Thematic Evaluation of the Energy Sector: Republic of South Africa

Approach Paper: Methodology and Process

Independent Evaluation Office
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Abbreviations and acronyms

ARC	Africa Regional Centre
BoD	Board of Directors
CEH	climate and ecosystems health
CPE	country portfolio evaluation
IDC	Industrial Development Corporation of South Africa
IRP	Integrated Resource Plan
GHG	greenhouse gases
IEO	The Independent Evaluation Office
MW	megawatt
NDB	New Development Bank
NDC	nationally determined contribution
NDP	National Development Plan
PPA	power purchase agreement
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
SANEDI	South African National Energy Development Institute
SDG	Sustainable Development Goal
WACC	weighted average cost of capital

I. Introduction

A. Background

1. Thematic/sector evaluations are important types of evaluation of the Independent Evaluation Office (IEO) product mix. They cover a selected theme/sector of significance to NDB, which is usually a priority in the Bank's current general strategy (e.g. infrastructure, transportation, energy, climate finance, etc.). The main purpose of such evaluations is to assess the performance of the Bank's operations and related activities in a particular sector/theme and to generate lessons and recommendations for the way forward.

2. As approved by the NDB Board of Directors in December 2024, in 2025 IEO will conduct a thematic evaluation of NDB-financed projects (both sovereign and non-sovereign) in the "energy sector" in the Republic of South Africa. More specifically, the evaluation will cover all projects classified in the "clean energy and energy efficiency" thematic area – including those currently in the project pipeline and on standby,[1] as well as those that may not be strictly classified as clean energy/energy efficiency, but have energy-related components and/or activities.

3. This Approach Paper presents the overall scope and design of this thematic evaluation, including the evaluation's objectives, methodology, key evaluation questions, process and timeframe. The evaluation framework in **annex 2** summarises the main evaluation criteria and corresponding questions that will form the methodological basis for the assessment.

B. Country context

4. South Africa covers an area of 1,221,037 square kilometres with a population (in 2023) of over 62 million people. The country has nine provinces and is divided into 52 districts (eight metropolitan and 44 district municipalities). South Africa has taken considerable strides to improve the wellbeing of its citizens since its transition to democracy in the mid-1990s, but progress in certain areas has stalled in the last decade. Structural challenges and weak growth have undermined progress in reducing poverty, heightened by the COVID-19 pandemic. Increasingly severe domestic constraints, alongside slowing global demand, led to GDP growth falling to just 0.7% in 2023 and a projected GDP growth rate of 1.5% in 2025.[2]

5. Multiple factors have led to South Africa's low-growth situation including: insufficient workforce skills, high levels of societal inequality, low corporate competition, low integration with regional and global value chains, electricity shortages, transport sector constraints and climate shocks. High inflation and rising interest rates have also reduced household disposable incomes, impacting consumer spending. Overall, the South African economy has prospects for growth, but global uncertainty could bring serious disruptions.

[1] Please refer to paragraph 23.

[2] *World Economic Outlook*, October 2024.

6. The Government of South Africa has initiated several multiple-layer programmes, projects and campaigns to boost growth and development. The National Development Plan 2030 (NDP) stands as the cornerstone of South Africa's development strategy,[3] with the Medium-Term Strategic Framework (henceforth referred to as the Medium-Term Development Plan [MTDP]) as the government's five-year implementation phase of the NDP 2030. Additionally, South Africa's updated nationally determined contributions (NDCs) maintain that programmes to achieve transitioning towards a low-carbon and climate-resilient economy will require climate finance and other forms of support provided to developing countries as specified in the Paris Agreement.[4]

C. Sectoral context

7. The government has taken multiple actions to catalyse economic growth through structural reforms in various areas and, among them, is energy sector reform. The Electricity Regulation Act of 2024 has been introduced to, among other things, establish a competitive electricity market and enable investment in new generation capacity and electricity infrastructure to promote long-term energy security. Also, reforms to freight logistics, the management of ports, and the telecommunication sector will contribute to the development of the energy sector in the country and alleviate the energy crisis in South Africa.

8. Coal is the mainstay of the South African energy system, meeting around 78% of installed power generation capacity by end 2024.[5] Coal dependency in the electricity sector is a major driver of greenhouse gas (GHG) emissions. If unmanaged, South Africa's emission levels could quadruple by 2050.[6] South Africa's electricity supply is primarily managed by Eskom Holdings SOC Limited (hereafter referred to as Eskom), a state-owned entity that generates about 95% of the country's electricity. To address this, South Africa is making strides to reduce its reliance on coal and diversifying energy supply by increasing the provision of low carbon technologies.

9. The most prominent issue facing the energy sector development in South Africa has, since 2007, been load-shedding. The year 2022 saw 3,776 hours (about 157 days)[7] of power outages, bringing severe economic cost. However, as a result of structural improvements due to the success of the Generation Recovery Plan there were 10 months of uninterrupted electricity supply. By 21 January 2025, Eskom reached 300 consecutive days without implementing load-shedding.[8] On 31 January 2025 there was a temporary

[3] These include the New Growth Path, which sets the trajectory of economic development; the National Infrastructure Plan, which guides the rollout of infrastructure to improve people's lives and enable economic growth; and the Industrial Policy Action Plan, which focuses on promoting investment and competitiveness in leading sectors and industries.
[4] South Africa's First NDCs Under the Paris Agreement, Updated September 2021.
[5] International Energy Agency.
[6] National Climate Change Response White Paper, 2011.
[7] *South Africa's Energy and Electricity Sector*, NDB Research Department.
[8] Eskom.

setback, due to plant breakdowns requiring extended repairs, which led to Eskom implementing 48 hours of Stage 3 load-shedding.[9]

10. At the same time, several factors have compounded the energy crisis in the country, such as electricity pricing inflation and its pricing methodology, the burden on electricity transmission caused by ageing infrastructure and imbalanced transmission line density, and Eskom's historical issues.[10] As part of the reforms, the government – through the Department of Minerals Resources and Energy (DMRE) – has also initiated a process for reviewing the Electricity Pricing Policy (EPP)[11] in order to update the approach adopted in 2008.

11. Renewable energy has been a minimal component in South Africa's energy mix to date, however wind energy generation has seen a slight upward trend in recent years. The low share of renewables in final energy consumption (the target of Sustainable Development Goal [SDG] 7.2) ranks South Africa at 112th place in the world, and the level of renewables as share of overall electricity generation ranks the country at 118th place in the world in 2022.[12]

12. South Africa has a well-defined, centrally controlled electricity generation, planning and supply system with stakeholders at different levels[13] and the government has also issued several key policies and initiatives to foster a competitive electricity market with private sector participation.

    (i) **The Energy Action Plan** is South Africa's plan to end load-shedding and achieve energy security. The plan outlines actions aimed at fixing Eskom and adding as much new generation capacity as possible as quickly as possible, to close the gap in electricity supply. The plan includes five key pillars.[14] The Plan targets construction of 10,280 kilometres of transmission lines by 2030, of which about 548 kilometres was already completed by November 2024.

    (ii) **Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)**: the government has also launched programmes to encourage private investment in renewable energy, covering technologies like onshore wind, solar photovoltaic panels, concentrated solar power, small hydro, biomass, biogas, and landfill gas. Energy generated from renewable energy sources was 112,590 gigawatt hours (6,181 megawatts [MW]) at the end of June 2024.

[9] Eskom.
[10] With reference to *South Africa's Energy and Electricity Sector*, NDB Research Department.
[11] DPME's Cost-Benefit Analysis study on EPP, 2023
[12] International Energy Agency.
[13] *South Africa's Energy and Electricity Sector*, NDB Research Department.
[14] (i) Fix Eskom and improve the availability of existing supply; (ii) Enable and accelerate private investment in generation capacity; (iii) Fast-track the procurement of new generation capacity from renewables, gas and battery storage; (iv) Unleash businesses and households to invest in rooftop solar; (v) Fundamentally transform the electricity sector to achieve long-term energy security. A National Energy Crisis Committee (NECOM) was established to ensure Energy Action Plan is fully implemented to achieve these objectives.

(iii) **Restructuring of Eskom.** Eskom has dominated the electricity sector in South Africa for many years. The government has provided debt relief measures to Eskom with certain conditional factors, and plans to restructure the company into three entities for different goals: generation, transmission and distribution. The process started with the official launch of the National Transmission Company of South Africa (NTCSA) in October 2024 to enable reliable and efficient transmission of electricity in the country.

