# Verification Report for Carbon Offset Units (CoUs) for Project (UCR ID: 050)

# Title: "7.676 MW Bundled Solar Power Project by Sudiva Spinners Private Limited"



## Project Owner details:

Sudiva Spinners Pvt Ltd,

91 KM Stone, NH-79, Village-Dhunwalia, P.O. Sareri, Teh-Hurda, Bhilwara-311024, Rajasthan, India.

Submitted by:

**Shardul Amin** 

Lead Verifier, Naturelink Solutions Pvt. Ltd.

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#### **COVER PAGE Project Verification Report Form (VR) BASIC INFORMATION** Name of approved UCR Project Verifier / Reference Naturelink Solutions Pvt. Ltd No. **Type of Accreditation** ☐ CDM Accreditation ☐ ISO 14065 Accreditation □ UCR Approved Verifier Approved UCR Scopes and GHG Sectoral scopes for Sectoral Scope: 01 Energy **Project Verification** Industries Validity of UCR approval of Verifier May 2022 onwards Completion date of this VR 22/02/2023 7.676 MW Bundled Title of the project activity Solar Power Project by Sudiva Spinners Private Limited **Project reference no.** (as provided by UCR Program) 050 Name of Entity requesting verification service Sudiva Spinners Pvt Ltd (can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.) Contact details of the representative of the Entity, Creduce Technologies Private requesting verification service Limited-(Focal Point assigned for all communications) Address: 2-O-13,14 Housing Board Colony, Banswara, Rajasthan - 327001, India. Country where project is located India **Applied methodologies** AMS-I.D.: "Grid connected renewable electricity (Approved methodologies by UCR Standard used) generation", version 18 **Project Verification Criteria: UCR Standard** $\boxtimes$ $\boxtimes$ Mandatory requirements to be assessed Applicable Approved Methodology Applicable Legal requirements /rules of host country

	Eligibility of the Project  Type
	Start date of the Project activity
	□ Do No Harm Test
	No GHG Double Counting
	Others (please mention below)
Project Verification Criteria:	Environmental
Optional requirements to be assessed	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 Solutions Pvt. Ltd, certifies the following with respect to the UCR Project Activity "7.676 MW Bundled Solar Power Project by Sudiva Spinners Private Limited"
	The Project Owner has correctly described the Project Activity in the Project Concept Note (dated 20/12/2021) including the applicability of the approved methodology A.M.S.I. D 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 9879 tCO <sub>2</sub> e, as indicated in the PCN, 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 Project ID: 050
	Date: 22/02/2023
Name of the authorised personnel of UCR Project Verifier and his/her signature with date	Mr. Shardul Amin
	Authorised Signatory

#### **Project Verification Report**

#### **A. Executive Summary**

The verification work has been contracted by project aggregator Creduce Technologies Pvt Ltd to perform an independent verification of its UCR project titled "7.676 MW Bundled Solar Power Project by Sudiva Spinners Private Limited UCR approved project ID:050, to establish the number of CoUs generated by the project over the crediting period from 01/01/2022 to 31/12/2022 (both days included).

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

In my opinion, the total GHG emission reductions over the crediting / verification period stated in the Monitoring Report (MR), submitted to me is found to be correct and in line with the UCR guidelines.

The GHG emission reductions were calculated on the basis of UCR Protocols which draws reference from, Standard Baseline, AMS. I. D – Grid-connected renewable electricity generation (Version 18.0). Owing to the Covid pandemic, the verification was done remotely by way of video calls, phone calls, and submission of documents for verification through emails.

I am able to certify that the emission reductions from the 7.676 MW Bundled Solar Power Project by Sudiva Spinners Private Limited (UCR ID - 050) for the period 01/01/2022 to 31/12/2022 amounts to **9879** CoUs (**9879** tCO<sub>2</sub>e).

#### <u>Scope</u>

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. The quality of data management and records of underlying data;
- 2. Completeness and accuracy of calculations and baseline emission reports;
- 3. Proper inclusion and documentation of all project locations.
- 4. Correct application of offset rules for filling Baseline Period data gaps;
- 5. Other data, methods, and procedures deemed necessary to establish the accuracy of emission reductions.
- 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 verification Guidance Document, UCR Standard, UCR Programme Manual, and related rules and guidelines. 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 present assignment and projects deemed validated post-registration by UCR.

