

**South Africa Greenhouse Gas Emission Reduction and Energy Sector
Development Project
Approach Paper: Methodology and Process**

Independent Evaluation Office

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Abbreviations and acronyms

BoD	Board of Directors
CSP	Concentrated Solar Power
DBSA	Development Bank of Southern Africa
DMRE	Department of Mineral Resources and Energy
GW	Gigawatt
IEO	Independent Evaluation Office
IPPs	Independent Power Producers
MW	Megawatt
NDP	National Development Plan
NDB	New Development Bank
NDC	Nationally Declared Commitment
NFI	National Financial Intermediary
PDB	Project Document for Board
PPA	Power Purchase Agreements
PV	Photovoltaic
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
SDG	Sustainable Development Goal
WACC	Weighted Average Cost of Capital

I Background

1.1 Country context

1. 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 structural and complex social issues inherited from its past legacies. The initial high growth trajectory from the late nineties slowed somewhat since 2010 and thereafter been exacerbated by prevailing global economic shocks—including the recent COVID-19 pandemic—and climate change risks. The economy grew by around 1% year over the past decade.
2. In 2021, South Africa's economy continued to recover from the COVID-19 pandemic. Real GDP grew by 4.9%, the highest in 14 years and recovering from a 6.4% pandemic induced contraction in 2020¹. The IMF forecasts South Africa's average GDP growth to be 1.5% per annum over the 2022–2026 period. Inflation rose, driven by higher food and energy prices. CPI inflation increased to 5.9% by December 2021, close to the upper bound of the South African Reserve Bank's inflation target of 3% to 6%. In November 2021, the South African Reserve Bank started to normalize monetary policy amid concerns over rising inflation, by raising the repo rate by 25 basis points to 3.75%.
3. South Africa's National Development Plan (NDP) 2030 has offered a long-term plan for the country. It defines a desired destination where inequality and unemployment are reduced, and poverty is eliminated so that all South Africans can attain a decent standard of living. The NDP envisages that, by 2030, South Africa will have an energy sector that provides reliable and efficient energy service at competitive rates by 2030; that is socially equitable through expanded access to energy at affordable tariffs; and that is environmentally sustainable through reduced emissions and pollution². South Africa has aimed to achieve its net-zero target by 2050. At the COP26, it formed a historic partnership with France, Germany, the United Kingdom, the United States, and the European Union to help the country transit towards a low-carbon and climate-resilient economy. The partner countries will provide an initial USD 8.5 billion over the next three to five years to support South Africa's decarbonization efforts.

¹ NDB's Annual Report 2021: Expanding Our Reach and Impact.

² Integrated Resource Plan (IRP2019) published by the Department of Mineral resources and Energy (DMRE) in October 2019.

1.2 Sectoral context

4. 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 throughout the economy. Despite the current challenges in the supply of electricity, South Africa has a well-developed electricity network which is known to have one of the highest rates of electricity access in sub-Saharan Africa³. As one of the core elements of a decent standard of living, electricity is the most-favored option for cooking and other domestic usage in both urban and rural areas of South Africa.
5. South Africa is the 11th highest emitter of greenhouse gasses in the world and one of the world's least energy efficient nations⁴, and it has used approximately 40% of Africa's electricity. The country's energy is predominantly dependent on coal, which made up 65% of the primary energy supply in 2018, followed by crude oil with 18% and renewables with 11%. Natural gas contributed 3% while nuclear contributed 2% to the total primary supply during the same period. The energy sector contributes close to 80% towards the country's total greenhouse gas emissions of which 50% are from electricity generation and liquid fuel production alone⁵.
6. South Africa has a centrally controlled electricity generation planning and procurement system. The electricity generated is transmitted through a network of high-voltage transmission lines that connect the load centres and Eskom (see below) and municipalities distribute the electricity to various end users. Key stakeholders in the electricity sector outlined below⁶:
 - **Department of Mineral Resources and Energy (DMRE):** DMRE, merged of the Department of Mineral Resources and the Department of Energy in 2019, is responsible for regulating, transforming, and promoting the energy sector in South Africa, providing sustainable and affordable energy for growth and development. As a part of energy planning, DMRE is mandated by the Electricity Regulation Act of 2006 (amended in 2007), to develop an Integrated Resource Plan which determines new generation capacity requirements.
 - **National Energy Regulator of South Africa (NERSA):** NERSA is a regulatory authority established under the National Energy Regulator Act of 2004 with a mandate to regulate the electricity, piped-gas and petroleum pipelines industries. NERSA issues generation

³ Electricity Access in Sub-Saharan Africa Uptake, Reliability, and Complementary Factors for Economic Impact, by Moussa P. Blimpo and Malcolm Cosgrove-Davies.

⁴ From the website of South Africa National Electricity Efficiency Programme, <https://www.gov.za/about-government/national-electricity-efficiency-programme-0>.

⁵ The Integrated Resource Plan (IRP2019).

⁶ Extracted from the Project Document approved by NDB Board in July 2018.

- licenses and enforces their compliance, regulates all tariffs for Eskom and municipalities, provides national grid codes and develops regulatory rules for relevant industries and determines the applicable standards.
- **Eskom:** Eskom is a state-owned electricity utility corporation in South Africa that generates approximately 91% of the electricity used in the country, operates and maintains 95% of the national transmission network, and shares the distribution network with licensed municipal distributors. Eskom is responsible for buying electricity from Independent Power Producers (IPP) generation companies. It also functions as the electricity system operator.
 - **Municipalities:** in 2018, 137 municipalities distributed electricity in areas where Eskom has no direct supply to end-users.
7. Policy makers have made conscious efforts to diversify the sources of power generation and reduce the emission level. The government's Integrated Resource Plan of 2010 has been a decisive step to guide the power development, which provides guiding projection and structure for quantity of new power generation, and their sources. For the first time, renewable energy was included as an option for power generation and was enlisted as a conscious choice in the South Africa's power generation mix. The trend is moving towards choosing mitigation options with the biggest potential contribution to the targeted CO₂ emission reduction. This in turn is expected to move the choices towards lower carbon electricity generation and upscaling in energy efficiency initiative. One of the key initiatives to reduce emission is the use of renewable energy sources for electricity generation.
8. From 2017 to 2019, the South Africa's total generation capacity increased from 48.3 Gigawatt (GW) to 51.7 GW, with 38 GW installed capacity from coal, 3.8 GW from diesel, 2.7 GW from pumped storage, 1.7 GW from hydro, 1.8 GW from nuclear, and 3.7 GW from renewable energy⁷. The government continues to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources. The extent of decommissioning of the existing coal fleet due to end of design life, could also provide space for a completely different energy mix relative to the current mix. In the period prior to 2030, the system requirements are largely for incremental capacity addition (modular) and flexible technology, to complement the existing installed inflexible capacity.

