Project Completion Report Validation

Republic of India

Renewable Energy Sector Development Project

Owner: **Independent Evaluation Office**

Version: **19 August 2025**

Table of contents

What is a project completion report validation (PCRV)?

At the closure of every project, the New Development Bank (NDB) prepares a project completion report (PCR) – a type of self-assessment designed to measure the project's implementation performance and results. The Bank's Independent Evaluation Office (IEO) then conducts an assessment of the overall quality of the PCR. This is called a project completion report validation – or PCRV. Information on the methodology and process of running a PCRV can be found here.

Key objectives of the PCRV:

(a) Promote accountability and learning;

(b) Contribute to strengthening the quality and credibility of PCRs (as a key self-evaluation instrument) prepared by the NDB;

(c) Provide an independent assessment of the entirety of projects financed by the NDB exiting the project portfolio in any given year; and

(d) Generate data and lessons that may provide the foundation for independent evaluations conducted by IEO.

Acknowledgements

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Abbreviations and acronyms

CLE	corporate-level evaluation
CSR	corporate social responsibility
E&S	environmental and social
EIRR	economic internal rate of return
FY	financial year
GWh	gigawatt-hour
KWh	kilowatt-hour
LA	loan agreement
MW	megawatt
O&M	operations and maintenance
PCR	project completion report
PCRV	project completion report validation
PDB	Project Document to the Board

I. Basic project data

Country	India	
Loan no.	19IN04	
Project name	Renewable energy sector development project	
Borrower & implementation agency	REC Ltd.	
Loan approval date	October 14, 2019	
Loan signing date	May 26, 2020	
Loan effectiveness date	May 26, 2020	
Loan closing date	June 2, 2022	
Loan tenor	10 years	
	At approval	**Currently**
Loan amount	300 million	300 million
Project completion date	June 2, 2022	June 31, 2022
Project implementation period	24 months	26 months
NDB project team	**At appraisal**	**At completion**
Team leader	Ms. Jianshi Yao	Mr. Deepanshu Sapra
Legal counsel	Mr. Abhimanyu Ghosh	
Operations	Mr. Mukund Kumar / Mr. Ninad Rajpurkar	Mr. Bindu Madhab Panda
E&S Impact Management	Mr. Naval Chaudhary	
Project procurement	Mr. Balasubramanian Janakiraman	
Financial management		Ms. Shakila Rajaram

Sub-project cost (INR million)	**Estimated cost**	**NDB loan**
Adani Wind Energy Kutch Five Limited	8,856.00	5,319.40
Adani Wind Energy Kutch Six Limited	4,910.00	3,501.60
Adani Wind Energy Kutch One Limited (SECI I)	3,738.50	2,783.10
Adani Wind Energy Kutch One Limited (SECI II)	3,124.60	1,895.60
Avaada Sunce Energy Private Limited	14,933.30	10,673.60
Total project cost	**35,562.40**	**24,173.30**
Project financing plan (USD million)	**Estimate at approval**	**Actual**
NDB	300.00	300.00
Counterpart funds	126.83	193.92
Total project financing	**426.83**	**493.92**
Project implementation schedule	**MW**	**Completion date**
Adani Wind Energy Kutch Five Limited	130	31.7.2022
Adani Wind Energy Kutch Six Limited	75.6	27.12.2019
Adani Wind Energy Kutch One Limited (SECI I)	50	4.11.2019
Adani Wind Energy Kutch One Limited (SECI II)	50	7.3.2020
Avaada Sunce Energy Private Limited	350	08.4.2022
Total	**655.6**	

II. Project description

A. Overview of the project

1. The Renewable Energy Sector Development Project aligns with India's national priorities of increasing the share of renewables in its energy mix. Despite heavy reliance on thermal power, which poses challenges for emissions control and environmental protection, India is committed to transitioning to a more energy-efficient and renewable-centric system. To support this transition, the Government of India launched the largest government-mandated renewable energy programme in 2015, targeting 175 gigawatts (GW) of additional renewable energy by 2022 and a 40% share of green energy in the total installed capacity by 2030.