13. Given that South Africa is the 12th highest carbon emitter in the world, the government promotes the development of climate-smart plans in order to reduce such emissions. The transition towards a green and climate-resilient economy is already part of the country's NDP 2030. In its updated NDCs, South Africa committed to reduce its greenhouse gas (GHG) emissions to 350-420 million tonnes of carbon dioxide equivalent (MtCO2e) by 2030 and reach carbon neutrality by the mid-century.[15] This can also be examined in several key initiatives.

(i) **South Africa's Just Energy Transition Investment Plan (JET-IP)**: The plan for the five-year period of 2023-2027 sets out the scale of need and the investments required to achieve the decarbonisation commitments in the country's NDCs. These outline the rate at which South Africa plans to reduce GHG emissions and represent South Africa's fair contribution to the goals of the Paris Agreement.

(ii) Consistent with its climate ambition, South Africa was the first country in Africa to adopt a **carbon tax policy** in June 2019. It serves as the country's climate mitigation strategy. The tax is imposed on fuel inputs based on emission factors and procedures in line with the standards published by the Intergovernmental Panel on Climate Change, covering about 90% of the country's total GHG emissions, with only agriculture, forestry, land use and waste excluded.[16]

(iii) **The Climate Change Bill** signed in July 2024 will establish a legal foundation for mandatory carbon budget phases and sectoral emissions targets. The country is updating its national mitigation analysis and advancing decarbonisation of the electricity sector, as reflected in the 2019 Integrated Resource Plan (IRP), prioritising climate mitigation and renewable energy.

II. NDB-financed projects in the energy sector

A. NDB project portfolio and presence in South Africa

14. As of December 2024, the total amount of financing approved by NDB to all its member countries and across all sectors amounts to USD 38.76 billion. The share of this funding allocated thus far to South Africa is around USD 7.23 billion (18.6% of the total volume). Sovereign operations account for 62% of South Africa's loans, 28% is for COVID-19 emergency support and 10% is for non-sovereign operations.

[15] *South Africa Carbon Pricing and Climate Mitigation Policy*. International Monetary Fund, African Dept. 6 Jun 2023.
[16] ibid.

15. NDB approved its first project in South Africa on April 13, 2016. To date, the Bank has approved 15 projects in the country, comprising 10 sovereign projects (including two COVID-19 emergency loans) and five non-sovereign projects. The cumulative disbursement ratio of South Africa is 50% of the overall loan amount to the country. The loan currency of NDB's South Africa projects is both United States dollars and South African rand, with 30% of all loans provided in local currency.

16. NDB approved projects in South Africa are across seven different sectors: four in clean energy and energy efficiency, four in transport infrastructure, two in water and sanitation, two in COVID-19 emergency assistance, one in digital infrastructure, one in environmental protection, and one crosses multiple areas. Clean energy and energy efficiency projects account for 12% of the overall financing in the country. The multiple areas project, the Development Bank of Southern Africa (DBSA) Sustainable Infrastructure Project, contains energy components, and thus will also be considered in this thematic evaluation. Details of the sectoral breakdown of NDB's projects in South Africa are listed below in **table 1**.

Table 1. NDB financed projects in South Africa by sector

Sector	No. of projects sovereign	No. of projects non-sovereign	% of total approved amount in South Africa
Clean energy and energy efficiency	2	2	12%
Transport infrastructure	3	1	35%
Water and sanitation	2	0	16%
COVID-19 emergency assistance	2	0	28%
Digital infrastructure	0	1	1%
Multiple areas	0	1	1%
Environmental protection	1	0	7%
Totals	**10**	**5**	**100%**

Source: NDB Project Summary as of 31 December 2024.

17. South Africa was the first NDB member country to have a regional office, with the Africa Regional Centre (ARC) officially opened in Johannesburg on 17 August 2017. The Bank aimed "to establish the ARC as an important contributor to sustainable infrastructure development in South Africa and as a useful participant in the development agenda of the continent".[17] The ARC currently has seven staff in total and is the primary interface between NDB and regional stakeholders, responsible for building and deepening the Bank's partnerships with stakeholders in the country and region. ARC manages client relations and identifies potential partnerships for NDB on the ground, coordinates the work programme, leads project sourcing/origination and supervision of the

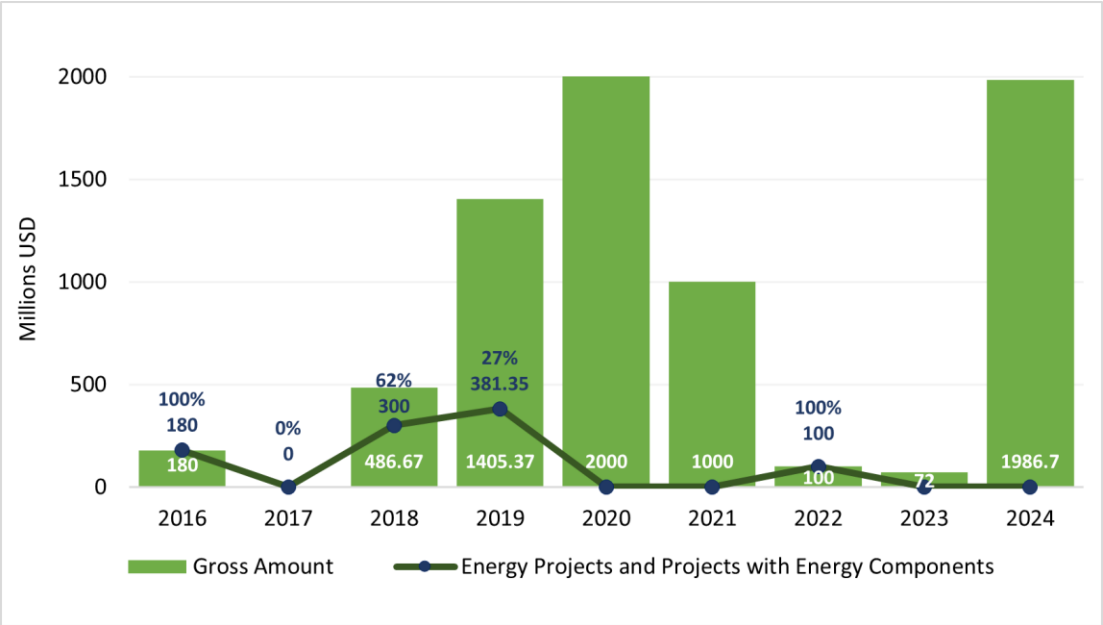
[17] See here.

implementation of NDB operations in the region.[18] The ARC Director General (DG) reports directly to NDB's Vice-President and Chief Operating Officer.

B. Summary of NDB energy sector projects in South Africa

18. The overall approved energy sector portfolio of NDB amounted to 3,592 million USD by 31 December 2024, and 24% of the total projects by loan amount are in South Africa, ranking it second among member countries, after China at 41%. The first energy sector project in South Africa was approved in April 2016, which was also the first project financed by NDB in the country. The percentage of energy projects against the overall approved loan amount in South Africa showed an upwards trend before 2019; but no new stand-alone energy projects have been approved since then. Energy was however part of the multiple area project approved in December 2022. See **figure 1** below for more information.

Figure 1. Approved energy projects against overall loan amount in South Africa



Source: NDB Project Summary as of 31 December 2024.

19. Covering the period of both NDB's General Strategies to date (from 2017-2021 and 2022-2026 respectively), by end December 2024 there are four projects categorised under clean energy and energy efficiency (two sovereign and two non-sovereign), and one multiple areas project which also contains an energy component, as shown in **table 1** above. Among these five projects, two are financed through local currency; three projects have been closed and two are 100% disbursed. The details of projects can be seen in t**able 2** below.

[18] NDB IEO Synthesis Evaluation Report. *Preliminary Experience in Establishing NDB on-the-ground Presence.*

20. Eskom is the borrower for both sovereign projects. Eskom, as mentioned earlier, is the main public utility company responsible for electricity generation, transmission and distribution in South Africa. The non-sovereign borrowers are the DBSA and the Industrial Development Corporation of South Africa Limited (IDC).

