Verification Report for Carbon Offset Units (CoUs) for Project (UCR ID Number: 102)

Title: “1.35 MW bundled Solar PV project in Himachal Pradesh, India”

Project Owner details:

M/S K.K.Kashyap Green Solar Energy Producer,

Address: SCO 832, 1st Floor, Shivalik Enclave, Manimajra, Chandigarh - 160101, India

Submitted by:

Naturelink Solutions Pvt. Ltd.
Approved Verifier, UCR
Contact No.: +91-7574804497
Email: audit@thenaturelink.in

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	22/07/2022
Title of the project activity	1.35 MW bundled Solar PV project in Himachal Pradesh, India
Project reference no. (as provided by UCR Program)	102
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.)	M/S K.K.Kashyap Green Solar Energy Producer
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	Creduce Technologies Private Limited- Address: 2-O-13,14 Housing Board Colony, Banswara, Rajasthan - 327001, India.
Country where project is located	India
Applied methodologies (Approved methodologies by UCR Standard used)	AMS-I.D.: "Grid connected renewable electricity generation", version 18
Project Verification Criteria: Mandatory requirements to be assessed	☒ UCR Standard ☒ Applicable Approved Methodology ☐ Applicable Legal requirements /rules of 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 Project Verifier Naturelink Solution Pvt. Ltd., certifies the following with respect to the UCR Project Activity "1.35 MW bundled Solar PV project in Himachal Pradesh, India". ☒ The Project Owner has correctly described the Project Activity in the Project Concept Note 2.0 (dated 16/06/2022) 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 3555 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 ID: 102 Date: 22/07/2022
Name of the authorised personnel of UCR Project Verifier and his/her signature with date	 22.07.22 Mr. Shardul Amin Lead Verifier Naturelink Solution Pvt. Ltd. Date: 22/07/2022

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 **"1.35 MW bundled Solar PV project in Himachal Pradesh, India UCR approved project ID:102**, to establish number of CoUs generated by project over the crediting period from 23.09.2019 to 31.12.2021 (both days included).

Verification for the period : 23.09.2019 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 1.35 MW bundled Solar PV project in Himachal Pradesh, India (UCR ID – 102) for the period 23.09.2019 to 31.12.2021 amounts to 3555 CoUs (3555 tCO2eq).

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 according to 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 installation and operation of solar PV power project of total 1350 kW. This is bundled project where 500, 500 and 350 kW capacity solar panels were installed at Chamba, Kasla and Swarghat in Himachal Pradesh. The Kasla and Swarghat project are at the same location and its metering point is also same and hence its meters serial number while Chamba project is a separate unit.

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 3555 tCO_{2eq} for the said period under verification, there on displacing 3951 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 1.35 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	23/09/2019
Carbon credits claimed up to	31/12/2021
Total ERs generated (tCO_{2eq})	3555 tCO_{2eq}
Leakage emission	0
Project Emission	0

B. Project Verification team, technical reviewer and approver:

No.	Role	Last name	First name	Affiliation	Involvement in		
					Doc review	Off-Site inspection	Interviews
1.	Lead Verifier	Amin	Shardul	Naturelink Solution Pvt Ltd.(UCR approved Verifier)	Yes	No	Yes

C. Means of Project Verification

C.1 Desk/document review

The project documents submitted to UCR approved verifier Naturelink Solution Pvt. Ltd. was reviewed by the technical expert and validated by the lead verifier. The documents reviewed involves 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 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 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.

C.2 On-Site inspection- Not applicable.

Date of off-site inspection: DD/MM/YYYY to DD/MM/YYYY	Not applicable as per UCR guideline site visit not conducted for this verification activity.

No.	Activity performed Off-Site	Site location	Date
1.			

