity will enable it to deliver a stable electricity supply to South African households after sunset once it begins operation by the end of 2023.

Despite the absence of a theory of change for the operation, the project does not exhibit any noticeable negative lasting impact on the environment. Benefitting from the REIPPPP's institutional framework and though not foreseen at design, the project promoted local participation, job creation, and socio-economic and enterprise development for local communities.

Sustainability: *Successful.*
The pricing structure of electricity tariff under renewable sources, the sovereign guarantee underpinned for off-takers power purchase, the country's shortage of electricity supply, and the

technology and skill availability have ensured the economic and financial sustainability of the IPPs funded by the project.

Institutional, environmental, and social sustainability are upheld by a robust legal framework, private sector interest, and social empowerment. Although sustainability prospects are evaluated as successful, an explicit exit strategy was not developed to ensure continuity of benefit.

NDB's Performance: *Moderately Successful.*
Most of the NDB policies and guidelines were still being developed during project design. Nevertheless, a clear rationale for the development problem that the project will address was included in the project design report, together with a good analysis of DBSA as the borrower and a Intermediary (NFI). The project implementation was initially conducted from NDB headquarters and handed over to the ARC in 2020. The decentralisation of the project monitoring and supervision process effectively enhanced the implementation efficiency and quality. The ARC conducted supervision missions to some sub-project sites after the COVID-19 pandemic, in addition to their desk-based implementation reviews.

Borrower Performance: *Successful*.
DBSA has substantial experience in funding and monitoring renewable energy projects with private sector developers. Management of sub-projects has strong technical competence and maintains a trustworthy relationship with DBSA, which assured a confident level of implementation. Despite being downgraded in 2020 due to a challenging external environment, DBSA demonstrated strong financial resilience with a low leverage ratio and high capitalisation level. Its policy framework, including the due diligence process, is sound and efficient in managing operational costs.

NDB's Additionality: *Moderately Unsatisfactory.*
NDB supported DBSA with low-cost funding in hard currency borrowing, long-term tenure, and an attractive grace period. Most importantly, NDB has demonstrated adequate flexibility during the implementation.

Although NDB provided some financial additionality, very limited technical, capacity building, and knowledge additionality were provided by the Bank in this project. In particular, insufficient attention was devoted to sub-projects' capacity building on developing their social and economic development initiatives and distilling lessons from the project's experience. Additionally, periodic in-depth reviews to identify areas in South Africa's energy sector systems that NDB could bolster had been hardly conducted.

Conclusion

Overall, the project positively contributed to the South African national strategy of expanding power generation by renewable energies and reducing carbon emissions. A large part of the credit for the successful outcomes is due to the DBSA's strong financial standing and extensive experience in the renewable energy sector. This success is also attributed to the robust mechanism of REIPPPP, strong M&E processes of the IPP offices, and the availability of a mature pipeline of sub-projects with pre-selected private sector co-investors.

However, there were noticeable time delays in the project. Multiple amendments were frequently made to change the initial project design during implementation. It is nevertheless fair to recognise that this was NDB's first non-sovereign operation fully disbursed in South Africa, and it was implemented during the outbreak of the COVID-19 pandemic. Therefore, gaps in the project design, knowledge management, M&E, and communication process are understandable.

The project has exceeded the objective and design target by enhancing electric supply reliability. However, the evaluation suggests that the project design should have more explicitly addressed socio-economic impacts and its potential to leverage the South African REIPPPP for maximising NDB's influence. Additionally, the project design and documents did not analyse how the USD

funding by NDB to DBSA for on-lending would specifically catalyse additional funding for the sub-projects. The specific financial and non-financial additionality provided by the project was not clearly elucidated by NDB.

Recommendations

Recommendation 1: *Formulate a South Africa-NDB country strategy.*
NDB should prepare a comprehensive South Africa-NDB country strategy and present it to the NDB Board for consideration in 2024, along with IEO comments. The strategy would guide the Bank's medium-term partnerships and activities and be rooted in meticulous diagnostics and insights covering proposed lending and non-lending activities.

Recommendation 2: *Proactively explore options for local currency financing.*
NDB should continually review options to strategically increase its local currency lending in South Africa to provide suitable financing for sustainable infrastructures such as renewable energy plants, which only generate local currency revenues. This would help clients mitigate the foreign exchange risk and reduce borrowers' dependencies on swap markets that involve significant costs. NDB should leverage South Africa's strong financial sector by actively engaging with local stakeholders and partnering with local commercial and investment banks. This can help NDB identify opportunities, broaden the Bank's investor base, and optimise its deal structures.

Recommendation 3: *Clearly define, generate, and leverage NDB's additionality.*
NDB should enhance its South African operations, especially non-financial additionalities for aspects like technology, social impact, environment, gender, and global cooperation. This requires building the capacity to integrate smart technologies into future energy projects. Project designs must have a clear theory of change and strong results frameworks for financial and non-financial benefits. In non-sovereign operations, NDB should generate financial additionality by offering what's unavailable in the market.

Recommendation 4: *Further strengthening the relationship with National Financial Intermediary (NFIs) and conducting in-depth reviews of member countries' systems.*
NDB should continue to strengthen work with NFIs in maximising the development impact of its projects, using country systems to bring deeper additionality in environmental and social governance (ESG) related topics, benefiting local communities.

Periodic knowledge sharing and comprehensive reviews should be undertaken to identify opportunities for enhancing NFI's practices and the national framework. This process will enable NDB to consistently fine-tune its strategies for operating within the unique South African contexts, ensuring the successful attainment of sustainability goals for its projects in the country.

Recommendation 5: *Enhance the project Design and Monitoring Framework (DMF) quality and the M&E process.*
By drawing on global best practices, NDB should enhance its upcoming projects' DMF. This entails incorporating baseline data for all key performance indicators and including specific indicators related to ESG, gender, and impact on local communities.

NDB should tailor and streamline reporting templates and M&E procedures. This would help enhance project effectiveness and efficiency. Sub-borrowers' consent for sharing necessary financial information and operational and ESG data with NDB is recommended to be secured before project approval.

Recommendation 6: *Project designs and implementation should include coherent knowledge management and communication strategies.*
NDB should prioritise knowledge sharing and documenting lessons and good practices. Future projects should also have a communication strategy with dedicated events, exposure visits for

policy and decision-makers, seminars, and the production of specific knowledge products such as infographics adapted to the reality of each project. This is fundamental to strengthening NDB visibility and making available lessons and good practices that can be scaled up for better impact by NDB, Government, and other development partners.

NDB MANAGEMENT RESPONSE

The NDB management commends the IEO for providing an in-depth assessment of the project, incorporating several inputs provided by the operations team, the DBSA, and the Government of South Africa.

The NDB management believes that the project performance evaluation would benefit from a differentiated evaluation approach towards a financial intermediary (FI) operation versus direct lending. The application of sovereign performance indicators to the operation, which is sovereign, also contributed to a certain mismatch in evaluation.

The Greenhouse Gas Emissions Reduction Project achieved substantive results in a strategic area of South Africa's sustainable development in the energy sector and contributed to the reduction in CO_2 emissions, increased the generating capacity from renewable energy sources, and increased energy efficiency of the economy. As a demonstration of the success of the project, NDB and DBSA agreed to implement a second on-lending facility, which was approved by the BoD in 2022.

The project was fully aligned with NDB's mandate and strategic focus of supporting sustainable infrastructure projects in its member countries.

Recommendation 1
IEO recommends that NDB prepare a South Africa-NDB country strategy. Country strategies are a common instrument used by most multilateral development banks and would provide NDB with a coherent framework for orienting its engagement, activities, and financing in South Africa in the medium-term. NDB's second General Strategy 2022 - 2026 also highlighted, "The Bank will also explore developing individual country partnership plans further to guide the work in its countries of operation, responding to their development challenges and priorities." Preparation of such a country strategy should be based on well-researched analytical diagnostics at macro and sector levels and propose sectoral and geographic priorities for lending and non-lending activities. The preparation of the country strategy should be built on a thorough consultative process with the Government and others to promote complementarity and coherence, ensuring that government and key partner priorities are adequately internalised. The South Africa-NDB country strategy should be prepared in the near future and presented to the NDB Board for consideration in 2024, along with IEO comments thereon.

Management Response
The NDB management agrees with developing the country partnership plans on a demand-driven basis. NDB management intends to develop a country partnership plan for South Africa, and work in this direction has already been initiated. Following approval of the updated financial model of NDB, in particular of the annual lending volume and key financing terms, the management will initiate a consultation process with member country governments and other key stakeholders once the initial preparation of the country partnership plan is concluded.

Recommendation 2
The evaluation recommends that NDB review options increase its local currency lending in South Africa to provide suitable financing for sustainable infrastructures such as renewable energy plants that only generate local currency revenues. This would help clients to mitigate the foreign exchange risk and reduce borrowers' dependencies on swap markets that involve significant costs. IEO noted that NDB, in April 2019, already registered its debut South African Rand (ZAR) bond programme in South Africa on the Johannesburg Stock Exchange, with a maximum size of ZAR 10 billion and unlimited validity. The Bank's first bond in South Africa, amounting to ZAR 1.5 billion, was issued on August 15, 2023. South Africa has a well-developed financial and banking sector. NDB should effectively use it by actively engaging with local stakeholders and partnering with local investment banks to continually identify issuance opportunities, broaden its investor base in South Africa, and optimise deal structures.

Management Response

The NDB management agrees with this recommendation. The management has been prioritising and making extensive efforts in this direction. The Bank's team has been actively exploring the options for local currency financing in our member countries. The Bank has been fruitful in this effort. On August 15, 2023, the Bank successfully issued its debut ZAR bond in the South African bond market, becoming the highest-rated issuer to issue in this market since 2015. The management will continue to explore other local currency financing options.

Recommendation 3

The evaluation recommends that NDB generate additionality in its South Africa operations, especially in the non-financial areas of technology, social, environmental, gender, and global south-south cooperation. The Bank needs to build capacity to facilitate, where appropriate, the application of smart, innovative, and fit-for-purpose technologies into its future energy projects. Project designs should focus more robustly on impact achievement and include provisions for social development, reduced inequalities, and clearer statements of development objectives. Attention should also be given to leveraging south-south cooperation as an instrument for wider NDB impact in its member countries.

Project designs should be supported by a strong theory of change and results framework with clearly defined financial and non-financial additionalities and a comprehensive risk assessment. The evaluation recommends that NDB institutionalises tools with applicable metrics that will help the Bank to evaluate the inclusiveness of projects and identify opportunities to address inequalities across gender, age, race, income, and geography. For non-sovereign operations, the Bank should generate relevant financial additionality by bringing what is unavailable from the market.

Management Response

Management acknowledges the importance of allocating funds to projects that result in tangible benefits and positive outcomes that would not have been achievable through traditional financing sources alone. In line with the 2022-2026 strategy, projects that support innovative approaches or technologies that bring about novel solutions to development challenges, furthering additionality by promoting progress and sustainability, are prioritised. Additionality on social and environmental benefits is achieved by ensuring that the projects funded by NDB prioritise social development, environmental sustainability, and other development objectives beyond mere financial returns. Several projects financed by NDB stimulated additional investments from other sources, both public and private, which amplifies the impact of the Bank's contributions.

The Bank's environmental and social value addition has been well captured in the E&S Portfolio Report, which is updated twice per year. To capture non-financial value addition by NDB at the project level, the management has directed staff to conduct an in-depth analysis of our value addition throughout the project phases and to reflect this in a separate section of each project document to the Board, which is now being constantly done. In addition, the management encourages staff to start analysis on potential value addition from the very beginning of the project cycle and aim, to the extent practicable, to include value addition section in the project concept notes.

Recommendation 4

The evaluation recommends that NDB continues to strengthen work with NFIs in maximising the development impact of its projects, using country systems to bring deeper additionality to Environmental and Social Governance (ESG)-related topics and benefit local communities. NDB should conduct periodic knowledge sharing and in-depth and systemic reviews should be conducted by NDB to identify areas in the NFI's practices and country system that could be bolstered to help the Bank continually calibrate its approach for operating in specific South African contexts and effectively achieve the sustainability objectives of its projects in the country.

The evaluation recommends that lessons learned from this project should be more thoroughly reviewed for the benefit of other on-lending operations by NDB with DBSA and NFIs, to: (i) draw on the good practices of South Africa's REIPPPP to enrich its understanding of developing renewables by

facilitating private sector investments; and (ii) share recent global good practice with South Africa (and other member countries) to strengthen local frameworks and implementation capacity, as required by the Bank's General Strategy 2022-2026.

Management response

The NDB management agrees with this recommendation, which has already been implemented. The Bank periodically undertakes reviews of ESG country systems and conducts capacity-building workshops with local stakeholders. Such studies and workshops have been conducted in all member countries in 2020-21, with about 800 participants attending the workshops. Similar capacity building in ESG is conducted on a project level during project preparation and implementation. Following the first project with the DBSA in South Africa, the Bank has provided funding to another South African NFI for further on-lending to renewable energy projects and approved another loan to DBSA. Operationalisation of regional offices in all BRICS countries allowed the Bank to have an on-the-ground presence as well as direct and effective communication with various stakeholders, including government, NFIs, etc.

Additionally, lessons learned from this project will be analysed and disseminated in due course during the preparation of the project completion report.

Recommendation 5

Enhance the project DMF quality and the M&E process. The evaluation recommends that NDB builds on international good practice to improve its future projects' DMF by including baseline figures for all key performance indicators, as well as relevant indicators for other salient design features such as environment and social governance, gender, and changes to the welfare of local communities.

For on-lending operations, the evaluation recommends that NDB customise and streamline its reporting templates as well as M&E procedures based on the operations' modality to effectively enhance the efficiencies of project implementation and loan agreement management processes. Consent by sub-borrowers for sharing required financial information and operational and ESG data for NDB's M&E process should be obtained before project approval in the future.

Management response

The management shares the view that a strong result framework is an important element of the design of projects that NDB finances and pays utmost attention to. At the same time the management believes that the DMF for the envisaged project has been adequate. It is important not to overload the DMF, especially in case of non-sovereign operations, and keep there only relevant indicators that allow reliably measuring the impact of the intervention.

The borrower's reporting template currently used for FI loans also seems quite adequate, and making it more complicated would not be fit for purpose. It is important to take into account the nature of the FI loans, wherein NDB borrowers are financial institutions that are not directly responsible for the implementation of the funded projects that are implemented by their clients. Having said this, the Bank makes provisions in loan agreements with the borrowers/NFIs to be able to obtain information necessary for the effective monitoring of project performance.

Recommendation 6

Project designs and implementation should include coherent knowledge management and communication strategies. The evaluation recommends that NDB pay more attention to sharing knowledge, lessons, and good practices. Future projects should have a communication strategy with dedicated events, exposure visits for policy and decision-makers, seminars, and the production of specific knowledge management products such as infographics adapted to the reality of each project. This is fundamental to strengthening NDB visibility as well as making available lessons and good practices that can be scaled up for better impact by NDB, government, and other development partners.

Management Response

The NDB management agrees with this recommendation. While the Bank has been accumulating knowledge from its operations and taking the knowledge and lessons into project design, preparation, and implementation, the Bank is also making efforts to establish a systematic knowledge management mechanism. The management supports the utilisation of various platforms for sharing knowledge, lessons, and good practice in collaboration with the project partners. The communication strategy should be cognizant of the terms stipulated in the loan agreements including the non-disclosure agreement, especially with regard to non-sovereign operations.

In the context of knowledge sharing, the management ensures that NDB is committed to adequate, timely, and effective information disclosure in accordance with its Information Disclosure Policy. The management will continue to work towards enhancing the project-related information disclosure and the accessibility of such information published by the Bank.

The management has been working to strengthen NDB's visibility through diversified forms of communication materials that could be effectively presented through various communication channels, such as the Bank's website and official social media accounts, as well as online and offline events.

The management also notes the potential for more active disclosure of ESG-related information. The Bank is committed to enhancing its disclosure practices in this realm, providing stakeholders with a more comprehensive understanding of the project's environmental and social implications, fostering greater transparency, and enhancing the Bank's visibility.


@Chao Sun

I. BACKGROUND

A. Introduction

1. In July 2018, the New Development Bank (NDB) Board of Directors (BoD) approved the 'Greenhouse Gas Emissions Reduction and Energy Sector Development' Project in South Africa (the project). The project includes a two-step loan amounting to USD 300 million by NDB to the Development Bank of Southern Africa (DBSA), which in turn on-lent the funds to renewable energy projects (the sub-projects) identified by DBSA. To ensure the additionality of NDB's loan, the proportion of NDB financing is up to 50% of the cost of each sub-project, and the total investment for all sub-projects reached above USD 600 million.

2. As a National Financial Intermediary (NFI) wholly owned by the Government of the Republic of South Africa, DBSA was the borrower and overall executing agency of the project. NDB classified this project as a "Non-Sovereign Operation", which was processed according to NDB's "Policy on Loans without Sovereign Guarantee to National Financial Intermediaries." It was the first operation (and first non-soverign operation) in South Africa evaluated by the Independent Evaluation Office (IEO) of NDB.

3. Following BoD approval in 2018, the NDB Loan Agreement (18ZA02) was signed with DBSA in March 2019. DBSA subsequently requested five amendments since December 2019. The project was originally designed with an implementation period of three years from March 2019, revised to around five years until January 2024. The loan closing date was changed from 14 March, 2022, to 28 January, 2024, by the fifth amendment to the loan agreement in April 2023.

4. The project had been fully disbursed by NDB to DBSA by June 2020 for financing 15 renewable energy sub-projects (including nine photovoltaic [PV] crystalline - single axis, four onshore wind farms, one concentrated solar power [CSP] station, and one biomass energy plant) through private sector sub-borrowers identified by DBSA. These are contributing to energy generation capacities in 12 local communities in four provinces of South Africa[1] (North West, Western Cape, Northern Cape and Mpumalanga). All sub-projects were awarded as Preferred Bidders under Bid Windows (BWs) 3.5 and 4 of South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), and 14 began commercial operations between 2020 and 2023.

B. Regional Context: Eastern and Southern Africa

5. The Eastern and Southern Africa region is geographically, culturally, and economically diverse and comprises 26 countries stretching from the Red Sea in the North to the Cape of Good Hope in the South. Home to almost 60% of Africa's population, the region has an estimated gross domestic product of USD 1,917,904 million, with South Africa as the region's largest economy, followed by Angola, Kenya, and Ethiopia.[2]

6. Like much of the Global South, African economies are disproportionately affected by persistent climate change factors, including a combination of crippling droughts, devastating floods, and rapidly rising temperatures. Southern Africa experienced increases in temperature of up to 2°C over the past century.[3] Access to affordable, reliable, and modern energy is essential for developing Africa's infrastructure ecosystem. Over half a billion people in Sub-Saharan Africa will still be without electricity in 2030 unless the current electrification pace is tripled.

1 Among the 15 sub-projects, 14 have been completed. Please refer to Annex 3 (Sub-projects data sheet) and Annex 8 (Sub-project commercial operation date and timelines review) for details.
2 Source: The World Bank - https://www.worldbank.org/en/region/afr/eastern-and-southern-africa.
3 Same as above.