⁷ The Integrated Resource Plan (IRP2019).

1.3 Renewable Energy Independent Power Producer Procurement Programme⁸

9. In 2011, the Department of Energy (DoE) launched the 'Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)', as a specially designed programme, to support achieving the goals of energy mix set by IRP.
10. The REIPPPP is a competitive tender process designed to facilitate private sector investment into grid connected renewable energy generation in South Africa. Independent Power Producers (IPPs) are invited to submit bids for onshore wind, solar photovoltaic (PV), concentrated solar power (CSP), small hydro, biomass, biogas or landfill gas projects. Once IPPs are appointed as Preferred Bidders, they are required to sign standard, nonnegotiable, rand 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 DoE, which, along with Government Framework Support Agreement, guarantees Eskom's payments to the IPPs. There is also a standard Direct Agreement between IPPs, Eskom, the Department of Energy and lenders, which provides the lenders with step-in rights in the event of default.
11. In line with the IRP 2010, there have been three Ministerial Determinations for the REIPPPP as of July 2018, totaling 13.2 GW that was available for allocation to renewable energy projects. There have been four bidding rounds between 2011 and 2015 referred to as Bid Windows (BW), with an additional round for CSP only. Competition has been fierce, with 390 submissions and just under a quarter of these (102 projects) being selected for procurement of 6.3 GW amounting to R 193 billion. By October 2016, 2.8 GW of the procured capacity from 53 IPPs had already started operations. The required return on equity has declined significantly over the successive bidding rounds, with some investors accepting post-tax nominal equity returns in the range of 8 - 10% p.a.⁹.
12. The REIPPPP has been seen as an example for other African countries for its ability to draw in private sector investment in the renewable energy sector. Since the promulgated IRP 2010–2030, a total electricity capacity of 6,422 Megawatt (MW) has been procured, with 3,876 MW operational and made available to the grid¹⁰.

⁸ From the PDB approved by NDB Board in July 2018.

⁹ From the PDB approved by NDB Board in July 2018.

¹⁰ The Integrated Resource Plan (IRP2019).

II The Project

2.1 Background

13. The Board of Directors of the New Development Bank (NDB) approved the ‘Greenhouse Gas Emissions Reduction and Energy Sector Development’ Project in South Africa on 20 July 2018. The Project includes a two-step loan of up to USD 300 million by NDB to the Development Bank of Southern Africa (DBSA), which in turn will on-lend to DBSA’s identified projects (the Sub-Projects). NDB Loan would finance no more than 50% of the Sub-Projects’ costs and the total expected investment should reach no less than USD 600 million.
14. As a National Financial Intermediary (NFI) fully owned by the Government of the Republic of South Africa (RSA), DBSA is the borrower and overall executing agency of the project. NDB classified this project as a “Non-Sovereign Operation” (NSO), and the loan was processed according to NDB’s “Policy on Loans without Sovereign Guarantee to National Financial Intermediaries”. The loan agreement was signed on 15 March 2019 and the first disbursement was made in May 2019.

Project: Basic Data¹¹

Loan Agreement Information

Loan Number:	18ZA02
Project Name:	Greenhouse Gas Emissions Reduction and Energy Sector Development Project
Borrower:	Development Bank of Southern Africa
Total Loan Amount:	USD 300,000,000
Loan Maturity:	15 years from the date of Loan Agreement signing, including a grace period of 42 months

Key Dates

Project Implementation Period	15 March 2019 – 14 March 2022 ¹²
Loan Approval Date	20 July 2018
Loan Signing Date	15 March 2019 (5 Loan Amendments were made until 2023)
Date of First Disbursement	15 May 2019
First Repayment Date	30 September 2022

15. The Project is 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. DBSA has been active in the REIPPPP by financing of renewable energy

¹¹ From the Project Progress Report as of September 2022.

¹² The Loan Closing Date was revised to January 2024 in the Fifth Loan Amendment.

projects in the country. From the date of project appraisal, the investments from DBSA into the REIPPPP Bidding Windows were estimated at R 9.9 billion, including the financing of 11 IPPs from Bid Window 4 of REIPPPP approved by the Board Credit Investment Committee of DBSA, totaling 971 MW with estimated project costs amounting to R 23.8 billion (USD 1.9 billion), with DBSA investments at approximately R 3.9 billion (USD 300 million)¹³.

16. The Project's predominant objective is to facilitate investments in renewable energy that can contribute to power generation mix and reduction in CO₂ emissions in South Africa, in line with the government's IRP and its target of reducing greenhouse gas emissions as articulated in the NDP 2030. The Project was expected to achieve a yearly electricity generation of ca. 887 GWh from clean energy sources and to a minimum saving of 834,000 tons of CO₂ emissions annually, when the Sub-Projects are expected to become fully operational starting from 2022, based on the following projections and assumptions:
 - Result of REIPPPP's Bid Window 4 indicated the average investment cost of 1 MW of renewable energy generation amounts to ca. R 20.9 million or, approximately, USD 1.6 million. The average Sub-Project construction period is estimated as 3 years.
 - For every MWh of energy generated using renewable energy sources, it was expected to avoid CO₂ emissions of 0.94 tons¹⁴, and the average capacity factor for wind and solar projects to be 27%.
17. Beyond the expected contribution to the 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 is 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.

2.2 Implementation arrangements¹⁵

18. DBSA was responsible for identifying, selecting, appraising, financing, and monitoring Sub-Projects eligible for NDB funding. The selection of the Sub-Projects was based on the selection 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 Framework¹⁶, (ii) has sufficient level of preparedness, and (iii) is in line with NDB's policies on economic and financial analysis, project procurement, and environmental and social

¹³ Extracts from the PDB approved by NDB BOD in July 2018. The projects approved span across the wind, solar, and biomass energy generation, and the indicative list of sub-projects was included in Annexure VII of the PDB.