C.3 Interviews:

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.	Sharma	Anish	Project In charge	20/07/2022	Project activities, JMRs and Meter Calibration

C.4 Sampling approach: Not Applicable

C.5 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	1	NIL	NIL
Application and selection of methodologies and standardized baselines	--	--	--
- Application of methodologies and standardized baselines	NIL	NIL	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	NIL	NIL	NIL
- Baseline scenario	NIL	NIL	NIL
- Estimation of emission reductions or net anthropogenic removals	NIL	NIL	NIL
- Monitoring Report	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	1	NIL	NIL

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	1. Project activity is described through UCR approved PCN. 2. 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	Document verification of Detailed Project Report, Commissioning certificate, Calibration reports, Power Plant and Meter Photographs and Joint Metering Reading Reports.
Findings	CL 1 was raised as pin point location (co-ordinates) of Chmaba 500 kW project does not show solar panels in google maps as it does in Kasla 500 kW and Swarghat 350 kW. 1. Project commissioning date is verified in accordance with the commissioning certificate. 2. Solar PV plant capacity is verified with the DPR JMRs and of the PV Plant.
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, DPR and PPA. CL-1 is closed as per the document received by PP.

D.3 Application and selection of methodologies and standardized baselines

D.3.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.

D.3.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 is taken as 0.9 as per UCR standard.
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 1.35 MW thus meeting the requirement of small-scale project.

D.3.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 revised PCN version 2.0. GHG source correctly identified and reported. The project meets the requirements of UCR project standard and verification standard

D.3.IV Baseline scenario

Means of Project Verification	PCN Section B.5 and General Project Eligibility Criteria and Guidance, UCR Standard.

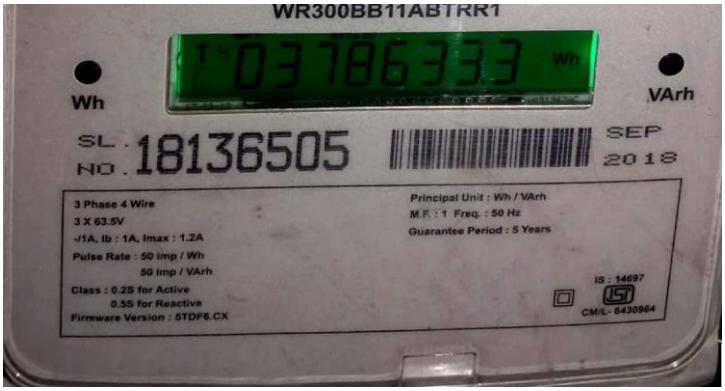
Findings	Declared information is correct and verified.
Conclusion	Baseline scenario is appropriately described. The conservative value for emission for each vintage year during the crediting period has been considered. The baseline scenario is in accordance with UCR project verification standard and UCR project standard.

D.3.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	None.
Conclusion	Emission reductions calculation sheet attached with MR was rounded down for each vintage year and the corrective action had been incorporated by the PP for the calculation of emission reductions. Monitoring parameter as reported after correction adequately represents the parameters relevant to emission reduction calculation. The emission factor for electricity is as per UCR standard for electricity component. Based on monitoring and emission reduction are correctly calculated and reported. The monitoring report meets the requirements of UCR project verification requirements.

D.3.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. Energy Meters installed at site: **<u>Meters at Chamba</u>** 

	Main Meter at Kasla and Swarghat  **Check Meter at Kasla and Swarghat** 
Findings	Kasla and Swarghat power projects are at same location and its metering point is also same.
Conclusion	Calibration reports of all the meters provided by PP certifies that errors are within permissible limits of IS-14697-1999 part-2, and details are mentioned below. Monitoring parameter as reported through MR adequately represents the parameters relevant to emission reduction calculation. The calibration report ensures the accuracy of data reported. The number of CoUs generation is calculated based on this accurately reported data. The calculation was done using excel

Project	Main Meter	Check Meter	Calibrated On
Kasla & Swarghat	18136505	18136517	20.02.2020
Chamba	17075517	18112824	13.09.2019

	sheet where all the parameters reported. The emission factor for electricity is as per UCR standard for electricity component. In the monitoring report, emission reduction calculations are correctly calculated and reported. The monitoring report meets the requirements of UCR project verification requirements.

D.4 Start date, crediting period and duration

Means of Project Verification	PCN 2.0, MR, Commissioning certificate, Detailed Project Report and JMRs documents were referred.
Findings	None
Conclusion	The start date and the generation of electricity was verified through the JMRs and commissioning letter the of each project. Its first month JMRs and commissioning certificate are attached in Annexure 2 for the reference.

