# Verification Report for Carbon Offset Units (CoUs) for Project (UCR ID Number: 152)

## Title: “1.6 MW Bundled Solar Power Project in Himachal Pradesh, India”

## Project Owner details:

M/S Evaz Solar Park PV Project. (500 kW) (Developer)

Address: Village Chatter, P.O. Bhira, Tehsil and Dist. Hamirpur, Himachal Pradesh, India.

M/S Ayannaz Solar Park PV Project (500 kW) (Developer)

Address: V.P.O Bhira, Hamirpur, Himachal Pradesh, India.

M/S Jaswal Solar PV Project (600 kW) (Developer)

Address: House No. 31, Pratap Nagar, Ward No. 3, Hamirpur, Himachal Pradesh, India.

## Submitted by:


Naturelink Solutions Pvt Ltd

Approved Verifier, UCR

Contact No.: +91 8320809503

Email: arjun@thenaturelink.in

| COVER PAGE<br>Project Verification Report Form (VR) | |
|---|---|
| | |
| **BASIC INFORMATION** | |
| **Name of approved UCR Project Verifier / Reference No.** | Mr. Arjun K Vyas<br>(Lead Verifier) |
| **Type of Accreditation** | ☐ CDM Accreditation<br>☐ ISO 14065 Accreditation<br>☒ UCR Approved Verifier |
| **Approved UCR Scopes and GHG Sectoral scopes for Project Verification** | Sectoral Scope: 01 Energy Industries |
| **Validity of UCR approval of Verifier** | 10/06/2022 onwards |
| **Completion date of this VR** | 10/06/2022 |
| **Title of the project activity** | 1.6 MW Bundled Solar Power Project in Himachal Pradesh, India |
| **Project reference no.** (as provided by UCR Program) | 152 |
| **Name of Entity requesting verification service**<br>(can be Project Owners themselves or any Entity having authorization of Project Owners, example aggregator.) | M/S Evaz Solar Park PV Project. (500 kW) (Developer)<br>M/S Ayannaz Solar Park PV Project (500 kW) (Developer)<br>M/S Jaswal Solar PV Project (600 kW) (Developer) |
| **Contact details of the representative of the Entity, requesting verification service**<br>(Focal Point assigned for all communications) | Creduce Technologies Private Limited-<br>Address: 2-O-13,14 Housing Board Colony, Banswara, Rajasthan - 327001, India. |
| **Country where project is located** | India |
| **Applied methodologies**<br>(Approved methodologies by UCR Standard used) | AMS-I.D.: "Grid connected renewable electricity generation", version 18 |
| **Project Verification Criteria:**<br>Mandatory requirements to be assessed | ☒ UCR Standard<br>☒ Applicable Approved Methodology |

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|---|---|
| | ☐ Applicable Legal requirements /rules of host country<br><br>☒ Eligibility of the Project Type<br><br>☒ Start date of the Project activity<br><br>☒ Meet applicability conditions in the applied methodology<br><br>☒ Credible Baseline<br><br>☒ Do No Harm Test<br><br>☒ Emission Reduction calculations<br><br>☒ Monitoring Report<br><br>☒ No GHG Double Counting<br><br>☐ Others (please mention below) |
| **Project Verification Criteria:**<br><br>Optional requirements to be assessed | ☒ Environmental Safeguards Standard and do-no-harm criteria<br><br>☐ Social Safeguards Standard do-no-harm criteria |
| **Project Verifier's Confirmation:**<br><br>The *UCR Project Verifier* has verified the UCR project activity and therefore confirms the following: | The UCR Project Verifier Arjun K Vyas, certifies the following with respect to the UCR Project Activity "1.6 MW Bundled Solar Power Project in Himachal Pradesh, India".<br><br>☒ The Project Owner has correctly described the Project Activity in the Project Concept Note (dated 27/05/2022) 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.<br><br>☒ The Project Activity is likely to generate GHG emission reductions amounting to the estimated 2,501 $TCO_{2e}$, 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.<br><br>☒ The Project Activity is not likely to cause any net-harm to the environment and/or society<br><br>☒ 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: 152<br><br>Date: 10/06/2022 |
| **Name of the authorised personnel of UCR Project Verifier and his/her signature with date** | Arjun K Vyas<br><br>  |

# 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 **"1.6 MW Bundled Solar Power Project in Himachal Pradesh, India UCR approved project ID:152**, to establish number of CoUs generated by project over the crediting period from 01/04/2020 to 31/12/2021 (both days included).

