आरईसी
REC
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Endless energy. Infinite possibilities.

REC GREEN BOND IMPACT ASSESSMENT REPORT

PART - 1

Prepared By

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A subsidiary of CARE Ratings Ltd.

Contents

1 Introduction

REC Ltd. has actively pursued green financing initiatives, particularly through the issuance of green bonds to fund environmentally sustainable projects. The company has established a Green Finance Framework, released in February 2023, aligned with the principles set out by the International Capital Market Association.

REC Bond Framework outlines the use of proceeds, criteria for project selection and evaluation, the process for monitoring fund allocation, and the reporting mechanisms to ensure transparency. A second-party opinion has also been obtained to validate the framework's alignment with global standards.

2 Scope of the engagement

REC engaged with CARE Analytics and Advisory Private Limited (CAAPL) to provide a Green Bond Impact Analysis Report, confirming that the utilization of proceeds and internal controls align with the REC Green Finance framework released in 2023.

3 REC Green Bond Program Overview

REC Limited has issued four major green bonds till date: ECB-25, ECB-59, ECB-66, ECB-79 as part of its commitment to financing India's clean energy transition and sustainable infrastructure, proceeds have been allocated across 40 projects. The entire amount has been fully deployed.

Table 1 REC Green Bond Program

S.No.	Bond Series Reference	Year of Raising	Underlying Currency	Amount FX (million)	Amount INR (Rs Cr)
1	ECB-25	2017	USD	450	2,915.49
2	ECB-59	2023	USD	750	6,144.12
3	ECB-66	2024	JPY	61100	3,437.19
4	ECB-74	2024	USD	500	4,184.85

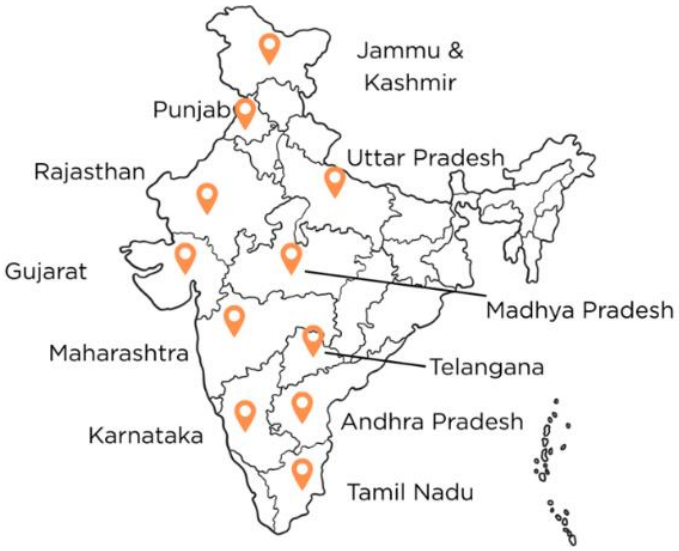
Source: REC

These funds have been deployed across a wide range of green and sustainable initiatives, including Solar Energy, Wind Energy, Solar-Wind Hybrid Projects, Biomass, Hydro, Low-Carbon Transport Solutions, Electric Mobility Infrastructure.

The financed projects are spread across India, engaging across different geographies/company regions and climatic zones, thereby supporting region-specific renewable potential and

development goals. These initiatives align with national priorities outlined in India's climate commitments and energy transition roadmap.

Therefore, REC's green bond program not only contributes to expanding India's renewable energy capacity, but also facilitates sustainable urbanization, reduces carbon emissions, and contributes to the eventual goal of is just transition to low low-carbon economy. The projects financed will be assessed and reviewed for their environmental position, and in each case, assured that operational transparency or monitoring will be established for impact integrity and reflect value.