D.5 Positive Environmental impacts

Means of Project Verification	PCN 2.0
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, 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. 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.

D.8 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 and Baseline, AMS.I.D – Grid connected renewable electricity generation (Version 18.0), the documents submitted during the verification including the PPA, DPR, Commissioning certificate, JMRs and calibration reports, Project Concept Note (PCN 2.0), Monitoring Report, I am able to certify that the emission reductions from the project - 1.35 MW bundled Solar PV project in Himachal Pradesh, India (UCR ID – 102) for the period 23.09.2019 to 31.12.2021 amounts to 3555 CoUs (3555 tCO2eq).

G. Abbreviations

Abbreviations	Full texts
UCR	Universal Carbon Registry
CPCB	Central Pollution Control Board
JMR	Joint meter reading
HPSEBL	Himachal Pradesh State Electricity Board Ltd
PGCIL	Power Grid Corporation of India Limited
MR	Monitoring report
PCN	Project Concept Note
VR	Verification Report
VS	Verification Statement
DAA	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.
tCO2eq	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	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	PP	Power Purchase Agreement	PA
7	Yash Metrology	Calibration report 2019,2020	PA
8	PP	Purchase order of Solar PV panel	PA
9	PP	Purchase order of Solar Inverter	PA
11	HPSEBL	Commissioning Date	PA
12	PP	Meter Photographs	PA
13	HPSEBL	JMR 2019 – 2021	PA

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

Table 1. CLs from this Project Verification

CL ID	**1**	**Section no.**	D.2 Project Verification Findings	**Date:** 19/07/2022
Description of CL				
Why google map co-ordinates of Chamba 500 kW power project doesn't show solar panels?				
Project Owner's response				**Date:** 19/07/2022
Google map doesn't show the power project at Chamba location and agreed.				
Documentation provided by Project Owner				
Project videos. Photos, PPA and DPR				
UCR Project Verifier assessment				**Date:** 21/07/2022
As per the documents shared by the project owner, it was confirmed that project exists at the given address.				

Table 2. CARs from this Project Verification

CAR ID		**Section no.**		**Date:**
Description of CAR				
Project Owner's response				**Date:**
Documentation provided by Project Owner				
UCR Project Verifier assessment				**Date:**

Table 3. FARs from this Project Verification

FAR ID		**Section no.**		**Date:** DD/MM/YYYY
Description of FAR				
Project Owner's response				**Date:** DD/MM/YYYY
Documentation provided by Project Owner				
UCR Project Verifier assessment				**Date:** DD/MM/YYYY

ANNEXURE I: Photographs of the Power Plant

Kasla and Swarghat Project Photos

A. Google Map Image of the Power Plant at Kasla amd Swarghat

PVJ POWER SOLUTIONS
NALAGARH, HP INDIA
www.pvjpower.in

3 PHASE OIL FILLED INVERTERTRANSFORMER

STANDARD	IS : 2026	TEMP OF COOLING	ONAN
KVA	500	TEMP RISE OIL °C	45
VOLTS AT INPUT	800	TEMP RISE WDG °C	50
OUTPUT	11000	MASS OF OIL Kg.	525
BIL OUTPUT	28 KV	TOTAL MASS Kg.	2250
BIL INPUT	03 KV	VOL. OF OIL L.	640
AMPERES AT OUTPUT (DELTA)	26.24	MONTH & YEAR OF MFG.	01/2020
INPUT (STAR)	36.08	SERIAL NO.	PVJ/2633
FREQUENCY Hz	50		
VECTOR GROUP	Ynd11		
IMPEDANCE %	4.5		
TAPPINGS	OFF-LOAD		

