Validation Report
February 2021

India: Clean Energy Finance Investment Program (Tranche 1)
NOTE

In this report, “$” refers to United States dollars.
## PROJECT BASIC DATA

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<td>M. Legal, Senior Evaluation Officer, IESP*</td>
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ADB = Asian Development Bank, ADF = Asian Development Fund, EIB = European Investment Bank, FI = financial intermediary, IED = Independent Evaluation Department, IESP = Sector and Project Division, JICA = Japan International Cooperation Agency, n.a. = not available, OCR = ordinary capital resources, PCR = project completion report.

*Team members: H. Hettige (Quality Reviewer), F. De Guzman (Senior Evaluation Officer), A. Subbiah (Consultant), and J. Eerikainen (Consultant).
I. PROJECT DESCRIPTION

A. Rationale

1. India needed additional power generation capacity to increase access, quality, and reliability of electricity at the time of project appraisal. The country’s Twelfth Five-Year Plan 2012–2017 targeted adding 88 gigawatts (GW) of generation capacity, with 30 GW of renewable energy capacity. The additional renewable capacity was seen to contribute to the government’s strategy to increase energy security and maintain a 31% share of renewables in the total generation mix until 2023. To support the industry, generation capacity incentives, as well as feed-in tariffs, were in place, benefitting the solar and wind power developers. Despite these incentives, reliability remained an issue as the country aims to connect all villages to the electricity network.

2. A major player in the country’s renewable energy sector is the Indian Renewable Energy Development Agency Limited (IREDA). IREDA is a wholly government-owned nonbanking financial company (NBFC) with deep experience in renewable energy investments and has benefited from government financing, issuance of bonds, and borrowing from multilateral development banks, such as the Asian Development Bank (ADB). Local rating agencies rated IREDA bonds AAA, and its lending was about 11% of total renewable energy lending in India in 2014.

3. ADB first lent $100 million to IREDA in 1996. Learning from IREDA’s previous investment loan and a similar financial intermediation multitranche financing facility (MFF) to the India Infrastructure Finance Company, ADB approved a $500 million MFF in October 2014. This MFF—Clean Energy Finance Investment Program—comprised three tranches totaling $6.6 billion to finance significant parts of IREDA’s indicative financing plan from 2014 to 2024. The MFF’s envisaged outcome was to facilitate investment to add at least 990 MW of renewable energy capacity generating an estimated 3,900 GW-hours (GWh) of electricity, and annually avoid 3.2 million additional tons of carbon dioxide (CO2). In November 2014, MFF’s $200 million tranche 1 was approved.

B. Expected Impacts, Outcomes, and Outputs

4. Tranche 1’s envisaged impact was the same for the MFF—increased renewable energy infrastructure. The expected outcome was also the same for the MFF—facilitated investment in renewable energy—with indicators in smaller scales. First, IREDA leveraged $80 million additional financing and about $120 million private sector equity and other funds to achieve $400 million of investments in renewable energy. Second, at least 395 MW of renewable energy

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2 Renewable energy policy incentives include tax incentives, feed-in (e.g., preferential) tariffs, generation-based incentives, and regulations establishing minimum renewable purchase obligations for power distribution utilities. Incentives include a specified per kilowatt-hour payment, paid out of funds allocated for such a program, to supplement the effective electricity sale price renewable energy generators earned.


4 Together with ADB’s loan and other lenders’ fund, the project funded cogeneration, wind, and solar–thermal plants generating a total of 318 megawatts (MW) of renewable capacity that was higher than the 125 MW target. ADB. 1996. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to the Indian Renewable Energy Development Agency Limited for the Renewable Energy Development Project*. Manila. Loan 1465 was approved on 26 September 1996 and closed on 25 October 2002.

capacity added through IREDA’s provision of long-term financing, generating an estimated 1,500 GWh of electricity annually. Last, approximately 1.2 million additional tons of CO₂ avoided annually.⁶

5. The two expected tranche 1 outputs were enhanced availability of long-term financing to support renewable energy projects and IREDA’s improved institutional capacity. These were to be measured through seven indicators: (i) at least 10 private sector subprojects approved and funded by 2018; (ii) timely disbursement of tranche 1; (iii) an integrated environmental and social management system (ESMS) operational by December 2014; (iv) ADB’s environment and social safeguard system and other ADB facility agreements successfully implemented by IREDA by December 2016; (v) ADB facility approval, disbursement, and liquidation successfully and timely carried out by IREDA, and nonperforming loan (NPL) ratio below 3.9% of disbursed projects maintained by IREDA by March 2015; (vi) enhanced comprehensive capacity building plan for financing and credit risk management developed by IREDA by end of 2018; and (viii) semiannual performance and risk management reports were to be submitted to ADB by December 2018.