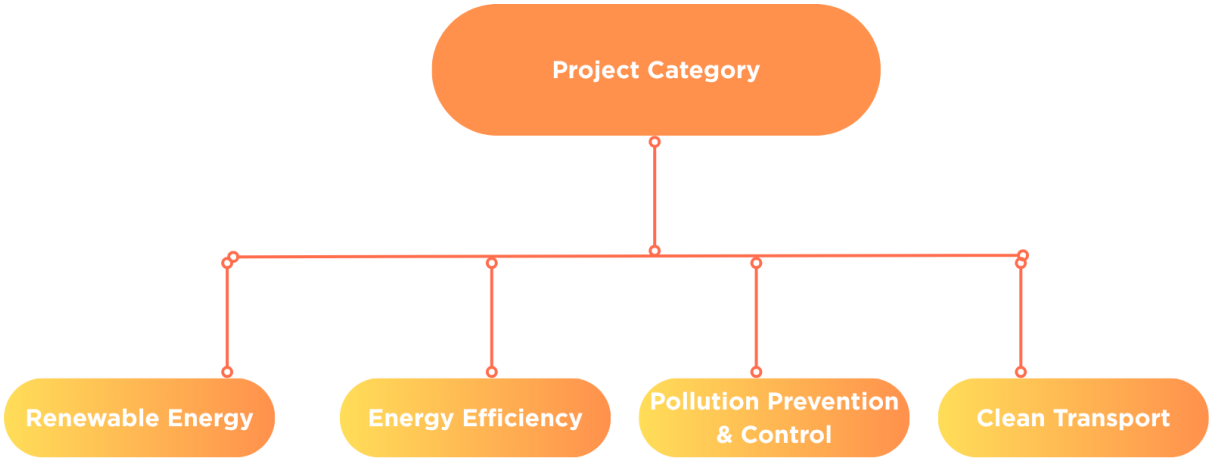


4 REC's Green Bond Framework

REC Limited, a Maharatna Central Public Sector Enterprise under the Ministry of Power, has developed its Green Finance Framework to direct the issuance of green bonds, loans, and other financial instruments that aid India's shift to a low-carbon, climate-resilient future. Published in February 2023, this framework guarantees that funds are dedicated solely to projects delivering clear environmental benefits.

REC's Green Finance Framework conforms to global standards, such as the Climate Bonds Standard (version 3.0) and the Green Bond Principles (GBPs) 2021, including the June 2022 Appendix, issued by the International Capital Markets Association (ICMA). These voluntary guidelines encourage transparency and disclosure, supporting integrity in sustainable finance market growth.

Eligible Project Categories: REC has specified a broad selection of green projects that qualify for financing within this framework, such as:



- **Renewable Energy:** Projects related to solar, wind, biomass, small hydropower, green hydrogen, and related infrastructure such as manufacturing and dedicated transmission systems.
- **Energy efficiency:** Technologies that enhance energy performance, including smart grids, energy meters, energy management systems, and battery storage.
- **Clean Transportation:** Procurement of low-emission and electric vehicles, along with investment in charging infrastructure.
- **Pollution Prevention &Control:** Projects involving the construction, operation, and maintenance of waste-to-energy facilities that generate electricity and/or heat, provided they meet low-emission thresholds (less than 100gCO_2e/kWh) and operate within public waste management systems, in line with the waste hierarchy.

Project Evaluation and Selection: According to existing procedures, a two-stage process is used to assess the overall viability of the project and the entity (promoter) based on a defined set of guidelines. The project division analyses the project's techno-financial viability, and the Entity division assesses the strength of the promoter and borrower. Parameters for project grading are categorized into two sets, i.e., Quantitative and Qualitative. Quantitative parameters include the cost of generation and the debt service coverage ratio (DSCR). In contrast, qualitative parameters encompass the engineering, procurement, and construction (EPC) contractor's strength, the off-taker's risk, resource assessment, and the operations and maintenance (O&M) contractor's strength, among others. Entity grading is obtained by rating the entity based on factors such as upfront equity, pro-rata equity, existing business, capacity to raise equity, financial stability, and other relevant criteria.

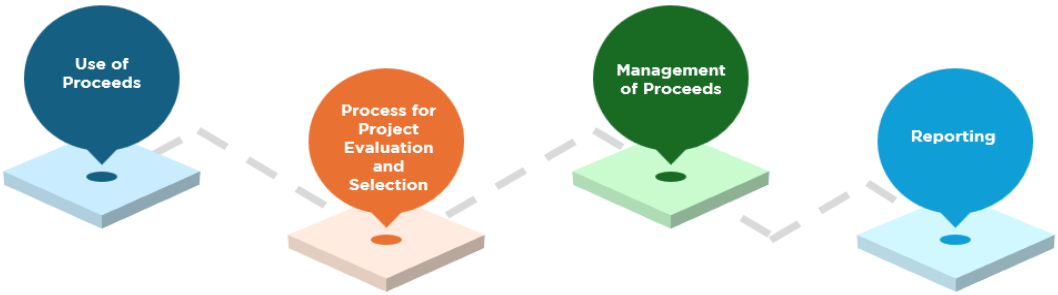
An integrated rating is determined through a defined matrix of project grading and entity grading. In addition to the above, REC also provides financial assistance to various State Sector projects based on utility rating and project viability. Post issuance, an independent third-party verifier will

assure that the nominated projects are in alignment with the Green Finance Framework. In the event of the subsequent issuance of green bonds or changes to the initial list of projects, a similar assessment and approval process would be carried out by REC.

