Verification Report

UCR ID: 238

Prepared by

Naturelink Solutions Pvt. Ltd.

Title	**990 kW rooftop solar project by M/s. R&B Denim Ltd**
Project Owner	**M/s R&B Denim Ltd.**
Project Location	**Block No. 467, Sachin Palsana Road, Surat-394315, Gujarat, India.** **Coordinates: 21°05'19.0"N 72°58'11.3"E**
Date	**02/01/2024**

COVER PAGE **Project Verification Report Form (VR)**	
BASIC INFORMATION	
Name of approved UCR Project Verifier / Reference No.	Naturelink Solutions Pvt. Ltd
Type of Accreditation	☐ CDM Accreditation ☐ ISO 14065 Accreditation ☒ UCR Approved Verifier
Approved UCR Scopes and GHG Sectoral scopes for Project Verification	Sectoral Scope: 01 Energy Industries
Validity of UCR approval of Verifier	May - 2022 onwards
Completion date of this VR	02/01/2024
Title of the project activity	990 kW rooftop solar project by M/s. R&B Denim Ltd
Project reference no. (as provided by UCR Program)	238
Name of Entity requesting verification service	Creduce Technologies Private Limited (Aggregator) R&B Denim Ltd. (Project owner)
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	Shailendra Singh Rao (Creduce) Mobile: +91-9016850742 Address: 2-O-13,14 Housing Board Colony, Banswara, Rajasthan - 327001, India. Perkin Jariwala (R&B denim) Mobile: +91-9909968987 Address: Block No. 467, Sachin Palsana Road, Surat-394315, Gujarat, India.
Country where project is located	India
Applied methodologies	AMS-I. F, Renewable electricity generation for captive use and mini-grid – Version 5.0.

Sectoral Scope(s):	1
Project Verification Criteria: Mandatory requirements to be assessed	☒ UCR Verification Standard ☒ Applicable Approved Methodology ☐ Applicable Legal requirements /rules of the host country ☒ Eligibility of the Project Type ☒ Start date of the Project activity ☒ Meet applicability conditions in the applied methodology ☒ Credible Baseline ☒ Do No Harm Test ☒ Emission Reduction calculations ☒ Monitoring Report ☒ No GHG Double Counting ☐ Others (please mention below)
Project Verification Criteria: Optional requirements to be assessed	☒ Environmental Safeguards Standard and do-no-harm criteria ☐ Social Safeguards Standard do-no-harm criteria
Project Verifier's Confirmation: The *UCR Project Verifier* has verified the UCR project activity and therefore confirms the following:	The UCR-approved verifier Naturelink Solution Pvt. Ltd., verifies the following with respect to the UCR Project Activity "990 kW rooftop solar project by M/s. R&B Denim Ltd" ☒ The project aggregator has correctly described the project activity in the Project Concept Note/6/ including the applicability of the approved methodology A.M.S I. F/5/ and meets the methodology applicability conditions and has achieved the estimated GHG emission reductions, complies with the monitoring methodology and has calculated emission reductions estimates correctly and conservatively. ☒ The project activity is likely to generate GHG emission reductions amounting to the estimated 1699 tCO_2e, as indicated in the monitoring report, which are additional to the reductions that are likely to occur in

	absence of the Project Activity and complies with all applicable UCR rules, including ISO 14064-2 and ISO 14064-3. ☒ The project activity is not likely to cause any net-harm to the environment and/or society ☒The project activity complies with all the applicable UCR rules and therefore recommends UCR Program to register the Project activity with above mentioned labels.
Project Verification Report, reference number and date of approval	Verification Report UCR Reference no.: NSPL/VR/2023/08/UCR/02 UCR ID: 238 Version: 1.0 Date: 02/01/2024
Name of the authorised personnel of UCR Project Verifier and his/her signature with date	 Mr. Shyam Mandliya GHG Assessor Naturelink Solution Pvt. Ltd. Date: 02/01/2024

Table of Contents

1. Project Verification Report

1.1 Executive Summary

The verification work has been contracted by project aggregator Creduce Technologies Pvt Ltd and R&B Denim Ltd. to perform an independent verification of its UCR project titled **"990 kW Rooftop solar project by M/s. R&B Denim Ltd.", UCR approved project ID:238**, to establish a number of CoUs generated by the project over the crediting period from 01/10/2021 to 31/12/2022 (both days included).

Verification for the period: 01/10/2021 to 31/12/2022

In our opinion, the total GHG emission reductions over the crediting / verification period stated in the Monitoring Report (MR)/7/, submitted are found to be correct and in line with the UCR guidelines. The GHG emission reductions were calculated on the basis of UCR guideline which draws reference from, the standard baseline, AMS- I.F – Renewable electricity generation for captive use and mini-grid, version 5.0/5/. The verification was done remotely by way of video calls, by onsite inspection of the plant and submission of documents for verification through emails.

It is certified that the emission reductions from the 990 kW Rooftop solar project by M/s. R&B Denim Ltd. (UCR ID – 238) for the period 01/10/2021 to 31/12/2022 amounts to **1699** CoUs (**1699 tCO_2e**).

Objective

The objective of this verification is to have an independent third-party assessment of whether the project activity conforms to the qualification criteria set out in the UCR Program Manual/2/, UCR CoU Standard/3/ and UCR verification standard/4/ to attain real, measurable, accurate and permanent emission reductions.