2. On October 14, 2019, NDB's Board of Directors approved a corporate loan of up to USD 300 million under non-sovereign terms to REC Limited (the borrower), a government company administered by the Ministry of Power. The total project cost at appraisal was USD 426.83 million, with counterpart funds of USD 126.83 million by the project entities and REC Ltd. The facility was used by REC Ltd. to support the government's increasing investment in the renewable energy sector. The loan agreement for the project was signed on May 26, 2020 and NDB disbursed USD 300 million (100% of the loan) in a single tranche on June 2, 2020.

3. The project aims to improve India's energy mix by increasing renewable power generation capacity, which will boost the supply of cleaner energy, reduce carbon emissions, and improve air quality, benefiting public health. Additionally, the project contributes to Sustainable Development Goal (SDG) 7 (Affordable and Clean Energy) and SDG 8 (Decent Work and Economic Growth) by promoting cleaner energy and fostering economic growth.

4. The project was designed to include five renewable energy sub-projects in wind and solar sectors with a total capacity of 615.6 megawatts (MW). REC Ltd. was responsible for identifying, selecting, appraising and financing the sub-projects, which are constructed by the project entities under its overall supervision. The project was implemented over two years and physically completed on July 31, 2022.

B. Project output, outcome and impact

5. The project's output, outcomes, and impact, as outlined in the project document to the Board (PDB), are as follows:

   - **Output**. At appraisal, the project aimed to construct renewable energy power plants and its associated transmission lines with a total capacity of 615.6 MW.
   - **Outcome**. The project was anticipated to generate 1,600 GWh of electricity by 2023. In addition, it was expected to reduce coal consumption by 488,292 tons and cut carbon emissions by 986,667 tons annually, contributing significantly to environmental sustainability by 2023.
   - **Impact**: The project aimed to reduce pollution, foster sustainable economic growth, and create job opportunities, contributing to both environmental and social benefits.

III. Assessment of project performance[1]

A. NDB mandate criteria

6. **Contribution to private sector development.** The validation agrees with NDB Management's project completion report (PCR) that the project marks a significant step in expanding NDB's non-sovereign operations in India, signalling a commitment to the private sector in the country. This is in alignment with NDB's General Strategy 2022-2026 to support private sector development and infrastructure projects.

7. However, the PCR's analysis of private sector development is limited. There is no evidence on the project's influence on market expansion and whether it led to broader private sector participation in renewable energy. Additionally, there is no mention of whether the project stimulated competition within the renewable energy sector. These are key factors that would strengthen the argument for the project's long-term impact on the market. Furthermore, the demonstration effect—whether the project served as a model for further investments or inspired other projects in the sector—is not sufficiently explored.

8. **Contribution to sustainable development.** The project's contribution to sustainable development is significant, particularly in terms of the achievement of project objectives and its alignment with NDB's mandate. The project's outputs include the construction of 655.6 MW of renewable energy capacity, which exceeds the expected target of 615.6 MW. Additionally, the project included the construction of 1,200 km of 33 kV transmission lines and 72 km of 220 kV transmission lines, improving energy access and enabling broader distribution of renewable energy, which directly supports regional integration.

9. When considering the project's outcomes, the project successfully achieved a reduction in use of 561,277 tons of coal and 1,134,144 tons of CO_2 emissions annually—far exceeding the expected reduction. Furthermore, the project's annual power production of 1,584 GWh from renewable energy sources is close to the target of 1,600 GWh, contributing to India's efforts to diversify its energy mix and reduce dependence on fossil fuels.

10. **Contribution to economic growth.** The project also contributed to economic growth through the creation of approximately 1,000 jobs during the construction phase and 280 jobs for operations and maintenance (O&M). The project's corporate social responsibility (CSR) activities further enhanced its contribution to local community development, with initiatives like computer literacy programmes, skills training for women, the provision of ambulance services, and the redevelopment of schools. However, the nature and long-term sustainability of these jobs as well as the broader economic impact of the CSR initiatives on the livelihoods of the local community are not fully addressed in the PCR.