21. As shown in **table 2** below, the projects are at different stages of completion with two of them fully disbursed. The Battery Energy Storage Project was approved in December 2019; however, it has still not been signed.[19] The DBSA Sustainable Infrastructure Project, which contains an energy component, is categorised as a multiple areas project. These five projects, which are at different stages of approval and implementation have been included given that the purpose of thematic evaluation is to review all operations in a country including - closed, on-going and approved projects which may not yet be under implementation. The NDB Board includes IEO's scope of projects which are not yet completed to help in a fuller understanding of NDB's processes and procedures.

Table 2. List of approved renewable energy projects to be included in the evaluation

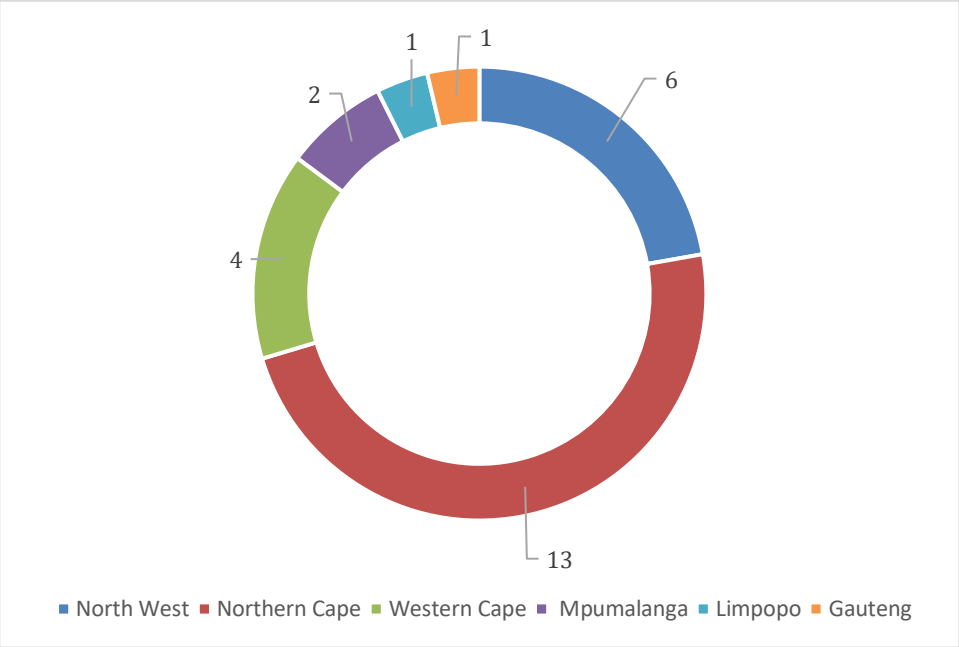
Loan No.	Project name	Borrower	Sov/ Non-sov	Loan currency	Approved Million	Approved (in USD million)	Disbursement (%)	Approval date	Closing date
16ZA01	Renewable Energy Integration and Transmission Augmentation Project	Eskom	Sov	USD	180 (33% of total financing)	180	67	13-Apr-16	11-Sep-24
18ZA02	Greenhouse Gas Emissions Reduction and Energy Sector Development Project	DBSA	Non-sov	USD	300	300	100	20-Jul-18	28-Jan-24
19ZA03	Renewable Energy Sector Development Project	IDC	Non-sov	ZAR	1,150 (10% of total financing)	63.18	100	31-Mar-19	06-Dec-23
19ZA05	Battery Energy Storage Project	Eskom	Sov	ZAR	6,000	329.62	0	16-Dec-19	/
22ZA01	The DBSA Sustainable Infrastructure Project	DBSA	Non-sov	USD	100 (up to 80% of total financing)	100	41.76	13-Dec-22	18-Aug-26

[19] During the preparatory mission, ESKOM has updated the team that the Battery Energy Storage Project will be submitted to the ESKOM Board for approval, estimated in March 2025, following which, the entity will be ready to sign.

Source: Loan Dashboard as of 31 December 2024.

22. The above-listed energy projects are implemented through sub-projects across South Africa.[20] These sub-projects are found in six provinces and multiple cities / municipalities / towns. The Northern Cape province has most of the sub-projects, 13, as shown in **figure 2**. A detailed list of information is in **annex 5**. The sub-projects support both electricity generation and transmission, e.g. solar photovoltaic (PV) panels, biomass, onshore wind, concentrated solar power, substation construction, transformer construction, circuit line construction, etc.

Figure 2. Distribution of sub-projects per province in South Africa



Source: Evaluation team with reference to IEO evaluation reports and NDB project documents to the Board (PDBs).

23. **South Africa project pipeline and standby projects.** As of Q3 2024, there were three South Africa projects in the pipeline, however none of them is categorised as a clean energy and energy efficiency project, or contains energy components. There are also five standby projects, of which the Energy Efficiency Program for Public Hospitals may include demand side energy components. Please see **table 3** below for detailed information on the pipeline. Since 2022, there have been 6-7 clean energy and energy efficiency non-sovereign projects which dropped out of the standby projects list at the pre-concept note stage, with an accumulated amount of USD 800 million. The main reason for the dropout is said to be pricing issue. The evaluation team will further analyse the reasons for the absence of energy projects in the pipeline since the last approved project in 2019, as well as the logic of energy project inclusion or exclusion in the evaluation report.

[20] The data for sub-projects may be adapted after evaluation main mission according to the latest development.

Table 3. South Africa project pipeline and standby projects by Q3 2024

Project status/stage	Project name	Sov/non-sov	Loan amount (USD millions)	Areas of operation
• Appraisal completed • Approval stage	Municipal Water and Sanitation Program in South Africa	Sov	1,000	Water and sanitation
• Concept note stage	Lufhereng Social Housing Project	Sov	203	Social infrastructure
• Concept note stage	uMkhomazi Water Project	Sov	640	Water and sanitation
• Standby project Preparation stage	Energy Efficiency Program for Public Hospitals	Sov	500	N/A
• Standby project Preparation stage	Western Cape School Program	Sov	150	N/A
• Standby project Preparation stage	Gauteng School Program	Sov	80	N/A
• Standby project Preparation stage	Limpopo Academic Hospital	Sov	230	N/A
• Standby project Preparation stage	Upgrade and refurbishment of Olifantspoort and Ebenezer Water Supply Scheme	Sov	75	N/A

Source: Project Pipeline for 2024-2025 as of Q3 2024.

III. Thematic evaluation of the energy sector in South Africa

A. Rationale

24. The energy sector in South Africa plays a crucial role in driving sustainable economic and social development. A reliable and efficient energy sector is essential for industrialisation, which in turn drives economic growth. Energy is needed to power industries, businesses and services, creating jobs and boosting the economy. Access to energy improves the quality of life for citizens: it enables better healthcare, education, and communication services. Transitioning to renewable energy sources like solar, wind and hydro can help South Africa reduce greenhouse gas emissions, combat climate change and achieve its NDCs. This is vital for protecting South Africa's natural resources and ensuring a sustainable future. South Africa has been facing multiple challenges, especially in recent years, in providing stable electricity to its population and frequent load-shedding has brought a detrimental effect to the country's economic and social development. Dependency on imported fuels and the high percentage of coal as an energy source, aged transmission lines, etc. have put South Africa's energy security at risk. The situation is beginning to improve as Eskom reached 300 consecutive days without implementing load-shedding since 26 March 2024 signalling the success of structural improvements in generation performance.[21]

25. NDB is an important player in the South African energy sector with the potential for further investments to support the country in its efforts. NDB continuously supports the

[21] Eskom.

shift to a more sustainable energy path of its member countries through various approaches. The energy sector has been one of the key areas of NDB's focus since the first General Strategy cycle in 2016. The second General Strategy for 2022-2026 also sets clean energy and energy efficiency as one of NDB's operational priorities. This evaluation is conducted in a timely manner After nearly 10 years of NDB operations to take a wholistic view of the Bank's engagement in the sector and to help define the way forward for the Bank.

26. This evaluation will be facilitated and informed by two detailed project performance evaluations (PPEs) of clean energy and energy efficiency projects already completed by IEO in South Africa: (i) the Greenhouse Gas Emissions Reduction and Energy Sector Development Project in 2023; and (ii) the Renewable Energy Sector Development Project in 2024. These evaluations offer an opportunity to identify systemic and cross-cutting issues and lessons, and their findings are additional resources of evidence for this evaluation. The India country portfolio evaluation (CPE), completed in 2024, also provides a useful guide to the methodology for a portfolio evaluation which covers projects at different stages of implementation. Given that this is the first thematic evaluation on a particular thematic sector conducted by the IEO, it is expected that the current evaluation will also provide a reference for the methodology and approach used for future thematic evaluations.