¹⁴ Extracts from the PDB: "South Africa's carbon emission factor, derived from its current energy source mix. Source: Emissions Intensity benchmarks for the South African carbon tax, Technical Support Study by The Green House and Ecofys, October 2014."

¹⁵ Extracts from the PDB approved by NDB BOD in July 2018.

¹⁶ Details about the DMF please refer to Annex 5 Project Design and Monitoring Framework.

impact management.

19. The loan agreement was expected to be signed by September 1st, 2018, and come into effect by September 30, 2018, at project approval. Financing is provided by DBSA to sub-borrowers in the form of (a) Senior debt; (b) Mezzanine debt; or (c) Loan facility for subsequent equity financing, for investing the renewable energy projects of: (i) wind; (ii) solar photovoltaic; (iii) solar thermal (CSP); (iv) biomass; (v) small hydro; (vi) waste to energy, are eligible expenditures from NDB's funds. After the loan agreement's actual signing on 15 March 2019, five amendments to it were made from December 2019 to April 2023.
20. To ensure the additionality of NDB's loan, the proportion of NDB's financing is up to 50% of each Sub-Project's cost. On-lending terms and conditions of Sub-Projects were determined by DBSA in accordance with its existing framework. Other key Terms and Conditions for the Loan designed at appraisal (and approval) are outlined in Table 1.

Table 1 – Summary of Key Terms and Conditions (from the Project Document for Board)

#	Item	Terms
1	Sub-Project Selection Criteria	<ul style="list-style-type: none"> (i) Sub-project shall contribute towards the power generation mix and reduction in carbon dioxide (CO₂) emissions in South Africa by not less than 90 tons per year per R 1 million. of Sub-Project cost. (ii) Sub-Project shall be economically viable and financially sustainable. Project must achieve an EIRR of 10%¹⁷ and FIRR above Sub-Project's WACC. (iii) Sub-Project shall be in South Africa and shall comply with all applicable national laws and regulations relating to environmental, resettlement and indigenous people. (iv) All necessary governmental approvals to start the construction have been obtained for the Sub-Project. (v) Counterpart funding for the Sub-Project (apart of DBSA funds) must be identified by DBSA. (vi) Unless pre-agreed, sub-loans provided by DBSA shall have minimum maturity of 10 (ten) years.
2	Retroactive Financing	Up to 20% of Loan amount, for costs incurred up to 12 months prior to the date of signing the loan agreement
3	Review, Reporting and Evaluation	<ul style="list-style-type: none"> • The Borrower shall submit Project Progress Reports at least annually. • Within six months after the project completion, the Borrower will prepare and furnish NDB with a project completion report.

¹⁷ The required economic internal rate of return (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 / defined as 8% in the Loan Agreement signed on March 15, 2019.

21. Before seeking a disbursement for every new Sub-Project, DBSA was required to submit to NDB a set of documents confirming the Sub-Project's conformity to the selection criteria. Sub-Projects for which DBSA's Sub-Loan is above the Free Limit set at (USD 40 million¹⁸), would need approval by the NDB. NDB's approval was also required for all Sub-Projects assessed as Category A with respect to an environmental and social impact (according to the NDB Environment and Social Framework).

2.3 Implementation status and output

22. The loan had been fully disbursed by NDB to DBSA by June 2020, for financing in a total of 15 renewable energy projects (the "Sub-Projects", including 9 Photovoltaic Crystalline-Single Axis, 4 Onshore Wind, 1 Concentrated Solar Power and 1 Biomass) through 5 sub-borrowers identified by DBSA, which are contributing to the energy generation capacities in 13 local communities of 4 provinces in South Africa¹⁹. All Sub-Projects financed by NDB's fund were selected as Preferred Bidders under the REIPPPP Bid Windows.

Table 2 – Distribution of the Sub-Projects

Renewable Energy Technology	Provinces				Number of Sub-Projects
	Northern Cape	Western Cape	Mpumalanga	North West	
Photovoltaic Crystalline-Single Axis	5	-	-	4	9
Onshore Wind	3	1	-	-	4
Concentrated Solar Power with storage	1	-	-	-	1
Biomass	1	-	1	-	1
Total Sub-Projects	9	1	1	4	15

Table 3 – NDB's Disbursement Dashboard for the Loan to DBSA (18ZA02 - USD 300 million)

No.	Value Date	Disbursement Method	Amount (USD)	% of Loan
1.	21-May-2019	Reimbursement	19,443,116.00	6.48%
2.	20-December-2019	Reimbursement	48,631,390.37	16.21%
3.	20-December-2019	Advance	51,368,609.63	17.12%
4.	22-June-2020	Advance	180,556,884.00	60.19%
Total			300,000,000.00	100.00%

23. Among the 15 Sub-Projects, 9 were financed by DBSA via the African Rainbow Energy &

¹⁸ The Free Limit was revised to USD 50 million in the Loan Agreement signed off on March 15th, 2019.

¹⁹ Please refer to Annex 4 List of Sub-Projects for details.

Power (“AREP”) BEE Facility, and 3 Photovoltaic Crystalline Sub-Projects were developed and commissioned by the Scatec Solar Construction Ltd²⁰. In 2022, all Sub-Projects reached commercial operation stage apart from Redstone, which was under construction. As of September 2022, the total estimated costs of 15 Sub-Projects were around R 40 billion with a planned capacity output of 1,304MW. The achieved annual renewable energy-based electricity generation is reported as 3,303 GWh, and CO2 emission avoided per year is above 3 million tons²¹.

Table 4 – Status of Sub-Projects funded as of September 2022²²

#	Name of the Sub-Borrower/ Sub-Project	Total Project Costs		NDB Loan Amount Allocated (in million USD)	Planned Contributions to Project’s Total Output		Estimated CO2 emission avoided per year (in ton)
		(in million Rands)	(in million USD) ²³		MW	%	
1	Roggeveld Windfarm Project	4,424	255.8	60	147MW	11.27%	528,915
2	Copperton Wind Farm Project	2,719	157.2	74	102MW	7.82%	306,000
3	Redstone CSP	11,296	653.3	45	100MW	7.66%	487,200
4	AREP BEE Facility (9 Sub-Projects)	17,051	986.1	38	730MW	55.98%	1,727,155
5	Scatec Solar (3 Sub-Projects)	4,779	276.4	83	225MW	17.25%	475,011
Total		40,269	2,328.9	300	1,304MW	100%	3,049,270

24. As indicated in the fourth loan amendment signed on March 22, 2022, the Project is scheduled for completion by December 2023, with the Project Completion Report due for submission by DBSA to NDB before December 30, 2024.