C. Provision of Inputs

6. Tranche 1 was approved in November 2014 and the government signed a year later in October 2015, with actual loan effectiveness in February 2016. The 1-year delay was due to other cheaper funding sources becoming available to IREDA.⁷ This delay led to a number of initially identified subprojects in 2015 to be classified as subprojects being implemented prior to loan effectiveness. As such, ADB’s disbursement methods had changed from advances to reimbursement. This was in addition to the originally planned direct subloans and about 20% of the ADB funds were used to buy out renewable energy loans from other financial institutions or takeout financing. Tranche 1 was fully disbursed in July 2018. The actual financial closing date was 7 months earlier than planned.

7. Tranche 1’s periodic financing request indicated that aside from the ADB loan, the approved amount included funds from unrestricted funds, project developers, cofinanciers, and others.⁸ This validation notes that except on what was reported in the design and monitoring framework and the $200 million disbursed under tranche 1, there are no clear information on the actual amount disbursed from each fund source.

8. The MFF, including tranche 1, was classified as financial intermediary (FI) for environment, involuntary resettlement, and indigenous peoples. At appraisal, IREDA agreed to establish a functioning environmental and social safeguards unit satisfactory to ADB to implement the ESMS. A capacity development technical assistance (TA) was approved in August 2015 to improve IREDA’s safeguard compliance, among other things.⁹ Since tranche 1’s effectiveness was delayed, TA’s effectiveness was also delayed, and it became effective in July 2016. The TA

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⁶ The MFF has the following outcome indicators: (i) $200 million of additional financing and about $300 million of private sector equity and other funds IREDA leveraged to achieve $1 billion of investments in renewable energy; (ii) at least 900 MW of additional renewable energy capacity, generating an estimated 3,900 GWh of electricity annually; and (iii) generation of approximately 3.2 million of additional tons of carbon dioxide avoided annually.

⁷ ADB (South Asia Department [SARD]). 2015. Second Loan Tripartite Portfolio Review Meeting (TPRM): Clean Energy Finance Investment Program (Tranche 1) in India. Minutes of TPRM Discussions. 7 December (internal).

⁸ Approved amount from cofinanciers was based on the ADB e-operations system data for tranche 1. Based on SARD’s additional information, unrestricted funds were defined as any sources other than the ADB facility, e.g., any forms of debt or equity. ADB (SARD). 2018. Semi-Annual Project Progress Report: Clean Energy Finance Investment Program in India. 30 September (internal).

also aimed to improve project administration, operation, and management. It also aimed to improve IREDA’s institutional capacity. The TA was to be completed in December 2019 but was extended to November 2020 due to coronavirus-related delays.

D. Implementation Arrangements

9. IREDA, the borrower, was also the executing and implementing agency. The ADB loan proceeds were to be re-lent to subborrowers at a price that was to consider IREDA’s cost of funds and based on subproject-specific risk and guided by technology-specific risks. To guarantee IREDA’s repayment, the government was to enter into a guarantee agreement with ADB. The PCR indicated that all subprojects under tranche 1 complied with the eligibility criteria outlined in the facility administration manual and a guarantee agreement with ADB was signed in October 2015.

10. At appraisal, the ADB loan proceeds were to be used for direct subloans and for takeout finance up to 20% of the ADB funds. Due to loan effectiveness delay, fund allocation for tranche 1 was revised to allocate 20% of the ADB funds to retroactive financing, with maximum of 1 year before October 2015; 20% takeout financing; and 60% to IREDA’s new subprojects. At completion, seven subprojects were new and two were takeout financing as stated in the PCR. This validation notes that despite a record of one subproject, which ADB reimbursed IREDA for $10 million, the PCR indicated that there was no subproject that used the retroactive financing.