B. Evaluation objectives and scope

27. The evaluation will be conducted within the overall framework of the NDB Evaluation Policy, Evaluation Strategy 2024-2026, and Evaluation Manual. These documents serve as the overarching guiding documents for the evaluation's design.

28. **Objectives.** The evaluation objectives are to:

    (i) Assess the results of NDB-financed operations and activities in the energy sector; and

    (ii) Generate lessons and recommendations for the way forward.

29. **Scope.** This energy sector thematic evaluation will cover the period 2016-2024 and assess all approved projects which are classified as clean energy and energy efficiency, as well as projects with energy components. The detailed list can be seen in **table 2.** The evaluation will also be built on the evaluation reports of the two completed projects mentioned above in paragraph 26. South Africa pipeline projects and standby projects will also be assessed in this thematic evaluation, as explained in paragraph 23.

30. However, for ongoing projects, the evaluation team will review their progress monitoring and technical reports. For those which have not yet started disbursements, like the Battery Energy Storage Project, only selected criteria like relevance to the overall NDB, country and energy context will be evaluated. For the analysis of projects in the pipeline and on standby, the focus will be on the logic of energy project selection, cancelation, evolution and the relevance to NDB's and South Africa's development priorities and sector background.

31. The choice of the projects included in the evaluation is based on their categorisation under the clean energy and energy efficiency sector and those in the multiple areas category that have an energy component. Of the projects financed by NDB, four are directly in the renewable energy sector, while the fifth is a multiple areas project for the financing of infrastructure which includes renewable energy infrastructure and will be included in the evaluation. However, the Lesotho Highlands Water Project Phase II, for financing the construction of the dam and water transfer tunnel in the territory of Lesotho, which may include hydropower generation component, is classified as water and sanitation project by NDB; and the objective of the project is to increase the water availability of the Vaal River System, contributing to the improvement of water supply security in South Africa. The evaluation team determined that it would not be included in this thematic evaluation with consideration on the geo-location of the project site and energy component significance.

C. Evaluation methodology

32. As enshrined in the Evaluation Manual, the core methodology will entail the use of internationally recognised evaluation criteria, including relevance, effectiveness, efficiency, impact and sustainability, which are widely used evaluation criteria, particularly in international development cooperation.

33. Considering NDB's unique context and its use of borrowing country legislation, regulations and oversight procedures, this evaluation will adopt a tailored approach in evaluation design to reflect South Africa's national development priorities and respect its in-country evaluation system. IEO's previous two project evaluations in South Africa have also covered transformative equity and climate and ecosystems health (CEH);[22] this thematic evaluation will therefore adopt these two dimensions as additional standalone criteria.[23] Tailored questions will be designed to reflect these two new criteria following the guidelines collaboratively developed by the Department of Planning, Monitoring, and Evaluation (DPME), the South African Monitoring and Evaluation Association (SAMEA), Department of Social Development (DSD) and the National Development Agency (NDA) on transformative equity and CEH. Please see **annex 1** for all seven evaluation criteria definitions.

34. In addition, several key elements and topics will be considered alongside the evaluation criteria mentioned above. These include:

    (i) **Private sector initiatives and major investments in the country.** South Africa has issued several initiatives to incentivise private sector investment in its energy sector. NDB non-sovereign projects may act as anchor financing and model projects for local resource mobilisation. Thus, besides looking at NDB financing, the

[22] Transformative equity focuses on how a project's goals, planning, execution, and outcomes address or perpetuate systemic inequities, with the aim of promoting a more inclusive society. The CEH criterion assesses the interaction between project activities and climate and ecosystems, providing insights on how to enhance strategies to positively impact CEH and increase the resilience of both the intervention and its intended beneficiaries to climate change.

[23] *IEO Evaluation Manual*. First Edition.

evaluation will also look at major energy investment projects from the private sector and understand the logic and process of this private capital engagement and how NDB can help to scale up sector investment in the country. It will also try to identify potential collaboration and partnership opportunities in the energy sector.

(ii) **Energy sector investments by multilateral development banks (MDBs) and key development partners.** A comparative analysis will be undertaken on the investments in the energy sector in South Africa by key multilateral development partners such as: the World Bank Group (WBG), which invests through its International Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC); the African Development Bank (AfDB) which supports various projects aimed at improving energy access, promoting renewable energy, and enhancing energy efficiency across the region; the Development Bank of Southern Africa, a regional development bank which focuses on infrastructure development and provides financing for energy projects, particularly in renewable energy and energy access initiatives; and the European Investment Bank (EIB), which supports various financing programmes and investments focused on renewable energy and sustainable energy projects in South Africa and others as appropriate.

(iii) **Priorities identified in the NDB general strategies.** The evaluation will review the overall performance of the energy sector investments from the perspective of the priorities specified in the NDB General Strategies for 2017-2021 and 2022-2026. This will include aspects such as evaluating the mobilisation of private capital, co-financing with other MDBs to deepen its cooperation with development finance institutions, expanding non-sovereign and local currency operations and local currency fundraising, cross-cutting considerations such as climate change and disaster resilience, institution-building, etc. However, projects which closed before the start of the current strategy in 2022 will be measured against the earlier strategy; but the extent to which they have catered to some of the priorities outlined in the new strategy will also be mentioned.

35. Each project will be rated individually against the criteria and an overall thematic evaluation rating will be built on them. For individual project assessments, the evaluation team will not go into detail like the project performance evaluations, however a project brief will be prepared to justify the ratings given with high-level comments for each project. Since the evaluation will also include projects that are not completed yet, it will follow the same approach adopted in the India CPE to categorise rating criteria based on the level of disbursement. Projects with disbursements below 40% will be evaluated only for relevance (i.e. an assessment of the relevance of objectives and design, study on disbursement ratio and its causal factors). Projects that are in more advanced stages of implementation and have disbursed more than 40% but less than 100% will be evaluated for relevance, effectiveness, and efficiency. In cases where the disbursement rate is not 100% but the project is closed, all criteria will be assessed. For the assessment of energy projects in the pipeline, relevance will be addressed to see the logic and justification of projects to be included or cancelled, and

the approach NDB follows to make the projects relevant to South Africa's national development priorities and the Bank's own mandate. Please see **table 4** below for the proposed evaluation criteria. Two additional criteria on transformative equity and climate and ecosystems health that South Africa adopts will be added besides the Organisation for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC) criteria. The DPME's guidelines on applying the CEH[24]and transformative equity[25] criteria will be used for the evaluation.

Table 4. Proposed evaluation criteria for South Africa energy projects

Loan No.	Project name	Borrower	Sov/Non-sov	Disbursement (%)	Approval Date	Closing Date	Relevance	Effectiveness	Efficiency	Impact	Sustainability	CEH	Transformative equity
16ZA01	Renewable Energy Integration and Transmission Augmentation Project	Eskom	Sov	67	13-Apr-16	11-Sep-24	✓	✓	✓	✓	✓	✓	✓
18ZA02	DBSA	DBSA	Non-sov	100	20-Jul-18	28-Jan-24	✓	✓	✓	✓	✓	✓	✓
19ZA03	Renewable Energy Sector Development Project	IDC	Non-sov	100	31-Mar-19	06-Dec-23	✓	✓	✓	✓	✓	✓	✓
19ZA05	Battery Energy Storage Project	Eskom	Sov	0	16-Dec-19	/	✓						
22ZA01	The DBSA Sustainable Infrastructure Project	DBSA	Non-sov	41.76	13-Dec-22	18-Aug-26	✓	✓	✓				
	Projects in pipeline and standby projects						✓						

Source: IEO evaluation team.

36. Triangulation techniques will validate the analysis, leading to the assignment of a performance rating for each criterion on a six-point scale as indicated **table 5**. Based on the assessment and ratings of the composite sets of criteria mentioned above, the evaluation will form a holistic performance judgement of the overall achievement of the

[24] Guidelines for applying the CEH criterion in the commissioning, design and implementation of evaluations.
[25] Integrating a transformative equity criterion into evaluations for promoting transformative systemic change.