Management of Proceeds: REC strives to fully allocate the net proceeds of any Green Finance Instrument on a best-efforts basis within 24 months after issuance. Before full allocation, balance proceeds will be held by our general liquidity/ investment guidelines, as appropriate, in cash, cash equivalents, and/or other liquid, marketable instruments.

The proceeds from green instruments are tracked through REC's internal ERP-based accounting system. This system is updated regularly to reflect project-level disbursements, repayments, and new allocations. REC aims to allocate the net proceeds of any Green Finance Instruments within 24 months after issuance.

Reporting: REC is committed to publishing annual reports that detail the allocation of proceeds and, where feasible, the environmental impact of the projects it funds. Reporting includes metrics such as renewable energy capacity added, electricity generated, and emissions avoided.



This report focuses on the impact assessment of projects financed through ECB 25 and ECB 59 green bond issuances.

5 Green Bond allocation details

In line with the REC Green Finance Framework, REC has allocated the proceeds of its ECB 25 and ECB 59 Green Bonds to eligible solar and wind projects, ensuring that Green Bond proceeds are channeled exclusively towards assets that support renewable energy deployment. As of March 2025, the cumulative allocation stands at Rs 9,782.56 crore, reflecting significant capital mobilization for clean energy infrastructure. The projects financed through these allocations delivered annual renewable electricity generation of 9,64,898.45 MWh, demonstrating on-the-ground operational outcomes and clean-energy output enabled by REC's green financing.

Table 2: REC Green Bond Overview (ECB 25 & 59)

S. No.	Projects Financed(location)	Type of power (RE) project (Solar/wind/ mixed)	Capacity (in MW)	Allocation as on March 2025 (Rs cr)	Annual renewable energy generation in MWh
1	Karimnagar, Telangana	Solar Energy	15	47.36	19,710
2	Jagtial, Telangana	Solar Energy	30	99.90	69,088
3	Sircilla, Telangana	Solar Energy	30	100.12	46,706
4	Warangal, Telangana	Solar Energy	15	47.49	20,693
5	Anantput, Andhra Pradesh	Solar Energy	500	1300.97	7,00,457
6	Karimnagar, Telangana	Solar Energy	15	47.34	23,742
7	Ranga Reddy, Telangana	Solar Energy	5	14.35	6,889
8	Medak, Telangana	Solar Energy	7	20.61	2,239
9	Karimnagar, Telangana	Solar Energy	15	47.36	24,460
10	Chitradurga, Karnataka	Solar Energy	30	80.85	32,883
11	Mumbai, Maharashtra	Low carbon Transport	NA	1,574.14	Project under construction
12	Mandasaur, Madhya Pradesh	Wind Energy	20	35.27	18,032
13	Mumbai, Maharashtara	Low carbon Transport	NA	521.84	Project under construction
14	Tuticorin, Thoothukudi District, Tamil Nadu	Wind Energy	540	2,561.68	Project under construction
15	Dharapuram, Tirupur District, Tamil Nadu	Wind Energy	270	647	Project under construction
16	Gadag district, Karnataka	Solar-Wind Hybrid Power Project	560	2,636.30	Project under construction
	Total		**2,052**	**9,782.56**	**9,64,898.45**