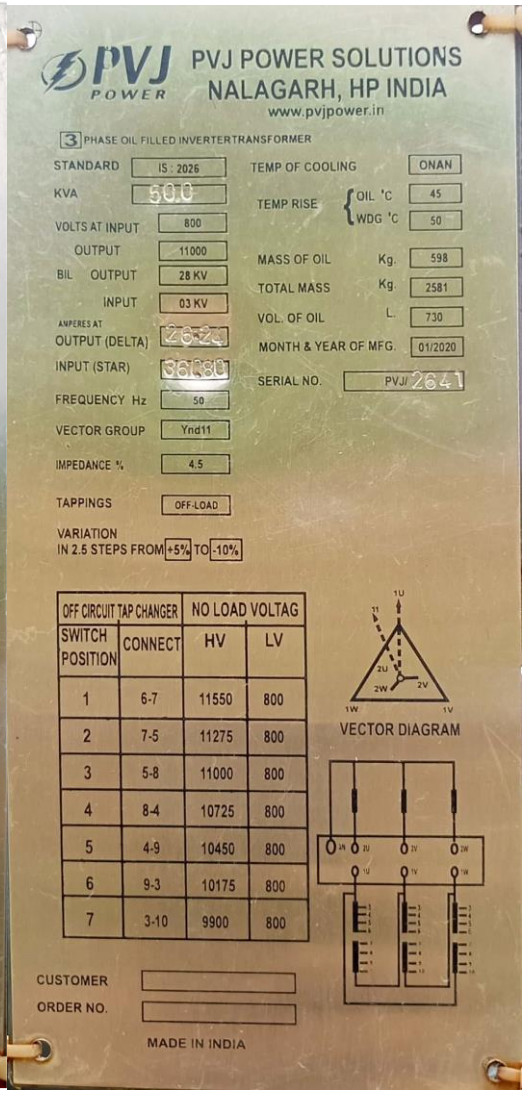
VARIATION
IN 2.5 STEPS FROM +5% TO -10%

OFF CIRCUIT TAP CHANGER		NO LOAD VOLTAG	
SWITCH POSITION	CONNECT	HV	LV
1	6-7	11550	800
2	7-5	11275	800
3	5-8	11000	800
4	8-4	10725	800
5	4-9	10450	800
6	9-3	10175	800
7	3-10	9900	800

VECTOR DIAGRAM

CUSTOMER
ORDER NO.

MADE IN INDIA



PVJ POWER SOLUTIONS
NALAGARH, HP INDIA
www.pvjpower.in

3 PHASE OIL FILLED INVERTERTRANSFORMER

STANDARD	IS : 2026	TEMP OF COOLING	ONAN
KVA	500	TEMP RISE OIL °C	45
VOLTS AT INPUT	800	TEMP RISE WDG °C	50
OUTPUT	11000	MASS OF OIL Kg.	598
BIL OUTPUT	28 KV	TOTAL MASS Kg.	2581
BIL INPUT	03 KV	VOL. OF OIL L.	730
AMPERES AT OUTPUT (DELTA)	26.24	MONTH & YEAR OF MFG.	01/2020
INPUT (STAR)	36.08	SERIAL NO.	PVJ/2641
FREQUENCY Hz	50		
VECTOR GROUP	Ynd11		
IMPEDANCE %	4.5		
TAPPINGS	OFF-LOAD		

VARIATION
IN 2.5 STEPS FROM +5% TO -10%

OFF CIRCUIT TAP CHANGER		NO LOAD VOLTAG	
SWITCH POSITION	CONNECT	HV	LV
1	6-7	11550	800
2	7-5	11275	800
3	5-8	11000	800
4	8-4	10725	800
5	4-9	10450	800
6	9-3	10175	800
7	3-10	9900	800

VECTOR DIAGRAM

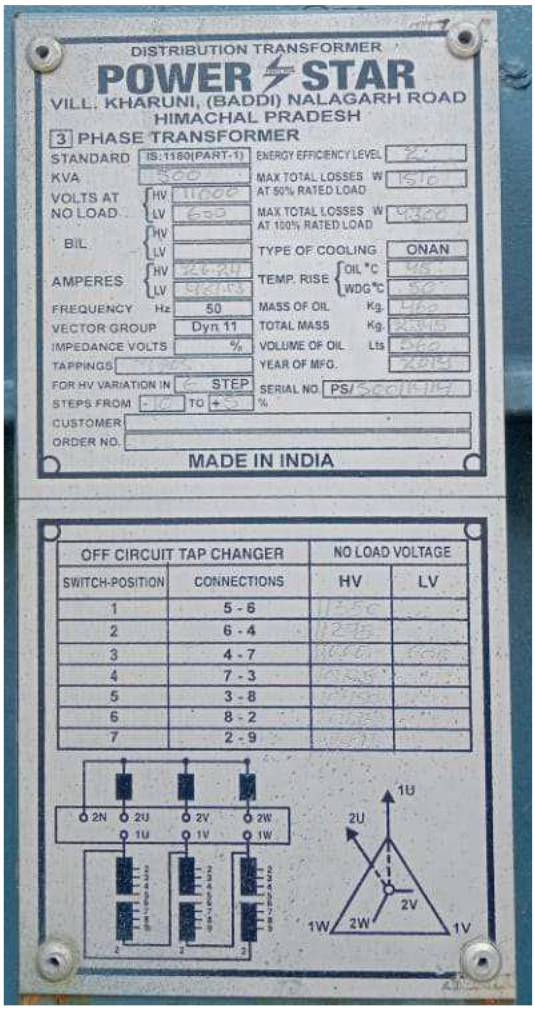
CUSTOMER
ORDER NO.