NDB investments in the energy sector in South Africa based on ratings of the individual projects.

37. Apart from determining the overall project outcomes, the evaluation will also assess NDB and borrower performance (during project design and preparation, implementation, monitoring and supervision). The additionality of NDB's investments in the energy sector will also be assessed as a key aspect of the evaluation.

38. The evaluation will customise different approaches and priorities of assessment for sovereign and non-sovereign projects in the energy sector portfolio. For instance, more analysis will be conducted on financial performance and sustainability for non-sovereign projects and more quantitative methods will be utilised. By customising these aspects, evaluations can provide more relevant and actionable insights for both sovereign and non-sovereign projects and have a more objective view on energy sector investment in the country. Also, the evaluation team will tailor the assessment techniques to the specific characteristics and requirements of different loan modality.

Table 5. Evaluation rating scale

#	Rating	Score descriptor
6	Highly Successful	Under the concerned criterion, the activity (project, programme, non-lending, etc.) achieved or surpassed all main targets, objectives, expectations, and results and could be considered as a model within its project typology.
5	Successful	Under the concerned criterion, the activity achieved almost all (indicatively, over 80-95 percent) of the main targets, objectives, expectations, and results.
4	Moderately Successful	Under the concerned criterion, the activity achieved the majority (indicatively, 60 to 80 percent) of the targets, objectives, expectations, and results. However, a significant part of these was not achieved.
3	Moderately Unsuccessful	Under the concerned criterion, the activity did not achieve its main targets (indicatively, less than 60 percent), objectives, expectations, and results.
2	Unsuccessful	Under the concerned criterion, the activity achieved only a minority of its targets, objectives, expectations, and results.
1	Highly Unsuccessful	Under the concerned criterion, the activity (project, programme, non-lending, etc.) achieved almost none of its targets, objectives, expectations, and results.

D. Evaluation questions

39. The methodology will be customised as appropriate to a thematic evaluation of the energy sector within the South African context. As part of this Approach Paper, key evaluation questions have been formulated for each evaluation criterion and will be posed to assess performance. The key questions that the evaluation will address are outlined in the Evaluation Framework in **annex 2** with details of each of the evaluation

criteria and the full set of questions to be explored under each criterion. Some of the key questions that will be posed are summarised below.

- How does the process of selection of projects align with the needs and priorities of the country, and the goals set forth in the National Development Plan 2030 and South Africa's National Integrated Resource Plan (IRP) for the diversification of power generation sources, the government's latest Economic Reconstruction and Recovery Plan (ERRP), particularly in terms of incorporating renewable energy, and the Energy Action Plan and the Just Energy Transition Investment Plan?
- How were the project investments aligned with the NDCs from South Africa to the Paris Agreement on Climate Change 2015 (and updated in 2021) for the reduction of carbon emissions?
- In what ways and to what extent did the investments in the energy sector advance the goals of SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action)?
- How significant were the investments' contribution towards alleviating the energy crisis in South Africa? To what extent did the projects succeed in contributing to the energy generation mix and reduction of carbon emissions?
- To what extent have the projects achieved their stated objectives? How effective have the projects been in producing the expected amount of electricity? Have the projects effectively contributed to a reduction in carbon emissions as planned? Are there quantifiable data to support the assessment?
- How did the projects' progress, in terms of their construction, procurement, operations and management activities, compare with the planned targets? Were there lessons learned to enhance future management efficiency and quality?
- Are the operations and maintenance aspects of the projects structured to ensure long-term sustainability? Are there effective monitoring systems in place, staffed by an experienced team, with sufficient quality checks to maintain high standards of operation?
- Did the projects contribute to transformative equity in dealing with local community members, Black Economic Empowerment, job creation and training for local community members and investment in regional development projects?
- How did the projects deal with social and environmental safeguards, with water and land and issues and any resettlement measures to protect biodiversity and local wildlife and other species?

E. Evaluation team and process

40. The evaluation will be conducted under the overall leadership and oversight of Mr. Ashwani K. Muthoo, the Director General (DG) of IEO. Ms. Jin Zhao, IEO Evaluation Specialist will be the lead evaluator, and she will be supported by a team of experts, including Ms. Maliha Hussein (Senior Development and Evaluation Expert), Ms. Ruse Thembela Moleshe (Energy Expert) and Ms. Beatriz Vieira Rauber (IEO Intern). The South

Africa Department of Planning, Monitoring and Evaluation will be the peer reviewer of this evaluation and will review both this approach paper and the draft final report. IEO will bear full responsibility for the contents and quality of the evaluation report and related outputs.

41. The evaluation will comprise the following phases.

(i) **Desk review**

- Sector and country context. A literature review will be undertaken to understand better the country and sector context of the energy sector in South Africa and use this as the backdrop for the thematic evaluation. The literature review will also include an assessment of the trends in the energy sector and the overall policies and plans of the government in addressing the challenges faced by the sector in making a transition to clean energy; and assess how the projects are poised to address the challenges faced by the energy sector.
- Project performance. The evaluation will include a review of all key project documents, including, inter-alia, the project design documents, loan agreements and any amendments, the project progress reports, project performance assessment reports, supervision reports, and any other relevant documents made available by NDB, the borrower, and the implementation agencies. For each project included in this evaluation and based on desk reviews, IEO will produce short project briefs summarising the project's performance. The project briefs will inform the main evaluation report and be made available by IEO upon request.
- Benchmarking analysis with other MDBs/IFIs. IEO will undertake a review of the energy sector projects financed by AfDB, EIB and WBG. The purpose of the benchmarking is to identify lessons and good practices that could be adopted by NDB, taking carefully into account the Bank's own specificity. A separate working paper will be produced on the benchmarking analysis which will be summarised in an annex of the main report.

(ii) **Preparatory mission.** IEO conducted a preparatory mission in the week of 20 January 2025 to South Africa to brief key stakeholders about the thematic evaluation and sensitise local stakeholders, as well as capture their feedback and priorities for the evaluation.

(iii) **Main mission.** The main mission is planned for the end of February to early March 2025. IEO will closely coordinate with Africa Regional Centre on the ground which is the main face of NDB in South Africa and coordinate the timeline with the relevant stakeholders at the same time. The purpose of the main mission is to conduct visits to selected project sites, collect additional data and information and documents, and hold discussions with key informants and stakeholder. At the end of the mission, IEO will organise a wrap-up meeting with key stakeholders to share its initial observations.

(iv) **Establishment of an Evaluation Reference Group**. An Evaluation Reference Group (ERG) will be established for the thematic evaluation, with the aim of promoting dialogue and exchanges at key stages of the evaluation process as well as to foster learning and building ownership in the evaluation. The ERG will be composed of representatives from NDB divisions and departments ARC, Public and Private Sector Operations, Environmental, Social and Governance (ESG) (including Procurement), and the executive assistant of Vice-President and Chief Operating Officer (VP&COO); and from external organisations like the South Africa National Treasury, DMRE, DPME, DBSA, Eskom, and IDC. For example, the ERG will be specifically invited to comment on key deliverables, participate in briefing sessions, provide inputs and access to data and documents on specific topics as well as attend any workshops and seminars that will be organised as part of the evaluation.

(v) **Interim reporting.** Before drafting the evaluation report, IEO will prepare an interim report (3-5 pages) which includes initial findings of the thematic evaluation for discussion with the ERG.

(vi) **Drafting of the evaluation report.** Building on the desk review, fieldwork and feedback on the interim report, IEO will draft the main evaluation report. The draft will be shared with in-country partners concerned and NDB Management for comments. The report will be finalised considering the comments received. An audit trail will be produced illustrating how the comments received have been incorporated by IEO in the final report.

(vii) **NDB Management Response.** Based on the final evaluation report, NDB Management will prepare a written Management Response, which will be included in the final report at the time of its publication.

(viii) **Discussion at NDB Board of Directors meeting.** The final report, along with the NDB Management Response, will be discussed in the Board meeting in Q3 2025.

(ix) **Knowledge-sharing and outreach.** The final evaluation report, inclusive of NDB Management Response, will be published on the IEO webpages and disseminated to key audiences. Evaluation findings will also be shared through relevant social media and communication instruments. An Evaluation Lens[26] and Infographic will be prepared and disseminated. The dissemination of the main evaluation report will be done in line with the provisions of the Evaluation Policy and Evaluation Strategy, approved by the Board. Finally, in cooperation with key stakeholders, IEO may organise a stakeholder seminar in South Africa to discuss and share the results and lessons from the evaluation.