Scope

The scope of the verification is the independent, objective review and ex-post determination of the monitored reductions in GHG emission by the project activity.

1. To verify the project implementation and operation with respect to the registered PCN/1/.
2. To verify the implemented monitoring plan with the registered PCN/1/ applied baseline and monitoring methodology.
3. To verify that the actual monitoring systems and procedures follow the monitoring plan.
4. To evaluate the GHG emission reduction data and express a conclusion whether the reported GHG emission reduction data is free from material misstatement
5. To verify that reported GHG emission data is sufficiently supported by evidence.
6. Agreement stating assurance to avoid double accounting for the project to be verified, along with required proof.

The project is assessed against the requirements of the UCR Program Manual/2/, UCR CoU Standard/3/ and UCR verification standard/4/, ISO 14064-2.

Due professional care has been exercised and ethical conduct has been followed by the assessment team during the verification process. The verification report is a fair presentation

of the verification activity. The validation of the project is not part of the present assignment and project is deemed validated post-registration by UCR.

1.2 Description of the Project

The project activity is a renewable power generation activity which incorporates installation and operation of a 1000 kW (AC) Rooftop solar project, manufactured by Trina solar. The solar plant is supplied and installed by Appollo solar power in district Surat of the state of Gujarat, India.

The project involves installation of Monocrystalline Solar PV modules of make Trina solar with 2384 Nos. of 495 Wp & 500Wp capacity and 10 nos. of 100 kW inverters make ABB-Fimer with a total of installation capacity of 1000 kW (AC). The details of the project activity are verified with the PCN/6/, MR/7/ and relevant documents submitted for verification as mentioned in appendix-2.

The technical specification is listed below;

Description	**Information**
Total number of Photovoltaic Modules	2384 Nos.
Rating of Photovoltaic Module	495 Wp & 500 Wp
Modules make	Trina Solar
Technology	Monocrystalline
No. of Inverter	10
Invertor Capacity	100 kW
Invertors make	ABB-Fimer
PV Connectors	MC4

As mentioned in the monitoring report/7/ and emission reduction calculation sheet/9/ submitted for verification, the project replaces anthropogenic emissions of greenhouse gases (GHGs) estimated to be 1699 tCO_2e for the verification period, there on displacing 1889 MWh amount of electricity from the generation of fossil-fuel based power plants connected to the Indian electricity grid.

The project activity is a roof top solar plant captive consumption renewable energy generation project having a capacity of less than 15 MW. The project is a small-scale activity. The methodology applied in the monitoring report is verified against the AMS-I. F, Renewable electricity generation for captive use and mini-grid – Version 5.0/5/ total emission reductions (ERs) achieved through the project activity during the monitoring period is summarised below:

Summary of the Project Activity and ERs Generated for the Monitoring Period	
Project start date	30/09/2021
Start date of this Monitoring Period	01/10/2021
Carbon credits claimed up to	31/12/2022
Total ERs generated (tCO_2e)	1699
Leakage Emission	0
Project Emission	0

1.3 Project Verification team, technical reviewer and approver:

Project verification team

Sr. No.	Role	Last name	First name	Affiliation	Involvement in		
					Doc review	On-Site inspection	Interviews
1.	GHG Assessor & Technical Expert	Mandliya	Shyam	Naturelink Solutions Pvt. Ltd.	Yes	Yes	Yes
2.	Trainee Assessor	Prajapati	Divya	Naturelink Solutions Pvt. Ltd.	Yes	No	Yes

Technical Reviewer and Approver of the Verification report

Sr. No.	Role	Type of resource	Last name	First name	Affiliation
1.	Internal Technical Reviewer & Approver	IR	Amin	Shardul	Naturelink Solutions Pvt. Ltd.

2 Verification Process

2.1.1 Desk/document review

The desk review was conducted by the verification team that included:

- A review of data and information presented to assess its completeness
- A review of the initial PCN/1/ and revised PCN/6/, MR /7/, emission reduction calculation sheet/9/, Methodology - AMS.I-F/5/.

The list of submitted documents is available in a subsequent section of this verification report under the appendix - 2 “Document reviewed or referenced”.

2.1.2 Onsite Inspection

The verification team conducted onsite visit of project activity on 21/09/2023 as mentioned in the below table.

Date of on-site inspection:	21/09/2023 to 21/09/2023			
No.	**Activity performed On-Site**	**Site location**	**Date**	**Project Personnel**
1.	Opening meeting	Project location	21/09/2023	Mr. Perkin Jariwala
2.	Visit to all installation and document review	Project location	21/09/2023	Mr. Hiren Taylor Mr. Dhaval Savani
3.	Closing meeting	Project location	21/09/2023	Mr. Perkin Jariwala

The following parameters were assessed but not limited to:

- An assessment of the implementation and operation of the registered project activity as per the registered PCN/1/ and revised PCN/6/;
- A review of information flows for generating, aggregating, and reporting the monitoring parameters;
- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PCN/6/ and MR/7/;
- A cross-check between information provided in the monitoring report/7/ and data from other sources such as energy meter logbooks, inventories, purchase invoices/15/ or similar data sources;
- A cross-check of the monitoring equipment including calibration reports and observations of monitoring practices against the requirements of the PCN/6/ and MR/7/ and the selected methodology/5/;
- A review of calculations and assumptions made in determining the GHG data and emission reductions calculation/9/;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.1.3 Interviews