MADE IN INDIA


11KV VCB SWITCHBOARD
IC-OG PANEL
Assembled at
Metering Chamber
Breaker Chamber
SWARGHAT
PT Chamber


11KV VCB SWITCHBOARD
IC-OG PANEL
Assembled at
Authorized OEM for
ABB India Limited
Metering Chamber
Breaker Chamber
KASLA
PT Chamber

Chamba Project Photos



ANNEXURE II:

A. JMR of the first month of generation at Kasla and Swarghat Power Project

JMR - MARCH 2020

Joint Meter Reading Report of Kasla Solar Power Company(500KW) & Swarghat Solar Power Project (350KW) in Joint Mode

for the month of March 2020

Date : 16-03-2020 to 31-03-2020

NoHPSEBL/ESON/2019-20 – 5 Dated:-01/05/20

GENERATION RECORDED FROM ABT METER AT SUNNA-BAROG FEEDER (FEEDING POINT)

		MAIN METER READING (Sr. No. 18136505)		CHECK METER READING (Sr. No. 18136517)	
Sr.No.	DATE	IMPORT	EXPORT	IMPORT	EXPORT
1	16.03.2020(IR)	99	44.2	25.3	33.2
2	31.03.2020(FR)	11143.1	183.7	11298	254.4

1. At Sunna-Barog feeder(Feeding Point)

C.T. Ratio :- -/1A P.T. Ratio :- -/110V Main Meter

C.T. Ratio :- -/1A P.T. Ratio :- -/110V Check Meter

Adopted/Connected 11kv Line C.T-Ratio..... 40/1A

Adopted/Connected 11kv Line P.T-Ratio..... 11000/110V

Multiplication factor .....4000/1000wWH=4KWH

Units of Main & Check Meter..... WH

A) Total Units imported from Kasla Solar Power Company(500KW) & Swarghat Solar Power Project(350KW) to HPSEBL Nand

1) As per main Meter = (FR - IR))x 4

Meter Reading = (11143.1 - 99.0)x 4 **44176.40** Kwh

2) As per Check Meter = (FR - IR))x 4

Meter Reading = (11298 - 25.3)x 4 **45090.80** Kwh

B) Total Units Exported to Kasla Solar Power Company(500KW) & Swarghat Solar Power Project(350KW) from HPSEBL Nand

1) As per main Meter = (FR - IR))x 4

Meter Reading = (183.7 - 44.2)x 4 **558.00** Kwh

2) As per Check Meter = (FR - IR))x 4

Meter Reading = (254.4 - 33.2)x 4 **884.80** Kwh

Swarghat

NET SALEABLE ENERGY AT SUB-STATION

(A1 - B1) 43618.40 = 43618.40

ABSTRACT :-

1) Units supplied by Kasla Solar Power Company (500KW) = **23449.25** Kwh

2) Unit Supplied by Swarghat Solar Power Project (350KW) = **20169.15** Kwh

Plant Manager
Kasla Solar Power Co.
Vill.Kasla, Tehsil Nalagarh
Distt. Solan (H.P.)

Plant Manager
Swarghat Solar Power Project
Vill.Kasla, Tehsil Nalagarh
Distt. Solan (H.P.)