11. One of the functions of the ESMS unit to be established in IREDA was to screen the subprojects as per ADB’s 2009 safeguard policy statement (para. 8). The ESMS was developed in line with the Indian national regulations. The TA engaged two safeguard specialists to assist in the technical and safeguard evaluations for new subprojects and trained IREDA staff on social safeguards. Three more consultants were hired for administration, strategy, and financial management to help meet the other performance indicators for output 2 (project administration, operations, and monitoring and review). IREDA also set up a project management unit that was headed by its general manager for finance. It reported to ADB semiannually in compliance with safeguards, loan undertakings, and covenants.

12. The PCR indicated that out of the 30 loan covenants, 12 were complied with, 17 were being complied with, and 1 was not complied with. Despite the subprojects were completed under tranche 1, the PCR was unclear why there were more than 50% of loan covenants still being complied, such as preparation, design, construction, operation and decommissioning of each qualified subprojects, safeguards compliance, and monitoring, as well as contractors’ compliance to health, labor, and safety provisions. Since subprojects under tranche 1 were completed, final status of compliance would have been determined at completion. Noncompliance was related to NPL ratio not meeting the target of below 3.9%.

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10 Takeout finance may include subprojects that are financially closed, under construction, or fully commissioned from other financial institutions.

11 The PCR’s actual financing figures totaled to $17.52 billion, which was above the $6.6 billion for the 10-year period. During the finalization of this report, the project team provided the correct figures to IED.

12 ADB (SARD). 2016. Fourth Loan Tripartite Portfolio Review Meeting: Clean Energy Finance Investment Program (Tranche 1) in India. Minutes of TPRM Discussions. 16–17 September (internal); and ADB (SARD). 2017. Fifth Loan Tripartite Portfolio Review Meeting: Clean Energy Finance Investment Program (Tranche 1) in India. Minutes of TPRM Discussions. 6–7 April (internal). This validation also notes that disbursement method was revised to cover retroactive financing (para. 6).


14 Achievements in these areas are discussed under the effectiveness section.
II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

13. The PCR rated the project relevant. The Government of India’s policy objective to expand renewable energy generation was aligned with tranche 1 and ADB’s country partnership strategy, 2013–2017. Leveraging private capital to expand renewable energy capacity in India was aligned with ADB’s Strategy 2020 through clean energy development, the promotion of private sector development, and the leveraging of cofinancing partnerships. The PCR also assessed tranche 1’s design and modality as appropriate and selecting IREDA, an NBFC dedicated to renewable energy lending, as the FI to implement the MFF. It noted that designing the program as an MFF enabled ADB to give 10 years of support to the government’s targets of achieving renewable energy by 2022.

14. This validation notes that designing the program as a MFF allowed flexibility in identifying subprojects. Such flexibility remained relevant during implementation such that IREDA chose to invest ADB funds in solar and wind projects for which demand for financing was high, instead of investing in other renewable energy technologies, such as cogeneration, hydropower, and waste to energy. The MFF also provided IREDA access to long-term financing that was not readily available from commercial banks. This validation also acknowledges the due diligence ADB made prior to the MFF’s approval to ensure that IREDA was qualified as an FI.

15. IREDA was well-positioned to support the development of renewable energy projects in India because of its strength in supporting local project sponsors to finance projects primarily through local debt markets. IREDA’s lending comprised about 11% of total renewable energy lending in India, and the government had been increasing its authorized capital enabling it to provide long tenor loans. IREDA had a 25.1% increase in its cumulative loan disbursements over the fiscal year (FY) 2013–2014 and FY 2014–2015 and a 13.1% rise in its profits after tax. The Reserve Bank of India (RBI) regulates IREDA and governs it with RBI regulations, including exposure limits. IREDA has to comply with corporate and financial governance and management practices and apply market principles in pricing its products.

16. This validation notes that tranche 1 was appropriately designed as reflected in its outcome and output performance indicators. Review of existing IREDA guidelines and other requirements to fulfill ADB safeguards requirement was properly implemented, as well as IREDA’s financial risk management, credit, technical, and procurement processes prior to its approval. Although detailed due diligence was conducted, this validation notes that given IREDA’s active role in the capital markets, initial public offering issuance, and its own bonds issues, an assessment on various ADB financial instruments, including nonsovereign lending, could have provided a stronger rationale for providing sovereign support to IREDA. This validation assesses tranche 1 relevant.