²⁰ The Sub-Projects are Dyason’s Klip 1, Dyason’s Klip 2 and Sirius Solar. Please refer to Annex 4 List of Sub-Projects for details.

²¹ From the Project Progress Report, September 2022.

²² Information and data summarized from the Project Progress Report, September 2022.

²³ The USD equivalent amount was converted by using the exchange rate of June 22, 2020 (i.e., the value date of last loan disbursement), as South African Rand 17.29/ USD.

III Project Evaluation

3.1 Background

25. This evaluation was included in the Independent Evaluation Office (IEO) 's Work Programme for 2023 which was approved by the NDB Board of Directors (BoD) in December 2022. It will be the first project to be evaluated by the IEO in South Africa. IEO plans to present this evaluation report, including the NDB Management Response, to the Board of Directors (BoD) in September 2023.
26. The Director General of Independent Evaluation Office (IEO) conducted a preparatory mission to South Africa in February 2023. The mission objective was to brief concerned counterparts in the South African government and borrower about the evaluation process, approach, and scope, and to seek their initial feedback on the overall methodology and approach, and timelines. After the meeting and based on the initial feedback, it was agreed that the main evaluation mission will be carried out in the week starting 2 May 2023, considering that the main government counterpart agencies (Department of National Treasury, Department of Mineral Resource and Energy) and the borrower are preoccupied in March and April due to commitments of book closing at yearly budgetary cycle end.

3.2 Evaluation methodology

27. The evaluation will be carried out within the overall framework of the NDB Evaluation Policy, approved by the BoD in August 2022. The following essential features of the Project have been considered when designing the evaluation methodology and framework:
 - DBSA, borrower of the USD 300 million loan, is a National Financial Intermediary (NFI), 100% owned by the South African government acting through the Department of National Treasury.
 - DBSA has been an active player in funding of renewable energy projects under the DMRE's REIPPPP. All 15 Sub-Projects financed by it through the NDB loan were appointed as Preferred Bidders under the REIPPPP's Bid Windows, which were released in line with the Ministerial Determinations.
 - Renewable energy projects under the REIPPPP are required to sign standard, nonnegotiable, Rand denominated 20-year Power Purchase Agreements (PPAs) with Eskom, and the prices are indexed to inflation²⁴. The PPAs are underpinned by a sovereign guarantee to Eskom.

²⁴ According to the PDB approved by NDB BoD in July 2018.

- The project's higher-level rationale builds heavily on the South African government's pronounced policies and national commitment on climate change and reduction of carbon emissions, which has put the project as one of the manifestations of the government's strong commitment and active strategy for addressing climate change issues, and more specifically, reducing carbon emissions through energy generation via Renewable Energy sources.
28. In light of the above, the Project was processed under the NDB Policy on Loans without Sovereign Guarantee to National Financial Intermediaries. With its expected contribution to national strategies of restructuring of the energy sector, the project outcome and impact analysis will require both a macro and a Sub-Project operational perspective. As such the proposed evaluation framework will address perspectives at both dimensions with a balanced combination of the internationally recognized evaluation methodologies, criteria, and processes for Public Sector and Private Sector Operations, as adopted by the Evaluation Cooperation Group of the Multilateral Development Banks, as outlined below:
- i. Due to its macro policy level significance and profile of the project (i.e., on-lending through an NFI), the evaluation analysis, at an overarching project level, will address the internationally recognized evaluation criteria, namely: **Relevance, Effectiveness, Efficiency, Sustainability, and Impact**²⁵. A composite criteria of overall project achievement will be determined based on the ratings of the above 5 criteria.
 - ii. The Project comprised of 15 Sub-Projects which were implemented through private sector enterprises (i.e., 5 sub-borrowers) with financing provided by the NFI borrower. Hence, the evaluation analysis, at the Sub-Project level, would also cover some dimensions as applied in assessing initiatives in the private sector viz.: **financial performance, economic sustainability, environmental and social performance**²⁶, to evaluate:
 - a. The Sub-Project's financial performance and achievement of business objectives articulated at approval, including assessing the benefits and costs associated with the Sub-Project and the extent to which the Sub-Project has delivered on the process and business objectives stated at appraisal and approval.

²⁵ Please find definition of the Evaluation Criteria in Annex 1.

²⁶ These dimensions draw from the ECG 'Good Practice Standards (GPS) for evaluation of Private sector Operations'.

- b. The Sub-Project’s economic effects, including measuring the economic activities of sub-borrowers, the level of Sub-Project’s economic viability and financial sustainability²⁷.
- c. The Sub-Project’s environmental and social performance in the area of influence of it, by considering the adequacy of borrower’s Environmental & Social Management System (ESMS) and its implementation on the Sub-Project.

These specific dimensions would be integrated within the overall analysis based on the five evaluation criteria mentioned above.

- 29. Apart from determining the overall project outcomes, the evaluation will also assess and rate two additional criteria. These are: **(i) NDB and Borrower Performance (during project design and preparation, implementation, monitoring, and supervision, and assessing the quality of self-evaluation products); and (ii) NDB’s Additionality²⁸.**
- 30. The evaluation will have a summative character and will rely on an application of mixed methods of both quantitative and qualitative analysis including the use of techniques of triangulation for validation of analysis as appropriate. Based on the evidence collected and their assessment, the evaluation team will assign a performance rating to each evaluation criterion, using a six-point scale (Table 5). Based on the assessment and ratings of the composite sets of criteria mentioned above, the evaluation will form a qualitative and holistic performance judgement of “overall project achievement”.

Table 5 - Rating Scale

Rating		Score (rating) descriptor
6	Highly Satisfactory	Under the concerned criterion, the project achieved or surpassed all main targets, objectives, expectations, and results and could be considered as a model within its project typology.
5	Satisfactory	Under the concerned criterion, the project achieved almost all (indicatively, over 80-95 per cent) of the main targets, objectives, expectations, and results.
4	Moderately Satisfactory	Under the concerned criterion, the project achieved the majority (indicatively, 60 to 80 per cent) of the targets, objectives, expectations, and results. However, a significant part of these was not achieved.