11. **Alignment with India's energy and climate goals.** The project aligns with India's renewable energy and climate policies, as outlined in national targets such as the 175 GW renewable energy goal and commitments under the Paris Agreement. The PDB references key policy frameworks—including the Electricity Act (2003), National Tariff Policy, and Renewable Purchase Obligations—and acknowledges structural challenges,

[1] Annex I gives a description of the evaluation criteria for PCRVs of private sector operations. Additionally, annex II, tables 1 and 2, provides the definition of the rating scale and the score descriptions, respectively.

such as: (i) the financial distress of distribution companies due to high aggregate technical and commercial losses;[2] and (ii) transmission constraints – typically referring to limitations in the grid's ability to evacuate and transmit renewable power efficiently, especially from remote generation sites to demand centres. However, while these risks are recognised, the document does not assess their specific implications for this project or outline mitigation measures that could enhance project resilience.

12. **PCRV rating.** Due to limited analysis of the project's impact on market expansion and private sector participation in renewable energy, as well as the lack of assessment of the quality and sustainability of jobs created and the broader economic impact of CSR initiatives on local livelihoods, the PCRV rates the project as "moderately successful" (4), compared to "successful" (5) in the PCR.

B. Economic criteria

13. **Project cost.** At completion, the realised project cost of USD 493.92 million was 15% higher than the original estimate of USD 426.83 million. This was largely attributed to selection of sub-projects with higher energy generation capacity than the original estimate.

14. **Timeline.** The project faced no significant implementation issues, aside from some delays caused by the COVID-19 pandemic. At appraisal, the project was scheduled for completion within 24 months, with a target date of June 2, 2022. However, it was ultimately completed in 26 months, on July 31, 2022. During COVID-19, the supply of materials was affected but private developers were able to resolve the situation by purchasing major materials in sizeable orders for their similar projects being implemented in India.

15. **Economic internal rate of return (EIRR).** The EIRR is found to be above the threshold limit of 10% for each of the sub-projects in both the low carbon and high carbon price scenarios. Furthermore, the result of the sensitivity analysis also indicates that the sub-project remains economically viable for all the tested scenarios. However, the EIRR calculation in the PCR assumes constant operations and maintenance costs in real terms throughout the project life, unlike the PDB, which considered a 2% annual escalation for a solar power project's O&M cost. This discrepancy raises the question of why the PCR did not apply the same escalation assumption for the finalised sub-projects.

16. **Lastly,** the five sub-projects introduced new technologies in their plants, which improved efficiency and performance of the power plants.[3] Project entities employed unskilled, semi-skilled and skilled employees for the power plants, with preference given to residents of local villages nearby the plants in the states of Gujarat and Rajasthan.

17. **PCRV rating.** In summary, although the project's cost exceeded the original estimate by 15% and was completed 2 months later than initially planned, the EIRR for each sub-project remains above the 10% threshold, even under sensitivity analysis. Based on this, the PCRV rates economic criteria as "successful" (5), in line with the PCR rating.

[2] Aggregate technical and commercial losses is combination of energy loss (technical loss + theft + inefficiency in billing) and commercial loss (default in payment + inefficiency in collection).
[3] New technology such as use of robots for cleaning the solar modules which replaced manual cleaning.

C. Financial criteria

18. **Borrower financial performance.** The financial performance of the REC Ltd. is satisfactory. Throughout project implementation, the borrower has maintained all the four financial covenants as defined in the loan agreement.

Table 1. Financial covenant as per the loan agreement

Particulars	March 31, 2023	March 31, 2022	March 31, 2021	Required as per loan agreement
Tangible net worth (INR billion)	581.19	513.10	437.57	>60
Ratio of net borrowings to net worth	6.55:1	6.49:1	7.54:1	<10:1
Ratio of EBITDA* to finance cost	1.58:1	1.56:1	1.50:1	>1.1:1
Capital adequacy ratio	25.78%	23.61%	19.72%	15%

* EBITDA = earnings before interest, taxes, depreciation and amortisation.

19. Furthermore, the borrower has stable financial parameters (table 2). Gross non-performing assets (NPA) and net NPA are 3.42% and 1.01% respectively in financial year (FY) 2023 which marks an improvement over previous financial year(s). The return on net worth, however, decreased in FY 2023.

20. For FY 2023, the statutory auditors, as appointed by the Comptroller & Auditor General of India, provided an unqualified report without any qualification or adverse remark.

21. The international credit rating from rating agencies Moody's and FITCH is "Baa3" and "BBB-" respectively for FY 2023, which is on par with the sovereign rating of India. Additionally, during FY 2023, REC Ltd. was accorded "Maharatna"[4] status by the Government of India for its operational and financial excellence.