F. Evaluation timeline

42. The evaluation will be conducted from January to September 2025. **Table 6** captures the specific deliverables, and a corresponding timeline, though the latter may be adjusted as the evaluation unfolds.

[26] A two-page reader-friendly brochure containing a summary of the evaluation findings and recommendations.

Table 6. Timeline*

Deliverable	Timeline in 2025
Draft Approach Paper shared with key partners	13 January 2025
Preparatory mission to South Africa	20-24 January
Approach Paper finalised	Mid-February
Main evaluation mission to South Africa	26 February – 7 March
Interim reporting to ERG	April/May
Main evaluation mission in NDB HQ for discussions	6-9 May
Draft evaluation report shared for comments and meeting with ERG to discuss the draft report	July
Report finalised	August
Preparation of NDB Management Response	August
Report discussed in NDB Board of Directors	September
Report published	October
Seminar in South Africa	Last quarter 2025

* The detailed timelines with specific dates will be defined following the preparatory mission to South Africa.

Annex I. Evaluation criteria definitions

Criteria	Definition
Relevance	The assessment of relevance will examine the extent to which: (i) the objectives of the projects are consistent with beneficiaries' requirements, country needs, institutional priorities, and partner and donor policies; (ii) the design of the projects is consistent with the objectives; and (iii) the project designs have been (re-)adapted to address changes in the context. Finally, under relevance, an assessment will also be made of the compatibility of the interventions with other interventions in a country, and the sectoral and institutional context.
Effectiveness	The extent to which the projects achieved, or are expected to achieve, their 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 projects deliver, or are likely to deliver, results in an economic and timely manner.*
Impact	The extent to which the projects have generated, or are expected to generate, significant positive or negative, intended or unintended, higher-level effects.
Sustainability	This criterion 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. The criteria will also assess the project's sustainability with respect to climate and ecosystems health: does the project degrade or regenerate climate and ecosystems health (CEH) and how will it be affected by changes in CEH.
Transformative equity	The extent to which an intervention's objectives, design, implementation and impact contribute to, or do not contribute to, addressing systemic inequities and promotion of a more inclusive society.
Climate and ecosystems health	Assessing the impacts that result from the interaction between intervention activities/practices and climate and ecosystems and making recommendations about how NDB intervention practices can be improved to make more positive contributions to CEH, and to make the intervention and its beneficiaries more adaptive.
Key dimension incorporated	
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's additionality	The rating of 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.

* This section will also review the procurement arrangements and procedures used under the project.
** This criterion will also assess the extent to which systems have been put in place to bring about sustainable change.

Annex II. Evaluation Framework for thematic evaluation of the energy sector in South Africa

Evaluation criteria	Evaluation questions	Methods/sources
Relevance	● National priorities and plans: How does the process of selection of energy sector projects align with the needs and priorities of the country, and the goals set forth in South Africa's national Integrated Resource Plan (IRP) for the diversification of power generation sources, particularly in terms of incorporating renewable energy, the Energy Action Plan and the Just Energy Transition Investment Plan (JET-IP)?	Review of stated policies and plans and compare with project designs.
	● How well do the project objectives align with the National Development Plan (NDP) 2030 goals for an environmentally sustainable, climate-resilient, and low-carbon economy, while also addressing key macroeconomic indicators such as employment, inflation control, economic growth, poverty reduction and inequality?	Interviews with government officials and key sector institutions.
	● Do the investments choices address the specific energy challenges in South Africa, such as the use of coal, the electricity crisis, the need for sustainable and clean energy sources and availability during peak hours?	Review of project reports and energy sector reports.
	● To what extent have the investments in the energy sector contributed to South Africa's Climate Change Bill and in meeting its nationally determined contributions (NDCs).	
	● Relevance to NDB priorities: How relevant are the investments in the energy sector to NDB's General Strategies for 2017-2021 and 2022-2026? Specifically do the investment decisions in the energy sector contribute to the overall objectives of NDB and assist in enhancing the Bank's capacity to mobilise resources at scale, finance diversified types of projects, employ sophisticated instruments, maximise impact, and continue building a robust institutional profile?	Review documents to understand challenges in the energy sector. Review of NDCs and other relevant documents
	● Relevance to Sustainable Development Goals (SDGs): To what extent do the projects contribute to the SDGs, specifically SDG 7 (ensuring access to affordable, reliable, sustainable, and modern energy for all) and SDG 13 (taking urgent action to combat climate change and its impacts)?	Review NDB strategy documents and interview with staff and management.
	● Relevant for private sector and other stakeholders: How relevant were the projects in attracting the private sector investors, meeting the needs of the local stakeholders, local communities and energy consumers?	Review of SDGs and project documents and progress reports.

Evaluation criteria	Evaluation questions	Methods/sources
		Discussions with key stakeholders.
Effectiveness	• Energy production metrics: To what extent have the completed projects achieved their stated outputs, outcomes and objectives? Are there measurable outcomes that indicate successful implementation? • To what extent do the ongoing projects indicate that they are on course to achieve their stated outputs, outcomes and objectives? • Have the projects been able to address some of the key challenges in the energy sector in South Africa such as issues of peak demand, reducing greenhouse gas (GHG) emissions, etc? • Have the projects produced the expected capacity and what has been the ratio of actual output over a period to the maximum possible output. • Have the projects contributed to the stability of the local power grid and enhanced energy security in the country? • Environmental metrics: Assess the carbon emissions reduced: amount of CO_2 emissions avoided compared to fossil fuel sources. • Technological choices: How effectively did the projects promote the use of new technologies? Were there any operational challenges, and how were they address? • Institutional strengthening: Did the project investments contribute to enhancing internal capabilities, coordination and processes of implementing partners? • Partnership-building: Did the NDB investments contribute to building partnerships with other MDBs and leverage partnerships in the energy sector with both sovereign and non-sovereign partners? • Resource mobilisation: How effective have the projects been in attracting financial resources from the public and private sector, local investors and international investors or using innovative financing instruments and bond issues? • Knowledge management and innovation: Did the projects generate new knowledge and innovation in the energy sector?	Review of project reports and energy sector reports. Assess energy production metrics of all projects. Interviews with Department of Mineral Resources and Energy (DMRE), Eskom, the state-owned electricity supplier, the Independent Power Producer Procurement Programme (IPPPP), the South African National Energy Development Institute (SANEDI), the Department of Planning, Monitoring and Evaluation (DPME), IDC. Interviews with key implementing partners and sponsors Interview with World Bank, AfDB, GEF and JET-IP, Sustainable Energy Fund for Africa (SEFA).

Evaluation criteria	Evaluation questions	Methods/sources
		Interviews with key resource people in the energy sector in South Africa. Interviews with key staff at ARC, and NDB.
Efficiency	• Adherence to timelines: Were the projects implemented within the expected timelines as outlined in the project appraisals. • How did the projects progress, in terms of their procurement, construction, operations and management, compare with the planned timeframe(s)? Were there lessons learned to enhance future management efficiency and quality? • Did the procurement and contracting arrangements of the projects facilitate project delivery? Were they compliant with both the government and NDB's procurement policies? • Were the consultants and project staff utilised efficiently within the original contract amounts and responsibilities? How did their performance impact the overall project efficiency? • How did the project adapt to external challenges such as COVID-19 constraints, nationwide civil unrest, and community protests, if any? Did the projects put in place contingency plans for such unprecedented events? • Were there any amendments to the loan agreements due to project changes or challenges, and if so, how efficiently were these amendments executed? • Were the project performance assessments and progress reports submitted in accordance with the timelines stipulated in the loan agreement? • Adherence to estimated costs and budgets: Were the projects executed within the budgeted costs? • Were the loan amounts disbursed according to the planned schedule and how were cost revisions, including any overruns, managed throughout the project? • Did the projects consistently meet the loan and financial covenants as set out in the loan agreements and the appraisal document?	Review of relevant documents and progress reports. Review of project performance assessment reports. Visit of a selected ongoing project and interviews with sponsors and implementing partners. Review of financial documents, audit reports. Review of loan agreement and its amendments. Interviews with borrowers and implementing partners.