No.	Interview			Date	Subject
	Last name	First name	Affiliation		
1.	Dalmia	Dipak	Owner - R&B Denim Ltd.	13/09/2023	Legal ownership of the project, Implementation of the project, start date and crediting period, Double counting of the carbon credits
2.	Jariwala	Perkin	Head (Accounts) - R&B Denim Ltd.	21/09/2023	Project boundary, Monitoring plan
3.	Taylor	Hiren	Electrical Maintenance - R&B Denim Ltd.	21/09/2023	Electricity generation, meter reading, log book, meter calibration
4.	Savani	Dhaval	Project Engineer – Apollo Solar Power	21/09/2023	Installation and connection of the solar plant, Solar panel and inverter specification,
5.	Rathore	Natasha	Associate Consultant – Creduce Technologies Pvt. Ltd.	20/09/2023	Project Overview, PCN, Monitoring Report, Methodology, eligibility criteria, Baseline emissions, Emission Reduction Calculation

2.1.4 Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	No. of CL	No. of CAR	No. of FAR
Green House Gas (GHG)			
Identification and Eligibility of project type	NIL	NIL	NIL
General description of project activity	NIL	01	NIL
Application and selection of methodologies and standardized baselines	--	--	--
• Application of methodologies and standardized baselines	NIL	01	NIL
• Deviation from methodology and/or methodological tool	NIL	NIL	NIL
• Clarification on applicability of methodology, tool and/or standardized baseline	NIL	NIL	NIL
• Project boundary, sources and GHGs	01	NIL	NIL

• Baseline scenario	NIL	01	NIL
• Estimation of emission reductions or net anthropogenic removals	NIL	01	NIL
• Monitoring Report	NIL	01	NIL
Start date, crediting period and duration	NIL	01	NIL
Environmental impacts	NIL	NIL	NIL
Project Owner- Identification and communication	NIL	NIL	NIL
Others (please specify)	01	NIL	NIL
Total	02	06	NIL

3 Project Verification findings

3.1 Identification and eligibility of project type

Means of Project Verification	The project is eligible as per UCR General project eligibility criteria and guidance Version 6.0/3/ which is acceptable since the project has not been registered under any GHG program and the operations started since 30/09/2021 which is the earliest commissioning date of the roof top power plant involved in the project activity. The commissioning documents of the all the roof top power plants involved in the project activity has been verified in this regard and found in order. Prior to the commencement of the project activity, the project owner got approval for the installation and operation of rooftop power plant from state energy development agency (GEDA) in their building premises and PO has signed wheeling agreement with Dakshin Gujarat Vij Company Ltd (DGVCL). The project also delivers real, measurable and additional emission reduction of 1699 tCO_2e over the crediting period Project applies an approved CDM monitoring and baseline methodology AMS-I. F, Renewable electricity generation for captive use and mini-grid – Version 5.0./5/
Findings	No findings were raised
Conclusion	The project is eligible as per the requirements of the UCR General project eligibility criteria and guidance Version 6.0/3/. Further project verification team cross checked the other GHG programmes like Clean Development Mechanism (CDM) Registry, VERRA Registry, Gold Standard (GS) Registry, and voluntary non-GHG Programs like I-REC Renewable Energy Certificate (REC) Mechanism in India for the information regarding the consistency of the title of the project activity , GPS coordinates, Legal Ownership of the Project activity and confirmed that the project was not submitted or registered under any other GHG programmes and non-voluntary non-GHG Programs.

3.2 General description of project activity

Means of Project Verification	The purpose of the project activity is to utilize clean technology that harnesses renewable solar energy to generate electricity which would be used to meet the electrical demand of manufacturing facility of PP. The project owner installed a 1000 kW (AC) Solar Photovoltaic (SPV) panels on rooftops of building. This consists Mono and Poly

	crystalline cells type of panels of and associated connection boxes, Inverters, other field equipment. Thus, the project activity generated total 1889 MWh electricity and displacing 1699 tCO_2e. In the absence of the project activity the State utility was importing the required electricity from the NEWNE grid to meet its requirement of electrical energy. The NEWNE Indian grid which is dominated by fossil fuel grid connected power plants. The electricity generated from solar plant is consumed by manufacturing facility and injected to the grid of the distribution utility under the mechanism of net metering if any surplus electricity is available after meeting their own consumption. The Location details has been verified during the onsite visit and geo coordinates verified through google earth/Maps and found to be correct. The project activity installed 2384 nos. of mono crystalline cells type of panels of and associated connection boxes, Inverters, other field equipment in project premises. The technical details of solar panels and inverters provided in PCN/6/ and MR/6/ have been verified during onsite visit and found in order. The project owner declared in the PCN/6/ the lifetime of the project activity is 25 Years as guaranteed by the suppliers of PV panels of the project activity and same has been verified in the technical data provided by the project owner and found acceptable. The project activity described and applied AMS-I.F.: Renewable electricity generation for captive use and mini-grid - Version 5.0 /5/ falls into the small-scale category as per CDM methodology.
Findings	CAR 01 was raised
Conclusion	The description of the project activity is verified to be true based on the review of PCN/6/, MR/7/, Commissioning Certificate/12/, and Purchase invoice copies/15/ of solar plant equipment.