Table 2. Borrower's financial parameters

Particulars	FY 2023	FY 2022	FY 2021
Total income (INR billion)	392.53	392.30	91.50
Profit after tax (INR billion)	110.55	100.46	83.62
Consolidated EBITDA (INR billion)	376.14	344.31	322.58
Interest coverage ratio	1.58	1.56	1.50
Debt to equity	6.49	6.41	7.40
Return on net worth (%)	20.35	21.28	21.30
Weighted average cost of funds (%)	7.28	7.00	7.26
Interest spread (%)	2.45	3.23	2.98
Gross NPA (%)	3.42	4.45	4.84
Net NPA (%)	1.01	1.45	1.71

* Net of finance cost.

22. **Project financial performance.** The financial internal rate of return (FIRR) was calculated for each of the five sub-projects. The FIRR calculated was above the weighted average cost of capital for each of the sub-projects. However, the sensitivity analysis indicated that the borrower needs to monitor these projects on regular basis as some sub-projects are sensitive to tested scenarios, such as increase in O&M expenditure by 10% or decrease in revenue by 10%.

[4] A "Maharatna" – meaning "large jewel" – status is accorded to a public sector organisation by the Government of India which: is listed on Indian stock exchange, has recorded more than INR 50 billion of net profit for three consecutive years, has an average annual turnover of INR 250 billion for the preceding three years and has an average annual net worth of INR 150 billion for the last three years.

23. **PCRV rating.** Given the borrower's stable financial parameters, adherence to loan covenants, and sovereign-equivalent credit rating, along with the satisfactory financial performance of the project—albeit with a note to regularly monitor certain sub-projects that are sensitive to revenue and O&M expenditure changes—the PCRV rates the financial criteria as "successful" (5), consistent with the PCR.

D. Environmental and social criteria

24. REC Ltd., the borrower, has a board-approved policy on Environment, Social, and Governance (ESG) and published a comprehensive ESG report for financial year 2024. In addition, the company highlights its ESG commitments through quarterly investor presentations which describe its ESG targets, outcomes, policies, and green power operations, all of which are aligned with India's national clean energy transition plans.

25. Notwithstanding these subsequent developments, during project implementation REC Ltd. lacked an in-house E&S specialist for reviewing loan applications or monitoring E&S performance during project implementation. Furthermore, the company did not have a formal environmental and social management system or environmental policy in place.

26. Despite these gaps, the project entities responsible for the implementation of each sub-project have demonstrated adequate organisational capacity and management systems for the continuous operation and supervision of the E&S aspects of the project. The developers have conducted thorough environmental and social impact assessments and created environmental and social management plans that effectively mitigate potential environmental and social risks. These plans are in line with the regulatory requirements of the host country and the standards outlined in NDB's E&S Policy.

27. The sub-projects have also significantly contributed to environmental sustainability. The wind sub-projects have implemented biodiversity protection measures, including peacock conservation and bird guards on high-voltage lines. The solar sub-project installed bird deflectors to protect habitats like that of the Great Indian Bustard. Additionally, the shift from fossil fuels to renewable energy in these sub-projects has led to a significant reduction in CO_2 emissions and air pollutants, contributing to climate change mitigation. However, while the PCR demonstrates robust E&S capacity at the project entity level, it does not assess REC Ltd.'s ability to maintain E&S standards independently in future operations. Given REC Ltd.'s lack of an environmental policy and in-house E&S specialists, the institutional sustainability of E&S outcomes remains uncertain.

28. In terms of social sustainability, the land acquisition process was conducted with full compliance to government regulations and consensual agreements with private landowners, avoiding physical resettlement and minimising social disruption. On-site, comprehensive health, safety and training practices ensure worker protection and contribute to the long-term welfare of the community.

29. On the monitoring front, each sub-project has implemented robust E&S monitoring systems, conducting internal and external audits, and tracking performance through key performance indicators via digital platforms.

30. **PCRV rating**. While REC Ltd.'s internal E&S capacity can be strengthened, the sub-project developers have ensured that E&S performance is closely monitored and effectively managed, achieving high standards in both environmental protection and social

responsibility. Based on this analysis, the PCRV rates E&S criteria as "successful" (5), in line with the PCR rating.