²⁷ According to the Loan Agreement, the Sub-Project shall be economically viable and financially sustainable and must have an economic internal rate of return of 8% and a financial internal rate of return above the Sub-Project’s weighted average cost of capital at the time of the approval of the Financing Instrument for the Sub-Project.

²⁸ Please find definition of the Evaluation Criteria in Annex 1.

3	Moderately Unsatisfactory	Under the concerned criterion, the project did not achieve its main targets (indicatively, less than 60 per cent), 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.

3.3 Evaluation questions

31. The key questions that the evaluation will address are listed below. The Evaluation Framework in Annex 2 details out the Evaluation Criteria and the full set of questions.
- How is this project aligned with and supportive to the objectives of the National Development Plan (NDP), the Government’s latest ‘Economic Reconstruction and Recovery Plan (ERRP)’ of October 2020, and to the targets of ‘Nationally Determined Contributions’ (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 does the project fit into the overall national planning and restructuring of the energy generation and transmission in South Africa? How are the various Sub-Projects contributing to enhancing reliability and expanded access to energy to meet domestic demand, and how do they complement the government’s plans for diversification of South Africa’s energy generation mix both in terms installed capacity and actual generation?
 - How well have resources and funds been utilized in financing the Sub-Projects? To what extent did the project deliver expected outputs and results in an economic and timely manner?
 - To what extent did the financing of Sub-Projects by 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 economic and financially sustainable approach?

- Was the appraisal and monitoring regime and capacity of borrower for the Sub-Projects helpful in attracting and selecting high-quality sponsors and investors from the private sector?
 - By supporting DBSA through enabling on-lending to the Sub-Projects, did the project contribute to enhancing South Africa's private sector participation in the energy sector? What are the lessons for funding renewable energy in South Africa in the future, and for on-lending with National Financial Intermediary such as DBSA?
32. During the preparatory mission to South Africa in February, the DG of IEO underlined key areas that would also be covered by this evaluation including an assessment of the: (i) level of alignment and support of the project to government's energy planning and restructuring of the sector, and contribution in reduction of carbon emission as set in the NDC; (ii) the sustainability of renewable energy infrastructure facilities put in place by the project; (iii) sustainability of the private sector efficiency and interest in renewable energy sector; (iv) the institutional capacity and related technical assistance requirements for the project and how they will be sustained; (v) sharing of lessons of this national initiative in wider international forums. The key questions in the Evaluation Framework as stated above were reiterated during the mission.

3.4 Evaluation team and process

33. The evaluation will be conducted under the overall leadership and oversight of Mr. Ashwani K. Muthoo, the Director General (DG) IEO. The evaluation will be operationally managed and conducted under the responsibility of Mr. Chao Sun, Senior Professional, IEO. Critical inputs will be provided by a team of consultants comprised of Mr. Mohammad Nurul Alam (Senior Independent Adviser), Ms. Lungile Mashele (Energy Sector Expert) and Mr. Heng Zhao (Evaluation Analyst). IEO is also planning to associate methodological advisers from the South African Monitoring and Evaluation Association (SAMEA) as peer reviewers as part of the evaluation process. IEO will bear full responsibility for the contents and quality of the evaluation report and related outputs.
34. The evaluation will comprise the following phases.
- i) **Desk Review.** IEO will conduct an initial literature review. The documents to be reviewed will include, *inter-alia*, the project appraisal paper, loan agreement and amendments, the project progress reports and supervision reports, and other self-evaluation products, relevant documentation, and data. The Evaluation Team will also examine findings on the impacts of the renewable energy projects on communities

elsewhere in South Africa that may be of relevance to the project. This phase will be in preparation for the field work.

- ii) **Field Work.** A field mission to South Africa is scheduled at the first week of May 2023 (2 May - 15 May) for conducting data collection, key informants' interview, collecting additional evidence, and visit to selected project sites and initial analysis. Semi-structured interviews with key informants, field observations, and relevant project documents will form the basis for initial analysis. The quantitative analysis will rely mainly on secondary data, including data from the sub-projects' and sub-borrowers' internal monitoring and evaluation system, financial data, as well as country and sector data from public sources. At the end of the mission and prior to departure from the country, the Evaluation Team will share its preliminary evaluation findings with the relevant stakeholders (e.g., DBSA and others concerned) by a power point presentation.
- iii) **Drafting of the evaluation report.** Building on the desk and field work, IEO will draft the main evaluation report (see Annex 3 for draft table of contents). The draft will be shared with DBSA and other concerned in-country partners and NDB Management for comments. The report will be finalized considering the comments received. An audit trail will be produced illustrating how the comments received have been incorporated by IEO in the final report. Once the final report has been prepared by IEO, on that basis, the NDB Management will prepare a written Management Response to the independent evaluation, which will be included in the evaluation report once published.
- iv) **Stakeholders' workshop.** Following the completion of the evaluation report, IEO will organize a final stakeholders' workshop in South Africa. The workshop will focus on learning, with the aim of discussing and exchanging views on the evaluation's main findings, lessons, and recommendations. In addition to the evaluation report and NDB Management Response, as background documentation for the workshop, IEO will prepare an Evaluation Lens²⁹ and summarize the main evaluation results and recommendations in a power point presentation to be delivered at the workshop (which will be held before BoD discussion, see next point).
- v) **BoD discussion.** The final evaluation report along with NDB Management Response will be discussed in the Bank's 41st Board of Directors meeting planned on 13 September 2023. Representatives of the Borrower (DBSA) will be invited to participate in the BoD to share their views on the project and the independent evaluation conducted by IEO.

²⁹ A two-page reader-friendly brochure summarizing the evaluation's findings and recommendations.

IV Disclosure

35. In line with the provisions of the NDB Evaluation Policy, key evaluation outputs (e.g., evaluation report, Evaluation lens and others) will be disclosed to the public through the IEO webpages³⁰ on the NDB website and other communication instruments.

V Evaluation Timeline

36. The evaluation will be conducted from April to September 2023. The following table captures the specific deliverables, and a corresponding timeline.