Incharge
Junior Engineer
Electrical Section
Swarghat

Assistant Engineer
Electrical Sub-Division
HPSEBL-Nand

Sr. Executive Engineer
Electrical Division HPSEBL
Nalagarh Distt. Solan HP

B. JMR of the first month of generation at Chamba Power Project

HPSEBL

No. HPSEBL/ESDN/Solar Power Plant/2019-20 250 Dated 1/10/19

JOINT METER READING

CHAMBA SOLAR POWER GENERATING STATION

JOINT METER READING IN R/O CHAMBA SOLAR POWER GENERTAING STATION AT 11 KV JOGHON FEEDER FOR THE MONTH OF SEPTEMEBER 2019

Sr. No.	Date	Main Meter Reading Sr. No.17075517		Check Meter Reading Sr. No. 18112824	
		Import (WH)	Export(WH)	Import(WH)	Export(WH)
1	23-09-2019	330.1	154.1	249.2	91.3
2	30-09-2019	2390.7	190.0	2059.2	127.0

Detail Of Main Meter and Check Meter

	Main Meter	Check Meter
Sr. No.	17075517	18112824
Make	L&T	L&T
CT-Ratio	-/1A	-/1A
PT-Ratio	-/110V	-/110V
2 Adopted /connected 11 KV Line CT Ratio		40/1A
3. Adopted/connected 11 KV Line PT ratio		11000/110v
4. Multiplying Fator		4000/1000WH(4KWH)
5. Units of Main & Check Meter		WH

I.Total KWH imported from Chamba Solar Power Generating Station to HPSEBL Nand

A) As per Main Meter	Final Reading	Initial Reading	Difference	MF	Total (KWH)
	2390.7	330.1	2060.6	4	8242.4
B) As per Check Meter	Final Reading	Initial Reading	Difference	MF	Total (KWH)
	2308.4	249.2	2059.2	4	8236.8

II.Total KWH exported to Chamba Solar Power Generating Station to HPSEBL Nand

A) As per Main Meter	Final Reading	Initial Reading	Difference	MF	Total (KWH)
	190.0	154.1	35.9	4	143.6
B) As per Check Meter	Final Reading	Initial Reading	Difference	MF	Total (KWH)
	127.0	91.3	35.7	4	142.8
Net Saleable energy=(8242.4-143.6)KWH=8098.8 KWH					

FOR Chamba Solar Power Generating Station

Authoised Signatory

Assistant Engineer
Electrical Sub Division
HPSEB Ltd. Nand
PH. No. 01795237250

Incharge(JE)
Electrical Section Swarghat

Sr. Executive Engineer
Electrical Division
HPSEB Ltd. Nalagarh
PH. No. 01795223097

C. Date of commissioning of Kasla

HIMACHAL PRADESH STATE ELECTRICITY BOARD LIMITED

(A State Govt. Undertaking)

No. HPSEBL/PHE/Kasla Solar-COD/2020 - 3475-81 Dated 21-03-2020

To

The Superintending Engineer (Electrical),
Directorate of Energy, Shanti Bhawan,
Phase-III, Sector- IV, Shimla-171009.

Subject:- **500 KWp Kasla Solar PV Power Project - Commissioning and achieving Commercial operation of Plant thereof.**

Sir,

In compliance to the Chief Engineer (Comm) office letter no. HPSEBL/ CE (Comm.)/PSP/ Solar/S-23 /2019-20-14607-18 dated 05.02.2020, Er. Ashwini Thakur, Sr. Executive Engineer (E) of this office visited the 500 KWp Kasla Solar PV Power Project on 16.03.2020 for its synchronisation and commissioning. The various test reports were reviewed and found in order. The final approval to energize the plant installations has been accorded by the Chief Electrical Inspector vide letter no. HIMVINI/Solar Power Project/Nand/2019-9029-33 dated 09.03.2020. The plant was found ready for synchronization with HPSEBL Grid and accordingly, the invertor was synchronised with the grid on dated 16.03.2020 in the presence of representative of this office, Independent Engineer and Field Engineer. The commissioning test were conducted/ witnessed and verified the Capacity and performance of the plant as per availability of irradiance in the presence of the representative of this office and Independent Engineer appointed by the Board on dated 16.03.2020.