E. Investment profitability

31. IEO agrees with the PCR that this particular investment by NDB is expected to be profitable in the long-run due to several key factors: the direct corporate loan to REC Ltd. of USD 300 million has a 10-year tenor; the loan has been given to a state-owned institution, which has a good credit rating and has demonstrated strong financial performance; the project itself is financially sustainable, with no payment defaults and timely servicing of interest payments to NDB; the covenants as specified have been complied with, except for a slight delay in the submission of the progress report, which has had a minimal effect on the overall administration costs of NDB. Furthermore, the loan is expected to be paid as scheduled in the loan agreement.

32. However, the PCRV does not fully support the calculation for net profits. The PCR states: *"As of December 2023, the total amount of interest and fee payments received from the Borrower is about USD 41 million, and after deducting the cost of funds (*over the benchmark rate) *from it, the loan is profitable of about USD 18 million*." While this provides a snapshot of short-term profitability, it overlooks several important factors. Firstly, it lacks a risk-adjusted, discounted cash flow analysis, which is essential for assessing long-term returns, especially for a loan with a 10-year tenor. The profitability calculation does not account for future risks, such as potential borrower financial instability or market shifts, that could affect repayment. Secondly, the analysis does not consider loss provisions/write-offs, which are important for mitigating risks in case of loan defaults or other financial issues.

33. **PCRV rating**. The PCR assigns a rating of "successful" (5) to this criterion, despite presenting only positive arguments. Although the PCRV does not agree with the PCR's basis for calculating net profitability, it also assigns a rating of "successful" (5) to investment profitability of the project. This rating is not based on the PCR's reasoning but reflects IEO's overall assessment, which takes into account the broader financial performance and repayment reliability of the project as well as the borrower.

F. Overall project achievement

34. The overall project achievement is not a simple mathematical average of the ratings assigned to the five evaluation criteria discussed earlier. Nevertheless, by calculating the average ratings assigned by IEO to each of the aforementioned criteria, it would be equal to 4.8 on a rating scale from 1 to 6. Taking this into account and considering IEO's wholistic assessment of the project, the PCRV rates "overall project achievement" as "successful" (5), which is the same as in the PCR – in spite of the "moderately successful" (4) rating assigned to the NDB mandate criteria. See table 3 below.

Table 3. Summary of evaluation ratings

Criterion	IEO rating	
NDB mandate criteria	Moderately Successful	4
Economic criteria	Successful	5
Financial criteria	Successful	5
E&S criteria	Successful	5
Investment profitability	Successful	5
Overall project achievement	**Successful**	**5**

IV. Other evaluation criteria

A. NDB performance

35. **During appraisal.** NDB's appraisal of the project, which experienced a six-month delay after loan approval, was comprehensive and aligned with India's energy and climate goals. A fact-finding mission in 2019, involving teams from NDB's operations, environment, social and governance, risk, and legal departments, assessed the project's relevance, market dynamics and alignment with NDB's policies. The project's concept, configuration and cost were carefully evaluated, taking into account REC Ltd.'s financial capacity and India's renewable energy potential. The financial plan and assumptions were reviewed thoroughly, confirming the project's long-term feasibility. NDB also assessed political and project risks, implementing mitigation measures through tailored loan terms, and addressing environmental and social risks through compliance requirements included in the legal agreement.

36. The project design was formalised after a review by various departments within NDB and key stakeholders such as the Department of Economic Affairs and the Ministry of Finance. Furthermore, the NDB Board of Directors approved procurement from non-member countries to ensure timely implementation, while providing flexibility to the borrower in selecting sub-projects in line with NDB's criteria, project objectives and NDB's policies.

37. However, there were notable gaps in the appraisal process that reflect a recurring challenge in NDB operations: the absence of systematic institutional assessments during project preparation. A more structured institutional analysis at the design phase could have identified the need for technical assistance, capacity-building measures, and conditional financing to strengthen REC Ltd.'s environmental, social, and governance framework. This issue has been noted in past evaluations, including the India country portfolio evaluation (CPE) and corporate-level evaluation (CLE) on NDB's project cycle, and remains an area requiring a corporate response from NDB.