Table 6 - Evaluation timeline

Deliverable	Timeline
Draft approach paper shared with NDB Management, the borrower and others	22 March
Comments on draft approach paper by Management, the borrower and others	07 April
Finalize approach paper	21 April
Main evaluation mission to South Africa	02 May-15 May
Draft evaluation report sent to NDB Management, the borrower and other relevant in- country partners	14 June
Comments on draft evaluation report by NDB Management, the borrower, and other relevant in-country partners	7 July
Final evaluation report by IEO	21 July
Share final evaluation report with NDB Management for preparation of Management Response	25 July
NDB Management Response finalized	To be decided
Stakeholder's workshop	To be decided
Presentation of evaluation report and Management Response in the 41 st Meeting for NDB Board of Directors	13 September

³⁰ https://www.ndb.int/wp-content/uploads/2022/11/IEO_Final-Evaluation-Policy-1.pdf

VI ANNEX

ANNEX 1: Evaluation 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 analysis of effectiveness involves taking account of the relative importance of the objectives or results.
EFFICIENCY	Focuses on how well resources are used. In particular, the assessment of efficiency will examine the extent to which the project delivers, or is likely to deliver, results in an economic and timely manner.
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.
IMPACT	The extent to which the project has generated, or is expected to generate, significant positive or negative, intended, or unintended, higher-level effects.
NDB AND BORROWER PERFORMANCE	This criterion assesses the contribution of partners to project design, execution, monitoring and reporting, supervision and implementation support, and evaluation. The performance of each partner will be assessed on an individual basis with a view to the partner's expected role and responsibility in the project life cycle.
NDB ADDITIONALITY	The rating of the NDB's additionality considers the organisation's value proposition in providing support to 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 the NDB.

ANNEX 2: Evaluation framework

Evaluation Criteria	Evaluation Questions	Methods/ Sources
<u>Relevance</u>	<ul style="list-style-type: none"> • How does the project’s rationale address and relate to South Africa’s macro level imperatives of economic growth, employment generation, alleviation of poverty 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 the energy generation, distribution, and plans for expanded renewable energy generation? • 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 level? To what extent have the Sub-Projects promoted economic development at their area of influence? 	<p>Stated policies and plans, interviews with government officials and borrower.</p> <p>Review of projects' initial power output estimations and actual monthly production.</p> <p>Review of baseline and collected data.</p> <p>NDB General Strategy For 2022–2026; interviews with NDB staffs and Management.</p>
<u>Effectiveness</u>	Macro and Overarching Project level:	Analysis of results data and energy mix.

Evaluation Criteria	Evaluation Questions	Methods/ Sources
(Include assessing the Sub-Project's financial performance)	<ul style="list-style-type: none"> • Was the project a positive contribution to the national effort to diversify 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 and thereby reducing the vulnerability of energy supply? • Was the Project Design and Monitoring Framework sound and to what extent are the performance indicators being 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 that the project maintain 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 same/neighboring areas? 	<p>Review of Sub-Projects' initial power output estimations and actual monthly productions (e.g., production, curtailment, production versus contracts, etc.).</p> <p>Discussions with Sub-Project operators.</p> <p>Perusal of relevant policy documents and scrutiny of other renewable energy projects in the country.</p> <p>Review of renewable energy projects in same provinces. Discussions with sub-project operators. Physical inspections, review project implementation reports and interviews with relevant staff and stakeholders.</p>

Evaluation Criteria	Evaluation Questions	Methods/ Sources
	<p>Financial Performance and Business Objectives (Sub-Project level):</p> <ul style="list-style-type: none"> • 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 required information? • Have the Sub-Projects, contributed to growth in the economy, by ensuring and enhancing 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? 	<p>Analysis of energy mix and result data.</p> <p>Review of projects' initial power output estimations and actual monthly production.</p> <p>Review of baseline and collected data.</p> <p>Comparison of projected output with the generated output (i.e., production, curtailment, production versus contracts and cost, etc.).</p> <p>Physical inspections, implementation reports and interviews with relevant staff.</p>
<p>Efficiency (Include assessing the Sub-Project’s financial performance and economic sustainability)</p>	<ul style="list-style-type: none"> • Was the Loan Agreement signed off and effect in line with appraisal estimated timelines indicating a sound project readiness? • Was the project’s disbursement performance in line with appraisal estimates and project design profile? 	<p>Physical inspections, review the project implementation reports and interviews with relevant staff.</p> <p>Review of project design, monitoring & result framework, and effectiveness of KPIs.</p>

Evaluation Criteria	Evaluation Questions	Methods/ Sources
	<ul style="list-style-type: none"> • To what extent have the Sub-Projects been completed as envisaged? • To what extent were the project designs, construction activities, operations and administration activities followed original specifications, timelines, and quality standards? • Do the financial statements demonstrate positive trend in profitability and revenues of the borrower's and Sub-Projects (sub-borrowers)? • Do the Sub-Project's financial performance and internal rate of return compare favorably 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? 	<p>Review of project design and implementation in the context of stated and inferred Environmental, Social, and Governance issues.</p> <p>Review of relevant documents and discussions with NDB staff and DBSA.</p> <p>Onsite inspections and interviews with staff and local community members.</p> <p>Perusal of relevant documentation and discussions with NDB operations and regional office staff and DBSA staff.</p> <p>Comparative economic and financial data, assessment of processes and discussions with appropriate staffs from NDB, DBSA and sub-borrowers.</p>

Evaluation Criteria	Evaluation Questions	Methods/ Sources
<p><u>Sustainability</u> (Include assessing the Sub-Project's economic sustainability, environmental and social performance)</p>	<ul style="list-style-type: none"> • 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 WACC? • Had all Sub-Projects entered Power Purchase Agreements (PPAs) with Eskom, and had they received payments from Eskom timely? • Were there subsidies granted to the projects/Sub-Projects such as tax exemptions, etc.? If yes, will they be able to sustain at usual market price of electricity once subsidies are reduced or lifted? • To what extent were Environmental, Social and 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 environmental and social safeguard regulations? Were 	<p>Review of project reports.</p> <p>Discussion with DBSA staff, Sub-Project operators, energy sector and E&S Environmental and Social (E&S) experts.</p> <p>Review of project design reports and projections.</p> <p>Discussions with relevant staff/management and comparison with international norms</p> <p>Discussions with relevant staff/management</p> <p>Interviews and review of documents.</p> <p>Mobilization of private capital – equity and/or new debts if any.</p> <p>Cost benefit analysis, Economic Internal Rate of Return and WACC review, if available.</p> <p>Discussions with DBSA, Sub-Project developers, and local communities.</p> <p>Discussion with Sub-Project operators and DBSA staff.</p> <p>Discussions with relevant</p>