Hence in view of the successful Commissioning the 500 KWp Kasla Solar PV

D. Date of commissioning of Swarghat

HIMACHAL PRADESH STATE ELECTRICITY BOARD LIMITED

(A State Govt. Undertaking)

No. HPSEBL/PHE/Swarghat Solar-COD/2020 - 3482-88 Dated 21-03-2020

To

The Superintending Engineer (Electrical),
Directorate of Energy, Shanti Bhawan,
Phase-III, Sector- IV, Shimla-171009.

Subject:- **350 KWp Swarghat Solar Power PV Project - Commissioning and achieving Commercial operation of Plant thereof.**

Sir,

In compliance to the Chief Engineer (Comm) office letter no. HPSEBL/ CE (Comm.)/PSP/ Solar/S-22 /2019-20-14740-51 dated 07.02.2020, Er. Ashwini Thakur, Sr. Executive Engineer (E) of this office visited the 350 KWp Swarghat Solar Power PV Project on 16.03.2020 for its synchronisation and commissioning. The various test reports were reviewed and found in order. The final approval to energize the plant installations has been accorded by the Chief Electrical Inspector vide letter no. HIMVINI/Solar Power Project/Nand/2019-9029-33 dated 09.03.2020. The plant was found ready for synchronization with HPSEBL Grid and accordingly, the invertor was synchronised with the grid on dated 16.03.2020 in the presence of representative of this office, Independent Engineer and Field Engineer. The commissioning test were conducted/ witnessed and verified the Capacity and performance of the plant as per availability of irradiance in the presence of the representative of this office and Independent Engineer appointed by the Board on dated 16.03.2020.

Hence in view of the successful Commissioning the 350 KWp Swarghat Solar

E. Date of commissioning of Chamba

HIMACHAL PRADESH STATE ELECTRICITY BOARD
(A State Govt. Undertaking)

Registered Office	Vidyut Bhawan HPSEBL, Shimla – 171004 (H.P.)
Number (CIN)	U40109HP2009SGC031255
GST No.	HPSEBL 02AACCH4894EHZB
Telephone Number	01907-262596 (Office/Fax)
Website Address	www.hpseb.com
Email	smallhydel@redifmail.com, sedphel@gmail.com

No. HPSEBL/PHE/Chamba Solar Power Gen. Station-COD/2019- 1584-91 Dated: - 25/9/19

To

The Chief Engineer (Energy),
Directorate of Energy, GOHP,
Shanti Bhawan, Phase-III,
Sector- IV, Shimla-171009.

Subject: - 0.5 MWp Chamba Solar Power Generating Station- Synchronizing, Commissioning and achieving Commercial operation of Plant thereof.

Sir,

In compliance to the Chief Engineer (Comm.) office letter no. HPSEBL/CE (Comm.)/PSP/ Solar/S-21/2018-19-6395-6406 dated 19.08.2019, Er. Sumit, Assistant Ex. Engineer (E) of this office visited the 0.5 MWp Chamba Solar Power Generating Station on dated 23.09.2019 for its commissioning. The various test reports were reviewed and found in order. The provisional approval to commission the above solar power plant has been accorded by the Chief Electrical Inspector vide office letter no. HIMVINI/Chamba Solar Power Generating Station/2019-3926-29 dated 11.09.2019. The plant was found ready for synchronization with HPSEBL Grid and accordingly, the units (invertors) were synchronised with the grid on dated 23.09.2019 in the presence of representative of this office, field Engineers, Independent Engineer and owner of the project. During synchronization, it was observed that all the units (Inverters) got synchronized with the grid successfully. The commissioning tests were conducted/ witnessed on all the Units (Inverters) individually and altogether and verified performance of the Units as per availability of irradiance on dated 23.09.2019.

Hence in view of the successful commissioning of all the Units (Invertors), 0.5 MWp Chamba Solar Power Generating Station is hereby recommended for trial run w.e.f. 23.09.2019 and for subsequent commercial operation after successful completion of 15 days Trial run w.e.f. 23.09.2019 to establish the reliability and stability of the Project.

The detailed report as submitted by representative of HPSEB Ltd. and Independent Engineer is enclosed for your information and further necessary action in the matter, please.