3.3 Application and selection of methodologies and standardized baselines

3.3.1 Application of methodology and standardized baselines

Means of Project Verification	The project activity applied AMS-I.F.: Renewable electricity generation for captive use and mini-grid - Version 5.0 /5/ falls into the small-scale category as per CDM methodology. Standardized baseline is “In the absence of the project activity, the equivalent amount of electricity would have been imported from the grid (which is connected to the unified Indian Grid system (NEWNE Grid)), which is carbon intensive due to being predominantly sourced

	from fossil fuel-based power plants" which is as per the project activity and clearly mentioned in PCN/6/ and MR/7/.
Findings	CAR 02 was raised
Conclusion	The methodology applied is appropriately meeting the requirements of UCR General project eligibility criteria and guidance/3/, standardized baseline. The methodology version is correct and valid. The referenced methodology is applicable to project activity.

3.3.2 Clarification on applicability of methodology, tool, and/or standardized baseline

Means of Project Verification	**Applicability as per AMS I.F version 5.0**	**Verifier assessment**
	This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s). The project activity will displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit i.e., in the absence of the project activity, the users would have been supplied electricity from one or more sources listed below: a) A national or a regional grid (grid hereafter). b) Fossil fuel fired captive power plant. c) A carbon intensive mini grid.	The proposed project activity "990 kW rooftop project by M/s. R&B Denim Limited" which incorporates installation and operation Rooftop Mounted Solar Photovoltaic power generation for captive consumption. a) Is applicable as in the absence of the project activity the total electricity requirements by the manufacturing facility was drawn from grid and not produced from fossil fuel fired on-site captive power plant. This fact was confirmed during the onsite visit and through document review of historical records of electricity bills.
	Illustration of respective situations under which each of the methodology (AMS-I.D., AMS-I.F. and AMS-I.A.) applies is included in Table 3.	This is the renewable power generation activity and the generated electricity from these installations used for captive consumption for the manufacturing facility of PO. This resembles the scenario listed at Sr. No. 2 of the Table No. 2 of the methodology and hence the methodology, AMS-I. F is applied appropriately
	In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added	No capacity addition in the existing renewable plant. This is new installation of Solar PV modules on the roof top of manufacturing facility of PO which was verified

	capacity of the units added by the project should be lower than 15 MW and should be physically distinct6 from the existing units.	and confirmed through onsite verification and interviewed with project owner and their representatives.
	In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	There is not retrofit or replacement Hence it is not applicable.
	If the unit added has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel the capacity of the entire unit shall not exceed the limit of 15 MW.	The project activity does not have a non-renewable component. Hence this criterion is not applicable.
	Combined heat and power (co-generation) systems are not eligible under this category.	The project activity does not involve co-generation. Hence this criterion is not applicable.
	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: a. The project activity is implemented in an existing reservoir with no change in the volume of reservoir; b. The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m2. b. The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is grated than 4 W/m^2	This criterion is not applicable as the project activity is the installation of solar PV Panels to generate electricity in the rooftop of the manufacturing facility of PO.
	If electricity and/or steam/heat produced by the project activity is delivered to a third party, i.e. another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered that ensures	The electricity generated by the Rooftop solar power plant is consumed by manufacturing facility of PO and injected to the grid of the distribution utility under the mechanism of net metering if any surplus electricity is available

	that there is no double counting of emission reductions.	after meeting their own consumption.
	In the case the project activities utilizes biomass, the "TOOL16: Project and leakage emissions from biomass" shall be applied to determine the relevant project emissions from the cultivation of biomass and the utilization of biomass or biomass residues.	The project is solar power project, and it is not applicable.
Findings	No findings were raised	
Conclusion	The verification team confirms that all the applicability criteria set by the applied CDM methodology/5/ and its eligible tools are met. The relevant information against those criteria is also included in the PCN/6/ and MR/7/. The selected CDM methodology for the project activity is applicable.	

3.3.3 Project boundary, sources and GHGs

Means of Project Verification	As per the applied methodology AMS-I. F version 5.0, the spatial extent of the project boundary includes industrial, commercial facilities consuming energy generated by the system. The components of the project boundary mentioned in the section B.4 of PCN were found to be in compliance with para 18 of the applied methodology. The project verification team conducted desk review of the implemented project to confirm the appropriateness of the project boundary identified. The project verification team confirmed that all GHG sources required by the methodology have been included within the project boundary. It was assessed that no emission sources related to project activity will cause any deviation from the applicability of the methodology or accuracy of the emission reductions. The project location is clearly depicted with the help of a pictorial depiction in section A.3. of the PCN/6/ and duly verified by the project verification team via geographical coordinates, commissioning certificate/12/ of the project activity & inter connection agreement/14/ between R&B Denim Ltd. and DGVCL.
Findings	CL 01 was raised
Conclusion	The project verification team was able to assess that complete information regarding the project boundary has been provided in PCN/6/ and MR/7/ and could be assured from the equipment drawing/16/, commissioning certificate/12/, geographical coordinates and Inter connection agreement/14/

	The project verification team confirms that the identified boundary, selected emissions sources are justified for the project activity.

