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Verification Report UCR ID:028



Title	3 MW Small Scale Hydro Power project in Jemeithang, Arunachal Pradesh, India
Project Owner	Hydro Power Development Corporation of Arunachal Pradesh Limited
Address	Park View Apartment, Lower Niti Vihar, District Papum Pare, Itanagar, Arunachal Pradesh – 791111, India
Auditor	Mr. Shardul Amin, Lead Verifier, Email: audit@thenaturelink.in, Contact: +91- 7574804497, Naturelink Solutions Pvt. Ltd.
Date	27/08/2022

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COVER PAGE		
Project Verification Report Form (VR)		
BASIC INFORMATIONS	3	
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	27/08/2022	
Title of the project activity	3 MW Small Scale Hydro Power project in Jemeithang, Arunachal Pradesh, India.	
Project reference no. (as provided by UCR Program)	028	
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.)	Hydro Power Development Corporation of Arunachal Pradesh Limited.	
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	Creduce Technologies Pvt. Ltd, 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	
(Approved methodologies by UCR Standard used)	renewable electricity generation", version 18	
Project Verification Criteria:	□ UCR Standard	
Mandatory requirements to be assessed	Applicable Approved Methodology	
	Applicable Legal requirements /rules of host country	

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	\boxtimes	Eligibility of the Project Type
		Start date of the Project activity
	\boxtimes	Meet applicability conditions in the applied methodology
	\boxtimes	Credible Baseline
	\boxtimes	Do No Harm Test
		Emission Reduction calculations
	\boxtimes	Monitoring Report
	\boxtimes	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:	of the (UCR UCR Focale Jemeit India. The describ Project 26/07/2 applicate method the condition estimated reduction monitors.)	ability of the approved dology A.M.S I. D and meets methodology applicability ons and has achieved the

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correctly and estimates conservatively. emission generate GHG reductions amounting to the estimated 6886 tCO2e. 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. to cause any net-harm to the environment and/or society with all the applicable UCR rules and therefore recommends UCR Program to register the Project activity with above mentioned labels. Verification Report UCR Project Project Verification Report, reference number and date ID: 028 of approval Date: 27/08/2022 Name of the authorised personnel of UCR Project Verifier and his/her signature with date 27.08.22 Mr. Shardul Amin, Lead Verifier, Naturelink Solutions Pvt. Ltd Date: 27/08//2022

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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 "3 MW Small Scale Hydro Power project in Jemeithang, Arunachal Pradesh, India. UCR approved project ID:028, to establish number of CoUs generated by project over the crediting period from 23/01/2020 to 31/12/2021 (both days included).

Verification for the period : 23/01/2020 to 31/12/2021

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 3 MW Small Scale Hydro Power project in Jemeithang, Arunachal Pradesh, India, UCR (UCR ID - 028) for the period 23/01/2020 to 31/12/2021 amounts to 6886 CoUs (6886 tCO₂e).

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. 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 programme 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 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 hydro project of installed aggregated capacity of 3 MW at Jemeithang village of Tawang district of Arunachal Pradesh India. The details of the project activity are verified with the project report copy submitted for verification.

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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 6886 tCO₂e for the said period under verification, there on displacing 7651 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	23/01/2020	
Carbon credits claimed up to	31/12/2021	
Total ERs generated (tCO2eq)	6886 tCO ₂ e	
Project Emission	0	
Leakage Emission	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.	Lead Verifier	Amin	Shardul	Naturelink Solutions Pvt Ltd. (UCR authorised verifier)	Yes	No	Yes

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C. Means of Project Verification

Desk/document review

The project documents submitted to UCR approved verifier Naturelink Solutions Pvt was reviewed by the technical expert and validated by the lead verifier. The documents reviewed includes verification of 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 (CPCB), monitoring related parameters including measuring instruments and their calibration records for the crediting period etc.

The PCN is made available to 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.

	off-site on: DD/MM/YYYY IM/YYYY	Not applicable as per UCR guid this verification activity.	leline site visit not cond	ducted for
No.	Activit	y 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 no interview conducted.

No.	Interview		Date	Subject	
	Last name	First name	Affiliation		
1.	Takar	Batak	Engineer, HPDCAPL	02/08/2022	Meter calibration, project overview.