38. Additionally, the lack of a clearly defined theory of change (ToC) meant that the link between the project's immediate outcomes and its long-term development impacts was unclear, limiting the ability to track the broader outcomes of the project. Incorporating a ToC is a good practice endorsed by the Evaluation Cooperation Group (ECG) of the MDBs and other peer organisations for strengthening the evaluability of projects by explicitly tracing causal pathways from inputs to outcomes.

39. Furthermore, the project design did not include specific social development components or measurable targets for community well-being, despite REC Ltd.'s CSR policy, which could have enhanced the project's contribution to inclusive development in the regions where the renewable energy plants were being established.

40. **During implementation.** Over the 26-month project implementation period between June 2020 and July 2022, NDB conducted only two review missions. The first mission took place in March 2022, just three months prior to the original project completion date, and no additional supervision missions were carried out during this period. Furthermore, the review missions were limited in scope, comprising just two members, including the project team leader and either an E&S or procurement expert, rather than a broader, multidisciplinary team. This approach contrasts with supervision models used by other MDBs, where missions typically include sector specialists, financial analysts, and monitoring and evaluation experts.

41. The limited frequency and scope of these missions highlight a recurring issue in NDB's supervision practices—where review missions tend to be infrequent, lack technical depth, and provide only limited implementation support to borrowers. These weaknesses are not unique to this project; similar gaps in supervision were highlighted in past evaluations, including the India CPE. Addressing these issues requires a more structured approach to supervision, and therefore warrants a corporate response.

42. The project's progress reports also lacked essential elements needed for a complete understanding of the project's status. They did not offer a detailed breakdown of progress by specific project outputs or milestones, making it challenging to track the status of individual components. Additionally, the reports did not provide a thorough analysis of risks or the mitigation measures in place. Detailed updates on environmental and social performance were minimal, with no clear progress or measurable targets for compliance, reducing the transparency and overall utility of the reports.

43. Although key stakeholders were engaged during project appraisal, at project completion, no stakeholder workshops were organised to enhance outreach or share key lessons and recommendations. The only knowledge product produced by NDB was the PCR. Given that this was NDB's first non-sovereign operation in the country, these workshops could have offered valuable insights and lessons for future non-sovereign projects in India. NDB's absence of such mechanisms limits its ability to refine project design, improve execution, and enhance implementation support in future operations. Establishing a structured post-completion learning framework—such as knowledge briefs or interactive stakeholder workshops—could significantly improve knowledge transfer within NDB.

44. **PCRV rating.** Given the inadequacy of the institutional analysis, the lack of a clearly defined theory of change, limited frequency and scope of supervision missions, poor quality of progress reports, and the absence of a structured post-completion learning framework, IEO rates NDB's performance as "moderately successful" (4), as compared to "successful" (5) in the PCR.

B. NDB's additionality

45. **Financial additionality.** In assessing NDB's financial additionality, several key points highlight the significance of its contribution to the project. NDB's loan, which represented 68% of the total project cost, amounted to USD 300 million and was disbursed in a single payment at a time when liquidity was frozen due to the COVID-19

pandemic. The loan's long-term tenor and "bullet" repayment terms provided essential financial flexibility to REC Ltd., ensuring the continued implementation of the renewable energy sub-projects. This was particularly critical given that, in FY 2019, REC Ltd. disbursed about USD 12 billion in total, but only USD 920 million (7.22%) was allocated to renewable energy projects, emphasising the importance of NDB's financing to REC Ltd. during that period.

46. However, a limitation of the financial additionality lies in the fact that the loan was not provided in the local currency, exposing the borrower to currency risk, which adds an additional financial burden. Furthermore, while the loan played a critical role in financing the renewable energy sector, there is no evidence that the project helped attract additional private sector participation or investments into the renewable energy market. The PCR does not explore whether the project contributed to making the sector more attractive for other private investors or increased competition within the industry, which is a key aspect of financial additionality.

47. **Non-financial additionality.** While NDB ensured E&S compliance through regular reviews, it did not actively support capacity-building at REC Ltd. The borrower adopted a board-approved ESG policy in 2024; however, at the time of project implementation it lacked an in-house E&S specialist, and yet NDB's role remained limited to reviewing the E&S assessments prepared by the project entities. In these circumstances, NDB could have played a more proactive role in building REC Ltd.'s capacity by helping develop its E&S management systems and training in-house specialists. Beyond capacity-building, the absence of a structured knowledge management approach within NDB further constrained learning from this project. Despite being NDB's first non-sovereign operation in India, no systematic learning products—such as knowledge briefs, case studies or post-completion reviews—were developed. Without a formalised knowledge management approach, lessons from individual projects remain fragmented and are not systematically integrated into future operations.