Evaluation criteria	Evaluation questions	Methods/sources
	• Cost-benefit analysis: How do the costs compare with the benefits achieved, such as energy output and how does this compare with the standard benchmarks and unit costs of production of clean energy? • Do the project's financial performance and internal rate of return compare favourably with initial projections at the time of appraisal? • Economic performance metrics: How do the projects fare in terms of their cost-benefit analysis (CBA)? • Return on investment (ROI): How do the projects fare in terms of their financial ROI in renewable energy infrastructure? • Did the projects choose the appropriate institutional and technological choices in promoting innovation and efficiency in the renewable energy sector and how did the investments ensure adherence to best practices and quality standards? • Operational performance metrics: Monitor metrics such as downtime, maintenance schedules, and operational costs to identify overall project efficiency. • Performance monitoring: How do the investments fare in terms of ongoing measurement of system performance using real-time monitoring tools and maintenance records to ensure optimal operation?	Comparative analysis of economic and financial data from appraisal, technical and financial reports. Assess economic metrics by comparing the costs of project implementation against the expected benefits and savings from renewable energy generation. Assess the levelised cost of energy (LCOE) or the average cost to produce energy over a project's lifetime, allowing for comparisons.
Sustainability	• Technical sustainability: Are the operations and maintenance aspects of the projects structured to ensure long-term sustainability? Are there effective monitoring systems in place, staffed by an experienced team, with sufficient quality checks to maintain high standards of operation and maintenance? • Did the NDB projects make the appropriate technical choices regarding the equipment to be used? How adaptable are the projects to future technological advancements and changes in the renewable energy sector? • Regulatory and compliance metrics: How well do the projects adhere to local, national, and international regulations and standards in renewable energy practices. • Social sustainability: Did the project (and sub-projects) lead to any resettlement issues, and were they managed appropriately?	Interviews with DMRE, Eskom, the IPPPP, SANEDI, DPME, IDC, DBSA. Review of project appraisal documents, loan agreements, technical, financial and progress reports. Review of project and third party monitoring and evaluation (M&E) reports.

Evaluation criteria	Evaluation questions	Methods/sources
	• How do the projects address social aspects like community engagement, local job creation, and social inclusivity? • What mechanisms are in place to ensure the projects' benefits are distributed equitably among different community groups, including marginalised or vulnerable populations? • Financial sustainability: Does the financial internal rate of return (FIRR) of the project and its sub-projects exceed the weighted average cost of capital (WACC), indicating financial sustainability? • Have projects achieved the targeted economic internal rate of return (EIRR) and FIRR above the WACC? • To what extent do the projects rely on government subsidies or financial support, and how would the withdrawal of such support affect the projects' sustainability? • Do the projects have power purchase agreements with Eskom, and have they received payments from Eskom in a timely manner? • Environmental sustainability: Were land and water used by the project (and sub-projects) within acceptable and sustainable limits? • Did the projects meet all safeguard requirements, and were any new issues identified or unresolved issues left after project completion? • To what extent were the projects compliant with the government's environmental and social safeguard regulations? Were consultations held in line with country regulations? • How has the project navigated land use and spatial planning challenges? • To what extent were the projects in line with South Africa's environmental regulations and project social plans? Was land acquisition and resettlement minimal as anticipated at appraisal? • Were any land acquisition and resettlement activities in compliance with government policies, rules, and regulations? • What is the capacity of the borrowers and sub-borrowers to monitor compliance with environmental and social (E&S) plans and applicable regulations?	Review of technical reports & Environmental assessment reports. Interviews with ARC and NDB operational teams and technical staff conducting safeguards assessments. Interview with regulatory bodies.

Evaluation criteria	Evaluation questions	Methods/sources
	• Were mitigation and compensation for E&S impacts from the projects handled in line with the borrower and NDB's processes?	
Impact	• To what degree have the projects diversified and strengthened the power generation mix in South Africa? • Did the projects contribute to the reduction of national carbon emissions in line with South Africa's NDC targets for greenhouse gas emissions by 2030? • How significant were the projects' contributions towards alleviating the energy crisis in South Africa? To what extent did the projects succeed in generating green electricity and promoting sustainable energy sources? • How have the projects improved energy access, particularly for underserved or remote communities? • Have the projects contributed to the sustainability of benefits, especially for end beneficiaries in terms of access to energy and improved livelihoods and incomes? • How did the projects contribute to capacity-building and knowledge transfer within the renewable energy sector in South Africa? • What role did the projects play in enhancing access to finance for the energy sector? • What role did the projects play in fostering innovation and advancing technology in the renewable energy sector? • What challenges and solutions have emerged in integrating solar energy into the national grid, including energy storage and balancing? • Have the projects influenced policy decisions or led to changes in regulatory frameworks within the renewable energy sector? • In what ways and to what extent did the projects advance the goals of SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action)? • What were the intended and unintended socio-economic impacts of the projects, particularly in terms of employment, poverty reduction, and addressing inequality in the region? • How have the projects influenced local economic development, particularly in terms of job creation and skills development in the renewable energy sector?	Review of appraisal, baseline and completion reports. Review of documents, produced by DoE, ESKOM, DPME SANEDI and IPPP. Interviews with DoE, ESKOM, DPME, SANEDI, and other government officials. Scrutiny of other renewable energy projects in the area or under the REIPPPP pipeline. Interview with energy experts.

Evaluation criteria	Evaluation questions	Methods/sources
	• To what extent have the projects attracted additional investments in the renewable energy sector within South Africa?	
Climate and ecosystems health (CEH)	• Are the objectives of the intervention likely to have a positive or negative effect on CEH and how vulnerable is the intervention to CEH effects, now and in the future? • During implementation is there any explicit attempt to understand and mitigate or adapt to CEH effects? For whom? • What alternative modes of intervention should be considered in the design and implementation of the projects now or in the future to promote adaptation to CEH impacts? • Considering water usage in solar energy projects, how have the projects managed water resources, and what has been their impact on local water availability? • In what ways does the intervention interact with the natural environment? What natural resources does the intervention depend upon and what impacts do the intervention's activities have on CEH? • Does the intervention design include ways in which the intervention can adapt to or mitigate the effects of the climate and ecosystems crises? Are the practices and activities of the intervention degrading or helping to restore and regenerate CEH? • In what ways are the climate crisis and ecological breakdown impacting on the intervention? What are the implications of these impacts for the future sustainability of the intervention? • Biodiversity impact: How does the project affect local ecosystems and wildlife?	Review of technical reports & Environmental assessment reports. Interview with Regulatory bodies. Interviews with ARC and NDB operational teams and technical staff conducting safeguards assessments. Review of technical reports & Environmental assessment reports. Review of NDB E&S policy. Interview with E&S sector experts.
Transformative equity	• How do the projects address social aspects like community engagement, local job creation, and social inclusivity? Were these aspects included in the intervention design documents such as the logical framework, budgets and activities etc.? • Was there strong and inclusive stakeholder engagement in the consultations for the intervention designs including local communities? • What mechanisms are in place to ensure a project's benefits are distributed equitably among different	Review of project appraisal, technical and M&E reports. Project completion and evaluation reports. Reports summarizing

Evaluation criteria	Evaluation questions	Methods/sources
	community groups, including marginalised or vulnerable populations? • Did the projects take into consideration Black Economic Empowerment (BEE) (a South African government policy that aims to improve the economic participation of black people in the country)? • Did the projects have a specific policy for the inclusion of women, unemployed youth and other marginal groups? • Did the projects have a proactive policy of providing training and/or employment opportunities for members from the local black or coloured communities, women and unemployed youth? • What is the number of jobs created through the projects, both during construction and ongoing operations. • Did the projects invest in local communities and help invest in local economic and social development projects for the community? • What proportion of funding was used for this purpose by the projects? • Did the M&E systems capture disaggregated data for various population groups, geographic locations and contexts to allow for equity analysis? • Do the projects have provision for surveys and feedback from stakeholders, including local communities to gauge satisfaction and impact and what do these reports reveal?	local community views and social impact assessments. Review of project documents including financial reports regarding BEE shareholding, inclusion of women, unemployed youth from local communities and volume of investment in community projects.
NDB and borrower performance	• Were the loans disbursed in a timely manner following the loan agreements between the borrower and NDB? • How proactive and diligent was NDB and the borrower in facilitating and approving loan agreements and any amendments? • Were loan amendments executed promptly in response to the changes that necessitated them? • What were the quality and timeliness of NDB's operational teams' progress reports on each project? • Did NDB's operational teams have a regular system of meeting with borrowers, sponsors, implementing teams and local communities near project sites?	Interviews with NDB staff and IDC officials. Review of results framework, progress reports, and effectiveness of KPIs. Review all related project documents. Interview with ARC and NDB headquarter staff.