Sampling approach: Not applicable

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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			
 Application of methodologies and 	NIL	NIL	NIL
standardized baselines			
 Deviation from methodology and/or 	NIL	NIL	NIL
methodological tool			
 Clarification on applicability of 	NIL	NIL	NIL
methodology, tool and/or standardized			
baseline			
 Project boundary, sources and GHGs 	NIL	NIL	NIL
- Baseline scenario	NIL	NIL	NIL
 Estimation of emission reductions or 	NIL	NIL	NIL
net anthropogenic removals			
- Monitoring Report	NIL	1	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	1	NIL

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D. Project Verification findings

D.1 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	 Project activity is described through UCR approved PCN. UCR project communication agreement clearly defines the Project Proponent and Project Aggregator.
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.

D.2 General description of project activity

Means of Project Verification	The project activity involves the setting up of a run-of-river hydro power plant. The commissioning certificate and DPR are referred. The project capacity was verified through PPA, purchase order/ invoices of turbine and JMR provided. The power evacuation at the Substation is confirmed by electricity generation sheet.
Findings	 Project Commissioning date is mentioned in the commissioning certificate. Turbine Capacity is same as mentioned technical specifications. Project implementation and sale of energy abide the power purchase agreement.
Conclusion	The description of the project activity is verified to be true based on the review of PCN, MR, Commissioning Certificate, Purchase Order Copies and Technical Specification sheet.

D.3 Application and selection of methodologies and standardized baselines

D.3.1 Application of methodology and standardized baselines

Means of Project	Project has taken reference of CDM methodology A.M.S I.D. CDM
Verification	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 and PPA documents were referred.

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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.

D.3.2 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.

D.3.3 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 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.

D.3.4 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 value for emission considered. The baseline scenario is in accordance with UCR project verification standard and UCR project standard.

D.3.5 Estimation of emission reductions or net anthropogenic removal

Means of Project	Joint Meter Reading Reports, and General Project Eligibility Criteria and
Verification	Guidance, UCR Standard, page 4.

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Findings	None
Conclusion	Emission reductions are correctly calculated. The instruments are calibrated and hence the emission reduction is reported correctly and meets the requirements of UCR verification standard and UCR project standard.

D.3.6 Monitoring Report

Meter Calibration reports, Joint Meter Reading Reports, and General **Means of Project** Verification Project Eligibility Criteria and Guidance, UCR Standard, page 4. Energy meters installed at the site: **Existing Main meter** 2022.7.8 16 **Findings** CAR-1 issued as meter calibration report was not provided. CAR-1 is closed as meter testing reports are provided PP. Conclusion Only single tri-vector-meter (ABT) meter of class 0.02S is installed at project site and it was calibrated on 09/03/2017. The Calibration reports are verified with available serial number of meters. The errors are within permissible limits. Monitoring parameter as reported through MR adequately represents the parameters relevant to emission reduction calculation. The number of CoUs generation is calculated based on this accurately reported data. The calculation was done using excel sheet 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 and reported. The

monitoring report meets the requirements of UCR project verification

requirements

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D.4 Start date, crediting period and duration

Means of Project Verification	PCN and MR, Commissioning certificate, Detailed Project Report and PPA 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.

D.5 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.

D.6 Project Owner- Identification and communication

Means of Project Verification	PCN, Communication Agreement, MR, 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.

D.7 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)

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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 - 3 MW Small Scale Hydro Power project in Jemeithang, Arunachal Pradesh, India. (UCR ID – 028) for the period 23/01/2020 to 31/12/2021 amounts to 6886 CoUs (6886 tCO₂e).

G. Abbreviations

Abbreviations	Full texts
UCR	Universal Carbon Registry
CPCB	Central Pollution Control Board
PGCIL	Power Grid Corporation of India Ltd.
HPDCAPL	Hydropower Development Corporation of Arunachal Pradesh
	Ltd.
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.
tCO ₂ e	Tons of Carbon Dioxide Equivalent
kWh	Kilo-Watt Hour
MWh	Mega-Watt Hour
kW	Kilo-Watt
MW	Mega-Watt

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CDM	Clean Development Mechanism
SDG	Sustainable Development Goal
CAR	Corrective Action Request
CL	Clarification Request
FAR	Forward Action Request
GHG	Green House Gas
HEP	Hydro Electric Power