#### Description of the Project

As described in the Project Concept Note (PCN), the project activity involves multiple solar PV power projects with different installation capacity as can be verified from the commissioning certificate, Detailed Project Reports and Purchase Order copies of the major equipment of the PV plants. The project location is in the village Dhunwalia of district Bhilwara in Rajasthan.

The details of the project is listed below.

Village	District	AC Capacity	DC Capacity of Plant	Rooftop/ Ground Mount	Commissionin gdate	Operation Type
Dhunwalia	Bhilwara	1100 kW	1274.93 kW	Rooftop	23/02/2017	Owned
Dhunwalia	Bhilwara	400 kW	463 kW	Rooftop	03/10/2017	Owned
Dhunwalia	Bhilwara	1608 kW	1710.54 kW	Rooftop	13/05/2019	Outsourced
Dhunwalia	Bhilwara	4128 kW	4815.08 kW	Rooftop	20/12/2019	Outsourced
Dhunwalia	Bhilwara	440 kW	557.90 kW	Rooftop	06/07/2021	Owned

As mentioned in the Monitoring Report and Emission Reduction Calculation sheet submitted for the verification, the project replaces anthropogenic emissions of greenhouse gases (GHGs) estimated to be approximately **9879 tCO**<sub>2</sub>**e** for the said period under verification, there on displacing 28,932 MWh amount of electricity from the generation mix of power plants connected to the Indian electricity grid, which is mainly dominated by the fossil-fuel based power plant.

The project activity is a grid-connected renewable energy generation project having capacity of less than 15 MW. The project is a small-scale activity. The methodology applied in the Monitoring Report is verified against the A.M.S I. D "Grid connected renewable electricity generation" version 18.0.

Verified total emission reductions achieved through the project activity during the monitoring period is summarised below:

Summary of the Project Activity and ERs Generated for the Monitoring Period		
Start date of this Monitoring Period	01/01/2022	
Carbon credits claimed up to	31/12/2022	
Total ERs generated (tCO₂e)	9879 tCO₂e	
Leakage	0	

#### B. Project Verification team, technical reviewer and approver:

No.	Role	Last	First	Affiliation		Involvement	in
		name	name		Doc review	Off-Site inspection	Intervie ws
1.	Verifier	Amin	Shardul	Lead Verifier,			
2.	Technical Expert	Amin	Shardul	Naturelink Solutions Pvt. Ltd.	Yes	No	Yes

#### **C.** Means of Project Verification

#### **Desk/document review**

The project documents submitted to UCR approved verifier Naturelink Solutions Pvt. Ltd was reviewed by the technical expert and validated by the verifier. The documents reviewed involves verification of the legal status of individual project owner for consistency, project related documents like installation and commissioning of equipment used in project activity. Environmental clearances from state or central pollution control board Consent to establish and operate, monitoring related meters/parameters equipment measuring instruments and their calibration records, to establish running of equipment for the crediting period etc.

The PCN is made available to the verifier post approval by UCR which is considered as validated documents and the content of validated PCN are considered as record wherever required. Further the communication agreement made between project owner and project aggregator is document of UCR registry hence the project aggregator is treated as authorized representative of project owner. All the documents submitted by project aggregator to verifier is treated as documents submission on behalf of project owner.

The list of submitted document is available in subsequent section of this verification report under section "Document reviewed or referenced"-section I.

#### **On-Site inspection- Not applicable.**

Date of inspectito DD/N	off-site ion: DD/MM/YYYY /IM/YYYY	Not applicable as per UCR guideline site visit not conducted this verification activity.		ducted for
No.	Activity performed Off-Site		Site location	Date
1.				

#### **Interviews: Not applicable**

As per UCR guideline the site visit was not conducted during the course of verification and only interviews were conducted through online mode.

No.		Interview		Date	Subject
	Last name	First name	Affiliation		
1.	Bihani	Mahesh	Project In- charge, M/s. Sudiva Spinners	16/02/2023	Meter Calibration, breakdown details and JMRs

#### Sampling approach:

For the verification of monitoring parameter of electricity generation Joint Metering Report was made available to verifier and the same has been verified. Data are being monitored on monthly basis for the captive and outsourced projects. Since the physical visit of installation site was not conducted, meter photos, calibration certificates and JMR copies are used for the verification.