C. Country Context

7. South Africa has been on a stable development progression since the country's first democratic elections in 1994. The country has pursued ambitious development objectives since that time, despite some endemic legacy structural and complex social issues. The initial high growth trajectory from the late 1990s slowed somewhat since the 2008-2009 global financial crisis and has been exacerbated by prevailing global economic shocks (including the recent COVID-19) and climate change risks. The economy grew by about 1% per year between 2012 and 2021.[4]

8. South Africa's Vision 2030, embodied in the National Development Plan (NDP), enshrined eliminating poverty by 2030, boosting shared prosperity, and reducing inequality as main goals. The Government's provision of improved access to basic services (such as electricity, water, sanitation, and housing) and the expansion of the social wage have considerably improved living standards for millions of South Africans. The country has achieved a substantial positive impact in alleviating inequality in the last two decades, and addressing inequality as a chronic phenomenon is a stated policy priority for the South African Government.

D. Sector Context and Strategic Imperatives on Climate Change

9. South Africa's high energy intensity puts the energy sector at the centre of the economy. Energy is an important sector of the economy that creates jobs and value by extracting, transforming, and distributing energy goods and services. As one of the core elements of a decent standard of living, electricity is the most favoured option for cooking and other domestic usage in both urban and rural areas of South Africa.[5]

10. Eskom's large power stations predominantly serve the South African power system. In 2022, coal dominated the South African energy mix, providing 80% of the total system load.[6] As one of the world's top 15 greenhouse gas (GHG) emitters,[7] South Africa is also one of the world's least energy-efficient nations.[8] The energy sector contributes nearly 80% of the country's total GHG emissions, of which 50% are from electricity generation and liquid fuel production alone.[9] If unmanaged, South Africa's emission levels could grow by as much as four times by 2050.

11. Climate change is already having a perceptible effect, altering its ecosystems, economies, and livelihoods. Since 1990, the national average temperature level has increased twice as fast as global temperatures.[10] Water security is deeply affected by severe climate impacts, with more frequent drought and water shortages resulting in water scarcity in parts of the country. The projected changes in temperature affect aspects such as infrastructure and services. They also put strain on the health system, increasing the disease burden, availability of medicines and medical supplies, and emergency services.

12. South Africa's climate priorities span climate adaptation and mitigation. The South African Cabinet has approved key climate actions, creating a Presidential Climate Commission, Low Emissions Development Strategy, National Climate Change Adaptation Strategy, and Just Transition Framework. Energy sector policies are inextricably linked with climate change and rooted in national growth priorities, equality, people's well-being, and sustainability. South Africa's Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change 2015 Paris Agreement committed to a reduction in GHG from its emissions growth trajectory by 42% in 2025 and in the country's annual GHG emissions to a range between 398 and 614 million metric tonnes of carbon dioxide (CO_2) equivalent by 2030.

4 The World Bank: https://www.worldbank.org/en/country/southafrica/overview.
5 The International Energy Agency: https://www.iea.org/articles/south-africa-energy-outlook.
6 Source: Council for Scientific and Industrial Research (CSIR), Statistics on Power Generation in South Africa for the first half of 2022 (January 1, 2022, to June 30, 2022).
7 Source: United States Agency for International Development, and the Global GHG Emissions published by the World Resources Institute - https://www.wri.org/
8 Source: South Africa National Electricity Efficiency Programme - https://www.gov.za/about-government/national-electricity-efficiency-programme
9 Government of the Republic of South Africa IRP 2019.
10 Source: South Africa's First Nationally Determined Contribution under the Paris Agreement (Updated in 2021).

13. A recurring problem in the South African electricity system has been load-shedding. Since 2007, it has experienced multiple periods of load-shedding as the country's demand for electricity exceeded its ability, notably of Eskom to supply it for many years. During these load-shedding periods, power is rationed between different electrical grid areas across the country and within municipal areas. One of the main causes is the country's heavy reliance on coal-fired power plants, which often experience breakdowns due to lack of maintenance, causing frequent unplanned outages that reduce the amount of electricity available to the grid. In 2022, load-shedding occurred for 3,773 hours, with areas experiencing power outages typically lasting at least two to four hours daily. According to the South African Reserve Bank's Financial Stability Review, load-shedding is expected to detract two percentage points from the country's overall economic growth in 2023.

14. Policymakers have noted the risks, and there have been conscious efforts to diversify power generation sources. The South Africa Government's IRP (latest update in 2019) has been a decisive step in guiding power development, providing the guiding projection and structure for the quantity of new power generation and their sources. The IRP incorporates a carbon emissions cap, and renewable energy is a regularly established power generation option. Renewable energy is enlisted as a conscious choice in South Africa's power generation mix and reduction in CO_2 emissions. The trend is moving towards choosing mitigation options with the biggest potential contribution to the targeted CO_2 emission reduction.

E. The Renewable Energy Independent Power Producer Procurement Programme

15. REIPPPP was established by the Department of Energy (later named Department of Mineral Resources and Energy [DMRE][11]) in collaboration with the National Treasury and DBSA in 2010. Its primary goal is to attract private sector investments to develop grid-connected renewable electricity generation capabilities and to support achieving the energy mix goals set by the IRP. Additionally, the REIPPPP aimed to contribute to broader national development objectives such as job creation, social upliftment, and economic transformation, primarily by promoting economic ownership across various sectors.

16. Independent Power Producers (IPPs) are invited to submit bids for onshore wind, solar PV, CSP, small hydro, biomass, biogas, or landfill gas projects. Once IPPs are appointed as Preferred Bidders, they are required to sign South African Rand (ZAR) denominated 20-year Power Purchase Agreements (PPAs) with Eskom. Prices are indexed to inflation. The PPA is supported by an Implementation Agreement between the IPP and the Department of Energy, which, along with a Government Framework Support Agreement, guarantees Eskom's payments to the IPPs. There is also a Direct Agreement between the IPPs, Eskom, DMRE, and lenders, which provides lenders with step-in rights in the event of default.

17. The REIPPPP has been seen as an example of the ability to draw in private sector investment: according to the IRP 2019, a total electricity capacity of 6,422 MW has been procured, with 3,876 MW operational and made available to the grid. When the BoD approved the project, three Ministerial Determinations were announced by the South African Government for the REIPPPP, with a total of 13.2GW available for allocation to renewable energy projects. Four bidding rounds (BWs) were conducted between 2011 and 2015, with an additional round (3.5) for CSP only. In total 92 renewable energy IPPs had been awarded as Preferred Bidders from BWs 1 to 4, including 45 Solar PV and 34 Onshore Wind projects.[12]

11 The President pronounced the reconfiguration and merger of the Department of Mineral Resources and the Department of Energy into a new Department of Mineral Resources and Energy, on May 29, 2019.
12 Information is summarised from the website of the IPP Office (https://www.ipp-projects.co.za/ProjectDatabase).

II. THE PROJECT

A. Project Objectives and Design

18. As approved by the BoD, the project's primary objective is to facilitate investments in renewable energy that can contribute to the power generation mix and reduction in CO_2 emissions in South Africa, in line with the Government's IRP and its target of reducing GHG emissions as articulated in the NDP 2030. The project was expected to achieve a yearly electricity generation of around 887 GWh from clean energy sources and a minimum saving of 834,000 tonnes of CO_2 emissions annually when the sub-projects were to become fully operational starting in 2022.

19. Beyond the expected contribution to Sustainable Development Goal (SDG) 7 (Ensure access to affordable, reliable, sustainable, and modern energy for all) and to SDG 13 (Take urgent action to combat climate change and its impacts), the project was also expected to bring additionality in terms of crowding in private sector financing and increasing availability of long-term funds for the energy sector projects in South Africa.

B. Implementation Arrangements[13]

20. As the NDB loan borrower and the project's main implementing agency, DBSA identified, selected, appraised, financed, and monitored sub-projects eligible for NDB funding. The selection of sub-projects was based on the criteria devised to allow NDB to determine that each of the sub-projects: (i) contribute to impact, outcomes, and outputs as set in the project's Design and Monitoring Framework (DMF),[14] (ii) have a sufficient level of preparedness, and (iii) are in line with NDB's policies on economic and financial analysis, project procurement, and governance (ESG).

21. DBSA provides financing to sub-borrowers in the form of either: (a) Senior debt, (b) Mezzanine debt, or (c) Loan facility. This is to be used for subsequent equity financing for investing in renewable energy sub-projects of: (i) wind, (ii) solar PV, (iii) solar thermal (CSP), (iv) biomass, (v) small hydro, or (vi) waste to energy. DBSA determined on-lending terms and conditions of sub-projects in accordance with its framework. Table 1 outlines other key terms of the NDB project design.

TABLE 1
Summary of key terms of NDB project design

Item	Project design approved by the NDB BoD
Sub-project selection criteria	a) Sub-project shall contribute towards the power generation mix and reduction in CO_2 emissions in South Africa by not less than 90 tonnes per year per ZAR 1 million of sub-project cost. b) Sub-project shall be economically viable and financially sustainable. The project must achieve an economic internal rate of return (EIRR) of 10%[15] and a Financial Internal Return Rate (FIRR) above the sub-projects weighted average cost of capital. c) Sub-project shall comply with all applicable national laws and regulations relating to the environment, resettlement, and indigenous people. d) All necessary governmental approvals to start the construction have been obtained for the sub-project. e) Unless pre-agreed, sub-loans provided by DBSA shall have a minimum maturity of 10 years.
Retroactive financing	Up to 20% of the loan amount for costs incurred up to 12 months prior to the date of signing the loan agreement.

Source: Project Document approved by the BoD (PDB)

13 Extracts from the PDB approved by NDB BoD in July 2018.
14 Please refer to Annex 2, Project DMF, for details about the DMF.
15 The required EIRR assessed by DBSA in accordance with its internal methodology at the time of the approval of the Financing Instrument for the sub-project was revised to 8% in the Loan Agreement signed on March 15, 2019.

22. Before seeking a disbursement for every new sub-project, DBSA was required to submit to NDB a set of documents confirming the sub-projects conformity with the selection criteria. Sub-projects for which DBSA's sub-loan was above the Free Limit set at (USD 40 million)[16] would need approval by NDB. NDB's approval was also required for all sub-projects assessed as Category A for environmental and social (E&S) impact (according to the NDB Environment and Social Framework). DBSA was required to submit Project Progress Reports (PPRs) to NDB at least annually.

C. Five Amendments to Loan Agreement

23. The Loan Agreement was signed on March 15, 2019. In 2020, Moody's downgraded the long-term foreign currency issuer rating of DBSA twice (first in June and second in November) from Ba1 to Ba3, effectively moving DBSA's ratings to one notch below that of the Sovereign (Ba2). During the first quarter of 2021, based on a request from DBSA, NDB carried out a comprehensive analysis of the situation, and based on this, the BoD approved the third amendment to the Loan Agreement to mitigate credit risks.

24. Apart from the above amendment, there are another four loan amendments requested by DBSA during project implementation. Key changes included: (i) adding the "Advance Disbursement" approach to allow DBSA to request advance drawdown and subsequently disburse funds to the sub-projects, and for which supporting documents will be provided by DBSA to NDB at a later date; (ii) deferring DBSA's obligation of reporting the usage of funds from the "Advance Disbursement"; and (iii) extending the project's implementation period and loan closing date. Table 2 outlines the project's design before and after the key changes.

TABLE 2
Project/loan: basic data

Item	Original project design (Approved by NDB BoD)	Revised project arrangement
Project implementation period	March 15, 2019 – March 14, 2022 (Loan Closing Date)	The 5th Amendment: Loan Closing Date was revised from March 14, 2022, to January 28, 2024
Loan maturity	15 years from the date of Loan Agreement signing	No changes, same as in original design
Project completion report due date	March 14, 2023	The 4th Amendment: Revised to December 30, 2024

Source: PDB, and the 4th and 5th Amendments to Loan Agreement

D. Implementation Results

25. The loan was fully disbursed by NDB to DBSA from 2019 to June 2020 with four disbursements, while DBSA's on-lending disbursement to sub-projects started in April 2018. Around 16.15% of the loan amount, USD 48.45 million, was retroactively financed by DBSA to 14 sub-projects before the loan agreement sign-off in March 2019.[17] The last on-lending disbursement was made by DBSA on April 30, 2023.

16 The free limit was revised to USD 50 million in the Loan Agreement signed on March 15, 2019, initially set as USD 40 million in the Project Design Paper approved by the NDB Board in July 2018.
17 Data and information are based on the Statement of Expenditures (Financial Reconciliation) submitted by DBSA to the NDB Africa Regional Centre (ARC) team in May 2023.

26. Among the sub-projects, DBSA financed nine via lending to a Black Economic Empowerment (BEE)[18] facility. The other six sub-projects were financed by DBSA directly as a senior lender with senior debts. All sub-loans on-lent by DBSA to the sub-borrowers were in ZAR with a tenor of at least 17 years.

27. In 2020, nine sub-projects reached commercial operations (60%), and 14 sub-projects were completed by Q2 2022 (93%). The remaining sub-project, a CSP station, is under construction and expected to be completed before 2024. The total investment costs of the 15 sub-projects were around ZAR 40 billion, with a total planned capacity output of 1,304 MW. As of September 2022, the annual renewable energy-based electricity generation already achieved is reported as 3,303 GWh - exceeding the target of 887 GWh. This saves CO_2 emissions of over three million tonnes per year, exceeding the minimum CO_2 emission reduction targets of 834,000. Annexes 3, 6, and 7 include detailed information on sub-project investment cost, capacity, and output.

18 The BEE represents the principal framework for economic transformation in South Africa. BEE is enshrined in an Act of Government (2003), and the state and the private sector have stated their commitment to ensuring that the legacy of apartheid is reversed through positive action in favour of historically disadvantaged persons.

III. EVALUATION OBJECTIVES, METHODOLOGY, AND PROCESS

A. Evaluation Objectives

28. This evaluation is part of IEO's work programme 2023, agreed upon with the BoD in December 2022. The IEO criteria for selecting projects for independent evaluation included completed (or nearly completed) operations, sector coverage, financing type, documentation availability, and country coverage. The project evaluation's primary purpose is to foster accountability and generate lessons learned to improve the quality of new and ongoing operations.

B. Methodology, Evaluation Questions, and Rating Scale

29. The evaluation was conducted within the overall framework of the NDB Evaluation Policy,[19] approved by the BoD in August 2022. In particular, the project evaluation followed internationally recognised evaluation methodologies, criteria, and processes adopted by the Evaluation Cooperation Group of the multilateral development banks (MDBs). The evaluation used the following criteria to assess the project: Relevance, Effectiveness, Efficiency, Sustainability, and Impact (see Annex 4 and Annex 5). Based on the assessment and ratings (see Table 3 for the rating scale) assigned to each criterion, IEO assessed and provided a rating to a composite evaluation criterion "Overall Project Achievement." Beyond that, IEO assessed and rated NDB additionality, NDB, and borrower performance, respectively.

30. In addition, as the project comprised 15 sub-projects implemented through private sector IPPs, at the sub-project level, this evaluation assessed several aspects as normally applied in the evaluation of private sector operations: financial performance, economic sustainability, and environmental and social (E&S) performance.

31. The evaluation was summative and relied on mixed quantitative and qualitative methods for analysis. More specifically, below are some key questions the evaluation covered. Annex 5 has the complete set of questions covered.

    - How is this project aligned with the objectives of the NDP, the Government's latest 'Economic Reconstruction and Recovery Plan' of October 2020, and the targets of NDC from South Africa to the Paris Agreement on Climate Change 2015 for reduction of carbon emissions?

    - To what extent did the project leave a positive footprint in South Africa's strategy for energy generation mix and reduction of carbon emission in the medium-term (2030) and thereby contribute to South Africa's wider NDP objectives or poverty alleviation, reduction of inequality and promotion of employment through industrial growth?

    - How are the sub-projects contributing to enhancing reliability and expanding access to energy to meet domestic demand? How well have resources and funds been utilised in financing the sub-projects? To what extent did the project deliver expected outputs and results economically and on time? To what extent did sub-project financing using the NDB loan enhance and expand DBSA's financial ability to expand power generation via renewable sources? Are the net benefits and additional electricity generation capacities delivered by the sub-projects likely to continue in an economical and financially sustainable approach?

32. The qualitative analysis entailed a thorough review of documents and interviews with key informants based on semi-structured questionnaires. In addition, field visits were undertaken to

19 www.ndb.int/wp-content/uploads/2022/11/IEO_Final-Evaluation-Policy-1.pdf

project sites by the evaluation team to assess the activities undertaken and hold discussions with key stakeholders at the local level. The quantitative analysis drew on secondary data, including data from the project's internal monitoring and evaluation (M&E) system, financial data, and sector and sub-project data from public sources. An essential dimension of the evaluation was ensuring a transparent and coherent evidence trail so that the conclusions are properly anchored in the findings and recommendations are based on the conclusions.

TABLE 3

Rating scale[20]

Rating scale	IEO rating	Description
6	Highly Successful	Under the concerned criterion, the project achieved or surpassed all main targets, objectives, expectations, and results and could be considered a model within its project typology.
5	Successful	Under the concerned criterion, the project achieved almost all (indicatively, over 80-95%) of the main targets, objectives, expectations, and results.
4	Moderately Successful	Under the concerned criterion, the project achieved the majority (indicatively, 60-80%) of the targets, objectives, expectations, and results. However, a significant part of these were not achieved.
3	Moderately Unsatisfactory	Under the concerned criterion, the project did not achieve its main targets (indicatively, less than 60%), objectives, expectations, and results.
2	Unsatisfactory	Under the concerned criterion, the project achieved only a minority of its targets, objectives, expectations, and results.
1	Highly Unsatisfactory	Under the concerned criterion, the project achieved almost none of its targets, objectives, expectations, and results.

C. Limitations

33. It is fair for the evaluation to outline transparently some of the key limitations that may have constrained project design, implementation, supervision/monitoring, and evaluation. There were limitations to the data available (such as actual power annually generated by the renewable energy plants) given that the project is not fully completed, with one sub-project still under construction. Also, some sub-projects only began commercial operations in 2022. Their post-completion Lender Technical Advisory reports and audited financial information were not available for IEO's review, and some of their long-term development impacts may only be seen in future years. The COVID-19 outbreak in 2020 affected the pace of project implementation, which constrained NDB from conducting periodic supervision missions and preparing supervision reports between 2020 and 2021.

34. Moreover, during the IEO's evaluation, the loan was not closed, and DBSA's disbursement reporting was not yet finalised. Another limitation was the inadequate quality of project implementation documents. For instance, IEO noted discrepancies in the implementation and periodic reporting documents related to disbursements and sub-project allocations. This will

20 Most MDBs use a similar rating scale. Adopting the same scale will facilitate benchmarking the performance of NDB's operations with other MDBs in the future.

be further elaborated later in the evaluation report. Moreover, neither the Project Progress Reports (PPRs) nor NDB's Project Performance Assessments contain any detailed financial and operational data at the sub-project level, such as the gross profit, operating cashflows, employment generated, and social impact at the local level. As the on-lending agreements between DBSA and the sub-borrowers are considered confidential and protected by privacy law on disclosure, IEO cannot assess the actual financial internal rates of return (FIRRs) or the sub-projects economic internal rates of return.