Source: REC

Project-wise Split-up- Wind & Solar

Cumulataive generation in FY 25: 18,032 MWh

Cumulative CO2 emissions : 0.015 million metric ton co2e

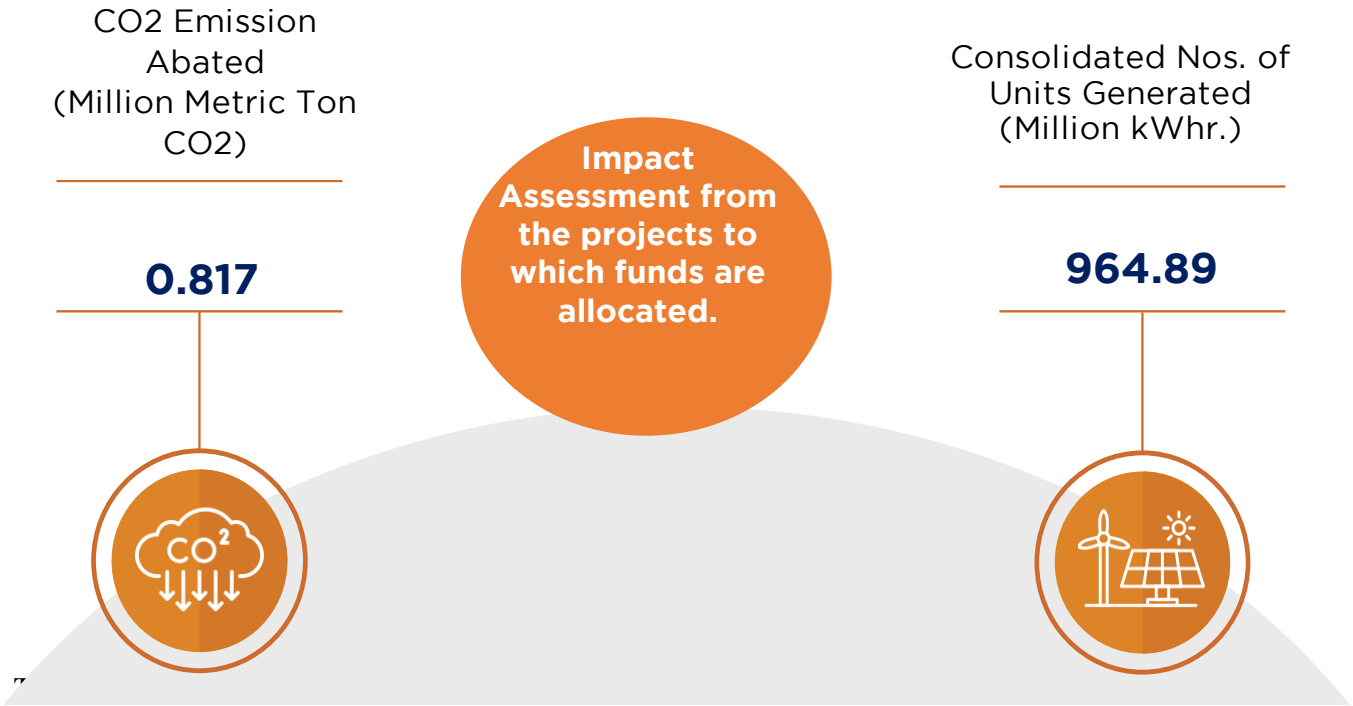
Cumulataive generation in FY 25: 9,64,898.45 MWh

Cumulative CO2 emissions : 0.802 million metric ton co2e

6 Impact assessment

The impact assessment has been undertaken for 11 projects financed under the ECB-25 Green Bond, as presented in Table 3. The projects that are currently under construction are expected to deliver significant renewable generation and, consequently, have substantial potential for future emissions avoidance; their impact assessment will be undertaken once they become operational and generation data is available.

For the estimation of abated (avoided) emissions, REC has applied grid emission factors issued by the Central Electricity Authority (CEA). Specifically, emissions avoidance has been calculated using an emission factor of 0.727 tCO_2/MWh for projects with plant capacity < 15 MW, and 0.861 tCO_2/MWh for projects with plant capacity > 15 MW, in line with the CEA factors referenced for this study.



Sr No	Project Location	Capacity (in MW)	Annual renewable energy generation in MWh	Project Avoided Emission in FY25 in t CO2
1	Karimnagar, Telangana	15	19,710	14,329.08
2	Jagtial, Telangana	30	69,088	59,485.10
3	Sircilla, Telangana	30	46,706	40,213.44
4	Warangal, Telanagana	15	20,693	15,043.59
5	Anantput, Andhra Pradesh	500	7,00,457	6,03,093.18
6	Karimnagar, Telangana	15	23,747	17,260.34
7	Ranga Reddy, Telangana	5	6,889	5,008.60
8	Medak, Telangana	7	2,239	1,627.19
9	Karimnagar, Telangana	15	24,460	17,782.48
10	Chitradurga, Karnataka	30	32,883	28,312.35
11	Mandasaur, Madhya Pradesh	20	18,032	15,525.24
		682	9,64,898.45	8,17,681.32

For emissions factor we referred to the CEA methodology.
https://cea.nic.in/wp-content/uploads/2021/03/User_Guide_Version_20.0.pdf
https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK
Data Source: REC.

REC's Green Bond programme demonstrates a clear, outcomes-based linkage between green finance deployment and measurable climate benefits from operational renewable assets. The impact assessment covers 11 operational projects financed under ECB-25 across Telangana, Andhra Pradesh, Karnataka, and Madhya Pradesh, reflecting REC's ability to translate allocations into commissioned renewable infrastructure with verifiable generation and quantified emissions abatement.