Verification for the period : 01/04/2020 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 1.6 MW Bundled Solar Power Project in Himachal Pradesh, India (UCR ID – 152) for the period 01/04/2020 to 31/12/2021 amounts to 2,501 CoUs (2,501 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 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 installation and operation of 1.6 MW solar PV power project. Detailed Project Reports and Purchase Order copies of the major equipment of the PV plants. The project location is in the village Chalet of district Una in Himachal Pradesh, India.

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 2,501 tCO2e for the said period under verification, there on displacing 2,779 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 | 01/04/2020 |
| Carbon credits claimed up to | 31/12/2021 |
| Total ERs generated (tCO2eq) | 2,501 tCO2eq |
| Leakage | 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. | Team Leader | Vyas | Arjun | Lead Verifier | Yes | No | Yes |
| 2. | Validator | Vyas | Arjun | Lead Verifier | Yes | No | Yes |
| 3. | Technical Expert | Shah | Kalindi | Outsourced Entity | Yes | No | No |

## C. Means of Project Verification

### Desk/document review

The project documents submitted to UCR approved verifier Mr. Arjun K Vyas was reviewed by the technical expert and validated by the verifier at Gandhinagar. 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.

### 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. | | | |

### 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. | | | | | |

### 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 physical visit of installation site was not conducted, meter photos, Testing 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 | -- | -- | -- |
| - 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** | 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** | 1. Project activity is described through UCR approved PCN.<br>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.<br><br>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.<br><br>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.<br><br>The Power Plant consists of the solar panels, solar inverters, ACDBs as verified by the name plates:<br><br>  |

| | |
|---|---|
| |  |
| **Findings** | 1. Project commissioning date is verified in accordance with the commissioning certificate and Joint metering report.<br>2. Solar PV plant capacity is verified with the Purchase order quantity and electrical inspection report of the PV Plant.<br>3. Project implementation and consumption of energy abide the power purchase agreement wherever applicable. |
| **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

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|---|---|
| **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** | Methodology has not been applied "as it is" rather it is referenced. 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 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 Testing reports, Joint Meter Reading Reports, and General Project Eligibility Criteria and Guidance, UCR Standard, page 4. |
| **Findings** | 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 |

| | |
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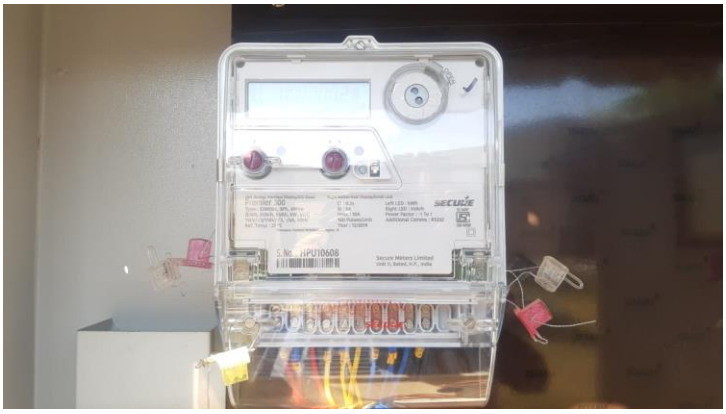
| | correctly and meets the requirements of UCR verification standard and UCR project standard. |

### (.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.<br><br>Energy Meters installed at site:<br><br>**Main Meter**<br><br>  <br><br>**Check Meter**<br><br>  |
| **Findings** | Declared information is correct and verified. |
| **Conclusion** | 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 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. |

## 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 - 1.6 MW Bundled Solar Power Project in Himachal Pradesh, India (UCR ID – 152) for the period 01/04/2020 to 31/12/2021 amounts to 2,501 CoUs (2,501 tCO2eq).