H. Competence of team members and technical reviewers

No.	Last name	First name	Affiliation	Technical Competence
1.	Amin	Shardul	Lead Verifier, Naturelink Solution Pvt Ltd.	Mr. Shardul Amin is post graduate having 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	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	HPDCAPL	JMR (2020- 2021)	PA
7	L&T	Meter Calibration	PA
8	HPDCAPL	PPA	PA
9	HPDCAPL	Commissioning Certificate	PA

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

Table 1. CLs from this Project Verification

CL ID	XX	Section no.:		Date:
Description	of CL			
Project Ow	ner's re	esponse		Date:
Documenta	tion pr	ovided by Project C	Owner	
UCR Projec	t Verifi	er assessment		Date:

Table 2. CARs from this Project Verification

CAR ID	01	Section	Monitoring	Date: 08/08/2022
		no.: D.3.6	Report	
Description	of CAR			
Kindly provi	de the meter calibrat	ion report.		
Project Ow	ner's response			Date: 25/08/22022
PP will provi	ide the calibration re	port.		
Documenta	tion provided by Pr	roject Owner		
L&T calibrat	ion report			
UCR Project	t Verifier assessme	ent		Date: 27/08/2022
Meters error	rs are within permiss	ible limit.		

Table 3. FARs from this Project Verification

FAR ID	xx	Section no.	Date: DD/MM/YY YY
Description	of FAR		·
Project Ow	ner's response		Date: DD/MM/YY YY
Documenta	ation provided by P	roject Owner	
UCR Projec	ct Verifier assessme	ent	Date: DD/MM/YY YY

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ANNEXURE I: Photographs of the power plant



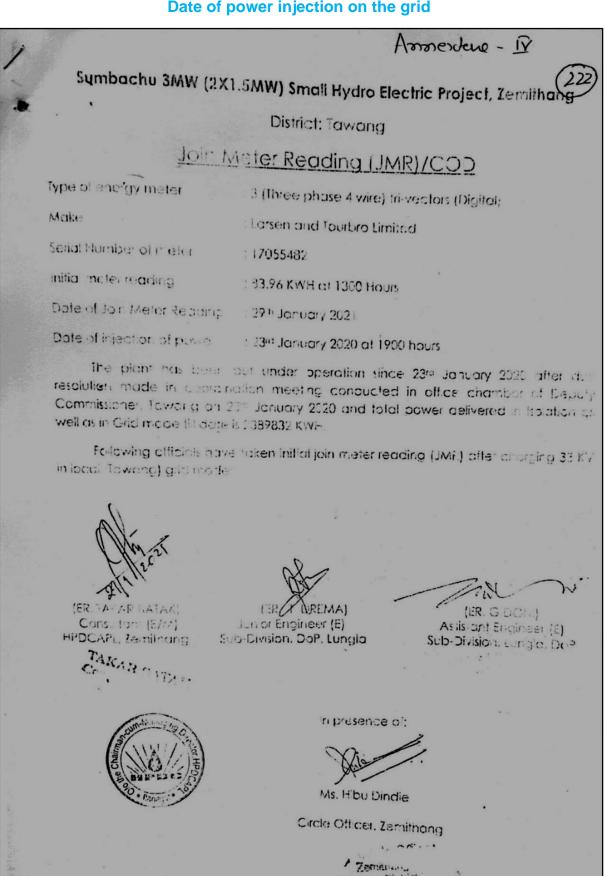






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Date of power injection on the grid



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JMR January 2020 and December 2021

the engineering					Date	:/.0.1./2020
	IOI.	nt meter re.	ading betwi	EEN Dopap & HP	DCAPL	
	MAIN M	ETER READIN	G (L & T, SL N	O - 17055482)	*	
SI.No.	Date	Present Reading	Previous Reading	Difference	M.F	Units (KWH)
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					Lungla Elect	rical Sub-Dynamical Sub-Dynami

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		0-17055482)	R READINGS(L&T,SI	MAIN METE			
	NITS(KWI	M.F	DIFFERENCE			DATE	St.No.
1 31-12-2021 260.53 248.75 11.78 30000 3	353400	30000	11.78	248.75	260.53	31-12-2021	1