Evaluation Criteria	Evaluation Questions	Methods/ Sources
	<p>consultations held in line with country regulations?</p> <ul style="list-style-type: none"> • For the Sub-Projects, were land acquisition and resettlement activities in compliance with government policies, rules, and regulations? • 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 Environmental and Social (E&S) impacts from Sub-Projects handled in line with the DBSA and NDB's processes? 	<p>staff/management and industry associations.</p> <p>Review of project reports. Discussion with DBSA staff, energy sector and E&S experts.</p> <p>Review regulations and safeguards pertinent to the project. Interviews with staff and community members.</p> <p>Review of E&S plans and report. Review of NDB E&S procedures. Discussions with E&S staff and consultants.</p>
<p><u>Impact</u></p>	<ul style="list-style-type: none"> • Will the project make the planned contribution in reduction of national carbon emission (as projected in appraisal) and planned contribution to the South Africa's NDC for Greenhouse Gas emission by 2030? • To what extent have Sub-Projects increased reliability and quality of supply of electricity via renewable energy at the local and regional level? • Have the Sub-Projects successfully contributed towards the power generation mix and reduction in carbon dioxide (CO₂) emissions in South Africa by not less than 90 tons per year per R 1 million of the Sub-Project cost? 	<p>Review of baseline and collected data.</p> <p>Scrutiny of other renewable energy projects in the area or under the REIPPPP pipeline.</p>

Evaluation Criteria	Evaluation Questions	Methods/ Sources
	<ul style="list-style-type: none"> • Were there any unintended outcomes and impacts of the Sub-Projects? • How the process and outcomes of this Project/ Loan influence policy and future efforts re renewal energy streams? 	
<u>NDB and Borrower Performance</u>	<ul style="list-style-type: none"> • What is the overall quality of 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 HQs and the African Regional Center (ARC) clearly 	<p>Interviews with NDB staff and DBSA officials.</p> <p>Review of results framework, implementation reports, and effectiveness of KPIs.</p> <p>Review all related project documents.</p>

Evaluation Criteria	Evaluation Questions	Methods/ Sources
	<p>defined in the project life cycle, and were these roles played adequately?</p> <ul style="list-style-type: none"> • Did NDB put in place a knowledge management and learning plan to document and share lessons learned, and has this been implemented? 	
<u>NDB Additionality</u>	<ul style="list-style-type: none"> • What was NDB's financial additionality overall? • Would DBSA have been able to mobilise sufficient financing for the project without NDB involvement? • Was NDB catalytic in mobilizing 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 the allocation of 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? 	<p>Perusal of relevant policy documents, and scrutiny of other renewable energy projects in the area or under the REIPPPP pipeline.</p> <p>Review of renewable energy projects in same provinces or under the REIPPPP pipeline.</p> <p>Discussion with project design team and stakeholders.</p> <p>Review of project documents and interviews.</p>

ANNEX 3: Evaluation Report Outline³¹

Acknowledgements	
Preface by DG IEO	1 page
List of Acronyms	1 page
Executive Summary	3-4 pages
Management Response	
Background	
• Country and International context	2 pages
• Sector, Project, and Local context	2-pages
Project background	
• Project objectives	1/2 page
• Project design and components	1 page
• Implementation arrangements and support	2 pages
Evaluation objectives, methodology and process	
• Objectives	1/2 page
• Methodology, questions, and rating system	2 pages
• Limitations and mitigation measures	1/2 page
• Process steps	1 page
Project outcomes	
• Relevance	1 page
• Effectiveness and Efficiency	2 pages
• Sustainability and Impact	2-3 pages
• Overall project outcomes	1/2 page
Other assessment criteria	
• NDB and Borrower Performance	1 page
• NDB Additionality	1/2 page
Conclusions, lessons learned and recommendations	
• Conclusions	1 page
• Overall project outcomes	1/2 page
• Recommendations	1 page
Annexes	

³¹ This is a draft and will be further developed as the evaluation is undertaken.

ANNEX 4: List of Sub-Projects³²

#	Sub-Project Name	REIPPPP Bid Window	Capacity (MW)	Province	Local Community	Time of Commercial Operation	Renewable energy Technology	Sub-Project Entity/ Sub-Borrower
1	Waterloo Solar Park	4	86	Northwest	Vryburg	November 2020	Photovoltaic Crystalline-Single Axis	African Rainbow Energy & Power ("AREP") BEE Facility
2	Bokamoso	4	77	Northwest	Matlosana	September 2020		
3	Zeerust	4	86	Northwest	Ramotshere Moiloa	December 2020		
4	De Wildt	4	57	Northwest	Brits	January 2021		
5	Droogfontein 2 Solar Park	4	86	Northern Cape	Kimberley	March 2020		
6	Greefspan PV Power Plant No. 2 Solar Park	4	63	Northern Cape	Douglas	April 2021		
7	Kangnas Wind Farm	4	140	Northern Cape	Springbok	November 2020	Onshore Wind	Scatec Solar Construction Ltd (the 'Contractor'), H1 Holdings (Pty) Ltd
8	Perdekraal East Wind Farm	4	110	Western Cape	Touwsrivier	October 2020		
9	Ngodwana Energy	4	25	Mpumalanga	Nelspruit	January 2022	Biomass	
10	Dyason's Klip 1	4	75	Northern Cape	Upington	March 2020	Photovoltaic Crystalline-Single Axis	
11	Dyason's Klip 2	4	75	Northern Cape	Upington	March 2020		
12	Sirius Solar PV Project One	4	75	Northern Cape	Upington	February 2020		
13	Roggeveld Wind Farm	4	147	Northern Cape	Sutherland	February 2022	Onshore Wind	Roggeveld Wind Power (RF) (Pty) Ltd
14	Copperton Windfarm	4	102	Northern Cape	Copperton	December 2021	Onshore Wind	Copperton Wind Farm (Pty) Ltd
15	Redstone Solar Thermal Power Plant	3.5	100	Northern Cape	Postmasburg	Still under construction	Concentrated Solar Power with storage	Acwa Power Solar Reserve Redstone Solar Thermal Power Plant (RF) Limited

³² Information is summarized from the Project Progress Report of September 2022 and website <https://www.ipp-projects.co.za>.