D. Evaluation Phases and Process

35. The evaluation involved the following main phases:

a) **Preparatory Mission:** Director General IEO conducted a preparatory mission to South Africa in February 2023 to launch the evaluation process. The mission revealed that – in addition to the key questions discussed above – other areas for the evaluation to cover included the following: (i) level of alignment and support of the project to the Government's energy planning and restructuring of the sector, and contribution in the reduction of carbon emission as set in the NDC; (ii) the sustainability of renewable energy infrastructure facilities put in place by the project; (iii) private sector engagement and interest in the renewable energy sector; (iv) the institutional capacity and related technical assistance requirements for the project and how they will be sustained; and (v) sharing of lessons from the project in wider national and international forums.

b) **Desk Review:** The IEO conducted an initial literature review. The reviewed documents included inter-alia, the Project Design Report, the loan agreement and subsequent amendments, available PPRs, and supervision reports. It also examined findings on the impact of renewable energy projects elsewhere in South Africa that may be relevant to the project. This phase was in preparation for the fieldwork and culminated in preparing an approach paper outlining the sector and project context as well as the overall evaluation methodology, process, and timelines.

c) **Field Work:** IEO fielded an evaluation mission to South Africa in May 2023 for around two weeks to collect data, visit project sites, hold interactions with key stakeholders, and conduct initial analysis. Among others, the evaluation mission held discussions with DBSA, key government authorities, NDB Africa Regional Centre (ARC), the South African Monitoring and Evaluation Association (SAMEA), and others. Furthermore, the mission travelled to two sub-project sites to collect additional evidence (in Brits of North-West Province and Witzenberg of Western Cape Province) and to conduct interviews with beneficiaries of the sub-projects at the local municipal level. The team interviewed the private sector sponsors and co-investors of all 14 completed sub-projects. At the end of the fieldwork, IEO prepared and shared a presentation on its initial findings with key stakeholders for information and comments on May 15, 2023.

d) **Preparation of the Main Report:** IEO prepared the draft final report after completing the fieldwork. The draft was shared with NDB management, DBSA, and National Treasury for comments. The National Treasury was invited to share the draft report with other relevant government departments. Moreover, it was shared with the SAMEA for peer review and comments. IEO has carefully considered all comments received in preparing the final report. Based on the final report, an NDB Management Response has been prepared. Annex 1 contains the final report by SAMEA on the quality of the evaluation and reflections on the way forward.

e) **BoD discussion and Dissemination of Evaluation Outputs:** The evaluation report along with the Management Response was considered by the NDB Board on November 28, 2023. The Board took note of the evaluation's findings and recommendations and expressed

appreciation to IEO for its first evaluation in South Africa. The main evaluation outputs include the evaluation approach paper, final report, and NDB Management Response. Moreover, a summary of the findings and recommendations is captured in a two-page Evaluation Lens. In line with the disclosure provisions in the Evaluation Policy, all these outputs will be available through the IEO web pages.[21]

21 https://www.ndb.int/governance/independent-evaluation/

IV. PROJECT PERFORMANCE

36. Overall, under the overarching oversight of the National Treasury, the financial and operational strength of DBSA, the technical and operational capacity of the sub-projects' private sector developers, the strong institutional framework of the REIPPPP, and the sophisticated country systems in South Africa, the project M&E activities by the ARC, the project performed well and has achieved its stated goals and objectives in general.

A. Relevance

37. In line with internationally agreed definitions, relevance is the assessment of the alignment of project goals and objectives with those of the concerned country and NDB. To make a comprehensive assessment, the evaluation assessed the relevance of project objectives as well as the relevance of design. The latter is equally important to ensure that the design is appropriate to meet the project's goals and objectives.

Relevance of Project Objectives

38. **South Africa's National Policy and Strategies:** The project's key objective is to invest in sustainable infrastructure that will contribute to a "reduction in CO_2 emissions and increased energy generated from renewable energy sources". Indeed, the project's objectives are aligned with South Africa's national policy objectives as captured in the country's NDP 2012-30, which underlines the country's full commitment to sustainable development and keeping South Africa on a steady course of development based on climate resilience and low-carbon development.

39. In the last decade, South Africa's Government has further streamlined its institutional framework to cope with climate change as an integral part of its development strategy. One of the key initiatives to reduce carbon emissions is using renewable energy sources for electricity generation, and there is a visible trend in investment in clean and renewable technologies by both domestic businesses and financial sectors. The project objectives demonstrate that it is relevant and an opportune move to build on to this positive trend of endeavours across sectors and businesses in South Africa.

40. **NDB General Strategy, Articles of Agreement, and Policies:** The project was approved by NDB's BoD in July 2018. Its objectives are aligned with NDB's commitment to supporting member countries' shift to a more sustainable energy pathway, as articulated in the Bank's first General Strategy for 2017–2021, through "structural transformation of the energy sector, in particular by promoting emerging renewable technologies." The project also aligns with the United Nations SDGs, particularly SDG7 (Ensure access to affordable, reliable, sustainable, and modern energy for all) and SDG13 (Take urgent action to combat climate change and its impacts).

41. Similarly, the project's objectives generally fit well with NDB's purpose and functions expressed in Article 1 of the Bank's Articles of Agreement as adopted in 2014, which notes that "*The Bank shall mobilise resources for infrastructure and sustainable development projects in BRICS and other emerging economies and developing countries, complementing the existing efforts of multilateral and regional financial institutions for global growth and development. To fulfill its purpose, the Bank shall support public or private projects through loans, guarantees, equity participation, and other financial instruments. It shall also cooperate with international organisations and other financial entities and provide technical assistance for projects to be supported by the Bank*". On the latter, NDB provided no technical assistance during the project's design or implementation.

42. In accordance with the NDB Environment and Social Framework (ESF), the project has been categorised as 'FI' as NDB provided funding through a Financial Intermediary (FI), DBSA. Considering the nature of renewable energy technologies, E&S impacts were expected to be minimal at the project design stage. Nonetheless, the loan agreement did provide NDB the right

to review the E&S categorisation of sub-projects funded by DBSA, especially if a sub-project is classified as Category A, based on the ESF, NDB's pre-approval would have been required. This did not turn out to be an issue, as all 15 sub-projects were classified as Category B, according to the ESF.

43. As per the Policy on Loans without Sovereign Guarantee to National Financial Intermediaries and NDB's Procurement Policy, the borrower managed the project's procurement supervision. DBSA conducted implementation monitoring mainly through the Lender Technical Advisors. The latter was appointed for the various sub-loans to link DBSA's on-lending disbursements to actual sub-project progress on site and ensure sub-borrowers' compliance with mandatory requirements of domestic legislation. The evaluation noted that although all sub-borrowers were from the private sector (which normally follows commercially acceptable procurement methods rather than formal competitive tendering), the REIPPPP had a strong oversight process to ensure that a certain percentage of total project value was spent in South Africa, to achieve positive socio-economic outcomes by boosting local manufacturing in a sector that is generally underdeveloped in the country.

44. The PDB mentions that supporting renewable energy through this project is in line with NDB's first General Strategy (which states that "*NDB supports the shift to a more sustainable energy path through structural transformation of the energy sector, in particular by promoting emerging renewable technologies*"). However, IEO is not in a position to comprehensively assess the relevance of project goals with the Bank's specific strategic objectives and priorities in the country, given the absence of an NDB country strategy for South Africa.

45. It is also not possible to determine whether the Bank and relevant in-country stakeholders had explicitly explored alternative options for NDB financing and why this particular project (financing REIPPPP BWs 3.5 and 4 awarded IPPs via a USD-dominated on-lending arrangement) was considered a priority for the sector at that point in time, based on the following reasons:

    - While the project mainly supported matured technologies (i.e., 13 of the 15 sub-projects are Solar PV and On-Shore Wind plants), NDB's first General Strategy emphasised the adoption of innovative and emerging new technologies, such as "energy storage systems, adaptable smart electricity grids, and solid-waste-based energy generation." Due to the lack of a dedicated country and sector strategy to guide the project design, the project documents did not assess why the competitive and matured technologies being funded (selected through REIPPPP BWs 3.5 and 4) from July 2018 were prioritised over other options for South Africa;

    - Other strategic important areas highlighted by the first General Strategy for financing clean energy, such as "upgrade of existing power plants, an overhaul of electricity grids and energy-efficient building techniques distributed solar energy generation, etc.", were neither assessed nor discussed in the project documents; and

    - The project's development objectives, as defined in the PDB, are comparatively narrow and did not incorporate social criteria in its design and implementation. NDB's first General Strategy 2017-2021 required a longer-term and broader assessment of the economic and social impacts of the sustainable infrastructure financed by the Bank. It also advocated that an appropriately designed project would be a critical enabler of economic development and job creation, promoting inclusive growth to help mitigate economic inequality. However, none of this is explicitly recognised in the PDB.

Relevance of Project Design

46. **Institutional Framework for Implementation:** Although relatively concentrated on Solar PV and Wind, the cluster of four (4) different renewable energy technologies financed through the project reflects a sound alignment with the Republic of South Africa Government's endeavour to achieve a healthy mix of energy sources for the industrial, manufacturing sectors, domestic households, and consumers.

47. The institutional framework available through the well-established REIPPPP was suitable as the operating mechanism for financing private sector IPPs with a proper safeguard in South Africa. The project's overall implementation agency and borrower, DBSA, was established in 1983 and is a Development Financial Intermediary 100% owned by the South African Government (acting through the National Treasury) with a sharp focus on infrastructure development in countries within the Southern African Development Community. Furthermore, DBSA has been instrumental in the REIPPPP's success by providing around 13% of the debt financing together with another NFI (the Industrial Development Corporation, IDC) until the BW 4.[22] In addition to being an active player in funding renewable energy projects in South Africa, DBSA is also a key sponsor of establishing and refining the REIPPPP. An assessment of DBSA was conducted in the Project Design Report, which covered key perspectives such as corporate governance, operational and financial performance, organisational structure, treasury, risk management framework, and its development work conducted in the country.

48. **Promote Socio-economic Benefits for the Local Population:** The project's relevance at the local community level was enhanced as it had benefited from the REIPPPP's mandatory requirement for socio-economic inclusion, despite this being neither included in the Bank's Project Design Paper nor covered by the PPR and NDB Project Performance Assessment reports. Although the development impact indicators such as job creation and social benefits were not included in the Project's DMF, the evaluation confirmed that all sub-projects had set clear Economic Development Objectives before being funded: as part of the REIPPPP's bidding process, all sub-projects had committed with the IPP Office to facilitate and expedite local job creation, community development, and Black commercial interests, as well as promote growth in emerging and smaller enterprises for inclusive growth within the energy sector. The IPP office has periodically monitored the progress of delivering these socio-economic commitments. Economic and social benefits for less developed areas are delivered by supporting community development initiatives to improve the living standards of economically disadvantaged and marginal populations in South Africa, which matches with NDB's advocacy on 'social inclusion' for reducing inequalities.

49. The project concretely applied the 'Public-Private Partnership' mechanism, which bodes well for NDB's advocacy of public-private parnterships.[23] The trilateral initiative under the stewardship of DMRE and the IPP office as government agencies, DBSA as a national financial institution, and private sector sponsors/ developers of sub-projects working together in sustainable infrastructure projects fit very well with the public-private partnership modality, and the project provides a good example of using a member country's system to achieve development goals.

50. In general, the goals and objectives of the project design mainly focused on increasing electricity generation capacity (outputs). However, it did not have a theory of change for linking increased capacity to improved impact on livelihoods in the areas of sub-projects. The project's DMF was inadequate, with narrow targets that were limited to infrastructure construction for the intended purposes (in this case, electricity generated by renewable energies). The design did not proactively include specific components and initiatives for social development in the project area to improve local communities' well-being, and therefore, the DMF did not include any corresponding indicators/targets. The evaluation believes the DMF did not reflect available good practices in the development industry at the time; for instance, it did not include baseline values - which are important to know the situation at the project's outset, facilitating ex-post evaluation of results.

51. In addition to the above limitations and the absence of an NDB country strategy for South Africa, other areas were not adequately discussed in the Project Design Paper:

22 The South African Renewable Energy IPP Procurement Programme: Review, Lessons Learned & Proposals to Reduce Transaction Costs, by Anton Eberhard and Raine Naude.

23 "Public-private partnerships could become another important instrument for the Bank to leverage resources of the private sector and increase its participation in major infrastructure projects." - Page 14 of NDB's General Strategy 2017 – 2021.

- Load-shedding has been an ongoing challenge, entailing widespread national blackouts of electricity supply. This began in late 2007 and continues to the present, despite a reprieve for some years. The PDB did not sufficiently assess how the project and sub-project selection will support the Government in relieving the national energy crisis effectively and sustainably;

- Lack of a review of other international financial institutions and peer MDB interventions and lessons learned in the energy sector. The evaluation understands that the South African REIPPPP was mainly facilitated by a well-developed local financial and sophisticated domestic banking sector.[24] Therefore, peer MDBs have very limited participation in financing the REIPPPP projects after BW 3 and focus on other sectoral strategic areas such as storage and dispatchable facilities, grid connections and transmission capacity for South Africa, etc.;

- The PDB did not clearly assess why the project needed to be financed in USD from NDB through a two-steps loan with DBSA, considering that: (i) all sub-loans on-lent by DBSA to sub-borrowers were in ZAR, which is also the major currency acknowledged by REIPPPP for funding renewables; (ii) South Africa has a highly sophisticated banking sector: until BW 4, seven local financial institutions (including the five largest commercial banks, DBSA and the IDC) had successfully contributed 81% of the debt financing to REIPPPP projects; (iii) DBSA has been an instrumental and active fundraiser in South African capital market with a robust and effective bond programme of ZAR 80 billion; and (iv) ZAR has been significantly depreciated against the USD with large foreign exchange risks to manage.[25]

52. Although the PDB indicated that DBSA financing mandate extends throughout the African region, where there is a need for foreign currency (USD) funding, this project only allows DBSA to on-lend for renewables in South Africa - which only generates revenues in ZAR. The evaluation believes a detailed analysis of how the USD financed by NDB to DBSA for on-lending would specifically catalyse any additional funding is absent, as DBSA might already have other efficient sources for arranging local currency financing to implement the sub-projects identified by it in the BWs 3.5 and 4 of REIPPPP.

53. In addition to the abovementioned points, the PDB was, overall, formulated in a moderately successful manner. This included consultations with key policymakers and pertinent stakeholders such as the borrower, sub-project developer, and the energy sector regulator. Inputs from NDB's internal oversight functions, encompassing Risk, E&S, and Project Procurement aspects, were assimilated into the document. The Project Risk Analysis and Mitigation Measures section assessed the financial and enterprise risks and generically discussed the project's implementation and procurement risks. Nevertheless, the evaluation thinks other important factors like the inherent risk of the renewables, such as the potential low-capacity ratio caused by inadequate solar and wind resources because of climate change as well as the impact of La Niña,[26] should also have been comprehensively assessed at the project design phase.

54. In the PDB, the project preparation team conducted an independent appraisal and due diligence analysis on one example sub-project (On-shore Wind Farm in the Western Cape). However, the Indicative List of Sub-Projects attached in PDB included 11 IPPs utilising three renewable energy technologies. The evaluation believes it would have been better to conduct more detailed assessments to cover at least all renewable energy technologies to be funded by this project, especially for biomass.

55. In conclusion, considering the above analysis, the evaluation assesses **Relevance** as **Moderately Successful (4)**.

24 The South African Renewable Energy IPP Procurement Programme: Review, Lessons Learned and Proposals to Reduce Transaction Costs, by Anton Eberhard and Raine Naude.

25 The exchange rate was ZAR 12.7/USD upon project approval in July 2018, which had depreciated over 55% to ZAR 19.7/USD until the end of May 2023. Before that, ZAR depreciated over 68% from 2010 (ZAR 7.3/USD) to 2018 (ZAR 12.3/USD).

26 La Niña is an oceanic and atmospheric phenomenon that is the colder counterpart of El Niño, as part of the broader El Niño–Southern Oscillation climate pattern. La Niña results in wetter-than-normal conditions in southern Africa from December to February and drier-than-normal conditions over equatorial east Africa over the same period.

Criterion	Rating
Relevance	Moderately Successful (4)

B. Effectiveness

56. Effectiveness is the extent to which the intervention achieved or is expected to achieve its objectives and results, including any differential results across groups. In assessing effectiveness, the evaluation first summarises the main outputs achieved and then assesses the achievement of project objectives.

57. Achievement of Project Outputs: According to the DMF, the NDB loan was to "contribute to a yearly generation of capacity 887 GWh from clean energy sources and a minimum saving of 834,000 tonnes of CO_2 emissions annually, starting from 2022, when the sub-projects are expected to become fully operational." To achieve this outcome, it required that: (i) at least three sub-projects should be funded by DBSA that make use of the NDB loan, and (ii) at least 375 MW of new renewable energy generation capacity should be added through DBSA lending by December 2021.

58. At the time of the evaluation in May 2023, NDB's funds of USD 300 million had been disbursed for the project and fully utilised by DBSA to finance 15 renewable energy sub-projects. The completed 14 sub-projects contribute to the energy generation capacities in 12 local communities of four provinces in South Africa (North West, Northern Cape, Mpumalanga, and Western Cape) with a total capacity of 1,147 MW of renewables.

TABLE 4

Project generation capacity timeline

Put-off period	Number of newly completed sub-projects annually	Newly added generation capacities annually [27]	Acnumulated number of completed sub-projects	Accumulated generation capacities[28]
By the end of 2020	9	768 MW	9	768 MW
By the end of 2021	3	207 MW	12	975 MW
By the end of 2022	2	172 MW	14	1,147 MW

Source: NDB Loan Disbursement Dashboard and Project Performance Assessment

59. The average capacity ratio for the nine Solar PV sub-projects is 31.4%, and for the four Onshore Wind sub-projects is around 42.4%. Considering that South Africa's energy is predominantly dependent on coal, and both wind and solar are zero-emission sources of energy, it is fair to assume every MWh of clean energy produced by wind and solar displaces one MWh of energy in Eskom's grid with an average emission factor of 0.94 kg of CO_2e//KWh (0.94 ton of CO_2/MWh). Accordingly, the completed sub-projects financed by the project are delivering around 3.54 million- MWh (equivalent to 3,540 GWh/ annum) of renewable energy generated in a year, as compared to at least 887 GWh/annum of energy generated from renewable sources expected at design. This saves CO_2 emissions estimated at over three million tonnes per annum in South Africa, compared to 834,000 tonnes annually by 2022.

27 Data in this column is from the sub-projects official websites and PPR.
28 Same as above.

60. The DMF says the project is expected to contribute to SDG7 (Affordable and Clean Energy) and SDG13 (Climate Action). The evaluation believes the project also helps advance other SDGs, such as SDG8 (Decent Work and Economic Growth) and SDG9 (Industry, Innovation, and Infrastructure). While attributing any one project's contribution to the SDGs is a challenging endeavour under all circumstances, there is no assessment or discussion about how the project is accelerating the SDGs in South Africa in any project documentation. Moreover, the evaluation believes it would have been useful for the design to include a theory of change for linking the project's inputs and outputs with outcomes and impacts on the livelihoods of communities in the project area.