3.3.4 Baseline scenario

Means of Project Verification	The baseline scenario as per paragraph 19 of the applied methodology, prescribed the baseline scenario of the project activity. In the absence of the project activity, the users would have been supplied electricity from the national grid. As per paragraph 19 Baseline emissions for other systems are the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor from the available options of calculation of emission factor as mentioned in AMS-I.F /5/. As per the General project eligibility criteria and guidance/3/; "The project owner has opted UCR recommended emission factor of 0.9 tCO_2/MWh for the 2013-2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Emission factors for the post 2020 period is to be selected as the most conservative estimate between the national electricity/power authority published data set and UCR default of 0.9 tCO_2/MWh".
Findings	CAR 03 was raised
Conclusion	The project verification team concluded that the identified baseline scenario reasonably represents what would occur in the absence of the project activity. The calculated baseline emission for each vintage year of crediting period is rounded down as per UCR CoU verification standard /4/.

3.3.5 Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	The project verification team checked whether the equations and parameters used to calculate GHG emission reductions or net anthropogenic GHG removals for PCN/6/ and MR/7/ is in accordance with applied methodology. Project Verification team checked section B.5 and C.5.1 of the PCN6/ & MR/7/ respectively to confirm whether all formulae to calculate baseline emissions, project emission and leakage have been applied in line with the underlying methodology. The emission reduction calculation has been done as per the CDM SSC methodology AMS-I.F., Version 5.0/5/. $BE_y = EG_{BLy} X EF_{CO2,y}$ Where, BE_y = Baseline Emissions in year y; tCO_2

	EG_{BLy}= Quantity of net electricity displaced as a result of the implementation of the CDM project activity in year y (MWh) $EF_{CO2,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year y. Project emissions: As per paragraph 25 of the applied methodology, For most renewable energy project activities, PE_y = 0. Since Solar power is a GHG emission free source of energy project emission considered as Zero for the project activity Leakage Emissions: As per the paragraph 29 of the applied methodology AMS I.F Version 5.0, there are no emissions related to leakage in this project. Emission reductions As per Paragraph 30 of the applied methodology, emission reductions are calculated as follows $ER_y = BE_y - PE_y - LE_y$ Where: ER_y = Emission reductions in year y (tCO_{2e}/y) BE_y = Baseline Emissions in year y (t CO_2/y) PE_y = Project emissions in year y (t CO_2/y) LE_y = Leakage emissions in year y (t CO_2/y)

Year	Electricity generated (kWh)	Emission factor (tCO_2/MWh)	Total Emission reduction (tCO_2e)
2021	3,50,901	0.9	315
2022	15,38,255	0.9	1384
Total	18,89,156	0.9	1699

Findings	CAR 04 was raised
Conclusion	The combined margin emission factor as per CEA database "CO_2 Baseline Database for the Indian Power Sector" current version 18, December 2022/18/ is 0.918 tCO_2/MWh which results into higher emission factor than the UCR recommended emission factor of 0.9 tCO_2/MWh; Hence for 2022 vintage UCR default emission factor remains conservative as per UCR General project eligibility criteria and guidance/3/. Project Verification team confirm that the algorithms and formulae proposed to calculate project emissions, baseline emissions, leakage and emission reductions in the PCN/6/ and MR/7/ is in line with the requirements of the selected methodology AMS I.F, version 05.0/5/ For emission reduction calculation, the assessment team confirms that

	All assumptions and data used by the project participants are listed in the PCN/6/ and MR/7/ including their references and sources. All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PCN/6/ and MR/7/ The baseline methodology and the applicable tool(s) have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions.

3.3.6 Monitoring Report

<table>
<tr><td>Means of Project Verification</td><td>The monitoring report/7/ submitted by the PP has been verified thoroughly and is in compliance with the applicable methodology and UCR General project eligibility criteria and guidance/3/ for calculation of GHG emission reductions.

The assessment team has reviewed all the parameters in the monitoring plan against the requirements of the applied methodology and confirmed that monitoring parameters are applied in line with the requirement of the methodology and relevant in the context of the program. The procedures have been reviewed by the assessment team through document review, interviews with the respective monitoring personnel and onsite assessment. Monitoring methodology, data management and calibration of the energy meter were also discussed with project owner.

Calibration of Energy meter is carried out by NABL Accredited DGVCL Hi-tech laboratory.
<table>
<tr><td>Sr. no.</td><td>Meter No.</td><td>Class</td><td>Calibration date</td></tr>
<tr><td>1.</td><td>X1718787</td><td>0.5 s</td><td>06/09/2021</td></tr>
</table>
</td></tr>
<tr><td>Findings</td><td>CAR 05 was raised</td></tr>
<tr><td>Conclusion</td><td>The project verification team confirms that,

The monitoring report/7/ is in compliance with the applicable methodology and UCR General project eligibility criteria and guidance/3/.

The monitoring parameters reported in PCN/6/ and MR/7/ adequately represents the parameters relevant to emission reduction calculation.

The calibration report/13/ ensures the accuracy of the data reported.

The number of CoUs generation is calculated based on accurately reported data. The calculation was done using an excel sheet where all the parameters were reported.</td></tr>
</table>

	UCR recommended emission factor for electricity generation is opted which is conservative. In the MR/7/, emission reduction calculations sheet/9/ are correctly calculated and reported. The monitoring report/7/ meets the requirements of UCR project verification requirements.