17 Solar and wind projects also faced less safeguards issues and were eligible for ADB financing.
18 Indian Renewable Energy Development Agency Ltd. IREDA Voyage 2017–18. New Delhi. The compound annual growth rate of IREDA’s cumulative loan disbursements over the period fiscal year (FY) 2013–2014 and FY2019–2020 is 21.4%. Fiscal year in this document refers to period April 1 of beginning year to March 31 the following year.
19 The slow disbursement due to loan’s low competitiveness had been apparent in various back-to-office reports. In one of them, the nonsovereign window was acknowledged as critical in expanding financial sector lending in India.
B. Effectiveness in Achieving Project Outcomes and Outputs

17. The PCR rated the project effective since it achieved the outcome and most of the output indicators identified in the design and monitoring framework. It indicated that the target of $400 million of multisourced investments in renewable energy exceeded by almost 1.4 times. Actual subproject costs amounted to $548.95 million.\(^{20}\) The outcome target of at least 395 MW of additional renewable energy capacity exceeded by 1.2 times. This validation notes that, while the target additional renewable energy capacity exceeded at completion, the 480.8 MW only generated a total of 819 megawatt-hours (MWh) of electricity annually, almost 100% lower than the 1,500 GWh target. Lastly, the PCR indicated that of the 1.2 million targeted additional tons of CO\(_2\) avoided annually, tranche 1 avoided 1.06 million additional tons of CO\(_2\) annually, slightly lower than the target.

18. For outputs, tranche 1 targeted to finance 10 subprojects and timely disburse the $200 million, but the PCR indicated that nine subprojects were financed. Although it was envisioned that subprojects would include other renewable energy technologies, only three wind energy, and six solar power energy subprojects were included. The PCR noted that this was due to greater demand for solar and wind energy projects, and other projects did not comply with ADB’s ESMS requirements.\(^{21}\) Of the $200.0 million, $87.2 million financed generation in three wind energy subprojects, while $112.8 million for the six solar energy subprojects. Annual fund disbursement targets were met, resulting in earlier financial closing of tranche 1. This validation notes that disbursement indicators were covered in output 2’s project administration.

19. Environmental and social safeguards and reporting commitments were achieved. The nine subprojects were either categorized B or C for involuntary resettlement and indigenous peoples since these were highly unlikely to have adverse impacts. As for environmental safeguards, subprojects were also either categorized B or C due to potential adverse environmental site-specific impacts. This validation notes that the ESMS was approved 7 months before the targeted date, private land required for the subprojects was directly purchased from landowners at market value, and no involuntary resettlement occurred. The subprojects complied with IREDA’s ESMS requirements and with India’s environmental and social safeguards laws and regulations. ADB’s safeguard requirements and loan covenants for land acquisition were materially complied with, and compensation to the affected persons, community development, and livelihood restoration initiatives were done. While the subprojects did not establish a grievance redress mechanism, complaint registers at the site offices were found during the site visits. Five semiannual progress reports were submitted to ADB.

20. On project administration, the PCR noted that while disbursement and liquidation were carried out on time, maintaining IREDA’s NPL ratio below 3.9% of disbursed subprojects was not met. By 2019, the NPL ratio was at 6.12%. The PCR argued that it was lower than the average NPL ratio of 6.3% for NBFCs in India. It noted that while IREDA was trying to contain NPL, it had entered into loan agreements with other lenders on a nonsovereign basis at higher NPL levels and sought to revise the ADB covenant on NPL to 10%. The PCR assessed that IREDA’s

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\(^{20}\) The detailed amounts by funding source did not add up to $555.77, as reported in appendix 1 of the PCR.

\(^{21}\) Solar and wind projects generally do not require environmental impact assessment, environmental management plan, and public consultation procedures under India’s law, while hydropower, cogeneration, and biomass projects above certain threshold require these documents and public consultation procedures. Thus, IREDA chose to finance only solar and wind projects with ADB financing.
operational capacity would be likely achieved as the ongoing TA provides capacity building support to develop its financing and credit risk management.

21. This validation notes that tranche 1’s outcome targets were generally achieved, except for the additional annual electricity generated indicator. All outputs were achieved, except the NPL ratio target. This validation assesses tranche 1 effective.