61. **Increasing Availability of Long-Term Funds for the Energy Sector Projects:** A key project objective was "to facilitate investments in renewable energy that can contribute to a diverse generation mix in South Africa" and "bring additionality in terms of crowding in private sector financing and increasing availability of long-term funds for the energy sector projects in South Africa." The PDB required the NDB loan to finance no more than 50% of the sub-projects, and the total expected investment should reach no less than USD 600 million.

62. The aggregate investment outlay for all sub-projects approximates ZAR 40 billion (approximately USD 2.5 billion), signifying a magnitude 8.5 times greater than the monetary allocation extended by NDB to DBSA for this endeavour. The most substantial financing provisioning is directed toward a CSP plant, encompassing ZAR 1,325 million (approximately USD 78.7 million), constituting approximately 11.7% of this sub-project's investment costs. Other financial contributions facilitated by DBSA under the purview of this undertaking span from ZAR 37 million to ZAR 1,065 million, comprising a percentage range of 2-39% with respect to the respective sub-projects overall investment outlay.

63. To increase the availability of long-term funds for the Energy Sector Projects, the PDB also required that "sub-loans provided by DBSA shall have a minimum maturity of 10 years". Among the sub-projects, nine were financed by DBSA via lending to a BEE Facility, and the latter used sub-loan proceeds from DBSA to conduct equity investments in these sub-projects as their BEE shareholder. The other six sub-projects were financed by DBSA directly as their senior lender with senior debts. According to the Sub-project Allocation Letters, all sub-loans on-lent by DBSA to the sub-borrowers were long-term funds dominated in ZAR with a minimum maturity of 17 years.

64. **Sub-Projects' Effectiveness of Reducing CO_2 Emissions:** To ensure NDB funds would be utilised effectively and efficiently for achieving the project objectives, the PDB indicated that for sub-projects to be eligible for funding, the "Sub-project shall contribute towards a reduction in CO_2 emissions in South Africa by not less than 90 tonnes per year per ZAR 1 million of sub-project cost". The evaluation recalculated the ratio and confirmed that all sub-projects had exceeded this requirement (e.g., between 95 tonnes to 154 tonnes per year per ZAR 1 million based on the Sub-Project Allocation Letter), apart from a CSP plant (i.e., 43 ton per year per ZAR 1 million) and a Biomass Energy project.

65. **The CSP Sub-project:** The PDB and loan agreement indicated that solar thermal projects are eligible for NDB's funding; however, NDB did not effectively envisage including CSP technology during the appraisal when determining the sub-project selection criteria. Therefore, the threshold of CO_2 reduction (per ZAR 1 million per year) was mainly based on competitive and matured RE technologies of wind and solar PV. As a solar thermal plant with greater dispatchability, the capital cost of this sub-project is much higher and would not be effectively eligible for funding. In April 2022 (one month after the original loan closing date), DBSA formally requested to allocate this CSP sub-project into the project for funding, and the Credit and Investment Committee of NDB waived this eligibility requirement in August 2022. It indicates that the sub-project selection criteria were not determined based on a highly effective appraisal and an adequately comprehensive assessment of the technologies to be funded by this project.

66. **The Biomass Energy Sub-Project:** DBSA's Allocation Letter stated this sub-project expected annual renewable energy output is approximately 197,002 MWh, and accordingly, the expected annual CO_2 emissions avoided is approximately 205,669 tonnes, which implied an average emission factor of 1.04 kg of CO_2e/kWh (1.04 ton of CO_2/MWh). However, the evaluation notes that these figures are not fully in line with the industry practices considering the below evidence:

    a. The sub-project uses biomass recovered from surrounding plantations and screened waste material from the mill production process, and up to 35 tonnes an hour of biomass is burned in a boiler to generate steam and drive a turbine to generate electricity, which is fed into Eskom's national grid;

    b. Some research pointed out that the immediate carbon emissions associated with burning woody biomass might be greater than for burning coal (e.g., immediately emit 150% of the CO_2 of coal and 300 – 400% of the CO_2 of natural gas per unit of energy produced, etc.);[29] and

    c. The sub-project also disclosed that on a kilowatt per hour (KWh)-basis, CO_2 emissions from woody biomass could be higher than those of coal due to wood's lower conversion efficiency – a consequence of the different chemical compositions of biomass and coal. However, the net GHG outcome of using biomass for energy cannot be determined by comparing emissions at the point of combustion.

67. After they began operations, the project implementation documents did not compare the actual outputs and capacity ratio of the sub-projects with the initial design (per their Allocation Letter). A sophisticated assessment of the sub-projects average emission factor (which varied from 0.73 to 1.08 tonnes of CO_2/MWh) and their corresponding annual CO_2 emission reduction was also not conducted in the PPR and PPA. These limitations challenge a comprehensive evaluation of the sub-projects effectiveness in achieving their performance target and eligibility for NDB's funding, which is more evident in the case of the Biomass Energy Sub-Project as discussed above. In summary, the evaluation thinks the sub-project allocations were not processed based on highly effective criteria and a robust mechanism of appraisal in general, which had mainly (or only) considered matured renewal energy technologies of onshore wind and solar PV at the design stage.

68. In sum, despite the limitations noted above, the evaluation believes the Project has met the objectives set at design and exceeded several of the agreed targets. Therefore, IEO rates **Project Effectiveness** as **Successful (5)**.

Criterion	Rating
Project Effectiveness	**Successful (5)**

C. Efficiency

69. Efficiency involves assessing the outcomes, both qualitative and quantitative, in comparison to the resources employed. It signifies optimising resource utilisation to attain desired outcomes while minimising costs. This evaluation employs various proxy indicators to evaluate project efficiency, encompassing aspects such as NDB and DBSA's disbursement performance relative to design commitments, project construction costs compared to initial estimates, adherence to planned implementation schedules, project management expenses in proportion to total investments, and additional relevant factors.

70. **Loan Agreement and Project Management:** As approved by the BoD in July 2018, the loan agreement was expected to be signed by September 1, 2018, and come into effect by September

29 https://wwfcee.org/what-we-do/forest/most-forest-biomass-worse-for-climate-than-fossil-fuels-eu-commission-report

30, 2018. The negotiation of terms and conditions took longer than expected, and the loan agreement was signed on March 15, 2019, with a delay of six months.

71. Some conditions approved in the PDB were revised by NDB in the loan agreement after negotiations with DBSA, including but not limited to the free limit (i.e., USD 40 million [PDB] vs. USD 50 million [Loan Agreement]) and the Economic Internal Rate of Return (EIRR) required for the sub-projects (i.e., 10% [PDB] vs. 8% [Loan Agreement]), etc. Debate on the project's applicable governing law also contributed to delays, and this was eventually changed from "Public International Law" to "English Law," considering that this project is processed as a non-sovereign operation without a sovereign guarantee. However, "Public International Law" was required in the PDB approved by BoD.

72. From December 2019 to April 2023, one amendment to the loan agreement was made each year, and the loan closing date was deferred to January 2024 by the fifth (and latest) amendment.

73. Before the last change was made in April 2023, a late allocation of four sub-projects was submitted by DBSA in April 2022 (i.e., three Solar PV plants and a CSP station). The evaluation noted that three of them had already begun commercial operations two years before, in 2020, and DBSA requested to allocate them to the Project for funding one month after the original loan closing date (i.e., March 14, 2022). While the necessities imposed by COVID-19 offer some justification for the frequent project changes, they revealed that the project design and implementation should be conducted more robustly based on a highly sophisticated assessment of DBSA demand, capacity, pipeline, and the profile of the sub-projects. The loan agreement review and management process should be refined to improve overall project efficiency.

74. **NDB Disbursements and DBSA on-lending:** The project was fully disbursed by NDB to DBSA within 13 months, from May 2019 to June 2020, in four disbursements. 93.5% of the loan (i.e., USD 280.5 million) was disbursed over six months from December 2019 to June 2020. Around 77% of the loan amount, USD 232 million, was disbursed by the "Advance" approach. The "Advance" disbursement allows DBSA to on-lend the advance loan proceeds to sub-projects for which supporting documents will be submitted later by DBSA, leading to fast disbursement achieved by NDB in advance of schedule.

TABLE 5

NDB's disbursement dashboard for the loan to DBSA

No.	Value date	Disbursement method	Amount (USD)	% of loan
1	May 21, 2019	Reimbursement with statement of expenditures	19,443,116	6.5
2	December 20, 2019	Reimbursement with statement of expenditures	48,631,390	16.2
3	December 20, 2019	Advance	51,368,610	17.1
4	June 22, 2020	Advance	180,556,884	60.2
		Total	**300,000,000**	**100**

75. Considering this project includes a two-step loan with an initially approved implementation period of three years, it is fair to review the on-lending activities of the borrower further (in this case, also the project's overall implementation agency). The evaluation noted DBSA on-lending disbursement to the sub-projects started in April 2018:[30] around 16.2% of the loan, USD 48.45 million, was retroactively financed to 14 sub-projects before the sign-off of the loan agreement. DBSA made the last disbursement on April 30, 2023. 20.3% of the NDB funds were on-lent to sub-projects after the original loan closing date (March 2022). Overall, DBSA spent five years (1838 days) to get the project fully disbursed for funding sub-projects identified and allocated by it. This is a relatively long time compared to that envisaged in the original project design.

TABLE 6

Financing breakdowns to sub-projects[31]

Timeline of on-lend disbursement by DBSA (in USD million)									
Sub-Project	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Total**	**% of loan**	**Planned capacity**
On-shore Wind Farm 1	8	20	36	2	1	-	67	22	102
On-shore Wind Farm 2	16	16	16	4	-	-	52	17	147
The BEE Facility	4	17	17	1	-	-	38	13	730
Solar PV Plant - 1	6	17	-	-	-	-	23	8	75
Solar PV Plant - 2	6	7	9	-	-	-	21	7	75
Solar PV Plant - 3	6	6	7	-	-	-	19	6	75
CSP Plant	-	-	-	-	50	29	70	26	100
Total	**46**	**84**	**85**	**7**	**51**	**29**	**300**	**100**	**1,304**

Source: PPR (September 2022) and Statement of Expenditures (Final Reconciliation, Mach 2023)

76. Sub-Project Cost and Implementation Timelines: The PDB required a total expected project investment of no less than USD 600 million. The performance indicator for the expected project output was set at 375 MW of renewable energy sources put into operation in 2022. Before 2023, total investment costs of the 15 sub-projects financed by the NDB loan had reached over ZAR 40 billion (over USD 2 billion), and in total, 1,147 MW capacity had been installed, i.e., nine sub-projects reached commercial operations with 768 MW in 2020, three sub-projects completed with 207 MW in 2021, and two sub-projects with 172 MW connected to Eskom's grid in 2022. Project outputs required by the PDB were delivered on time.

77. Among the 14 completed sub-projects, the largest financing contributed by the NDB loan is for an Onshore Wind Farm in Northern Cape Province, i.e., sub-loans amounting to USD 67.2 million contributed 39% of the sub-project's total investment cost. Nine sub-projects were financed by DBSA via lending to a BEE Facility. The BEE facility used loan proceeds to conduct equity investments in these sub-projects, with a marginal contribution of the total sub-project value/

30 Data and information are based on the Statement of Expenditures (Financial Reconciliation) submitted by DBSA to the NDB Operations team in May 2023. More details are in Figure 1, Loan Disbursement Breakdown, and Figure 2 On-lending Disbursement by Sub-project.
31 Same as above.

cost ranging from 2% to 6%, respectively. Despite COVID-19 bringing tremendous challenges to project implementation, the sub-projects' private sector sponsors and co-investors demonstrated technical competence in managing renewables, familiarity with the requirement of country systems and the licensing process, as well as a trustworthy relationship with DBSA, which gave confidence in the likely level of sub-projects implementation on the ground.

78. The evaluation reviewed the Sub-Project Allocation Letters and noted that the costs budgeted for sub-project management in relation to their total investment costs are, on average, below 8% and in a reasonable range. However, the PPR and annual Project Performance Assessment did not include data and analysis during the implementation.

79. Costs for construction in relation to design estimates (by the developers of sub-projects) are largely consistent, with some additional costs incurred mainly due to the lockdown period during the COVID-19 pandemic. The evaluation did not observe any significant overruns for the completed sub-projects, apart from an increased ZAR 434 million cost for an Onshore Wind Farm in the Western Cape (around 10% of the initial design estimate). The sub-project's original commercial operation date was planned for April 2021, delayed to February 2022. The delay caused additional interest expenses, operating costs during construction, and additional expenses to arrange debt repayments. Nevertheless, it successfully managed to fund the overruns by pre-commissioning revenue, interest earned on drawn funding, and liquidated damages claims.

80. Private sector IPPs developed all sub-projects, so no mandatory procurement procedures specific to project procurement in sovereign operations had to be applied under NDB's Procurement Policy. Nevertheless, the evaluation noted that almost all engineering, procurement, and construction contractors were selected through a comprehensive competitive bidding process among the best global suppliers, which were chosen for their comparatively low levelised cost of electricity[32] that, enabling the sub-project to bid a competitive tariff in the process of the REIPPPP. Additionally, the REIPPPP requires at least 40% of the sub-project investment value should be spent on local content, and all sub-projects have periodically reported their actual procurement performance against their commitment to the IPP office. As a lender to the sub-projects, DBSA also monitored compliance with procurement obligations (mainly through the Lenders Technical Advisor [LTA]).

81. Based on the above findings, the evaluation assesses project **Efficiency** as **Moderately Successful (4)**. Delays and overruns were mainly caused by uncontrollable external factors such as the pandemic, which was unexpected. However, some procedures could be streamlined and improved to enhance the efficiency of project implementation, monitoring and reporting, and loan agreement management processes, which will be further discussed in this report's sections on NDB Performance and Borrower Performance.

Criterion	Rating
Efficiency	**Moderately Successful (4)**

D. Impact

82. Impact is defined as the positive and negative changes a development intervention produces, directly or indirectly, intended or unintended. This involves the main impacts and effects of the activity on the local social, economic, environmental, and other development indicators.

32 Levelised cost of electricity is the cost per KWh of constructing and operating a power plant over a specified life cycle (20 years for this subproject), considering the cost of capital and anticipated capacity factor. Simply put, it is the tariff at which revenues will equal costs, making a return on capital equal to the discount rate.

83. **Improve Energy Reliability:** The average plant availability for the completed 14 sub-projects is over 98% and added 1,147 MW capacity to the grid, supporting South Africa's ambitions of transitioning to a low-carbon economy. By assuming an average annual electricity consumption of 4,703 KWh for a low-income household in South Africa (and middle-income households around 6,983 KWh per year),[33] the power generated by these sub-projects would supply the electricity usage of around 757,585 low-income household (or 510,228 middle-income households) every year across the country.

TABLE 7

Distribution of the sub-projects

Renewable energy technology	Provinces				Number of sub-projects
	Northern Cape	Western Cape	Mpumalanga	North West	
PV	5	-	-	4	**9**
Onshore Wind	3	1	-	-	**4**
CSP with storage	1	-	-	-	**1**
Biomass	-	-	1	-	**1**
Total sub-projects	**9**	**1**	**1**	**4**	**15**

Source: PPR and PPA Report (September 2022)

84. It is worth mentioning that the four onshore wind sub-projects are particularly instrumental during the evening peak, where they help prevent worsened load-shedding during South Africa's National Energy Crisis. The REIPPPP projects, with a total installed renewable capacity of 6,200 MW, including 1,147 MW delivered by this project (which contributes to an estimated 165 MW of energy during the evening peak by assuming an average 33% capacity factor), saved Eskom from having to implement at least one stage of rotational blackouts during the evening peak. By the end of 2023, the CSP sub-project, with a molten salt storage facility, will contribute favourably to this figure.

85. **Emission Reductions:** The completed 14 sub-projects deliver around 3.5 million MWh of generated renewable energy annually. By assuming every MWh of energy produced displaces one MWh of energy in Eskom's grid with an average emission factor of about 0.94 kg of CO_2e/KWh, the project is estimated to save South African CO_2 emissions of over three million tonnes per annum (excluding the Biomass Energy sub-project).

86. **Adverse Impacts:** By interviewing various stakeholders and reviewing the LTA and Environmental Control Officer reports, the evaluation noted that various measures were taken to effectively mitigate the impact of civil works on the local environment. All sub-project sponsors had appointed Independent Environmental Assessment Practitioners when participating in the bidding process of REIPPPP. The sub-projects hired experienced environment specialists as their independent environmental control officers to ensure compliance with the requirements of the country system (such as Environmental Authorisation, Environmental Management Plan, and other permits).

33 The annual average household electricity consumption data is from a research paper published by the University of Cape Town on May 31, 2021, titled as "Residential Electricity Consumption in South Africa Research Project Report".

87. Monthly reporting to the authorities took place, and limited adverse environmental impacts during construction and commercial operations were identified, which included: (i) potential alteration and loss of natural habitats, (ii) soil erosion due to removal of vegetation, (iii) poor waste management by ECP contractors, and (vi) potential loss of wildlife species, particularly avifauna and bats. It appears that these impacts were either temporary or have been closely followed up and effectively mitigated by various measures such as the installation of bird diverters on the powerlines, contruction of biodiversity corridors/critter paths within the fence line of sub-project site, post-construction monitoring via bat acoustic recorders, and on-site employee training and progress evaluation conducted by independent environment specialists, etc.

88. Social Benefits Impact: The NDB project design nor implementation covered social and economic development perspectives, even though the REIPPPP has a distinguishing feature to incentivise the promotion of job growth, domestic industrialisation, community development, and BEE. Data was not collected in the PPR or NDB Project Performance Assessment reports to track the sub-projects' economic internal rates of return and quantified social benefits during their implementation or after they began commercial operations. The PDB paid no attention to women's job access. There were no targets or gender-specific goals for the project in the design paper, and the breakdown of jobs created for women was not recorded in either the PPR or the NDB PPA reports. No attention was explicitly given to reducing inequality in the project documents.

89. Nevertheless, benefiting from the robust institutional framework of the REIPPPP, the evaluation noted that for all sub-projects, at least 2.5% of their shareholding is owned by local communities through respective community trusts, and over 12% of their on-site employees are South African citizens from local communities. For the nine Solar PV sub-projects, over 45% of their total investment costs (above USD 376 million) were spent on procuring local content. For the other six sub-projects, the local content expenditures are also above 40% (over USD 691 million). The project has promoted local participation and brought together a coalition of interests to shift South Africa towards a lower-carbon-intensive economy, as well as promote job creation and industrial development. However, the evaluation noticed that some jobs created were temporary or mainly during the construction of sub-project sites.

90. Additionally, the REIPPPP requires IPPs to allocate a portion of their anticipated earnings throughout the 20-year duration of their operational project towards initiatives that promote socio-economic development (SED) and enterprise development, and the minimum requirement for SED contributions is 1% of revenue. The evaluation noted on average, around 2% of the completed sub-projects annual revenue has been spent on such programmes in favour of local communities since they began commercial operations (i.e., fund improvements in healthcare, infrastructure, and education, etc.), which is double of the minimum compliance threshold.