3.4 Start date, crediting period and duration

Means of Project Verification	The Commissioning certificate/12/ of the installation of the project activity has been verified as per PCN/6/ and MR/7/.
Findings	CAR 06 was raised
Conclusion	The expected lifetime of the project activity is 25 years which is verified by the technical specification/10/. Crediting period is from 01/10/2021 to 31/12/2022 which is appropriate as per UCR General project eligibility criteria and guidance/3/.

3.5 Environmental impacts and safeguard assessment

Means of Project Verification	As The guidelines on Environmental Impact Assessment have been published by Ministry of Environment, Forests and Climate Change (MoEF&CC), Government of India (GOI) under Environmental Impact Assessment notification 14/09/2006/49/. Further amendments to the notification have been done, The Solar Power projects up to 25 MW are listed in white category, hence the No EIA required. The impact of the project activity on the environmental safeguards has been carried out. Out of all the safeguards no risks were identified to the environment due to the project implementation and operation. And the following have been indicated as positive impacts: Environment Air - CO_2 emissions: The project activity being renewable power generation avoids CO_2 emissions that would have occurred in baseline scenario due to the electricity generation in thermal power plants. Environment - Natural Resources: Replacing fossil fuels with renewable sources of energy. Impacts identified as 'Harmless': Solid waste Pollution from E- waste: - Any E-waste including broken panels and batteries if generated from the plant shall be discarded in accordance with host country regulation. n. The parameter is being monitored as 'Project Waste' and Proper mitigation action has been implemented for waste management.

	Land use: since the solar plant is installed on the rooftop of the PO; no land is harmed due to the project activity. Emission due to transportation of solar panels: The emissions associated with transport of the modules are insignificant compare to manufacturing facilities. Solid waste Pollution from end-of-life products equipment: - Waste generated from the plant.
Findings	No findings were raised.
Conclusion	The project activity displaces fossil fuel consumption and provides affordable and clean energy. The project has also avoided total 1699 tCO_2e, hence it has positive impact.

3.6 Project Owner- Identification and communication

Means of Project Verification	The information and contact details of the project owner has been appropriately incorporated in the PCN/6/ and MR/7/ which was checked. The legal owner of the project activity has been identified through the commissioning certificate/12/, inter connection agreement/14/, and purchase invoice/15/ issued by equipment suppliers.
Findings	No findings were raised.
Conclusion	The project verification team confirms that the legal ownership of the project belongs to M/s. R&B Denim Ltd.

3.7 Positive Social Impact

Means of Project Verification	NA
Findings	--
Conclusion	Project has overall positive social impact.

3.8 Sustainable development aspects (if any)

Means of Project Verification	Not Applicable
Findings	--
Conclusion	The Project has the capability to address SDG 7 Affordable and Clean Energy and SDG 13 Climate Action

3.9 Others (Double Counting of Credits)

Means of Project Verification	The project activity was searched on other GHG programs to ensure that project is not registered in any other GHG programs like VERRA, Gold standard, GCC, IREC, Indian REC. An agreement stating that project activity will not cause double counting of the credits is also checked as per clause 1.8, Universal Carbon Registry Program Manual (Ver 4.0) August 2022.
Findings	CL 02 was raised
Conclusion	Double accounting agreement/8/ is signed between PO and Aggregator and found to appropriate as per clause 1.8, Universal Carbon Registry Program Manual (Ver 4.0) August 2022.

4 Internal quality control:

- Due professional care has been taken while reviewing the submitted document.
- There is no conflict of interest as the verifier has no other engagement with either the aggregator or project owner directly or indirectly.
- Verification team consists of experienced personnel.
- Technical review is performed by an independent person.

5 Project Verification opinion:

The project verification was conducted on the basis of UCR Program Manual/2/, UCR General project eligibility criteria and guidance/3/, UCR Verification standard /4/, AMS -I.F. -Renewable electricity generation for captive use and mini-grid, version 5.0./5/, Inter connection agreement/14/, Purchase invoice/15/, Calibration Report/13/, Commissioning Certificate/12/, Project Concept Note (PCN)/6/, Monitoring Report (MR)/7/ and documents mentioned in Appendix-2.

Verification team raised 02 Nos. of Clarification Requests (CLs) and 06 Nos. of Corrective Actions Requests (CARs) and they were corrected, verified and closed satisfactorily.

It is certified with reasonable level of assurance that the emission reductions from the project 990 kW rooftop solar project by M/s. R&B Denim Ltd (UCR ID – 238) for the period 01/10/2021 to 31/12/2022 amounts to **1699** CoUs (1699 tCO_2e).

6 Competence of team members and technical reviewers

No.	Last name	First name	Role and Affiliation	Technical Competence
1.	Mandliya	Shyam	GHG Assessor and Technical Expert - NSPL	Mr. Shyam Mandliya is having M.E in Chemical Engineering. He has expertise in environmental audits. He has performed environmental monitoring of different industries in Gujarat for air, water, and hazardous waste. He has also contributed to the community-based biogas project development.
2.	Prajapati	Divya	Trainee Assessor - NSPL	Ms. Divya Prajapati is having M. Tech. in Environmental Engineering. She has experience is performing Environmental Impact Assessments of Various industries. She has also conducted Environmental Audit of CETP and TSDF sites and quantified GHG emissions from Solid Waste Disposal sites.
3.	Amin	Shardul	Technical Reviewer - NSPL	Mr. Shardul Amin is a post-graduate having M. Tech in Thermal System Design. He has more than 7 years of experience in the field of waste-to-energy, thermochemical conversion technologies, and emission study. He has vast experience in performing Verification of GHG emission reduction projects on UCR.