# 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	NIL	NIL
Application and selection of methodologies and			
standardized baselines			
<ul> <li>Application of methodologies and</li> </ul>	NIL	NIL	NIL
standardized baselines			
<ul> <li>Deviation from methodology and/or</li> </ul>	NIL	NIL	NIL
methodological tool			
<ul> <li>Clarification on applicability of</li> </ul>	NIL	NIL	NIL
methodology, tool and/or standardized			
baseline			
<ul> <li>Project boundary, sources and GHGs</li> </ul>	NIL	NIL	NIL
- Baseline scenario	NIL	NIL	NIL
<ul> <li>Estimation of emission reductions or</li> </ul>	NIL	NIL	NIL
net anthropogenic removals			
<ul> <li>Monitoring Report</li> </ul>	NIL	NIL	NIL
Start date, crediting period and duration	NIL	NIL	NIL
Environmental impacts	NIL	NIL	NIL
Project Owner- Identification and communication	NIL	NIL	NIL
Others (please specify)	NIL	NIL	NIL
Total	NIL	NIL	NIL

#### **D. Project Verification findings**

#### Identification and eligibility of project type

Means of Project Verification	Project has taken reference of CDM methodology AMS-I D, version 18 Grid Connected Renewable Electricity Generation.
Findings	<ol> <li>Project activity is described through UCR approved PCN.</li> <li>UCR project communication agreement clearly defines the Project Proponent and Project Aggregator.</li> </ol>
Conclusion	The UCR approved format is used for description and project meets the requirement of UCR verification standard and UCR project standard.  UCR project communication agreement submitted to verifier and the same has been verified. Methodology referenced and applied appropriately describing the project type. The eligibility of project aggregator is verified using UCR communication agreement, Project correctly applies the verification standard, UCR project standard and UCR regulations.  The project activity is overall meeting the requirements of UCR Verification standard and UCR project standard.

#### General description of project activity

Means of Project Verification	Document verification of Detailed Project Report, Commissioning certificate, Electrical Inspection Report, Power Plant and Meter Photographs, Purchase order copy and Joint Metering Reading Reports.
Findings	<ol> <li>Project commissioning date is verified in accordance with the commissioning certificate and Joint metering report.</li> <li>Solar PV plant capacity is verified with the Purchase order quantity and electrical inspection report of the PV Plant.</li> <li>Project implementation and consumption of energy abide the power purchase agreement wherever applicable.</li> </ol>
Conclusion	The description of the project activity is verified to be as per the actual electricity generation from the solar plant based on the review of Emission reduction excel sheet, PCN, MR, Commissioning Certificate, Purchase Order Copies and Technical Specification sheet.

#### Application and selection of methodologies and standardized baselines

#### (.a.i) Application of methodology and standardized baselines

Means of Project Verification	Project has taken reference of CDM methodology A.M.S I.D. CDM website is referred to check the latest version of the methodology. For the applicability mentioned in the PCN and MR, Commissioning certificate, Detailed Project Report documents were referred.
Findings	The methodology applied is applicable for the project activity.
Conclusion	Methodology application is appropriate meeting the requirements of UCR and its standardized baseline. The methodology version is correct and valid. Referenced methodology is applicable to project activity.

# (.a.ii) Clarification on applicability of methodology, tool and/or standardized baseline

Means of Project Verification	The documents reviewed are A.M.S I. D "Grid connected renewable electricity generation" version 18, UCR Program standard, and UCR Verification Standard.
Findings	Emission factor calculated using the methodology is higher than UCR standard recommends.
Conclusion	The emission factor considered for the calculation of the emission reductions is verified with the UCR Program Standard. The total installed electrical energy generation capacity of the project equipment does not exceed 15 MW thus meeting the requirement of small-scale project.

#### (.a.iii) Project boundary, sources and GHGs

Means of Project Verification	Letter from CPCB dated 07/03/2016 No. B-29012/ESS(CPA)/2015-16. PCN section B.4.		
Findings	Project boundary is appropriately defined in PCN version 01 which is physical and geographical site of power house.		
Conclusion	Project boundary is correctly defined in the revised PCN version 01. GHG source correctly identified and reported. The project meets the requirements of UCR project standard, Verification standard and methodology requirements for boundary, GHG source.		

#### (.a.iv) Baseline scenario

Means of Project Verification	PCN Section B.5 and General Project Eligibility Criteria and Guidance, UCR Standard.
Findings	Declared information is correct and verified.
Conclusion	Baseline scenario is appropriately described. The conservative or default value for emission considered. The baseline scenario is in accordance with UCR project verification standard and UCR project standard.