91. Overall, the evaluation believes the project's impact is very encouraging based on the immediate deliverables. However, as with other renewable energy IPPs developed in the country, the project's long-term impacts face some uncertainties, including but not limited to lower solar and wind resources (than estimates) due to the impact of climate change, the frequency and voltage instability and mismatch between energy and capacity caused by penetration of renewables (especially solar during the day), the ongoing deprecation of ZAR and price inflation, etc., which need to be further thoroughly reviewed in the Project Completion Report. Nevertheless, project **Impact** is rated as **Successful (5)**.

Criterion	Rating
Impact	Successful (5)

E. Sustainability

92. Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after funding provided by the development agency has been withdrawn. Projects need to be financially as well as environmentally sustainable.

93. Economically Viable and Financially Sustainable: The evaluation confirmed that all 15 sub-projects selected by DBSA for this project had been awarded as Preferred Bidders in BWs 3.5 and 4 of the REIPPPP, and had entered non-negotiable, ZAR denominated 20-year PPAs with Eskom, with their bid tariff prices escalated annually with the Consumer Price Index rate.[34] All the PPAs are supported by an Implementation Agreement between the sub-projects and the South African Government (DMRE), which, along with a Government Framework Support Agreement, effectively guarantees Eskom's payments to the sub-projects over the entire lifespan of their PPAs.

94. Although a sovereign guarantee underpins the PPAs, the most striking outcome of REIPPPP has been the decline in average energy prices over time. For the completed 14 sub-projects, their bid price awarded in BW 4 had almost reached grid parity with Eskom tariffs (i.e., Solar PV average tariff between ZAR 79 to ZAR 85 c/ KWh, and Wind average tariff between ZAR 62 to ZAR 72 c/ KWh). Nevertheless, renewable energy technology costs have declined, which means that the lower bid prices might still achieve a sustainable rate of return on the project. This is mainly contributed by the declining international price for RE equipment (due to excess supply by 2020 globally), although it has been partly offset by the significant depreciation of the ZAR since 2018, which makes equipment imports, such as wind turbines, more costly.

95. During the sub-project selection and allocation process, DBSA had some capacity issues in assessing their EIRR, and NDB assisted them in using financial models developed by the sub-borrower's financial advisors. The evaluation reviewed Sub-Project Allocation Letters submitted by DBSA and confirmed all EIRRs were above the hurdle rate of 8% set in the Loan Agreement, i.e., ranging from 12% to 20%. The sub-projects FIRR during selection ranged from 11.2% to 14.5%. These values were also higher than their corresponding weighted average cost of capital, ranging from 8.4% to 12.8%, affirming their economic viability during the project design phase.

96. However, the PPR and Project Performance Assessment did not collect data to track sub-projects' EIRR and FIRR at different stages. Nevertheless, the evaluation understands that the main factor affecting the sub-projects, financial performance is their annual power generation, which has been closely monitored by their on-site operators and co-investors against P50 estimates. Despite lower solar and wind resources reported at various sites in previous years, largely because of climate change as well as the impact of La Niña, the situation is expected to change in 2023. For the sites visited, the number of full-time staff employed is modest, and the operating expenses are stable. DBSA and sub-projects' co-investors indicated that all completed IPPs had received timely payments from Eskom, including the curtailment charges, with positive operating cashflows since they began commercial operations.

97. Environmentally Sustainable: The project's main environmental benefit has been its contribution to reduced CO_2 emissions across the country. All sub-projects selected by DBSA were assessed as Category B with respect to environment and social impact according to the NDB ESF.

98. NDB comprehensively assessed the DBSA E&S management system adopted for the project, which includes: (i) pre-deal E&S appraisal of each new sub-project comprising E&S categorisation by using NDB ESF, review of the sub-project technical and permitting documentation to ensure that relevant E&S studies and management plans have been prepared, and applicable E&S approvals and permits have been secured; and (ii) post-deal E&S supervision executed mainly by

34 A fixed rate has been set per the PPA, and for the BW4 projects, it has been stipulated as 5.7%.

professional LTAs appointed for each sub-project. The evaluation observed that the scope of work under the LTAs encompasses monitoring sub-project adherence to the country's E&S systems and the Equator Principles, a task that has been periodically carried out. Close monitoring of action plans addressing identified concerns has been maintained. While certain issues regarding the end-of-life cycle of power plants remain unresolved, such as the recycling of solar panels and wind energy blades, environmental sustainability has not been significantly compromised according to the evaluation's findings.

99. **Technology and Operational Sustainability:** Research has revealed that for renewable energy projects, in general, the annual Operations & Maintenance (O&M) costs account for 20-25% or more of the projects' levelised cost of electricity. The REIPPPP has succeeded in generating interest from experienced local, regional, and international project developers such as Scatec, and sophisticated engineering/consulting firms are appointed as O&M managers of the sub-projects like Siemens Wind Power for the wind turbine generators. The evaluation noted that the tariff charged by sub-projects with Eskom per the PPA would likely allow them to recuperate all costs incurred in generating the power over their project life.

100. In conclusion, the revenue and pricing structure of electricity under renewable sources, the sovereign guarantee underpinned for off-takers power purchase, the shortage of electricity supply, and the technology and skill availability ensure the economic and financial sustainability of the IPPs funded by the project. Additionally, the legal and institutional framework facilitated by the public sector, the enabling support for renewable power generation, the vibrant private sector interest in the renewable sector, and the social empowerment and development dimension all provide an assurance of institutional, environmental, and social sustainability for the Project as well as the IPPs being funded. Though the project design did not have an explicit exit strategy and considering the few issues identified above, the **Sustainability** prospects are considered **Successful (5)**.

Criterion	Rating
Sustainability	Successful (5)

F. Overall Project Outcomes and Performance

101. Table 8 below provides a summary assessment of project performance ratings, including a rating of the composite indicator on "Overall project achievement." The composite indicator is not rated based on a mathematical average of the various ratings but is based on IEO's holistic judgement of the project's success and challenges faced. **Overall Project Achievement** is considered - with some areas for improvement.

TABLE 8

Summary of evaluation ratings

Criterion	IEO rating
Relevance	Moderately Successful (4)
Effectiveness	Successful (5)
Efficiency	Moderately Successful (4)
Impact	Successful (5)
Sustainability	Successful (5)
Overall Project Achievement	Successful (5)

V. OTHER EVALUATION CRITERIA

A. NDB Performance

102. The assessment of NDB's performance covers numerous aspects, including the project design process, its involvement in project supervision, implementation support and monitoring, knowledge management, and others.

103. Project Design and Strategic Performance of NDB: The PDB revealed that the project preparation team had consulted key stakeholders during the appraisal process, including government agencies, regulatory authorities, and energy associations. The Project Design has reviewed South Africa's strategic imperatives on climate change and the REIPPPP. A good analysis of DBSA as the borrower and NFI has been conducted. However, DBSA Johannesburg Stock Exchange-listed Domestic Medium-Term Note Programme (with a total size of ZAR 80 billion) as part of its existing robust local currency financing mechanism to support the REIPPPP projects had not been thoroughly discussed in the PDB.

104. A clear rationale for the development problem the project will address has been included in the project design paper. However, no assessment or discussion exists about how the project is accelerating the SDGs in South Africa in any project documentation. The evaluation believes it would have been appropriate for the project to have been designed based on a robust and explicit theory of change, as mentioned before.

105. The evaluation noted that NDB does not have a country strategy for South Africa nor a sector diagnostic report. Therefore, while the project objectives are generally appropriate, there are weaknesses that the evaluation highlighted earlier in the section on Relevance.

106. Operational Performance: As a two-step loan, the monitoring and supervision activities on the sub-project level were mainly conducted by DBSA together with other co-lenders through the LTA. NDB prepared annual Project Performance Assessments based on the PPRs submitted by DBSA after incorporating inputs from NDB ESG, Procurement, and FBA (Loan Back Office) teams. In addition to the desk-based reviews, NDB conducted supervision missions to four completed sub-project sites and attended one sub-project COD event in 2022 after the COVID-19 pandemic. The evaluation noted that implementation support and supervision was initially conducted from NDB headquarters and then were handed over to the ARC in 2020 with a project manager based in Johannesburg, under the supervision of the Director-General ARC. The decentralisation of project monitoring and supervision process has effectively enhanced the implementation efficiency and quality from 2021.

107. The project has undergone frequent changes, particularly one amendment to the loan agreement each year from December 2019 to April 2023. While the necessities imposed by the pandemic offer some justification for the revisions, the evaluation believes the Project Design should have been more robust based on a sophisticated assessment of the client's demand, capacity, and process. DBSA and some NDB internal stakeholders also noted that the loan agreement was drafted in an over-complicated (and obscure) fashion and some terms are neither practical nor straightforward to interpret for a "vanilla" on-lending operation, which had added further challenges to a very smooth implementation for both NDB and DBSA.

108. Additionally, although NDB had fully disbursed the project to DBSA in June 2020, IEO noted that as of April 2023, only the two reimbursement disbursements (around USD 68 million) had been fully allocated to sub-projects in the NDB Loan Management System. The delay is mainly caused by frequent amendments to the loan agreement and quality issues of project implementation documents (such as multiple discrepancies noted in the periodical reconciliations, reporting of usage for advance disbursement, sub-project allocation letters, etc.).

109. Knowledge Management, Outreach, and Visibility: NDB's first General Strategy (2017 to 2021) and policies lacked explicit objectives and activities related to knowledge management. Nevertheless, it noted that "NDB will engage in partnerships to strengthen its capacity in research, knowledge-dissemination, and technical assistance." The evaluation noted that the Bank did not develop specific documents, brochures, videos, or other promotional activities, nor organised events to showcase the project and the Bank's role during implementation. The sub-projects produced several websites, documents, and videos to enhance its visibility, raise awareness, and share lessons learned. In general, it is fair to conclude that NDB's visibility in the project areas is minimal, and NDB should make more effective efforts to share lessons and good practices from this relatively successful non-sovereign operation within and beyond South Africa.

110. As a two-step loan, NDB's relationship in this project was mainly with DBSA. The evaluation hardly observed partnerships and outreach activities with key stakeholders during the implementation. Sub-borrowers, sub-project operators, and local municipal managers interviewed by the evaluation stated that they only became aware of the participation of NDB in this operation during IEO's mission. The Bank's dialogues with other development partners in South Africa, such as the African Development Bank Group, International Finance Corporation, and European Investment Bank, on lessons learned and experience in the energy sector as well as related themes, were not adequate.

111. Nevertheless, considering that this Project was: (i) approved in July 2018 when most NDB policies and guidelines were still being put in place; and (ii) the first non-sovereign operation fully disbursed by the Bank in South Africa, the evaluation assesses **NDB Performance** as **Moderately Successful (4)**.

Criterion	Rating
NDB Performance	**Moderately Successful (4)**
Strategic Performance	*Moderately Successful (4)*
Operational Performance	*Moderately Successful (4)*

B. Borrower Performance

113. As one of the sponsors of REIPPPP, DBSA has substantial experience in developing, financing and managing renewable energy projects with IPP developers from the private sector. The commitment and ownership demonstrated by it and the sub-borrowers' of this relatively diversified portfolio of 15 renewable energy infrastructures was a critical factor to the project's success. This was complemented by effective coordination between DBSA (the borrower and project implementing agency), the sub-project developers, and other co-investors/co-lenders.

114. International rating agencies downgraded DBSA during project implementation in 2020, mainly caused by a challenging external environment worsened by the outbreak of the COVID-19 pandemic. Despite this, DBSA demonstrated strong financial resilience with a low leverage ratio and high capitalisation level. Its policy framework, including due diligence process and risk management, appears to be sound and efficient in managing operational costs. Sub-project managers have strong technical competence and maintain a trustworthy relationship with DBSA, ensuring a confident level of project implementation efficiency.

115. The confidentiality agreements between DBSA and sub-borrowers brought some challenges in sharing sub-project proprietary information with NDB for supervision. However, DBSA managed to submit PPRs annually (with output data) and other required documents to facilitate NDB monitoring activities and largely within required timelines.

116. The evaluation noted multiple discrepancies in the periodic reconciliations, reporting of

usage for "Advance" disbursement, and sub-project allocation letters submitted by DBSA to NDB. And it is fair to conclude that the quality of some project implementation documents is generally inadequate compared with the requirement of loan agreements (and amendments). The evaluation asserts that the level of familiarity and training regarding NDB's reporting requirement provided to the DBSA project/ loan management team was inadequate, attributed to the absence of substantial capacity building in this domain. Furthermore, it was observed that DBSA had allocated limited resources for the management of this project. Moreover, frequent amendments to the loan agreement added extra difficulties to the project's implementation. The four sub-projects late allocation in April 2022 also indicated that the DBSA project management process and communication with NDB need to be further improved.

117. Despite the above-mentioned operational issues, the overall result and timeliness of the project's deliverables were strong evidence of a well-implemented intervention. The project has generated positive economic, environmental, and social benefits to South Africa for over three years since the first sub-project began commercial operation in April 2020. The overall **performance of DBSA** is rated as **Successful (5)**.

Criterion	Rating
Borrower (DBSA) Performance	**Successful (5)**

C. NDB Additionality

118. NDB provided some financial additionality by funding this project but very limited technical, capacity, and knowledge additionality. While NDB provided USD 300 million towards renewable energy, it is evident that before 2018 DBSA already had a strong pipeline of projects at the financial close of the REIPPPP BWs 3.5 and 4. Given the financial strength of DBSA and its robust (also effective) fundraising programme for ZAR 80 billion,[35] it is fair to assume that all sub-projects would probably have been implemented without NDB's USD funding.

119. Therefore, the evaluation believes the PDB did not thoroughly discuss (i) why the sub-projects identified by DBSA through REIPPPP needed to be financed by NDB via a USD-dominated on-lending operation; (ii) what would be the specific financial additionality offered by NDB's hard currency funding to the sub-projects selected by DBSA, and what is the rationale to support this proposed financial additionality; and (iii) what might be the cost for DBSA to manage the foreign exchange exposures by borrowing USD[36] from NDB on this project.

120. Nevertheless, NDB supported DBSA with low-cost funding in hard currency borrowing, long-term tenure, and an attractive grace period. Most importantly, NDB demonstrated adequate flexibility during the implementation, especially when COVID-19 heavily impacted South Africa and international rating agencies downgraded. For e.g., 77% of the loan (USD 232 million) was disbursed as "Advance" to DBSA from December 2019 to June 2020, recognised by DBSA as an important additional benefit, especially during this challenging time. However, the process of reporting and allocating the disbursed funds to sub-projects (as required by the loan agreement and amendments) is generally weak. On the one hand, training in NDB's reporting requirements was very limited due to the lack of capacity-building exercises to bring in any technical additionality. However, on the other hand, NDB's reporting template and process are neither fully customised nor highly streamlined based on the modality of on-lending operations.

35 DBSA domestic bonds / commercial paper are issued under the Johannesburg Stock Exchange listed Domestic Medium-Term Note (DMTN) Programme with a total size of ZAR 80 billion: https://www.dbsa.org/sites/default/files/media/documents/2021-02/Programme%20Memorandum%20-DBSA%20DMT%20Programme.pdf

36 The exchange rate was ZAR 12.7/ USD upon project approval in July 2018, which had depreciated over 55% to ZAR 19.7/ USD until the end of May 2023.

121. Additionally, the evaluation believes that insufficient attention has been devoted to sub-project capacity building on developing their social and economic development annual plan and distilling lessons learned from the project's experience. Non-lending activities that NDB can bring more additionalities are not defined.

122. The evaluation noted that the use of country systems in ESG, as well as procurement practices, is a defining feature of NDB's operational approach, and the Bank's first General Strategy (2017-2021) indicated that NDB's policies are directed toward the goal of not only using but also strengthening country systems. However, periodic in-depth reviews to identify areas in the systems of South Africa's renewable energy sector that could be bolstered by NDB (including procurement of local content, social economic development target, job creation for marginalised groups, and other ESG-related perspectives, etc.) have been hardly conducted on this Project so far, which is a missed opportunity for NDB to: (i) draw on the good practices of South Africa's REIPPPP to enrich its understanding of national standards; and (ii) share recent global good practice with South Africa (and other member countries) with a view to strengthening local frameworks and implementation capacity. This is relevant, given: (i) that South Africa's REIPPPP offers valuable lessons for other developing countries in terms of designing and running competitive tenders for grid-connected renewable energy IPPs; and (ii) the relative success of this on-lending operation.

123. In summary, the evaluation rates **NDB Additionality** as **Moderately Unsatisfactory (3)** in this project.

Criterion	Rating
NDB Additionality	Moderately Unsatisfactory (3)

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

124. **Overall, the project stands out as a generally successful joint initiative of DBSA, NDB, and the government agencies of South Africa.** So far, the project has demonstrated successful results and is positively contributing to South Africa's national strategy of expanding power generation by renewable energies, reducing carbon emissions, and enhancing the reliability of electric supply to industry and the population. The project has financed 15 renewable energy plants with a total installed capacity for energy generation of 1,147 MW across the country. As a result of this project and funding contributed by other co-investors/lenders of the sub-projects, CO_2 emission reductions are estimated to be over three million tonnes per annum, contributing to the country's NDC target for carbon emission reduction. At the same time, the Project Design did not proactively leverage the REIPPPP to maximise NDB impact on social and economic development and reduce inequality. It is a missed opportunity, given that the REIPPPP has a distinguishing feature to promote job growth, domestic industrialisation, community development, and BEE. And activities related to knowledge management, outreach, and communication of lessons were rather limited.

125. **The evaluation considers that the objectives of the project have been generally accomplished and the outputs delivered as planned.** The project satisfactorily delivered the outputs within a reasonable time frame, although it faced some initial delays and unexpected challenges brought about by the outbreak of the COVID-19 pandemic in 2020. The relatively smooth implementation was mainly due to DBSA's strong financial standing and discipline as an NFI wholly owned by the South African Government, its long and rich experience in the renewable energy sector, the robust mechanism of REIPPPP, and strong M&E processes of the IPP offices, as well as the availability of a mature pipeline of sub-projects with preselected private sector co-investors. The ARC proactively engaged with the executing agency during implementation, and South Africa's National Treasury provided important broader support and oversight for the initiative.

126. **However, there were noticeable time delays between project approval and the signing of the loan agreement, and multiple amendments were frequently made to the loan agreement during implementation.** This can partly be attributed to "teething troubles" as the two main parties (NDB and DBSA) were venturing into a new relationship. Given that this was the first NDB non-sovereign operation fully disbursed in South Africa, gaps in the project's design, appraisal, loan agreement management, and implementation process are understandable. Nevertheless, despite staffing constraints, once the project responsibility was transferred from NDB headquarters to the ARC, the latter made good efforts in M&E and, together with DBSA, made the required efforts to ensure the operation would be implemented appropriately.