48. Additionally, NDB did not contribute to supervision of sub-projects, nor did it implement social development indicators in the Design and Monitoring Framework (DMF) to enhance socio-economic impact. NDB also did not create a theory of change to specifically track the impact of its funding. Furthermore, there was no involvement in community development programmes or any technological innovations.

49. **PCRV rating.** Considering: (i) the financial aspects of NDB's additionality, including the exposure of the borrower to currency risk, and the lack of efforts to make the sector more attractive to private investors or to foster competition; and (ii) the non-financial aspects of NDB's additionality – including the limited capacity-building support to the borrower, the lack of social development indicators in the DMF, and no engagement in community development programmes or technological innovation – the PCRV gives a rating of "moderately successful" (4), as compared to "successful" (5) in the PCR.

50. It is important to note that, the observations and recommendations in this PCRV are fully aligned with NDB's Policy on Transactions without Sovereign Guarantee. The areas identified for improvement in this PCRV—whether related to additionality, institutional assessment gaps, supervision quality, or post-project learning—are directly linked to the expectations defined in the policy. This validation does not impose any new expectations but instead reinforces the importance of applying NDB's existing policy framework consistently to enhance project outcomes and institutional learning.

V. Assessment of PCR quality[5]

51. **General observations.** The PCR adheres to the most part to the methodology outlined in the "PCR Validation: Methodology and Process" document approved by the Board in March 2023. Notably, the evaluation criteria are presented in the internationally recognised sequence, ensuring greater consistency with global best practices. Furthermore, the terminology has been refined, with "Overall Assessment" appropriately revised to "Overall Project Achievement". However, it is important to note that NDB's performance and additionality should not be factored into the rating of overall project achievement. These aspects are distinct and should be assessed and rated separately.

52. **Candour.** There are two points regarding the candour of the PCR. Firstly, under each criterion, the PCR narrative focuses only on the positive aspects and does not highlight areas of improvement. Secondly, the evaluation criteria ratings are not well aligned with the narrative in the PCR. None of the criteria are supported by explicit discussion regarding the limitations or setbacks that might have warranted a lower rating of "successful" (5) than the optimal "highly successful" (6). For example, while the EIRR is well above the threshold for all sub-projects in all scenarios of the sensitivity analysis, the PCR does not explain why the project was rated "successful" (5) instead of "highly successful" (6) under the economic criterion. The PCRV therefore rates the PCR's candour as "moderately successful" (4).

53. **Lessons learned.** The lessons identified in the PCR provide useful insights into regulatory factors, management practices, and emerging sustainability opportunities. Notably, the PCR highlights the importance of securing power purchase agreements prior to loan approval as a mitigation strategy against delays, particularly in the context of distribution companies' weak financial health in India. This is a valuable, project-specific lesson that can inform future non-sovereign operations in similar contexts.

54. However, it could further strengthen its utility for future operations by including additional project-specific insights, such as how COVID-19 delays were mitigated. The project faced supply chain disruptions during the pandemic, but the PCR does not explicitly capture how these challenges were managed. Additionally, while the lesson on circular economy opportunities in solar waste management is forward looking, it would benefit from being more grounded in the project's implementation experience—such as whether any steps were taken (or not) during the project to address end-of-life waste considerations.

55. Overall, while the PCR's lessons provide relevant and useful starting points, they could be enhanced by offering more granular, project-specific examples that reflect the challenges and solutions encountered during implementation. This would strengthen the practical value of lessons for future NDB non-sovereign operations in India and similar markets. Therefore, the PCRV rates the lessons learned criterion as "successful" (5).