C. Efficiency of Resource Use

22. The PCR rated the project efficient. It reestimated the economic internal rates of return (EIRRs) for four of the nine subprojects financed. Project costs covered the cost of capital and operations and maintenance. Benefits included incremental, non-incremental, and environmental benefits. A standard conversion factor was used to estimate the economic costs of operations and maintenance. The benefits from reduction of CO₂ emissions have been accounted for in the economic analysis consistent with the Central Electricity Authority’s (CEA) guidelines.²²

23. Of the nine subprojects, only four—three solar power energy and one wind power energy—were recomputed for EIRRs at completion, with three EIRRs exceeding the 12% hurdle rate.²³ The EIRR for one solar project (25 MW Chattel) was lower than 12% both at appraisal (4.52%) and completion (1.98%). Of the five subprojects that had no recomputed EIRRs, three were for solar power energy and had lower than 12% at appraisal.²⁴ The rationale for selecting subprojects with EIRR below 12% at project appraisal for financing from ADB funds was not documented in the PCR and in various mission back-to-office reports.

24. This validation recomputed EIRRs for the four subprojects following ADB guidelines for economic analysis and on emission factors. The resulting EIRRs are slightly lower—13.13% for 70 MW Rising Bhadla 1 solar project, 12.43% for 70 MW Rising Bhadla 2 solar project, 1.71% for 25 MW Chattel solar project, and 12% for 100 MW Orange Anantapur wind project.²⁵

25. Funds were fully disbursed and was closed earlier than planned. While process efficiency was achieved, this validation raises doubts on the economic efficiency of tranche 1. Of the nine subprojects, three subprojects have clear evidence that they were economically viable at completion, while two have yet to be confirmed, subject to recalculation of their EIRRs at completion. Hence, this validation assesses tranche 1 less than efficient.

D. Preliminary Assessment of Sustainability

26. The PCR rated the project most likely sustainable despite the higher NPL ratio at 6.12%, which was above the below 3.9% target. It argued that IREDA, being a well-capitalized NBFC, complies with RBI’s banking ratios and criteria for government-owned financial institutions. It also has access to liquidity from multiple sources including bonds issuance with an AAA rating and is

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²² The CO₂ emission factors (0.92 tons of carbon dioxide per megawatt-hour [tCO₂/MWh for India] in the CEA guidelines are different from the emission factors (0.8717 tCO₂/MWh for India) in the ADB guidelines. Government of India, CEA. 2018. CO₂ Baseline Database for the Indian Power Sector: User Guide Version 13.0. New Delhi; and ADB. 2011. Manual for Calculating Energy Output Indicators. Manila.

²³ Subprojects with EIRRs that exceeded 12.00% hurdle rate were 70 MW Rising Bhadla 1 solar project (13.70%), 70 MW Rising Bhadla 2 solar project (12.96%), and 100 MW Orange Anantapur wind project (12.42%).

²⁴ Subprojects with EIRRs lower than 12.00% hurdle rate were Azure Clean Energy Private Limited (11.46%), SSJ Power Projects and Infrastructure Private Infrastructure Private Limited (7.78%), and Hiraco Renewable Energy (3.71%); while these subprojects had higher hurdle rates, Orange Urvankonda Wind Power (18.83%) and Etesian Urja Limited (20.87%).

managed by professional and highly trained staff. IREDA’s loans grew at a compound annual growth rate of 23.7% over the past 5 years. This validation adds that as of FY2019–2020, IREDA had over $7.3 billion of cumulative disbursements to finance 2,600 renewable energy projects with 16,295 MW capacity. As of FY2019–2020, IREDA raised $1.3 billion in domestic and foreign bonds, and borrowed about $232 million from domestic banks and $2.6 billion from international lenders. IREDA’s comprehensive income in FY2019–2020 was $76.2 million and credit impaired loan assets as of end of March 2020 was $320.7 million. Moody’s rated IREDA’s international Masala bond Baa3 negative, an investment grade with moderate credit risk. However, IREDA’s earnings per share dropped in FY2018–2019 and FY2019–2020 compared to past years. This validation notes that this is due to a change in accounting systems to comply with revised Indian Accounting Standards. Despite these factors, IREDA continues to perform well and remains a financially sustainable intermediary.