## G. Abbreviations

| Abbreviations | Full texts |
|---|---|
| UCR | Universal Carbon Registry |
| CPCB | Central Pollution Control Board |
| HPSEB | Himachal Pradesh State Electricity Board |
| 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. |
| 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. | Vyas | Arjun | Lead Verifier | Mr. Arjun K Vyas is post graduate engineer having more than 10 years of experience in the field of Energy, Power and Carbon mitigation projects. As a verifier, he has diverse portfolio of Renewable Energy Projects. Projects verified by him has gained more than 50 million CoUs. |
| 3. | Shah | Kalindi | Outsourced Entity | Mrs. Kalindi Shah is post graduate scientist in the field of Climate Change. Currently, she is acting as technical expert for reviewing the project documents and emission reduction calculations. |

## I. Document reviewed or referenced

| No. | Author | Title | References to the document | Provider |
|---|---|---|---|---|
| 1 | UCR | Communication Agreement | | PA |
| 2 | Creduce | Project Concept Note v2.0 | | PA |
| 3 | Creduce | Monitoring Report | | PA |
| 4 | Creduce | Avoidance of double accounting | | PA |
| 5 | Creduce | Emission Reduction Excel | | PA |
| 6 | HPSEB | Power Purchase Agreement | | PA |
| 7 | HPSEB | Metering and Testing Report 2020 | | PA |
| 8 | HPSEB | Metering and Testing Report 2021 | | PA |
| 9 | PP | Purchase order of Solar PV panel | | PA |
| 10 | PP | Purchase order of Solar Inverter | | PA |
| 11 | HPSEB | Commissioning Certificates | | PA |
| 12 | PP | Meter Photographs | | PA |
| 13 | HPSEB | JMR 2020 – 2021 | | 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/YYYY |
|---|---|---|---|---|
| **Description of CL** | | | | |
| | | | | |
| **Project Owner's response** | | | | **Date:** DD/MM/YYYY |
| | | | | |
| **Documentation provided by Project Owner** | | | | |
| | | | | |
| **UCR Project Verifier assessment** | | | | **Date:** DD/MM/YYYY |
| | | | | |
| | | | | |

### Table 2. CARs from this Project Verification

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

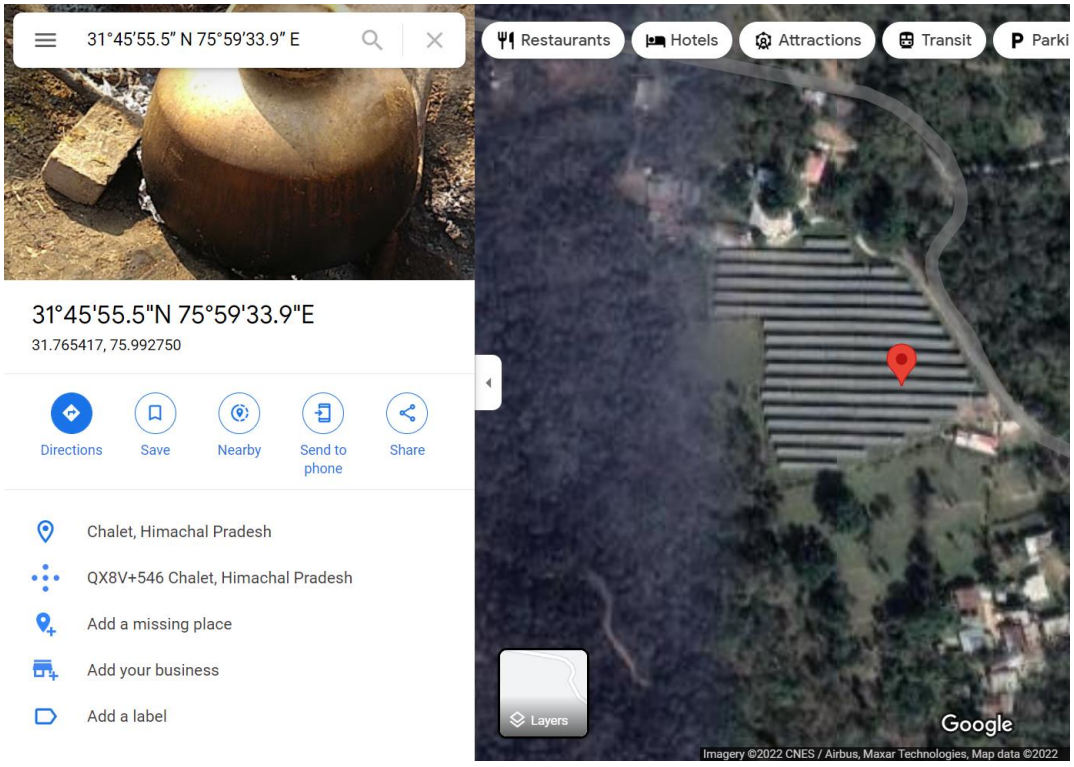
### Table 3. FARs from this Project Verification

| **FAR ID** | xx | **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

### A. Google Map Image of the Power Plant




### B. Solar PV Plant Implementation