Appendix 1: Abbreviations

Abbreviations	Full texts
UCR	Universal Carbon Registry
CPCB	Central Pollution Control Board
GERC	Gujarat Electricity Regulatory Commission (GERC)
GEDA	Gujarat Energy Development Agency
DGVCL	Dakshin Gujarat Vij Company Limited.
CEA	Central Electricity Authority
NSPL	Naturelink Solutions Private Limited
MR	Monitoring report
PCN	Project Concept Note
VR	Verification Report
VS	Verification Statement
DAA	Avoidance of Double Accounting Agreement
COD	Commercial Operation Date
PO	Project Owner
PA/ PP	Project Aggregator / Project Proponent
PPA	Power Purchase Agreement
ER	Emission Reduction
CoUs	Carbon offset Units
tCO_2e	Tons of Carbon Dioxide Equivalent
kWh	Kilo-Watt Hour
MWh	Mega-Watt Hour
kW	Kilo-Watt
MW	Mega-Watt
CDM	Clean Development Mechanism
SDG	Sustainable Development Goal
CAR	Corrective Action Request
CL	Clarification Request
FAR	Forward Action Request
GHG	Green House Gas

Appendix 2: Document reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Creduce	Project concept note	Version 1.0, October 2022	PA
2	UCR	UCR Program Manual	Version 4.0, August 2022	UCR website
3	UCR	UCR General project eligibility criteria and guidance (CoU Standard)	Version 6.0, August 2022	UCR website
4	UCR	UCR Program Verification standard	Version 2.0, August 2022	UCR website
5	CDM	AMS-I. F – "Renewable electricity generation for captive use and mini-grid"	Version 05.0	CDM website
6	Creduce	Project Concept Note	Version 2.0 dated 18/10/2023	PA
7	Creduce	Monitoring report	Version 2.0 dated 18/10/2023	PA
8	Creduce	Assurance to avoid double accounting by project owners	Double accounting agreement signed on 21/09/2023	PA
9	Creduce	Emission reduction excel – "990 kW rooftop solar project by M/S R&B Denim Ltd"	Version 2.0 dated 18/10/2023	PA
10	Apollo Solar Power	Technical specification Brochure of 500 kW solar panel by Trina solar	-	PA
11	Apollo Solar Power	Technical specification Brochure of 100 kW Inverter by Fimer	-	PA
12	Apollo Solar Power	Project Commissioning certificate	Dated 05/10/2021	PA
13	DGVCL Hi Tech Laboratory	Meter test reports 1. Meter no.: X1718787	1. DGVCL Hi-Tech Lab/T-379/P/DG Hi-Tech/Solar/21/09/02	PA
14	DGVCL & PO	Inter connection agreement for captive use	-	PA
15	PO	Purchase Invoice of Solar Panel and Inverter	ASP/INV2/82 dated 11/06/2021	PA
16	Apollo solar power	Equipment drawing	Dated 14/06/2021	PA

17	CEA	Central Electricity Authority (Installation and Operation of Meters) (Amendment) Regulations, 2019	Dated 23/12/2019	-
18	CEA	CO_2 baseline database for the Indian Power sector	Version 18.0 dated December 2022	-
19	PA	Communication agreement between PP and PO	Dated 22nd October, 2021	PA
20	PO	Installation Certificate	-	PA
21	PA	Monitoring report	Version 1.0, dated 21/08/2023	PA

Appendix 3: Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

CL ID	01	**Section no.:**	3.3.3. Project boundary, sources and GHGs	**Date:** 13/09/2023
Description of CL				
PP is requested to provide single line diagram to establish the connection with nearest grid as per applicable methodology.				
Project Owner's response				**Date:** 18/10/2023
Equipment drawing of the plant is provided.				
Documentation provided by Project Owner				
Equipment drawing of 990 kWp dated 14/06/2021				
UCR Project Verifier assessment				**Date:** 30/10/2023
Equipment drawing is checked and found to be consistent with the project activity and applied methodology; hence CL 01 is closed.				

CL ID	02	**Section no.:**	Others	**Date:** 23/09/2023
Description of CL				
As per the UCR verification standard clause "Dates of registration of project", PP is requested to provided Double accounting agreement.				
Project Owner's response				**Date:** 18/10/2023
Double accounting agreement is provided				
Documentation provided by Project Owner				
Double accounting agreement dated 21/09/2023				
UCR Project Verifier assessment				**Date:** 30/10/2023
Double accounting agreement is checked and found to be appropriate; hence CL 02 is closed.				

Table 2. CARs from this Project Verification

CAR ID	01	**Section no.:**	3.2 General Description of project activity	**Date:** 23/09/2023
Description of CAR				
1. *In the section A.1. of the PCN and Section A. 1.3 of MR Project capacity is defined inconsistently. Kindly correct it.* 2. In the section A.4 of PCN and B.1.2 of MR the technical specification mentioned is in not in line with commissioning certificate.				
Project Owner's response				Date: 18/10/2023
1. *The plant capacity is revised in PCN and MR* 2. *Technical specification was reported inappropriately, it is now corrected as per commissioning certificate.*				
Documentation provided by Project Owner				
PCN Version 2.0 and MR Version 2.0				
UCR Project Verifier assessment				Date: 30/10/2023
Revised plant capacity is checked and found to be appropriate; hence CAR 01 is closed.				