27. This validation notes that while the financial internal rate of return (FIRR) and weighted average cost of capital (WACC) for the actual IREDA subprojects on wind and solar power energy were computed at appraisal, the PCR did not include an estimation of the FIRR and WACC at completion. While tranche 1’s sustainability was assessed primarily based on IREDA’s sustainability as an FI, it would be useful to include an assessment of the subproject’s FIRRs and WACCs under tranche 1. While IREDA conducts subborrowers’ due diligence and uses external credit rating agencies to validate creditworthiness, cash flow analysis of the subprojects or of the entire portfolio of ADB-financed assets based on real costs would provide a better assessment of the subprojects’ financial returns. This would be useful, given that some subprojects’ EIRRs are relatively low, delayed payments to renewable energy projects from some distribution companies are potentially a cause for concern, and power demand in India due to the COVID-19 pandemic is lower. Nevertheless, IREDA benefits from the same loan recourse conditions, which other commercial banks in the syndicate may seek from subborrowers, improving credit worthiness of the loans.

28. Despite a higher NPL ratio and absence of FIRR and WACC for the nine subprojects at completion, IREDA as an FI demonstrates financial sustainability and improves its financial risk management and system, which the complementary TA currently supports. This validation assesses tranche 1 to be likely sustainable.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

29. The PCR rated tranche 1’s development impact satisfactory. Tranche 1 supported the financing of renewable energy subprojects that helped increase the generation capacity of renewable energy from 5.6% in 2015 to 7.8% in 2018. As of 2018, 39.5 GW of renewable energy was added, more than half of the 2027 target, i.e., 70 GW. At appraisal, increased employment opportunities due to the subprojects’ constructions, as well as increased women’s employment and families who sold land, among others, were identified as social benefits. Although there was no detailed discussion on actual achievements in these areas, given that these were part of the ESMS compliance, this validation notes that the subprojects generated additional employment in

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the project areas. Similarly, the performance indicators on CO₂ emission reduction and environmental safeguards indicated that subprojects under tranche 1 generated environmental benefits. Although the institutional capacity support is being implemented under a complementary TA, ADB’s loan financing served as leverage to improving IREDA’s operational capacity and private sector financing. For these reasons, this validation assesses tranche 1’s development impacts satisfactory.

B. Performance of the Borrower and Executing Agency

30. The PCR rated IREDA’s performance satisfactory. It noted that IREDA has strong ownership, governance, and leadership, and is under the purview of robust regulations that govern NBFCs in India. It has a good loan appraisal process that verifies project viability and creditworthiness of sponsors and relies on accredited external credit-rating agencies’ validation. While submissions of financial statements were delayed, IREDA established an adequately staffed project management unit and ESMS to comply with ADB requirements. It led to an earlier financial closing as well as compliance with all loan covenants with the exception of the targeted NPL ratio. This validation adds that a ready pipeline of subprojects and financial analysis of eligible subprojects demonstrated IREDA’s strong leadership and project ownership. As the TA’s executing agency, IREDA also ensured that outputs and deliverables under the TA remain to be relevant and supportive of tranche 1. This validation assesses IREDA’s performance satisfactory.

C. Performance of the Asian Development Bank and Cofinanciers

31. The PCR rated ADB’s performance satisfactory for tranche 1. It noted that lessons from the 1996 loan helped ADB to develop an investment program suited for IREDA to provide project sponsors market-based debt instruments with longer tenor. ADB, providing a complementary TA, was an appropriate support to help IREDA implement its ESMS and financial risk management, and establish an Alternative Investment Fund and securitize IREDA’s selected loans. This helped develop IREDA’s capacity to process ADB loan and loans from other international borrowers. The PCR noted that ADB provided adequate support throughout the loan appraisal, approval and implementation, although loan effectiveness took more than a year.

32. This validation notes that ADB’s effective consultation missions prior to the investment program’s approval resulted in identifying a complementary TA as an appropriate capacity building support. A total of five consultation missions, including a fact-finding mission; nine project review missions, including a special project administration mission; and eight tripartite portfolio review meetings (TPRMs), were conducted to timely assess tranche 1’s status, discuss implementation issues, and review the complementary TA’s contribution. ADB also adjusted its financing type to include retroactive financing due to delays.