Evaluation criteria	Evaluation questions	Methods/sources
	• Did NDB leverage its financing of the project to highlight its role in the energy sector in South Africa? • Did NDB put in place a knowledge management and learning plans to document and share lessons learned, and have these been implemented? • Did NDB and the borrower effectively ensure compliance with the loan covenants? • How comprehensive were the loan agreements in detailing outputs, outcomes, and the agreed loan amounts? • What was the quality of the project design documents submitted to the Board? Were the preparation processes participatory and did they align with the loan agreements? • How robust were the Design and Monitoring Frameworks in the project design documents? • Did the NDB conduct regular project reviews and supervision missions to monitor the progress of the projects? • Did the NDB adhere to the standard templates for project progress reports? • What was the quality of the project progress reports provided by the NDB? • Did the borrower ensure compliance with NDB's procurement policy? • Was the borrower cooperative in facilitating site visits and meetings during NDB missions? • Did both the NDB and the borrower ensure that a project and its sub-projects complied with South Africa's environmental and social standards, in line with NDB's Environmental & Social Framework? • Did the borrower maintain an effective M&E system to track project progress? • Was the operations and maintenance team of the borrower adequately skilled and effective? • Did the borrower consult with energy sector authorities to integrate technological advancements and other regulatory measures and best practices? • Were progress and assessment reports by the borrower completed and submitted on schedule?	Interviews with MDBs, donor agencies and sector institutions.

Evaluation criteria	Evaluation questions	Methods/sources
	• What was the quality of the progress reports submitted by the borrower?	
NDB's additionality	• What was NDB's financial additionality overall? • Did NDB play a catalytic role in the projects and what was the value added of NDB in the different projects? • Would the borrower have been able to mobilise sufficient financing for the project without NDB involvement? • Was NDB engagement important to reduce risks or to provide comfort to other investors and lenders? • Did NDB's knowledge and expertise strengthen project design or project implementation, monitoring or evaluation?	Perusal of relevant policy documents, and sector context and key project documents. Discussion with borrowers, sponsors, implementing partners and key resource people and stakeholders.

Annex III. Evaluation report outline

Acknowledgement	1 page
Preface by DG IEO	1 page
List of Acronyms	1 page
Executive Summary	3-4 pages
Management Response	3-4 pages
Background	
● Country Context	2 pages
● Energy Sector Context	6 pages
NDB Renewable Energy Sector Investments	
● Overall NDB projects and energy projects portfolio	2 pages
● Summary of NDB Energy Projects project design and components	2 pages
Evaluation Objectives, Methodology and Process	
● Objectives	1 / 2 page
● Methodology, questions, and rating system	2 pages
● Limitations and mitigation measures	1 page
● Process	1 page
Evaluation Findings	15 pages
● Relevance	
● Effectiveness	
● Efficiency	
● Sustainability	
● Impact	
● CEH	
● Transformative equity	
Featured Chapter	
● Private Sector for energy in country	
● MDB energy sector Benchmark	
Other Assessment Criteria	3-4 pages
● NDB and borrower performance	
● NDB's Additionality	
Conclusions and Recommendations	
● Conclusions	2-3 pages
● Recommendations	2-3 pages
Annexes	

Annex IV. Bibliography

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

- New Development Bank General Strategy for 2022-2026: Scaling Up Development Finance for a Sustainable Future
- New Development Bank General Strategy: 2017 – 2021
- New Development Bank Policy on Processing of Sovereign Loans and Loans with Sovereign Guarantee
- New Development Bank Policy on Sovereign Loans and Loans with Sovereign Guarantee
- Loan Dashboard as of December 2024
- Project Summary as of 31 December 2024
- Quarterly Project Implementation and Disbursement Report Q2 2024
- Project Pipeline for 2024-2025 as of Q3_2024

Section B - NDB IEO Documents

- IEO Policy
- IEO Strategy
- IEO Evaluation Manual. First Edition
- Project Performance Evaluation report and Approach Paper- South Africa: Renewable Energy Sector Development Project
- Project Performance Evaluation report and Approach Paper- South Africa: Greenhouse Gas Emission Reduction & Energy
- Indian Country Portfolio Evaluation report and Approach Paper
- Preliminary Experience in Establishing NDB on-the-ground Presence
- report and Approach Paper NDB Fast-Track Support to the COVID-19 Emergency

Section C - Project Documents

- AM-Sustainable Infrastructure Project 10012025 Final
- BTOR for ESKOM Emission Project 20 October 2023
- 20181106_Battery Storage ERA executive summary
- Loan Agreements
- Projects Documents to the Board

Others

- South Africa's Energy and Electricity Sector, NDB Research Department
- Energy Outlook 2024, IEA
- World Economic Outlook, October 2024
- South Africa GDP Report, Q3 2024

Annex V. Detail of sub-projects of NDB financed energy projects in South Africa

Project	Sub-project energy type	Sub-project location	Sub-project electricity generation (MW)/output
18ZA02-DBSA	Solar photovoltaic (PV)	Zeerust, North West	75
	Solar PV	Vryburg, North West	75
	Solar PV	Kimberley, Northern Cape	55
	Solar PV	Brits, North West	50
	Solar PV	Leeudoringstad, North West	67.9
	Onshore wind	Witzenberg, Western Cape	110
	Biomass	Ngodwana, Mpumalanga	25
	Solar PV	Douglas, Northern Cape	75
	Onshore wind	Nama Khoi, Northern Cape	140
	Onshore wind	Siyathemba, Northern Cape	102
	Onshore wind	Central Karoo, Western Cape	147
	Solar PV	Upington, Northern Cape	86
	Solar PV	Upington, Northern Cape	86
	Solar PV	Upington, Northern Cape	86
	Concentrated Solar-Thermal Power (CSP)	Postmasburg, Northern Cape	100
19ZA03-Renewable Energy Sector Development Project	Redstone: Concentrated Solar	Postmasburg, Northern Cape	100
	Scatec: solar photovoltaic and battery storage	Kenhardt, Northern Cape	180
	Scatec: solar photovoltaic and battery storage	Kenhardt, Northern Cape	180
	Scatec: solar photovoltaic and battery storage	Kenhardt, Northern Cape	180

Project	Sub-project energy type	Sub-project location	Sub-project electricity generation (MW)/output
16ZA01-Renewable Energy Integration and Transmission Augmentation Project	Kronos IPP Integration, Northern Cape	Siyathemba Local Municipality, Pixley ka Seme District Municipality, Northern Cape	500MVA 400kV/133kV Transformer; integration of 127.2 MW Copperton wind farm and 140 MW Garob wind farm
	Kusile Tx integration: Lulamisa lines and Substation	Kusile, Mpumalanga, South Africa, to Lulamisa, Mpumalanga	Construction of 106 km 400kV transmission line from Kusile power station to Lulamisa
	Waterberg GX Integration: Medupi Witkop 400kV line	Limpopo Province	Construction of 200 km 400kV transmission line
	Vaal Strengthening phase 2B	Etna Glockner, Gauteng	2 x 400 kV lines operated (30km) at 275 kV from Glockner MTS to Etna MTS
	Ankerlig Sterrekus 400kV Line	Ankerlig, Western Cape, South Africa, to Sterrekus, Western Cape	16KM of 400kV Double Circuit Line and sub-station
	Komsberg IPP Integration	Western Cape	Not less than 670MW of installed capacity of RE-IPP connected to ESKOM's electrical grid, power stations and circuit
22ZA 01-The DBSA Sustainable Infrastructure Project	Abo Wind Lichtenburg 2 PV	Lichtenburg, the North west province	2x 100 MW of solar PV renewable energy
	Abo Wind Lichtenburg 3 PV		
19ZA 05-Battery Energy Storage Project	(i) 360 MW of distributed battery storage systems located throughout Eskom's electricity distribution substations; (ii) 60 MW solar PV component; and (iii) software applications to manage the battery energy resource.		