#### (.a.v) Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	Meter Calibration reports, Joint Meter Reading Reports, and General Project Eligibility Criteria and Guidance, UCR Standard, page 4.			
Findings	The declared information is correct and verified.			
Conclusion	Emission reductions are correctly calculated. The data used are either monitored at plant. The instruments are calibrated and hence the emission reduction is reported correctly and meets the requirements of UCR verification standard and UCR project standard.			
	Year Total No. of Electricity delivered in MWh  Total No. of ed emission factor genera tCO <sub>2</sub> /MWh			
	2022	10,977	0.9	9,879
	Total CoUs to be issued for this monitoring period (Year: 2022) 9,879			

#### (.a.vi) Monitoring Report

Means of Project Verification	Meter Calibration reports, Joint Meter Reading Reports, and General Project Eligibility Criteria and Guidance, UCR Standard, page 4.	
Findings	Declared information is correct and verified.	
Conclusion	Declared information is correct and verified.  Monitoring parameter as reported through Mill adequately represents the parameters relevant the emission reduction calculation. The calibration reported ensures the accuracy of data reported. The number of CoUs generation is calculated based on this accurated reported data. The calculation was done using excessive where all the parameters reported. The emission factor for electricity is as per UCR standard for electricity component. Based on monitoring and emission reduction calculations are correctly calculated an reported. The monitoring report meets the requirement of UCR project verification requirements.	

#### Start date, crediting period and duration

Means of Project Verification	PCN and MR, Purchase order of Solar PV panels, Solar Inverter, Commissioning certificate, Detailed Project Report documents were referred.
Findings	Declared information is correct and verified.
Conclusion	The start date, crediting period and project duration reported correctly and this meets the requirements of UCR verification standard and UCR project standard.

#### **Positive Environmental impacts**

Means of Project Verification	PCN		
Findings	Declared information is correct and verified.		
Conclusion	The positive environmental impact meets the requirement of UCR verification standard and UCR project standard.		

#### **Project Owner- Identification and communication**

Means of Project Verification	PCN, Communication Agreement, MR, Purchase order of Solar PV panel, Solar Inverter, Commissioning certificate, Power Purchase Agreement.		
Findings	Declared information is correct and verified.		
Conclusion	Project owner identified through communication agreement signed between PP and PA. Equipment purchase order and commission verified. Also, legal document like Power Purchase Agreement clearly establishes the project owner. The identification and communication correctly meet the requirement of project verification and UCR project standard.		

#### **Positive Social Impact**

Means of Project Verification	Project has provided temporary employment to local people during its installation and commissioning. Also post commissioning some of people have employed permanently and local people were engaged leading to social financial benefit to surrounding. Overall social impact of project implementation is positive on the surrounding area.	
Findings		
Conclusion	Project has overall positive social impact.	

#### Sustainable development aspects (if any)

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

#### E. 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 aggregator or project owner directly or indirectly.
- Verification team consists of experience personnel.
- Technical review is performed by experienced and independent person.

#### F. Project Verification opinion:

Considering the above mentioned verification conducted on the basis of UCR Protocol, which draws reference from UCR Protocol Standard Baseline, AMS.I.D – Grid connected renewable electricity generation (Version 18.0), the documents submitted during the verification including the data, Project Concept Note (PCN) / Monitoring Report (MR), I am able to certify that the emission reductions from the project - 7.676 MW Bundled Solar Power Project by Sudiva Spinners Private Limited (UCR ID – 050) for the period 01/01/2022 to 31/12/2022 amounts to 9879 CoUs (9879 tCO<sub>2</sub>e).

#### **G.** Abbreviations

Abbreviations	Full texts		
UCR	Universal Carbon Registry		
CPCB	Central Pollution Control Board		
PGCIL	Power Grid Corporation of India Limited		
AVVNL	Ajmer Vidyut Vitran Nigam Limited		
GPIL	Genus Power Infrastructure Limited		
MR	Monitoring report		
PCN	Project Concept Note		
VR	Verification Report		
VS	Verification Statement		
DAA	Avoidance of Double Accounting Agreement		
COD	Commercial Operation Date		
PP/PO	Project Proponent / Project Owner		
PA	Project Aggregator		
PPA	Power Purchase Agreement		
ER	Emission Reduction		
CoUs	Carbon offset Units.		
tCO₂e	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	
SPV	Solar Photovoltaic	
PV	Photovoltaic	

#### H. Competence of team members and technical reviewers

No.	Last name	First name	Affiliation	Technical Competence
1.	Amin	Shardul	Lead Verifier, Naturelink Solutions Pvt. Ltd.	Mr. Shardul Amin is a post-graduate having M.Tech in Thermal System Design. He has more than 5 years of experience in the field of waste-to-energy, thermochemical conversion technologies, and emission study.