33. ADB’s sovereign loan to IREDA was approved at a time when the cost of domestic funds was relatively higher compared to funds from ADB and other international development banks, and IREDA’s balance sheet in FY2013–2014 showed assets of only about $1.3 billion. This validation notes that given IREDA’s lending resources and its mandate to support small to medium-sized renewable energy projects, an ADB sovereign loan was appropriate at the time the MFF was approved. However, given that IREDA is a government-owned entity that participates in the capital markets, ADB could have considered looking into the prospects of nonsovereign lending and assessing the most appropriate financial instrument that ADB could offer as part of its due diligence. During implementation, such assessment could have been revisited and

30 Despite that the MFF is still ongoing, the PCR rated the entire MFF satisfactory.
updated to consider the emerging trends in the capital markets and other cheaper funds available to IREDA.\textsuperscript{31} Given ADB’s performance prior and during tranche 1 implementation, this validation assesses ADB’s performance satisfactory.

D. Others

34. ADB and IREDA periodically reviewed project progress, including other ADB ongoing and proposed projects, in the TPRM with the Department of Economic Affairs of the government of India. Review of various TPRM minutes indicated that ADB discussed program progress with the government to resolve any concerns or issues.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

35. The PCR rated tranche 1 successful since its design was relevant. It was effective in delivering outcome and output targets, and was efficient with three of four recomputed EIRRs being above the 12%. Tranche 1 was also rated most likely sustainable based on IREDA’s financial performance and ongoing complementary TA support to improve its financial risk management. This validation assesses tranche 1 relevant and effective but assesses it less than efficient and likely sustainable. Given the lower trends in solar power energy, it is likely that four of the nine subprojects are below the 12% hurdle rate. Despite not calculating FIRR and WACC at completion, IREDA demonstrates financial sustainability. However, it needs to address its high NPL ratio, which the ongoing TA is supporting. Overall, this validation assesses tranche 1 successful.

Overall Ratings

<table>
<thead>
<tr>
<th>Validation Criteria</th>
<th>PCR</th>
<th>IED Review</th>
<th>Reason for Disagreement and/or Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>Relevant</td>
<td>Relevant</td>
<td></td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Effective</td>
<td>Effective</td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>Efficient</td>
<td>Less than efficient</td>
<td>Three of nine subprojects have evidence that they were economically viable at completion, while two are only likely economically viable, subject to recalculation of their EIRRs at completion.</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Most likely sustainable</td>
<td>Likely sustainable</td>
<td>IREDA demonstrates financial sustainability and the TA supports financial risk management. However, high NPL ratio still needs to be addressed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Assessment</th>
<th>Successful</th>
<th>Successful</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary Assessment of impact</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td></td>
</tr>
<tr>
<td>Borrower and executing agency</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td></td>
</tr>
<tr>
<td>Performance of ADB</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td></td>
</tr>
<tr>
<td>Quality of PCR</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>Para. 43</td>
</tr>
</tbody>
</table>

\textsuperscript{31} The PCR acknowledged that the loan pricing was significantly higher than other funds available in the market, especially in a low-interest regime due to the guarantee fee that the Department of Economic Affairs charged IREDA.
Source: ADB (IED).

B. Lessons

36. The PCR identified two issues that needed to be addressed. First, there was no credit risk team independent of credit origination. Second, covenant structuring in MFF had to consider the potential changes in the operating environment. This was relevant for the NPL ratio setting and gap analysis between IREDA’s latest updated ESMS and ADB’s safeguard policy statement. This validation offers four lessons.

37. Sector-level lesson. A financially sound institution dedicated to finance projects in renewable energy subsector, with the national government’s support, signals country’s strong commitment to achieve its goals in the subsector. This, together with favorable regulatory environment, is instrumental in providing the right incentives to attract private investors and other development partners and foster the rapid deployment of renewable energy in a country.

38. Project-level lessons. Particularly for loans, in-depth review on a borrower’s credit performance and the sector context, as part of the due diligence assessment, is vital for recognizing potential financial risks. Analytical measurements on financing risks (e.g., adequacy of capital ratio, contingent liabilities), risk allocation options, and risk management monitoring, for example, are key factors that enhance credit appraisal and help develop a well-structured financing scheme and related covenants. A thorough review of these assessments during implementation can help address any required covenant adjustment arising from market volatility or slowdown in the finance sector. The pressure from growing NPLs and IREDA’s exposure to foreign exchange risk resulted in noncompliance with NPL threshold covenant. However, IREDA fully disbursed the funds to creditors and achieved the project targets ahead of financial closure. Careful diagnostic credit appraisal, including parallel in-depth capacity risk assessment and sector analysis, helps ensure better management of risks.