127. **The lack of an NDB country strategy to guide the South Africa-NDB partnership was and continues to remain a constraint.** Though the project's goals were aligned with the strategic priorities of the South African Government in general, NDB's decision to finance the operation may be considered opportunistic rather than a strategic choice. This is because, unlike most peer organisations, NDB does not have a Country Strategy to guide its investment decisions and priorities in member countries, including South Africa, which continues to be the case. The lack of a country strategy, inter-alia, has limited the opportunities for building synergies between this and other NDB-financed operations in South Africa for deeper results on economic and social development, as well as restricting the possibility of scaling up lessons and good practices across the portfolio in the country.

128. **The project outputs and the benefits delivered so far demonstrate good prospects for sustainability, though the project's long-term impacts face some uncertainties.** The institutional strength of DBSA, the technical and operational capacity of the sub-project

private sector implementing agencies, and the fixed-term (20 years) PPA underpinned by a sovereign guarantee provide reasonable assurances for sustainability. Nevertheless, lower solar and wind resources due to climate change and other emerging matters, which might impact the project's long-term impacts, need to be thoroughly reviewed during the eventual preparation of the Project Completion Report.

129. **The project is a good example of the use of country systems as a way to achieve long-term development results.** Since all the 15 sub-projects were implemented within the broader framework of South Africa's REIPPPP, the project could leverage the well-established country systems for project procurement, E&S safeguards, and robust M&E by the IPP office. Furthermore, the REIPPPP proactively directs project procurement expenditure towards the local content and priority groups of black people, women, and small and emerging enterprises and seeks to direct funding towards projects that have a positive socio-economic impact. Although the project's design paper and implementation documents did not define its additionality and contributions to social development, reduction in inequality, and related aspects, to a certain extent, this gap had been substantially compensated by the robust framework and mandatory requirements of the REIPPPP, within which the project was broadly anchored. However, according to IEO, this was more of a coincidence than a deliberate choice.

130. **In-depth and systemic reviews were hardly conducted during project implementation to identify areas within South Africa's energy sector and REIPPPP that NDB could bolster,** including procurement of local content, social and economic development target, and job creation for marginalised groups. This is a missed opportunity, given the relative success of this operation. Based on the experience, the evaluation believes the interactions between the operation and the REIPPPP offer valuable lessons for other developing countries in designing and running competitive tenders for grid-connected renewable energy IPPs.

131. **The project created a good foundation for a strong relationship with DBSA.** The latter is an important player in social and economic development in South Africa. This first Non-Sovereign Operation fully disbursed by NDB in South Africa provided the Bank with an opportunity to develop a solid relationship and dialogue with DBSA in general and to learn from its approaches and lessons. On NDB's side, it demonstrated adequate flexibility in project implementation, bringing some financial additionality to DBSA during the challenging times of 2020 onwards, especially in light of the advent of the COVID-19 pandemic. This initial partnership has resulted in a new and similar project financed by NDB, with a further loan of USD 100 million to DBSA for renewable energy and sustainable digital and social infrastructure in South Africa.

132. **Despite the aforementioned, there was no analysis of how the loan in USD financed by NDB to DBSA for on-lending would specifically catalyse additional funding.** DBSA might already have had other sources for local currency financing to implement all the sub-projects within this operation. Without the aforementioned analysis, it is difficult to assess why the sub-projects identified by DBSA through REIPPPP, which mainly required ZAR funding, needed to be financed by NDB via a USD-dominated on-lending operation. Given the financial strength of DBSA, its robust fundraising programme (of ZAR 80 billion), and the on-going depreciation of the ZAR, the evaluation believes specific financial additionality provided by NDB USD funding to the sub-projects (selected and on-lent by DBSA) was not adequate.

133. **The project design did not focus on social inclusion and the generation of economic benefits for poor communities in the project areas.** Social inclusion and gender-related aspects were considered important by all stakeholders, and the renewable energy activities within the REIPPPP framework are mandatory to include dimensions of job growth, domestic industrialisation, community development, and BEE. The IPP Office's reporting system has specific provisions for compulsory planning and reporting on this aspect, and this project benefited from this requirement. Nevertheless, the evaluation concludes that neither the NDB project design nor its DMF paid any attention to social inclusion, reduction of inequalities, women's empowerment,

and improvements in the welfare of poor communities. These are critical aspects that should have been given attention upfront by NDB.

134. **The project's DMF was generally inadequate.** The DMF was weak, did not include baseline values, and had few key performance indicators (only four for a large two-step loan provided by NDB). It did not define indicators for the environment and social governance, gender, and local communities' benefits-related perspectives, nor did it capture the ample M&E good practices available from other organisations for maximising the Bank's development impact and non-financial additionalities. Multiple discrepancies were noted in PPRs, including on topics related to disbursements, sub-project allocations, and usage of advance disbursements. The weak quality of some M&E documents caused delays in liquidating disbursed funds for the sub-projects by the NDB Loan Management System.

135. **Additionally, familiarisation and training on NDB reporting requirements for the DBSA project/loan management team were insufficient due to a lack of capacity-building initiatives.** The Project had undergone frequent changes, reflecting that it was not initially designed based on a highly sophisticated assessment of DBSA demand and capacity. The project's legal documents were not tightly drafted, for e.g.,, some terms were not fit-for-purpose or straightforward to interpret for a "vanilla" on-lending operation. It is fair to conclude that NDB's monitoring and reporting templates and loan agreement management processes were neither streamlined nor effective to fit the modality of on-lending operations fully. While the implementation and administrative efficiency of the project could be improved, this had been largely compensated by the sub-projects operational efficiency and the robust framework of South Africa's REIPPPP.

136. **An important missing link in the project is knowledge management, communication, partnership with other development actors, and Global South-South cooperation.** Given the Government's priority on the propagation and use of renewable energy generation, it would have been important to codify and share technical and general knowledge based on the project's experiences within South Africa and beyond. However, at the time, NDB's policies lacked explicit objectives and a process for knowledge management. Hence, the project did not include specific knowledge generation or dissemination activities in its work plan. For example, no specific publications were produced by NDB to showcase the experience, which would also have helped strengthen NDB's footprint and reputation. Finally, attention to partnerships and Global South-South cooperation activities with other stakeholders was hardly observed by the evaluation. In particular, NDB dialogue with other development partners in South Africa on lessons learned in the energy sector and related themes was not sufficiently considered.

B. Recommendations

Recommendation 1: *Formulate a South Africa - NDB country strategy*

137. **IEO recommends that NDB prepare a South Africa-NDB Country Strategy.** Country strategies are a common instrument used by most MDBs and would provide NDB with a coherent framework for orienting its engagement, activities, and financing in South Africa in the medium-term. NDB's second General Strategy (2022 - 2026) also highlighted, "The Bank will also explore developing individual country partnership plans further to guide the work in its countries of operation, responding to their development challenges and priorities." Preparation of such a country strategy should be based on well-researched analytical diagnostics at macro and sector levels and propose sectoral and geographic priorities for lending and non-lending activities. The preparation of the country strategy should be built on a thorough consultative process with the Government and others to promote complementarity and coherence, ensuring that government and key partner priorities are adequately internalised. The South Africa-NDB country strategy should be prepared in the near future and presented to the NDB Board for consideration in 2024, along with IEO comments thereon.

Recommendation 2: *Proactively explore options for local currency financing*

138. **The evaluation recommends that NDB review options increase its local currency lending in South Africa to provide suitable financing for sustainable infrastructures such as renewable energy plants that only generate local currency revenues.** This would help clients mitigate the foreign-exchange risk and reduce borrowers' dependencies on swap markets that involve significant costs. IEO noted that NDB, in April 2019, already registered its debut ZAR bond programme in South Africa on the Johannesburg Stock Exchange, with a maximum size of ZAR 10 billion and unlimited validity. The Bank's first bond in South Africa, amounting to ZAR 1.5 billion, was issued on August 15, 2023. South Africa has a well-developed financial and banking sector. NDB should effectively use it by actively engaging with local stakeholders and partnering with local investment banks to continually identify issuance opportunities, broaden its investor base in South Africa, and optimise deal structures.

Recommendation 3: *Clearly define, generate, and leverage NDB's additionality*

139. **The evaluation recommends that NDB generate additionality in its South Africa operations, especially in the non-financial areas of technology, social, environmental, gender, and global south-south cooperation.** The Bank needs to build capacity to facilitate, where appropriate, the application of smart, innovative, and fit-for-purpose technologies into its future energy projects. Project designs should focus more robustly on impact achievement and include provisions for social development, reduced inequalities, and clearer statements of development objectives. Attention should also be given to leveraging south-south cooperation as an instrument for wider NDB impact in its member countries.

140. **Project Designs should be supported by a strong theory of change and results framework with clearly defined financial and non-financial additionalities and a comprehensive risk assessment.** The evaluation recommends that NDB institutionalises tools with applicable metrics that will help the Bank to evaluate the inclusiveness of projects and identify opportunities to address inequalities across gender, age, race, class, and geography. For non-sovereign operations, the Bank should generate relevant financial additionality by bringing what is unavailable from the market.

Recommendation 4: *Further strengthening the relationship with the NFI and conducting in-depth reviews of member countries' systems*

141. **The evaluation recommends that NDB continues to strengthen work with NFIs in maximising the development impact of its projects, using country systems to bring deeper additionality in ESG-related topics and benefiting local communities.** NDB should conduct periodic knowledge sharing. In-depth and systemic reviews should be conducted by NDB to identify areas in the NFI's practices and country system that could be bolstered to help the Bank continually calibrate its approach for operating in specific South African contexts and effectively achieving the sustainability objectives of its projects in the country.

142. **The evaluation recommends that lessons learned from this project should be more thoroughly reviewed for the benefit of other on-lending operations by NDB with DBSA and other NFIs** to: (i) draw on the good practices of South Africa's REIPPPP to enrich its understanding of developing renewables by facilitating private sector investments; and (ii) share recent global good practice with South Africa (and other member countries) to strengthen local frameworks and implementation capacity, as required by the Bank's General Strategy 2022-2026.

Recommendation 5: *Enhance the quality of project Design and Monitoring Framework quality and the Monitoring and Evaluation process*

143. **The evaluation recommends that NDB builds on international good practice to improve its future projects' DMF** by including baseline figures for all key performance indicators, as well as relevant indicators for other salient design features such as environment and social governance, gender, and changes to the welfare of local communities.

144. For on-lending operations, the evaluation recommends that NDB customise and streamline its reporting templates as well as M&E procedures based on the operations' modality to effectively enhance the efficiencies of project implementation and loan agreement management processes. Consent by sub-borrowers for sharing required financial information and operational and ESG data for NDB's M&E process should be obtained before project approval in the future.

Recommendation 6: *Project designs and implementation should include coherent knowledge management and communication strategies*

145. **The evaluation recommends that NDB pay more attention to sharing knowledge, lessons, and good practices.** Future projects should have a communication strategy with dedicated events, exposure visits for policy and decision-makers, seminars, and the production of specific knowledge management products such as infographics adapted to the reality of each project. This is fundamental to strengthen NDB visibility as well as to make available lessons and good practices that can be scaled up for better impact by NDB, Government, and other development partners.

ANNEXES

Annex 1: Report of SAMEA on the quality of the evaluation and reflections for the way forward

Report on peer review of the Project Performance Evaluation Report of the New Development Bank's support for the Greenhouse Gas Emissions Reduction and Energy Sector Development Project

A. Introduction

The South African Monitoring and Evaluation Association (SAMEA) was invited to peer review the evaluation of the New Development Bank's support for the Greenhouse Gas Emissions Reduction and Energy Sector Development Project. Five Board members of SAMEA contributed to the peer review, Ian Goldman, Tikwiza Silubonde, Molupe Matsumunyane, Jennifer Norins, Mayibongwe Mncube.

B. Process

SAMEA provided comments on the Approach Paper in April 2023, on the draft evaluation report, and checked the changes made to the final report in August 2023, to consider these comments. The report below is the final report, taking into account changes made as a result of comments on the draft evaluation report.

C. Methodology

Comments were provided on the Approach Paper on the evaluation matrix, as well as the criteria, highlighting that South Africa has two new evaluation criteria on transformative equity and climate/ecosystems health. We note that in the eventual evaluation, the six DAC evaluation criteria were used, expanding the sustainability criterion to include environmental sustainability. It is a pity that the two new evaluation criteria, South Africa on transformative equity and climate and ecosystems health were not explicitly applied, although there is a degree of overlap with how NDB is interpreting sustainability. This would have helped to bring out further equity issues which the evaluation does refer to.

The evaluation report would benefit from providing a more comprehensive and explicit explanation of the methodology used, perhaps in an annex, outlining the specific qualitative and quantitative methods utilised in the evaluation process. This information will allow readers to gauge the rigor and validity of the evaluation's findings. Clear and transparent reporting of data collection methods is crucial to ensure the credibility of the evaluation results. Similarly, this should cover the data analysis process, so readers can understand how the collected data was processed, interpreted, and transformed into meaningful insights.

The field work for the evaluation was brief, we note there were field visits to two of the projects, and there has been extensive coverage of project documents, while also recognising that there was a problem accessing some of these for confidentiality reasons. We note that a recommendation has been added in this regard addressing our concerns. **Overall, the methodology appears successful.**

D. Findings

Overall, the findings seem justifiable and supported by evidence and the ratings of success seem fair.

One point to note is that rather than emissions reductions, in many cases as the grid is constrained by generation capacity, this generation capacity does not of itself mitigate emissions but adds carbon-free capacity to the grid. Hence, they are emissions avoided. This could be clearer.

Re *Impact* we also welcome findings that the design and monitoring framework did not include specific components and initiatives for social development in project areas to improve local communities' well-being, and it did not reflect in its outputs, outcomes, impact and related indicators and targets. However, the REIPPP did cover this, and so this was implemented, as recognised in the report. It would have been very valuable to have had further interrogation of these co-benefits of the projects, but we recognise there was a problem in having access to this information from confidential agreements for on-lending from DBSA. Future evaluative work should consider how to ensure this information is available.

Re *additionality*, concerns are raised over whether a US dollar loan was needed considering South Africa's developed financial markets. This is a valid concern.

E. Recommendations

Overall, the recommendations seem fair, with potentially an additional recommendation considering how to address the data access needed in confidentiality clauses on projects to enable adequate M&E processes.

August 23, 2023

Annex 2: Project design and monitoring framework[37]

As presented in the appraisal paper, this project is expected to contribute to SDG 7 (Ensure access to affordable, reliable, sustainable, and modern energy for all) and to SDG 13 (Take urgent action to combat climate change and its impacts) as set by the United Nations General Assembly Resolution of September 25, 2015. The evaluation assessed each performance target and indicator as tabled at appraisal in 2018. It evaluated the project's achievement of each target and the effectiveness of the project monitoring and reporting mechanism during the implementation. It also identified risks not initially considered for their impact on the project or its results (e.g., the COVID-19 pandemic, etc.).

Design summary	Performance targets / indicators	Reporting mechanism
Outcome		
• Reduction in CO_2 emissions.	By 2022: i. Avoided 834,000 tonnes of CO_2 gas emissions annually.	• Project Progress Reports
• Increased energy generated from renewable energy sources.	ii. At least 887 GWh/annum of energy is generated from renewable sources.	• Project Completion Report
Output		
• Construction of new renewable energy plants.	By 2022: i. At least three sub-projects approved and funded by DBSA that use NDB loan.	• Project Progress Reports
• Increased generation capacity from renewable energy sources.	ii. At least 375 MW of new renewable energy generation capacity was added through DBSA lending.	
Key activities with milestones		**Inputs**
1. NDB and DBSA signed the loan agreement in September 2018. 2. DBSA sources and appraises sub-projects starting from 2017 and ongoing till 2020. 3. DBSA administers the sub-loans and monitors the sub-project implementation from 2018 to 2022.		• NDB Loan: USD 300 million • Other (loans, equity, grants): USD 300 million

37 From the Project Document for Board, July 2018.

Annex 3: Sub-project data sheet[38]

No. of sub-project	Energy type and Bid Window (BW)	Location (City, Province)	Project cost (million ZAR)	Total output (Capacity/MW)
1	Solar PV (BW 4)	Zeerust, North West	1,505	75
2	Solar PV (BW 4)	Vryburg, North West	1,568	75
3	Solar PV (BW 4)	Kimberley, Northern Cape	1,208	55
4	Solar PV (BW 4)	Brits, North West	1,033	50
5	Solar PV (BW 4)	Leeudoringstad, North West	1,455	67.9
6	Onshore Wind (BW 4)	Witzenberg, Western Cape	3,100	110
7	Biomass (BW 4)	Ngodwana, Mpumalanga	2,159	25
8	Solar Photovoltaic (BW 4)	Douglas, Northern Cape	1,589	75
9	Onshore Wind (BW 4)	Nama Khoi, Northern Cape	3,570	140
10	Onshore Wind (BW 4)	Siyathemba, Northern Cape	2,720	102
11	Onshore Wind (BW 4)	Central Karoo, Western Cape	4,423	147
12	Solar Photovoltaic (BW 4)	Upington, Northern Cape	1,596	86
13	Solar Photovoltaic (BW 4)	Upington, Northern Cape	1,598	86
14	Solar Photovoltaic (BW 4)	Upington, Northern Cape	1,584	86
15	Concentrated Solar- Thermal Power (CSP) (BW 3.5)	Postmasburg, Northern Cape	11,297	100

38 Information was summarised based on the PPR as of September 30, 2022, and website of IPP Office (https://www.ipp-projects.co.za/ProjectDatabase).

Annex 4: Definition of the evaluation criteria used by IEO

Criteria	Definition
RELEVANCE	The assessment of relevance will examine the extent to which: (i) the objectives of the project are consistent with beneficiaries' requirements, country needs, institutional priorities, and partner policies; (ii) the design of the project is consistent with the objectives; and (iii) the project design has been (re-) adapted to address changes in the context. Finally, under relevance, an assessment will also be made of the compatibility of the intervention with other interventions in a country, sector, or institution.
EFFECTIVENESS	The extent to which the project achieved, or is expected to achieve, its objectives and results at the time of the evaluation, including any differential results across groups. The effectiveness analysis involves considering the relative importance of the objectives or results.
EFFICIENCY	Focusses on how well resources are used. In particular, the efficiency assessment will examine the extent to which the project delivers, or is likely to deliver, results in an economical and timely manner.
IMPACT	The extent to which the project has generated, or is expected to generate significant positive or negative, intended or unintended, higher-level effects.
SUSTAINABILITY	Assesses whether project benefits will last or are expected to last after completion. More specifically, sustainability is about whether the net benefits of the project will continue or are likely to continue.
NDB AND BORROWER PERFORMANCE	This criterion assesses the contribution of partners to project design, execution, monitoring and reporting, supervision and implementation support, and evaluation. Each partner's performance will be assessed individually with a view to the partner's expected role and responsibility in the project life cycle.
NDB ADDITIONALITY	The rating of NDB's additionality considers the organisation's value proposition in supporting the project. It is based on the counterfactual assessment of how the project would have (or would not have) proceeded without NDB support. It should consider all factors relevant to the role and contribution of NDB.