CAR ID	02	**Section no.:**	3.3 Application and selection of methodologies and standardized baselines	**Date:** 23/09/2023
Description of CAR				
As per the document review and on-site inspection it is found that project activity does not meet the requirement defined in clause 2.1 of CDM Methodology AMS-I. D: "Grid connected renewable electricity generation", version 18, Kindly apply methodology applicable as per the project activity.				
Project Owner's response				Date: 18/10/2023
The CDM Methodology is corrected to AMS -I.F. "Renewable electricity generation for captive use and mini-grid", version 5.0. and applicability criteria is updated accordingly in PCN and MR.				
Documentation provided by Project Owner				
PCN Version 2.0 and MR Version 2.0				
UCR Project Verifier assessment				Date: 30/10/2023
Corrected CDM Methodology AMS-I.F. "Renewable electricity generation for captive use and mini-grid" is found to be appropriate and consistent with the project activity; hence CAR 02 is closed.				

CAR ID	03	Section no.:	3.3.4. Baseline Scenario	Date: 23/09/2023
Description of CAR				
As per the onsite visit, solar power plant is installed at the rooftop of the PO facility and electricity generated from solar power plant is used for the captive consumption, however Project scenario mentioned in Section A.6 of PCN version 1.0 and B.3. of Monitoring report version 1.0 it is found to be inconsistent as per the equipment drawing.				
Project Owner's response				Date: 18/10/2023
The baseline scenario and project scenario are revised as per equipment drawing and CDM Methodology AMS -I.F. "Renewable electricity generation for captive use and mini-grid", version 5.0.				
Documentation provided by Project Owner				
PCN Version 2.0 and MR Version 2.0				
UCR Project Verifier assessment				Date: 30/10/2023
Revised baseline scenario and project scenario is checked and found to be appropriate with the equipment drawing and CDM Methodology AMS -I.F. "Renewable electricity generation for captive use and mini-grid", version 5.0; hence CAR 03 is closed.				

CAR ID	04	Section no.:	3.3.5. Estimation of emission reductions or net anthropogenic removal	Date: 23/09/2023
Description of CAR				
1. *In the Section C.5.1. of Monitoring report baseline emission is not correctly calculated as per the section 5.5 of CDM Methodology AMS I.D – "Grid connected renewable electricity generation", version 18.0.* 2. *The project proponent is requested to choose the conservative value for calculation of emission reduction as per clause "Conservative Estimate" of UCR verification standard with respect to daily energy generation log book and excel sheet.*				
Project Owner's response				Date: 18/10/2023
1. *Baseline emission calculation is corrected.* 2. *The calculation of emission reduction is corrected as per conservative approach.*				
Documentation provided by Project Owner				
MR Version 2.0 and revised emission reduction calculation sheet.				
UCR Project Verifier assessment				Date: 30/10/2023
1. The standard unit of total baseline emission is updated by PP and found to be correct 2. The project proponent has revised the emission reduction calculation from 1700 tCO_2e to 1699 tCO_2e ; hence CAR 04 is closed.				

CAR ID	05	**Section no.:**	3.3.6. Monitoring report	**Date:** 23/09/2023
Description of CAR				
In the section A.1 – Description of Project activity of Monitoring report, it is mentioned that project activity is a grid connected "bundled" renewable project power generation activity but as per site assessment conducted on 21/09/2023 it was observed that the project activity is not bundled project.				
Project Owner's response				**Date:** 18/10/2023
A.1 section of monitoring report is corrected and revised monitoring report is submitted.				
Documentation provided by Project Owner				
Monitoring report Version 2.0.				
UCR Project Verifier assessment				**Date:** 30/10/2023
1. Description of project activity is checked and found to be consistent with project activity, Hence CAR 05 is closed.				

CAR ID	06	**Section no.:**	3.4 Start date, crediting period and duration	**Date:** 23/09/2023
Description of CAR				
There is mismatch observed in project commissioning date during the desk review and onsite visit and accordingly In the section A.5 of the monitoring report, B.9 of the PCN, Commissioning certificate/12/ and Installation Certificate/20/				
Project Owner's response				Date: 18/10/2023
Project start date 15/04/2021 was written inappropriately in PCN and MR however Meter installation was done on 30/09/2021 and it is considered as project start date. Electricity generation recorded from 01/10/2021 therefore start date of crediting period is 01/10/2021.				
Documentation provided by Project Owner				
PCN Version 2.0 and MR Version 2.0				
UCR Project Verifier assessment				Date: 30/10/2023
1. Revised crediting period is checked and found consistent with the documents provided and on-site assessment; hence CAR 06 is closed. 2. The revised project start date in PCN and MR is checked and found to be correct with project activity; hence CAR 06 is closed.				

Table 3. FARs from this Project Verification

FAR ID	**--**	**Section no.**		**Date:**
Description of FAR				
Project Owner's response				**Date:**
Documentation provided by Project Owner				