ANNEX 5: Project design and monitoring framework³³

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 will assess each of the performance targets and indicators as tabled at appraisal in 2018. It will evaluate the project's achievement of each target and the effectiveness of the project monitoring and reporting mechanism during the implementation. It will also identify any risks not considered initially for their impact either on the project or its results (e.g., the COVID-19 pandemic, etc.).

Design Summary	Performance Targets /Indicators	Reporting Mechanism
Outcome		
<ul style="list-style-type: none"> • Reduction in CO2 emissions • Increased energy generated from renewable energy sources. 	By 2022: i) Avoided 834,000 tons of carbon dioxide gas emissions annually. ii) At least 887 GWh/annum of energy generated from renewable sources.	<ul style="list-style-type: none"> • Project Progress Reports • Project Completion Report
Output		
<ul style="list-style-type: none"> • Construction of new renewable energy plants • Increased generation capacity from renewable energy sources. 	By December 2021: i) At least 3 Sub-Projects approved and funded by DBSA that use NDB loan. ii) At least 375 MW of new renewable energy generation capacity added through DBSA lending.	Project Progress Reports
Key activities with milestones		Inputs
<ol style="list-style-type: none"> 1. NDB and DBSA signs 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 implementation of the Sub-Projects starting from 2018 till 2022. 		<ul style="list-style-type: none"> • NDB Loan: USD 300 million • Other sources (loans, equity, grants): USD 300 million

³³ From the Project Document for Board (PDB), July 2018.

ANNEX 6: PROJECT RISK ANALYSIS AND MITIGATION MEASURES³⁴

The evaluation will assess each of the risks as tabled at appraisal in 2018. It will evaluate the extent to which each of these risks materialized and the robustness of the mitigation measures proposed against actual events throughout the project implementation. It will also identify any risks not considered initially for their impact either on the project or its results (e.g., the COVID-19 pandemic, etc.).

#	Risks	Mitigation Measures
1.	Macroeconomic risk (moderate)	<ul style="list-style-type: none"> • Large changes in exchange rate between USD and Rand and increasing interest rates in USD may decrease DBSA appetite to borrow in USD. DBSA financing mandate extends beyond South Africa, throughout the African region, where there is need for foreign currency (USD) funding. • DBSA as a development institution with a relatively narrowly focused mandate of operations may have limited project portfolio growth during cycles of economic slowdown.
2.	Sector risk (moderate)	<ul style="list-style-type: none"> • Predominant role of Eskom in SA energy sector implies that its potential financial difficulties affect all other players in this sector and financial institutions exposed to it. Renewable energy projects under the REIPPPP are underpinned by a sovereign guarantee to Eskom, which mitigates the risk. • DBSA's is exploring opportunities to fund off-grid projects, for supply to private off takers and also increasing its exposure in other sectors such as transport and water.
3.	Credit risk (low)	DBSA has a good financial standing and a sound financial management.
4.	Implementation risk (moderate)	A bulk of Sub-Projects are expected to be implemented by private companies, which makes the Sub-Projects difficult to coordinate. Risk is partially mitigated by DBSA having lender technical advisors, which monitor project implementation.
5.	Financial Management risk (low)	DBSA has a sound financial management and a due level of transparency and supervision, including by state authorities.
6.	Sub-Project Credit risk (Medium to high)	Most of Sub-Projects are financed on a non-recourse project finance basis. The projections for the cashflows of the Sub-Projects

³⁴ From the Project Document for Board (PDB), July 2018.

		are conservative (using P90 case), and they are structured with performance and construction delay guarantees to minimize risk.
7.	Procurement (low)	Sub-Projects within Renewable Energy Independent Power Producer Procurement Program (REIPPPP) have been selected through an open competitive process. Most of Sub-Project entities are expected to be private companies, hence procurement within Sub-Projects do not bear risks associated with public procurement and public finances.

ANNEX 7: Tentative Mission Schedule

Date	Weekday	City	Purpose
May 2, 2023	Tuesday	Pretoria (Gauteng Province)	Meeting with the Department of Planning, Monitoring and Evaluation, and DBSA.
May 3, 2023	Wednesday	Pretoria and Johannesburg (Gauteng Province)	Meeting with Independent Power Producer Procurement Programme Office, the National Energy Regulator of South Africa, and the NDB African Regional Center staffs.
May 4 th , 2023	Thursday	Sandton, Johannesburg (Gauteng Province)	Meeting with South African National Energy Development Institute (SANEDI) and the African Rainbow Energy & Power (“AREP”).
May 5 th , 2023	Friday	Brits (Northwest Province)	Site visit to De Wildt Solar Project, meeting with the Project Contractor (Cobra) and the Economic Development Program Officer.
May 8 th to 9 th 2023	Monday and Tuesday	Pretoria (Gauteng Province)	Meeting with Regional Representatives of peer multilateral development banks (e.g., the International Finance Corporation, the African Development Bank, the European Investment Bank, etc.)
May 10 th 2023	Wednesday	Cape Town (Western Cape Province)	Travel from Pretoria to Cape Town, meeting with the Power Futures Lab at University of Cape Town.
May 11 th 2023	Thursday	Touws River (Western Cape Province)	Site visit to the Perdekraal Wind Farm Project and meeting with the Sub-Project operator, co-investor (Mainstream), and local municipal manager.
May 12 th , 2023	Friday	Cape Town (Western Cape Province)	Meeting with H1 Holding: one of the investors of Roggeveld Wind Farm Project, Scatec Projects (DK1, DK2 and Sirius1), Perdekraal and Kangas Wind Farm Projects.
May 15 th , 2023	Monday	Pretoria (Gauteng Province)	Meeting with the Department of National Treasury. Presentation of the preliminary findings of the evaluation mission to DBSA and NDB ARC teams.

ANNEX 8: Bibliography and project documents reviewed

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

- New Development Bank Policy on Partnerships with National Development Banks – December 2015
- New Development Bank Policy on Loans without Sovereign Guarantee to National Financial Intermediaries – January 2016
- New Development Bank Environment and Social Framework – March 2016
- NDB Project Implementation Guidelines - April 2018
- New Development Bank General Strategy for 2022-2026: Scaling Up Development Finance for a Sustainable Future – May 2019
- New Development Bank General Strategy: 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