Annex 5: Evaluation framework

Evaluation criteria	Evaluation questions	Methods/sources
RELEVANCE	• How does the project's rationale address and relate to South Africa's macro-level imperatives of economic growth, employment generation, poverty alleviation, and inequality as articulated in the National Development Plan (NDP) and Economic Reconstruction and Recovery Plan? • How will the project contribute to attaining South Africa's Nationally Declared Commitment (NDC) on Carbon Emission by 2030? • To what extent was the project in line with the objectives and targets of the South African Government's Integrated Resources Plans (IRP) for energy generation, distribution, and expanded renewable energy generation plans? • To what extent is the project aligned with, and will contribute to, NDB's General Strategy? • Were the project objectives compatible with other energy interventions carried out nationally and at the regional, sub-regional, and municipal/ local community levels? To what extent have the sub-projects promoted economic development in their area of influence?	Stated policies and plans, interviews with Government officials and borrowers. Review of projects' initial power output estimations and actual monthly production. Review of baseline and collected data. NDB General Strategy for 2022–2026; interviews with NDB staff and management.
EFFECTIVENESS (Include assessing the sub-projects financial performance)	**Macro and Overarching Project Level:** • Was the project a positive contribution to the national effort to diversify the South African energy mix and help efforts to address the effects of climate change? • To what extent have the project (and underlying sub-projects) contributed to improved reliability and access to energy, both at regional and national levels? • Will the project contribute to meeting national energy generation targets during the NDP plan period, thereby reducing the energy supply vulnerability? • Was the Project Design and Monitoring Framework sound, and to what extent are the performance indicators monitored and reported? • Did the project facilitate/enhance DBSA's efforts in offering expanded financing facilities for the private sector entrepreneurs in renewable energy projects? • Were the relevant public authorities actively coordinating and ensuring the project maintains active complementarity with similar ventures in the sector? • Did the sub-projects enhance complementarity and coordination with other institutions operating similar renewable energy projects in the same/neighbouring areas?	Analysis of energy mix and result data. Review of projects' initial power output estimations and actual monthly production. Review of baseline and collected data. Comparison of projected output with the generated output (i.e., production, curtailment, production versus contracts and cost, etc.). Physical inspections, implementation reports, and interviews with relevant staff.

Evaluation criteria	Evaluation questions	Methods/sources
EFFECTIVENESS (Include assessing the sub-projects financial performance)	**Financial Performance and Business Objectives (Sub-Project Level):** • Are the sub-projects' financial performance in line with expectations and sub-project Selection Criteria? • Have the sub-projects been able to provide power in line with forecasts reliably? To what extent were sub-projects supported with adequate transmission access and reliability? • Did the borrower conduct timely supervision of all sub-projects, monitoring of sub-borrowers' activities, and produce the project progress reports with the required information? • Have the sub-projects, contributed to economic growth by ensuring and enhancing the performance of enterprises/producers of manufacturing and industrial sectors through enhanced and reliable access to electricity? • Did the borrower reach and engage the right sub-borrowers through the REIPPPP?	Analysis of energy mix and result data. Review of projects' initial power output estimations and actual monthly production. Review of baseline and collected data. Comparison of projected output with the generated output (i.e., production, curtailment, production versus contracts and cost, etc.). Physical inspections, implementation reports, and interviews with relevant staff.
EFFICIENCY (Include assessing the sub-projects financial performance and economic sustainability)	• Was the Loan Agreement signed off and effective in line with appraisal estimated timelines indicating a sound project readiness? • Was the project's disbursement performance aligned with appraisal estimates and the project design profile? • To what extent have the sub-projects been completed as envisaged? • To what extent did the project designs, construction activities, operations, and administration follow original specifications, timelines, and quality standards? • Do the financial statements demonstrate a positive trend in profitability and revenues of the borrowers and sub-projects (sub-borrowers)? • Do the sub-project's financial performance and internal rate of return compare favourably with initial projections at the time of appraisal? • What was the proportion of project management costs and overheads compared to investment costs? • Was the sub-project's procurement and contracting procedures and arrangements compliant with applicable Government-prescribed standards for the REIPPPP pipeline? • Was the borrower objective and transparent in its application of sub-project selection criteria?	Physical inspections, review of the project implementation reports, and interviews with relevant staff. Review of project design, monitoring, and result framework, and effectiveness of KPIs. Review of project design and implementation in the context of stated and inferred Environmental, Social, and Governance issues. Review of relevant documents and discussions with NDB staff and DBSA. Onsite inspections and interviews with staff and local community members. A perusal of relevant documentation and discussions with NDB operations, regional office staff, and DBSA staff. Comparative economic and financial data, assessment of processes, and discussions with appropriate staff from NDB, DBSA, and sub-borrowers.

Evaluation criteria	Evaluation questions	Methods/sources
SUSTAINABILITY (Include assessing the sub-projects economic sustainability, E&S performance)	• Was an exit strategy developed to ensure that recurrent costs of sub-projects are met post-project implementation? • What are the provisions for operations and maintenance of renewable power generation machineries, equipment, and infrastructure put in place by the sub-projects? • Are the sub-project economically viable and financially sustainable? Have all sub-projects (financed by this project) achieved the targeted EIRR and FIRR above the sub-project's weighted average cost of capital? • Had all sub-projects entered Power Purchase Agreements (PPAs) with Eskom, and had they received payments from Eskom timely? • Were subsidies granted to the projects/sub-projects, such as tax exemptions, etc.? If yes, will they sustain at the usual market price of electricity once subsidies are reduced or lifted? • To what extent were Environmental and Social Governance (ESG) dimensions incorporated in the design and implementation of the project and sub-projects? • Has the project contributed to the sustainability of benefits, especially for end beneficiaries, in terms of access to energy and improved livelihoods and incomes? • To what extent were the sub-projects compliant with the Government's E&S safeguard regulations? Were consultations held in line with country regulations? • Were land acquisition and resettlement activities compliant with government policies, rules, and regulations for the sub-projects? • What is the capacity of the borrower and sub-borrowers to monitor compliance with E&S plans and applicable regulations? • Were mitigation and compensation for E&S impacts from sub-projects handled in line with the DBSA and NDB's processes?	Review of project reports. Discussion with DBSA staff, sub-project operators, energy sector and E&S experts. Review of project design reports and projections. Discussions with relevant staff/ management and comparison with international norms Discussions with relevant staff/ management Interviews and review of documents. Mobilisation of private capital equity and/or new debts, if any. Cost-benefit analysis, EIRR, and weighted average cost of capital review, if available. Discussions with DBSA, sub-project developers, and local communities. Discussion with sub-project operators and DBSA staff. Discussions with relevant staff/ management and industry associations. Review of project reports. Discussion with DBSA staff, energy sector, and E&S experts. Review regulations and safeguards pertinent to the project. Interviews with staff and community members. Review of E&S plans and report. Review of NDB E&S procedures. Discussions with E&S staff and consultants.
IMPACT	• Will the project make the planned contribution to the reduction of national carbon emissions (as projected in the appraisal) and planned contribution to South Africa's NDC for Greenhouse Gas emissions by 2030? • To what extent have sub-projects increased the reliability and quality of electricity supply via renewable energy at the local and regional levels? • Have the sub-projects successfully contributed towards the power generation mix and reduced CO_2 emissions in South Africa by not less than 90 tonnes per year per ZAR 1 million of the sub-project cost? • Were there any unintended outcomes and impacts of the sub-projects? • How do the process and outcomes of this project/loan influence policy and future efforts regarding the renewal of energy streams?	Review of baseline and collected data. Scrutiny of other renewable energy projects in the area or under the REIPPPP pipeline.

Evaluation criteria	Evaluation questions	Methods/sources
NDB AND BORROWER PERFORMANCE	• What is the overall quality of the Project Document for Board (PDB)? • Was the PDB preparation process participatory? • Is the Loan Agreement appropriately aligned with the PDB? • How is the quality of the Design and Monitoring Framework in the PDB and self-evaluation products prepared by NDB and Borrower, such as the Project Progress Reports and Project Performance Assessment? • Did NDB conduct project supervision, and what was the frequency and quality of supervision processes and deliverables? • Was the project progress report and PPA done in a timely manner? Evaluate the quality of the self-evaluation products. • Did NDB and DBSA assign appropriate human resources (number and skills) to accompany project implementation? • Were the roles and responsibilities of NDB headquarters and the ARC clearly defined in the project life cycle, and were these roles played adequately? • Did NDB put in place a knowledge management and learning plan to document and share lessons learned, and has this been implemented?	Interviews with NDB staff and DBSA officials. Review of results framework, implementation reports, and effectiveness of KPIs. Review all related project documents.
NDB ADDITIONALITY	• What was NDB's financial additionality overall? • Would DBSA have been able to mobilise sufficient financing for the project without NDB's involvement? • Was NDB catalytic in mobilising funding and facilitating private sector investment into grid-connected renewable energy generation, or was it merely helping complete the financing package? • Was NDB engagement important to reduce risks or to provide comfort to other investors and lenders? • What was NDB's non-financial additionality overall? • Was NDB participation important to allocating risk and responsibilities between DBSA and the sub-borrowers? • Did NDB's knowledge and expertise strengthen project design and DBSA's functioning and capacity building?	A perusal of relevant policy documents and scrutiny of other renewable energy projects in the area or under the REIPPPP pipeline. Review renewable energy projects in the same provinces or under the REIPPPP pipeline. Discussion with the project design team and stakeholders. Review of project documents and interviews.

Annex 6: Sub-project outcome review (CO_2 reduction ratio)

No. of sub-project	Renewable energy technology	Planned annual power generation[39] (MWh)	Disclosed annual power generation[40] (MWh)	Planned annual CO_2 avoided - tonnes[41]	Annual CO_2 avoided - tonnes (disclosed)[42]	Planned CO_2 reduction ratio (ton/ MWh)	Disclosed CO_2 reduction ratio (ton/ MWh)
		A	B	C	D	E= C/A	F=D/B
1	PV Crystalline - Single Axis	187,739	180,000	172,882	125,000	0.92	0.69
2		155,794	177,660	152,460	206,000	0.98	1.16
3		165,383	180,000	161,820	125,000	0.98	0.69
4		108,919	150,000	106,917	118,000	0.98	0.79
5		180,692	180,000	169,850	180,000	0.94	1.00
6		135,954	180,000	133,272	130,000	0.98	0.72
7	Biomass	197,002	23,040[43]	205,669	22,576[44]	1.04	0.98
8	Onshore Wind	462,400	513,200	454,823	550,000	0.98	1.07
9		329,900	368,800	324,494	410,000	0.98	1.11
10		550,000	613,000	521,700	502,900	0.95	0.82
11		375,000	463,600[45]	352,500	487,200	0.94	1.01
12	PV Crystalline - Single Axis	217,820	217,000	158,337	200,000	0.73	0.92
13		216,888	217,000	158,337	200,000	0.73	0.92
14		217,058	217,000	158,337	200,000	0.73	0.92
15	Concentrated Solar Power with storage	450,003	N/A, under construction	487,200	N/A, under construction	1.08	N/A, under construction

39 Data in this column is from the Sub-project Allocation Letter submitted by DBSA to NDB.
40 Data in this column is from the sub-projects official websites.
41 Data in this column is from the sub-project Allocation Letter submitted by DBSA to NDB.
42 Data in this column is from the sub-projects official websites.
43 This data is from the PPR (April 1, 2021 - March 30, 2022).
44 Same as above.
45 Same as above.

Annex 7: Sub-project effectiveness and output review (capacity ratio)

No. of sub-project	Renewable energy technology	Planned capacity (MW)[46]	Planned annual power generation[47] (MWh)	Capacity ratio (planned in %)	Disclosed capacity (MW)[48]	Disclosed annual power generation[49] (MWh)	Capacity ratio (based on disclosed data in %)
		A	B	C= B/ (A*24*365)	D	E	F= E/ (D*24*365)
1	PV Crystalline - Single Axis	86	187,739	24.92	75	180,000	27.40
2		77	155,794	23.10	67.9	177,660	29.87
3		86	165,383	21.95	75	180,000	27.40
4		57	108,919	21.81	50	150,000	34.25
5		86	180,692	23.98	75	180,000	27.40
6		63	135,954	24.63	55	180,000	37.36
7	Biomass	25	197,002	89.96	25	276,400[50]	126.25
8	Onshore Wind	143.1	462,400	36.89	140	513,200	53.26
9		110.4	329,900	34.11	110	368,800	38.27
10		147	550,000	42.71	147	613,000	63.62
11		102	375,000	41.97	102	375,000	38.92
12	PV Crystalline - Single Axis	75	217,820	33.15	75	217,000	33.03
13		75	216,888	33.01	75	217,000	33.03
14		75	217,058	33.04	75	217,000	33.03
15	Concentrated Solar Power with storage	100	450,003	51.37	N/A, under construction	N/A, under construction	N/A, under construction

46 Data in this column is from the sub-project Allocation Letter submitted by DBSA to NDB.
47 Same as above.
48 Data in this column is from the sub-project's official websites.
49 Same as above.
50 This data is from the PPR (April 1, 2021 - March 30, 2022).

Annex 8: Sub-project commercial operation date and timelines review

No. of sub-project	Location (City and Province)	Planned COD[51]	Actual COD[52]	Community trusty ownership[53]	Economic development programme[54]
1	Vryburg, North West	Sep 2020	Nov 2020	Cicada Community Trust	The focuses of Solar PV Plant's Socio-Economic Development Projects is on Education, Youth Development, Health, Enterprise Development, Food Security and Welfare.
2	Leeudoringstad, North West	Jun 2020	Sep 2020	Cicada Community Trust	The focus of Solar PV Plant's Socio-Economic Development Projects is on Education, Youth Development, Health, Food Security and Welfare.
3	Zeerust, North West	May 2020	Dec 2020	4.99% owned by Cicada Community Trust	The focus of Solar PV Plant's Socio-Economic Development Projects is on Education, Youth Development, Health, Enterprise Development, and Welfare.
4	Brits, North West	Aug 2020	Jan 2021	3% owned by Cicada Community Trust	Operations phase (20 years) investment in Socio-Economic Development (SED) and Enterprise Development (ED) initiatives within 50 Km of the project. Over 4% of annual turnover committed as SED & ED spend in the Local Communities: 1. Education 2. Healthcare 3. Infrastructure 4. Community skills training and skills development 5. Enterprise creation and development 6.SMME development.
5	Kimberley, Northern Cape	Feb 2020	Mar 2020	Cicada Community Trust	The focus of Solar PV Plant's Socio-Economic Development (SED) Projects will be on education (specifically within ECD centres), health, skills development, and welfare.
6	Douglas, Northern Cape	Nov 2020	Apr 2021	Cicada Community Trust	As part of this programme, the Solar PV Project will assess the condition of ECD centres in the Siyancuma Local Municipality and appoint local service providers to conduct the repairs and/or maintenance as general maintenance of the ECD facilities is often neglected due to the lack of funds. ECD centres are largely dependent on the government subsidies and school fees to sustain their operations, which are often not reliable. This places an additional burden on the ECD centres as their core focus is on the child.
7	Ngodwana, Mpumalanga	Jul 2020	Mar 2022	Information not available	Information not available.
8	Nama Khoi, Northern Cape	Aug 2020	Nov 2020	2.5% owned by Local Community Trust	2.8% of the wind farm's revenue will be spent on SED and 0.2% on enterprise development over a 20-year period from the time of commercial operations.
9	Witzenberg, Western Cape	Jul 2020	Oct 2020	2.5 % owned by Local Community Trust	Same as above.
10	Central Karoo, Western Cape	Apr 2021	Feb 2022	2.5% owned by Local Community Trust	The projects are expected to create over 61,000 jobs and draw investment worth ZAR 56 billion to the economy.
11	Siyathemba, Northern Cape	May 2020	Dec 2021	5% owned by Local Community Trust	The Onshore Wind Farm's Socio-Economic Development Projects: Health programmes (HIV & AIDs awareness programmes): Youth and Women upliftment, Infrastructure development, Sports programmes, and Education support programmes.

51 Information in this column is from the Sub-Project Allocation Letter submitted by DBSA to NDB.
52 Information in this column is from the sub-projects' websites or PPR as September, 2022.
53 Same as above.
54 Same as above.

No. of sub-project	Location (City and Province)	Planned COD	Actual COD	Community trusty ownership	Economic development programme
12	Upington, Northern Cape	Mar 2020	Mar 2020	5% owned by Local Community Trust	Positive socio-economic impacts include the creation of job opportunities, transfer of skills, and contributions to the local, regional, and national economies. The local communities also stand to benefit from the dividend which will flow to the Community of Upington Trust from the projects. This will enable the community to implement community-based programmes that serve to uplift the citizens.
13	Upington, Northern Cape	Apr 2020	Apr 2020		
14	Upington, Northern Cape	Feb 2020	Feb 2020		
15	Town of Postmasburg Northern Cape	Nov 2023	N/A, under construction	N/A, under construction	N/A, under construction.

Annex 9: Summary of DBSA's credit rating[55]

Key date	Moody's (LT Issuer rating - foreign)		S&P (Issuer credit rating)		Notes
	DBSA	South Africa Sovereign	DBSA	South Africa Sovereign	
July 20, 2018	Baa3 (Stable)	Baa3	BB (Negative)	BB (Stable)	Date of PDB approved by the NDB BoD.
May 21, 2019	Baa3 (Stable)	Baa3	BB (Negative)	BB (Stable)	Date of the first loan disbursement.
November 22, 2019	Baa3 (Stable)	Baa3	BB (Negative)	BB (Negative)	S&P changed the credit outlook of South Africa from Stable to Negative.
December 16, 2019	Baa3 (Stable)	Baa3	BB (Negative)	BB (Negative)	Date of the first loan amendment.
December 20, 2019	Baa3 (Stable)	Baa3	BB (Negative)	BB (Negative)	Date of the second and third loan disbursements.
March 31, 2020	Ba1 (Stable)	Ba 1	BB (Negative)	BB (Negative)	In March 2020, both South Africa and DBSA were downgraded by Moody's.
April 29, 2020	Ba1 (Stable)	Ba 1	BB (Negative)	BB- (Stable)	In April 2020, South Africa was downgraded by S&P.
June 2, 2020	Ba1 (Stable)	Ba1	BB- (Stable)	BB- (Stable)	Date of the second amendment to loan agreement.
June 22, 2020	Ba1 (Stable)	Ba1	BB- (Stable)	BB- (Stable)	Date of the fourth loan disbursement.
June 25, 2020	Ba2 (Stable)	Ba1	BB- (Stable)	BB- (Stable)	In June 2020, DBSA was downgraded by Moody's.
November 5, 2021	Ba2 (Stable)	Ba1	BB- (Stable)	BB- (Positive)	Date of the third amendment to loan agreement.
November 24, 2021	Ba3 (Stable)	Ba1	BB- (Stable)	BB- (Positive)	In November 2021, DBSA was downgraded by Moody's.