#### I. Document reviewed or referenced

No.	Author	Title	References to the document	Provider
1	UCR	Communication Agreement		PA
2	Creduce	Project Concept Note		PA
3	Creduce	Monitoring Report		PA
4	Creduce	Avoidance of double accounting		PA
5	Creduce	Emission Reduction Excel		PA
6	SunSource & PP	Joint Meter Reading (JMR) (2022)		PA
7	PP	Joint Meter Reading (JMR) (2022)		PA
8	AVVNL Meter Laboratory	Meter Testing Report Phase-1		PA
9	Secure TUV	Meter Testing Report Phase-2		PA
10	Secure TUV	Meter Testing Report Phase-3 & 4		PA
11	Secure TUV	Meter Testing Report Phase-5		PA
12	SunSource & PP	Power Purchase Agreement		PA
13	PP	Purchase order of Solar PV panel		PA
14	PP	Purchase order of Solar Inverter		PA
15	State Gov.	Commissioning Certificates		PA

### J. Clarification request, corrective action request and forward action request

#### **Table 1. CLs from this Project Verification**

CL ID	xx	Section no.		Date: DD/MM/YY YY	
Description	n of CL				
Project Ow	ner's response			Date: DD/MM/YY YY	
Documenta	Documentation provided by Project Owner				
UCR Projec	ct Verifier assessme	ent		Date: DD/MM/YY YY	

#### **Table 2. CARs from this Project Verification**

CAR ID	XX	Section no.		Date: DD/MM/YY YY
Description	of CAR			
Project Owner's response			Date: DD/MM/YY YY	
Documentation provided by Project Owner				
UCR Projec	ct Verifier assessme	ent		Date: DD/MM/YY YY

#### **Table 3. FARs from this Project Verification**

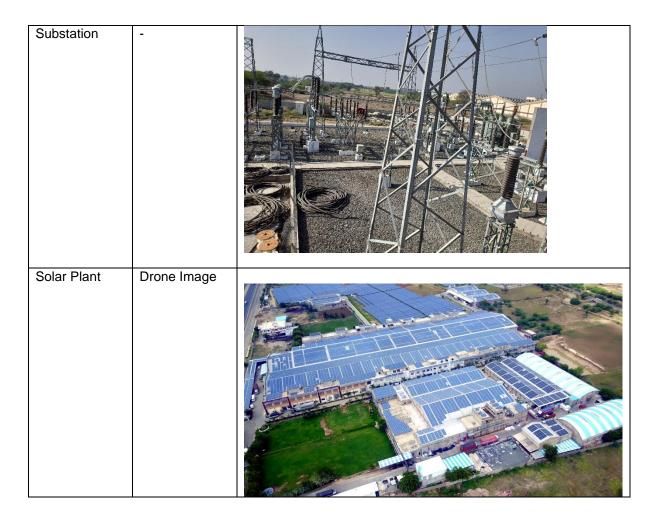
FAR ID	xx	Section no.	Date: DD/MM/YY YY		
Description of FAR					
Project Owner's response  Date: DD/MM/ YY			DD/MM/YY		

Date: DD/MM/YY YY
·

#### **ANNEXURE I: Photographs of the Power Plant**

Phase - 1	X0240435	
		To state the state of the state
Phase-2	RJB90913	Promise 250  And Called And And And And And And And And And An
Phase-3	XG420968	Primaries 200  The first one of the second o
Phase-4	XG420969	GENS
Phase-5	X1585548	1989  Company of the state of t

Monitoring Room	RM-1	
Monitoring Room	RM-2	INVOS = INVOS
Monitoring Room	RM-3	
Monitoring	RM-4	Evat ben have



#### **Meter Calibration Details.**

Sr. No	Meter Sr. No	<b>Date of Calibration</b>
1	X0240435	09/03/2017
2	RJB90913	15/09/2017
3	XG420968	13/03/2019
4	XG420969	13/03/2019
5	X1585548	02/02/2021



**Google map photos.**