56. **Scope.** In assessing the scope of the PCR, two main points can be made. First, some statements in the PCR lack supporting evidence, which affects the robustness of the analysis. For example, the report mentions the project's contribution to private sector development due to NDB's first non-sovereign operation in India. However, there is no

[5] Refer to table 2, in annex III to see the ratings of the project completion report quality.

evidence provided to show how this project attracted additional private sector investments, increased competition or stimulated market growth in the renewable energy sector. Second, certain evaluation criteria in the PCR are correctly discussed but under inappropriate titles. For instance, under the "NDB Mandate" criterion, the PCR evaluates the achievement of project objectives. However, this is not aligned with the intended purpose of the criterion, which should focus on the project's contribution to NDB mandate objectives. The discussion would be more fitting under the title “Contribution to Sustainable Development” as it evaluates how the project outcomes align with broader sustainability goals, such as reduction of coal-generated power and CO_2 emissions. Hence, the PCRV rates the scope of the PCR as “moderately successful” (4).

57. **Coverage.** The report adequately covers several key aspects of the project, including physical outputs, disbursements, and financial management, and provides high-level summaries on safeguards and procurement. However, it lacks depth in assessing the quality of monitoring and evaluation systems—there is little discussion on how data was collected, tracked, or used to inform implementation decisions. Additionally, the coverage is largely descriptive and does not reflect on challenges encountered or how they were addressed. Most notably, the report does not include any forward-looking analysis or action plan based on implementation experience. Hence, the PCRV rates the coverage of the PCR as “successful” (5).

58. **Overall quality of PCR.** While the PCR is well-structured and covers key aspects of the project, its strong emphasis on positive outcomes, without sufficient critical discussion of challenges, limits its value for future learning. However, the PCRV notes that the lack of focus on learning and continuous improvement is a broader issue that extends beyond this specific PCR and requires a corporate-level response. Considering these factors, the overall quality of the PCR is rated as “successful” (5), though there is still room for improvement in candour and depth of analysis.

Annex I.
Definition of evaluation criteria for PCRVs of private sector operations

Financial criteria. It reflects the project/company's financial performance and achievement of project business objectives. This criterion includes the assessment of the fulfilment of project business objectives. The rating considers the achievement of process and business objectives articulated at approval.

Economic criteria. It reflects the project/company's contribution to economic growth. This includes assessing the operations net benefits, both benefits and costs associated with the project, including economic distortions.

NDB mandate criteria. This indicator measures the project's contribution to the NDB's mandate objectives, be they to stimulate development of the private sector, development of efficient financial/capital markets, or transition to a market economy.

Environment and social (E&S) criteria. It reflects the project/company's environmental and social performance. The rating of environmental and social performance considers the project company's/enterprise's overall environmental and social performance in the area of influence of the project.

Investment profitability. The indicator measures the profitability of each of NDB's investment(s) in the project company.

NDB performance. This criterion assesses the contribution of NDB to project design, execution, monitoring and reporting, supervision and implementation support, and evaluation. The performance will be assessed with a view to NDB's expected role and responsibility in the project life cycle.

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 II.
Rating scale

Table 1. Definition of rating scale

Rating (numeric value)	Description
6	Highly Successful
5	Successful
4	Moderately Successful
3	Moderately Unsuccessful
2	Unsuccessful
1	Highly Unsuccessful

Table 2. Score descriptions

Rating	Score (rating) descriptor
6	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	Under the concerned criterion, the activity achieved almost all (indicatively, over 80-95 per cent) of the main targets, objectives, expectations, and results.
4	Under the concerned criterion, the activity 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.
3	Under the concerned criterion, the activity did not achieve its main targets (indicatively, less than 60 per cent), objectives, expectations and results.
2	Under the concerned criterion, the activity achieved only a minority of its targets, objectives, expectations and results.
1	Under the concerned criterion, the activity (project, programme, non-lending, etc.) achieved almost none of its targets, objectives, expectations and results.

Annex III.
Tables of ratings

Table 1. Rating comparison: PCR (NDB Management) and PCRV (IEO)

Evaluation criteria	PCR rating	PCRV rating	Disconnect (PCRV rating – PCR rating)
NDB mandate criteria	5	4	-1
Economic criteria	5	5	0
Financial criteria	5	5	0
E&S criteria	5	5	0
Investment profitability	5	5	0
Overall project assessment	**5**	**5**	**0**
NDB performance	5	4	-1
NDB additionality	5	4	-1

Table 2. Rating of the project completion report quality

Criteria	Rating
Candour	4
Lessons learned	5
Scope	4
Coverage	5
Overall quality	**5**