In FY25, the assessed portfolio, aggregating 682 MW, reported 9,64,898.45 MWh of renewable electricity generation. This clean energy output directly displaces grid electricity and supports India's energy transition. Through such investments, REC is actively enabling the expansion of domestic renewable capacity and strengthening progress towards the Government of India's renewable energy ambitions, including large-scale integration of solar and wind into the national power mix and accelerated decarbonisation of the electricity system.

Based on the Central Electricity Authority (CEA) Grid Emission Factors and CEA-aligned plant-capacity categorisation, the total project-level avoided emissions for FY25 are estimated at 8,17,681.32 tCO_2. This quantification approach provides a consistent and credible basis for impact

reporting, ensuring that the assessed climate outcomes are comparable and aligned with Indian regulatory methodology.

Financed and Enabled Emissions

The assessment further distinguishes the climate impact attributable to REC's financing from the broader system-level impact enabled by the projects. In FY25, avoided emissions attributable to REC (financed share) are assessed at 3,95,117.86 tCO_2, reflecting REC's project-wise contribution based on the financing structure. The balance, 4,22,563.46 tCO_2, represents enabled avoided emissions, the additional emissions avoided by the same projects beyond REC's financed share, underscoring REC's catalytic role in mobilising capital, crowding in co-financing, and accelerating renewable deployment in support of national clean energy and climate objectives.

To perform a green bond impact analysis, CAAPL sought detailed information materials to obtain all the evidence, information, and explanations it considered necessary to arrive at a meaningful conclusion. The following is the list of information checklists we referred to:

Information checklist

General requirements:

- Details on Use of Proceeds
- List of nominated projects and activities
- Management and Reporting practices.

Specific requirements on the deployment of funds:

- Evidence on the amount allocated.
- Date of issuance
- Maturity
- Amount Raised

7 Work undertaken:

- Reviewed the REC Green Finance Framework (2023) that includes processes in place for the management of bond proceeds.
- Held conversations with management and key staff responsible for the Green Bond to understand how the processes, systems, and controls defined in the Green Bond Framework have been implemented.
- We have referred to the list of projects provided by REC, to which bond proceeds have been allocated. The performance of the projects has been evaluated by the criteria outlined in the ESG Financing Framework.

- Confirmed the amount of bond proceeds allocated to nominated projects and assets through examination of REC's internal system for tracking the same. REC has provided the data.
- Recalculated estimated per annum greenhouse gas (GHG)emission reduction from projects using information collected by the issuer (REC).

8 Conclusion

The following conclusion is based on the work performed and evidence obtained, and the scope of our engagement described above.

CareEdge Advisory believes that the green bonds issued are aligned with the REC Green Financing Framework, which is aligned with global sustainable finance frameworks, such as the Climate Bonds Standard (version 3.0), developed by the Climate Bond Initiative, and the Green Bond Principles 2021, issued by the International Capital Market Association (ICMA).

9 REC's Management's responsibilities

The management of the Issuer (REC) is responsible for ensuring that the Issuer and its green bond comply with the requirements of the ESG Finance Framework. The Framework has been developed in alignment with the following sustainable finance principles and guidelines:

- Green Bond Principles 2021
- Climate Bonds Standard (version 3.0)

10 Specific limitations and exclusions

The CAAPL green bond impact analysis report is subject to the following limitations, as we have not been engaged in:

- REC's financial statements and economic performance
- Verify the REC's statements that describe the expression of opinion, belief, aspiration, expectation, aim, or future intention or global socio-economic and environmental aspects provided by the REC.

11 CAAPL's responsibilities

CAAPL's responsibility is limited to providing an impact analysis for the bond allocation based on the REC Green Bond framework, in relation to the procedures performed and the evidence obtained. We conducted our engagement with a multidisciplinary team, which included professionals with suitable skills and experience to understand environmental, social, and governance practices.

This green bond impact analysis report is prepared solely for the issuer (REC) by our engagement team, which includes an agreed-upon arrangement for disclosure. Any party other than the issuer

that obtains access to our impact assessment report or a copy thereof and chooses to rely on our impact assessment report will do so at its own risk. To the fullest extent permitted by law, we accept or assume no responsibility and deny any liability to any party other than the issuer for our work, for this Green Bond Impact Assessment Report or for the conclusions we have reached.

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CARE Analytics and Advisory Private Limited

August 2025