55 Information summarised based on the websites of Moody's and S&P.

Annex 10: Bibliography

Section A: NDB's Policies, Guidelines, and General Strategies

- NDB Policy on Partnerships with National Development Banks, December 2015
- NDB Policy on Loans without Sovereign Guarantee to National Financial Intermediaries, January 2016
- NDB Environment and Social Framework, March 2016
- NDB Project Implementation Guidelines, April 2018
- NDB General Strategy for 2022-2026: Scaling Up Development Finance for a Sustainable Future
- NDB General Strategy for 2017-2021

Section B: Project Documents

- Project Document to the Board (PDB) for the South Africa Green House Gas Emissions Reduction and Energy Sector Development Project, July 2018
- Approved Project Summary of Loan to the DBSA (18ZA02)
- NDB-DBSA Loan Agreement, March 2019
- First Amendment to the Loan Agreement, December 2019
- Second Amendment to the Loan Agreement, June 2020
- Third Amendment to the Loan Agreement, November 2021
- Fourth Amendment to the Loan Agreement, March 2022
- Fifth Amendment to the Loan Agreement, April 2023
- Project Progress Report, September 2022
- NDB Project Performance Assessment, September 2021
- NDB Project Performance Assessment, September 2022

Annex 11: List of key persons met

THE BORROWER
Development Bank of Southern Africa

- Mr. Craig Bezuidenhout, Principal, Funding Desk
- Ms. Lungile Liberato Tom, Acting Head, Project Finance
- Mr. Sydwell Lekgau, Head, Evaluation and Monitoring Department
- Mr. Chris Visser, Head, Loan Management and Client Administration
- Mr. Vukosi Maluleke, Treasury Head, Treasury and Balance Sheet Management Division
- Mr. Mafera Kgwale, Principal Investment Officer
- Ms. Charmaine Kotze, Loans Management Specialist
- Mr. Aurett Makina, Credit Analyst

GOVERNMENTAL AGENCIES AND POLICY MAKERS
Department of National Treasury

- Mr. Mfundo Hlatshwayo, Chief Director: BRICS, Global and Emerging Markets, International and Regional Economic Policy
- Mr. Victor Luvhengo, Senior Economist, Multilateral Development Banks, and Concessional Finance, International and Regional Economic Policy
- Mr. Oratilwe Teisho, Economist, BRICS Global and Emerging Markets, International and Regional Economic Policy Division
- Mr. Nkosingiphile Hamilton Ntuli, Financial Analyst, Public Entities Oversight Unit

Department of Mineral Resources and Energy

- Mr. Thabang Audat, Chief Director responsible for Electricity, Gas, and Nuclear Planning

Independent Power Producers Procurement Programme Office

- Mr. Bernard Magoro, Head of Office
- Ms. Elmarie Oosthuizen, Programme Manager
- Mr. Louis Moyse, Head of Contract Management

National Energy Regulator of South Africa

- Mr. Nhlanhla Gumede, Regulator Member
- Mr. Mark Beare, Advisor to the Full Time Regulator Member for Electricity
- Mr. Zingisa Mavuso, Executive: Electricity Regulation
- Mr. Mondli Shozi, Senior Electrical Engineer
- Ms. Vuyiswa Magubane, Senior Regulatory Specialist

South African National Energy Development Institute

- Dr. Titus Mathe, Chief Executive Officer

Department of Planning, Monitoring and Evaluation

- Mr. Robert Nkuna, Director General
- Mr. Godfrey Mashamba, Deputy Directors General, Evidence and Knowledge Systems

- Ms. Thokozile Molaiwa, Chief Director Evaluation
- Ms. Kgaugelo Moshia-Molebatsi, Senior Evaluation Specialist, Director of Research and Evaluation
- Ms. Nkamang Tsotetsi, Assistant Director, Administration

OTHER MUTILATERAL LENDERS/MDBS

International Finance Corporation (IFC) Southern Africa Regional Office

- Mr. Izak Christoffel Leimecke, Senior Advisor
- Mr. Bassem Nehme, Senior Investment Officer, Infrastructure and Natural Resources Department

African Development Bank Group, Southern Africa Regional Office

- Mr. Anders Cajus Pedersen, Chief Regional Power Systems Officer
- Mr. Jectone Achieng, Senior Investment Officer

European Investment Bank, Regional Office for Southern Africa and the Indian Ocean

- Mr. Jim Hodges, Head of Office
- Ms. Charmaine Lebese, Investment Analyst

World Bank Group, Regional Representation for Southern Africa and the Indian Ocean

- Mr. Vonjy Rakotondramanana, Senior Energy Specialist
- Mr. Mariano Salto, Senior Energy Economist

ACADEMIC

Power Futures Lab, University of Cape Town's Graduate School of Business

- Dr. Wikus Kruger, Director

CO-INVESTORS, MANAGEMENT, AND VENDORS OF THE SUB-PROJECTS

A BEE Facility (Equity Investor of Nine Sub-Projects)

- Chief Investment Officer
- Chief Financial Officer
- Head of Legal and Company Secretary
- Executive, Investment Consultant

ECP, Testing and Commissioning Vendor of a Solar PV Sub-Project

- Plant Foreman, Operations and Maintenance

Project's Operator of a Solar PV Plant Sub-Project

- Community Projects Officer

Independent Developer and Co-Investor of Two Sub-Projects

- General Manager

An Onshore Wind Farm Sub-Project in Western Cape Province

- Plant Manager
- Country Economic Development Manager

A Developer and BEE Equity Investor of Six Sub-Projects

- Head of Asset Management
- Financial Controller
- Financial Manager, Investment

LOCAL MUNICIPALITY/COMMUNITY
Witzenberg Local Municipality

- Mr. David Nasson, Municipal Manager
- Mr. Johan Swanepoel, Manager Projects and Performance

NDB AFRICA REGIONAL CENTRE

- Mr. Monale Ratsoma, Director General
- Mr. Tshifhiwa Mukwevho, Senior Professional
- Ms. Jasmin Jakoet, Senior Professional

NDB PRIVATE SECTOR AND NON-SOVEREIGN TRANSACTIONS DEPARTMENT

- Ms. Nokuthula Mabuza, Principal Professional

Annex 12: Pictures from the evaluation mission to South Africa

Picture of Director General – IEO, Director General – ARC with NDB team in the ARC office

©Ashwani Muthoo

Picture of IEO team with DBSA and Management of an Onshore Wind Farm in Western Cape

©Chao Sun

Picture of IEO team with DBSA, ARC, and Management of a Solar PV Project in North West

©Chao Sun

Picture of IEO team with DBSA, ARC, and Management of a Solar PV project in North West

©Chao Sun

Annex 13: Figures

FIGURE 1

Loan disbursement break-down

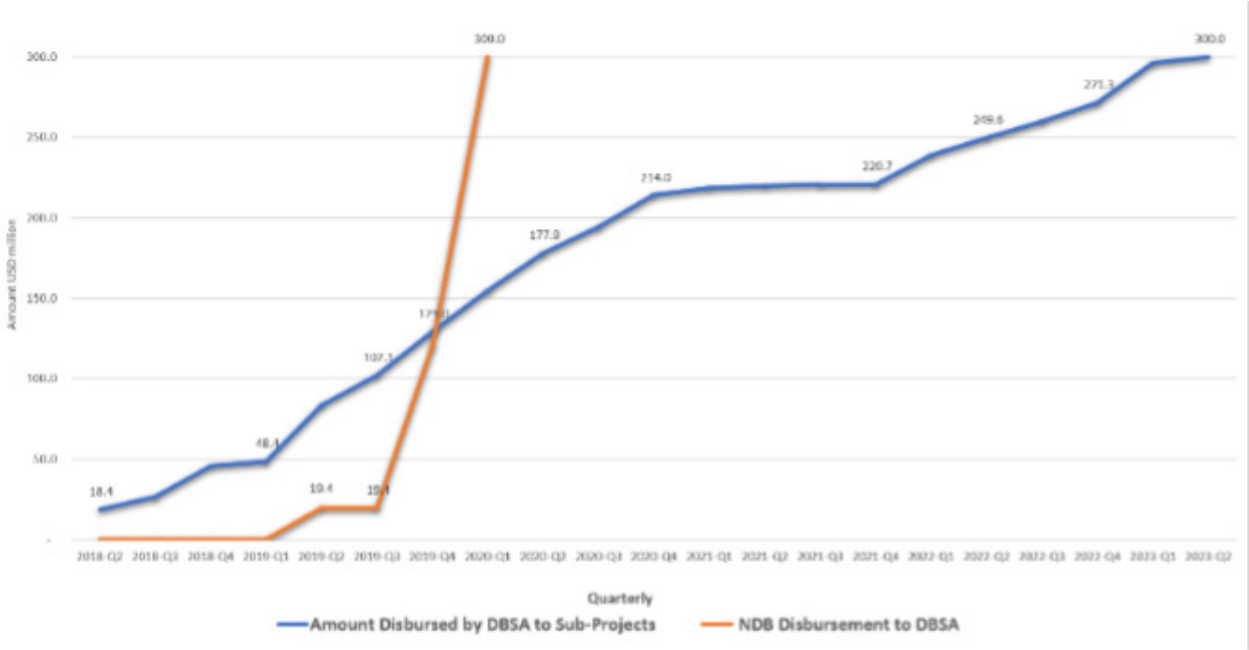


FIGURE 2

On-lending disbursement by sub-project

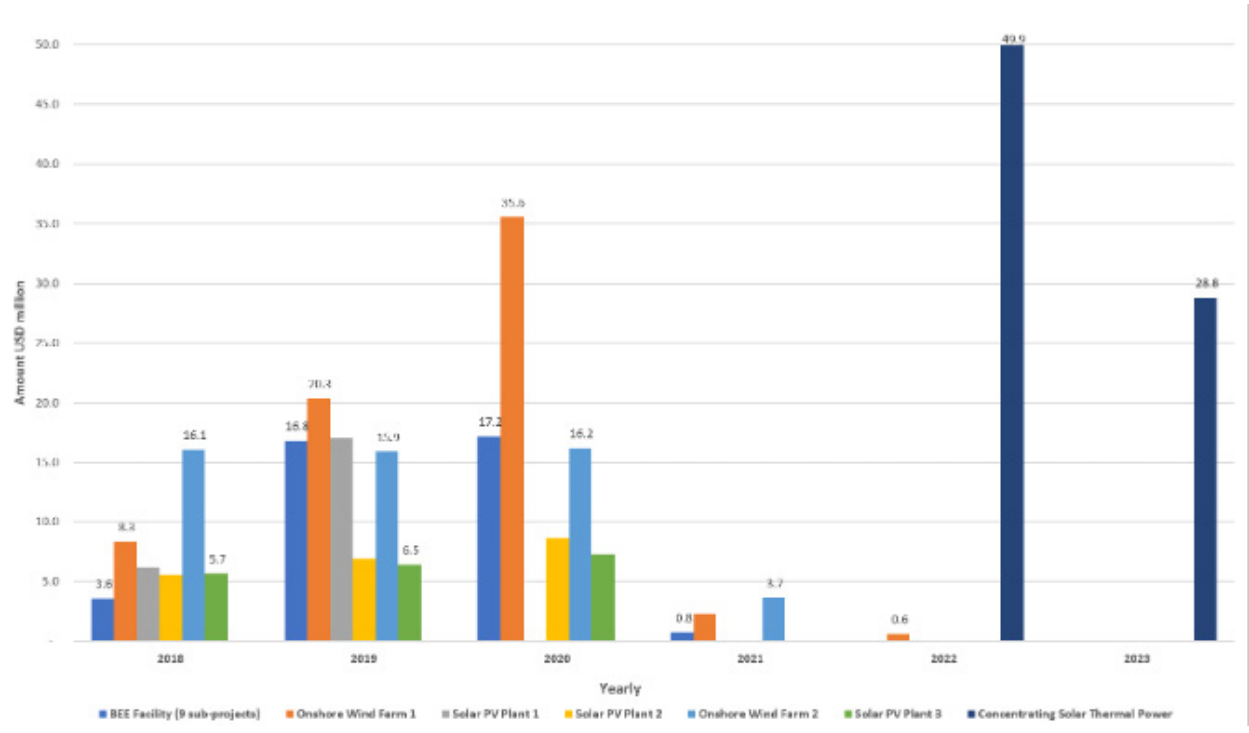


FIGURE 3

Distribution of the 15 sub-projects map

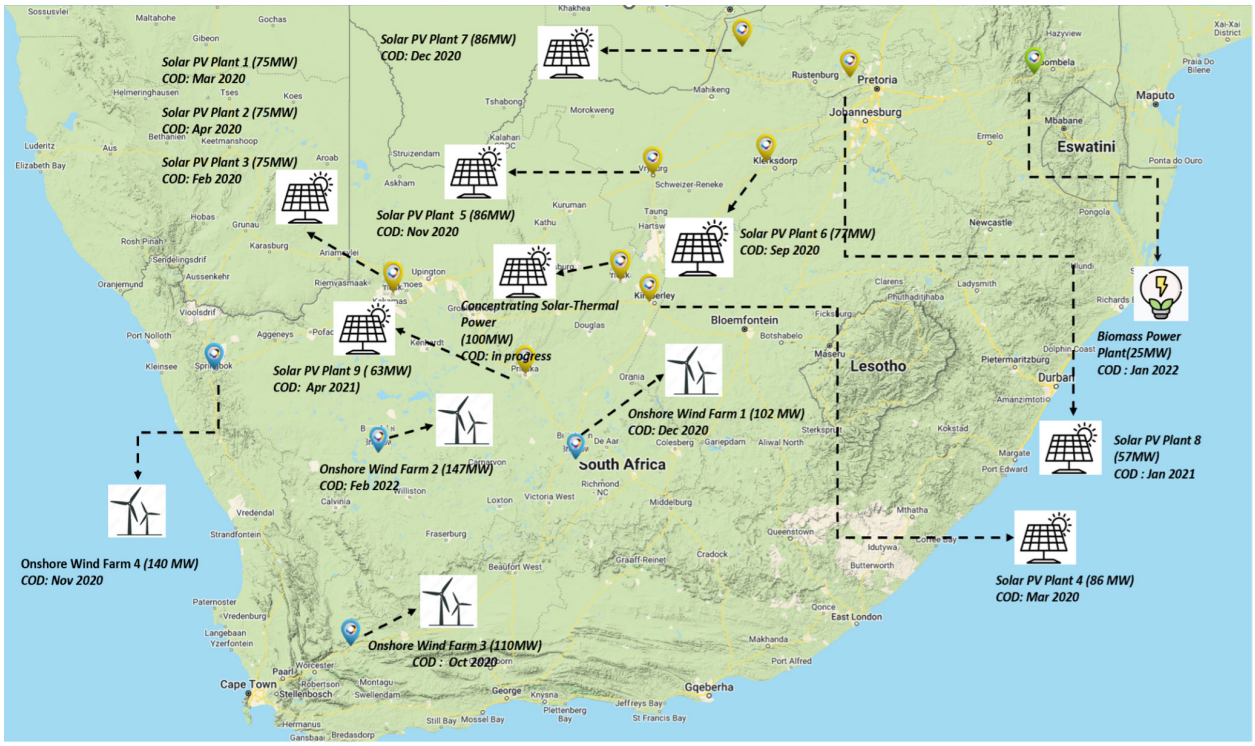
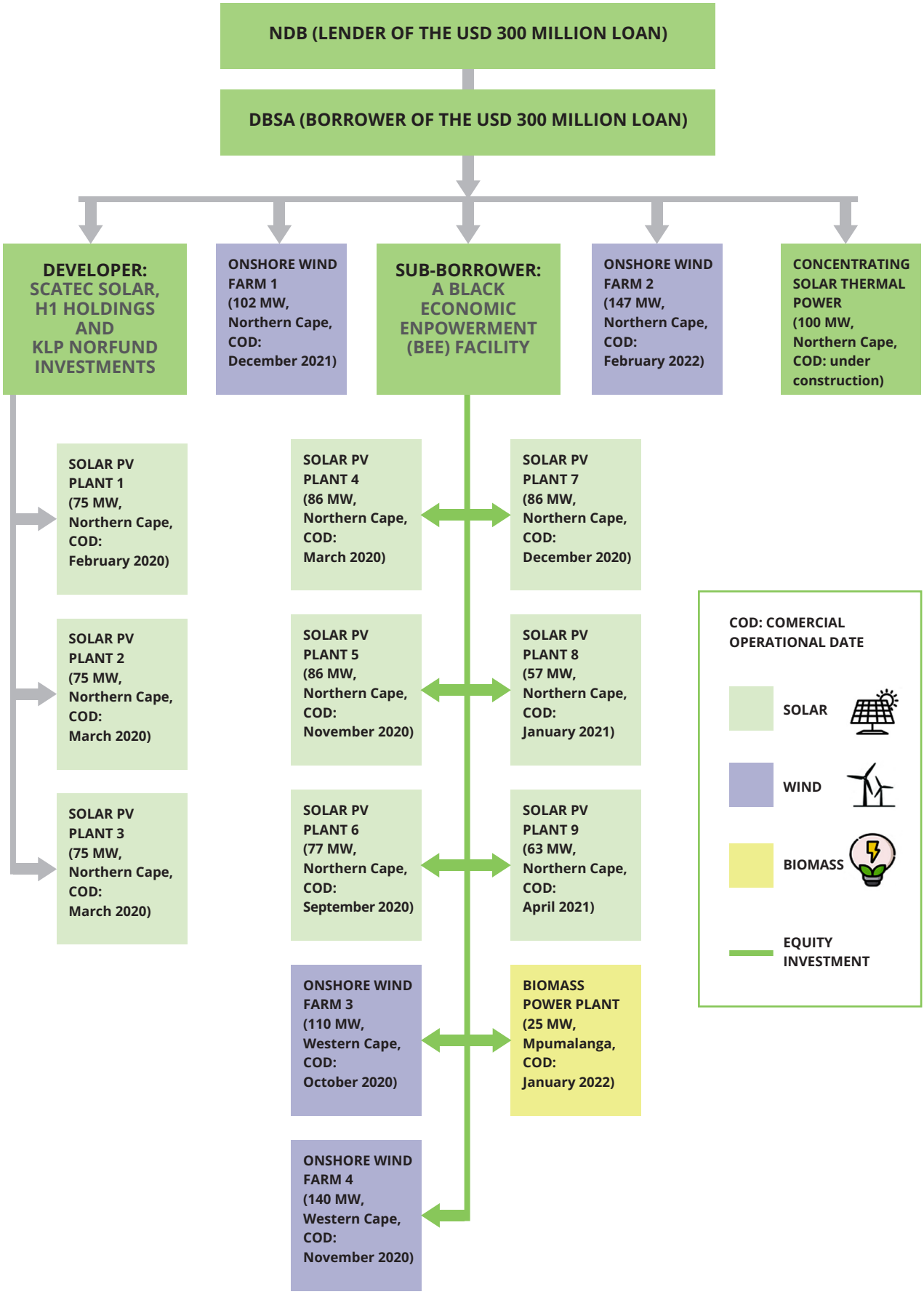
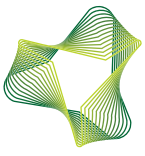


FIGURE 4

NDB loan 18ZA02 on-lending structure[56]



56 Summarised based on the PPR as of September 30, 2022.



New Development Bank

INDEPENDENT EVALUATION OFFICE
New Development Bank
1600, Guozhan Road, Pudong New District,
Shanghai – 200126 China

Tel: +86-21-8021-9512
E-mail: ieo@ndb.int
Website: https://www.ndb.int/governance/independent-evaluation/