39. Another lesson is that strong partnership and greater collaboration among FIs and stakeholders support the strengthening of financial supervision and risk management monitoring. Due diligence on the FI’s institutional capacity prior to loan approval, led to develop a complementary TA, which in turn supported in improving FI’s operational and financial management. ADB’s additional financing served as leverage to pursue recommendations from the TA, aimed to improve the FI’s financial and operational performance.

40. Results framework and methodology-level lesson. Having specific performance indicators dedicated to improving FI’s operational and financial management helps ADB foster its development objectives, while improving FI’s institutional capacity. Specifically, the performance indicators on safeguards compliance help ADB improve FI’s ESMS, thereby, mainstreaming ADB’s environmental and social objectives in infrastructure projects that FIs implemented.

C. Recommendations for Follow-Up

41. The PCR had four recommendations. First, a separate credit risk management function with a dedicated team to be established at IREDA to support pre- and post-credit appraisal
validation and perform risk analytics for decision making. Second, the NPL covenant is to be revised in tranche 2 to satisfy both ADB’s and IREDA’s requirements, and that periodic missions be held to review IREDA’s financial and risk management performance. Third, loan performance and pricing be monitored to ensure timely drawdown of funds, especially since ADB funds that IREDA utilized may be more expensive compared to low-interest competitive instruments. Finally, a gap analysis should be conducted between IREDA’s updated ESMS and ADB’s 2009 safeguard policy statement to ensure compliance. This validation supports the PCR recommendations. It recommends assessing the advantages and prospects of pursuing sovereign or nonsovereign lending, taking into consideration the cost of financing and capital. This will provide a more detailed guidance for both ADB and IREDA on their future engagement and identify the risks and mitigation plan needed to support such engagement.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

42. The report and recommendation of the President (RRP) noted that lessons from an earlier loan to IREDA emphasized the importance of a well-designed monitoring and reporting mechanism to ensure compliance with ADB implementation. The RRP also noted that a TA from Japan International Cooperation Agency was being prepared to implement a computerized database for project monitoring and performance evaluation. However, it was not clear whether a project performance and monitoring system envisioned at appraisal was established. For MFF’s future evaluation and its future tranches, the India Resident Mission should determine whether the project performance and monitoring system was established and operational, and if so, data should be provided to the resident mission for review. Tracking and monitoring of progress and performance of the remaining five subprojects under tranche 1 that were not reevaluated at completion, particularly the solar power energy plants, should be conducted to validate the financial viability of the subprojects.

B. Comments on Project Completion Report Quality

43. This validation assesses the PCR quality satisfactory. It provided substantial information to assess an FI loan. Justifications for the evaluation criteria were generally reasonable, except on the efficiency criterion. The separate EIRR calculations were useful, but these could have been done for all nine individual subprojects to give a more robust assessment of its economic viability. It also should have computed the FIRR and WACC to assess the subprojects’ financial sustainability. However, detailed information to assess IREDA’s financial performance and sustainability were available. The PCR identified critical issues that this validation built upon to generate lessons.

C. Data Sources for Validation

44. The data sources were the RRP, back-to-office reports, relevant ADB country partnership and corporate strategies, and India’s 5-year development plan. Additional information on IREDA was also gathered from its website.

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32 This will be critical for IREDA to meet its corporate objectives and anticipated growth plans over the next 5 years when tranches 2 and 3 of the MFF will be disbursed.

33 IREDA. [https://www.ireda.in/home](https://www.ireda.in/home)
D. Recommendation for Independent Evaluation Department Follow-Up

45. The PCR recommended that a project performance evaluation report (PPER) be completed after financial closure of each tranche of the MFF to apply lessons to future tranches. This validation recommends that this performance evaluation report be best conducted by 2025 to assess the achievements and results of all the subprojects that the entire MFF financed, as well as the MFF’s contribution to IREDA’s 10-year financing plan on renewable energy in India.