MONITORING REPORT

CARBON OFFSET UNIT (CoU) PROJECT



Title	**:**	3.787 MW Bundled Roof Top Solar Projects in Gujarat, India.
Version	**:**	1.0
MR Date	**:**	11/01/2023
First CoU Issuance Period	**:**	02 Year and 08 Months
First Monitoring Duration	**:**	28/05/2020 to 31/12/2022

Monitoring Report (MR)

CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION

Title of the project activity	3.787 MW Bundled Roof Top Solar Projects in Gujarat, India
UCR Project Registration Number	098
Version	1.0
Completion date of the MR	11/01/2023
Monitoring period number and duration of this monitoring period	Monitoring Period Number: 01 Duration of this monitoring Period: (first and last days included (28/05/2020 to 31/12/2022)
Project participants	Creduce Technologies Private Limited (Aggregator) M/S. Radhalaxmi Spintex Pvt. Ltd. (999 kW) (Project owner) M/S. Vivekanand Cotspin LLP(998 kW) (Project Owner) M/S. Orito Polyfab Pvt. Ltd (990 kW) (Project Owner) M/S. Dharti Cotspin Pvt. Ltd.(800 kW) (Project Owner)
Host Party	India
Applied methodologies and standardized baselines	Applied Baseline Methodology: AMS-I. D: "Grid connected renewable electricity generation", version 18
Sectoral Scope	01 Energy industries (Renewable/Non-Renewable Sources)
Estimated amount of GHG emission reductions for this monitoring period	2020 : 1,469 CoUs (1,469 tCO_2e) 2021 : 5,194 CoUs (5,194 tCO_2e) 2022 : 5,417 CoUs (5,417 tCO2e)
Total:	12,080 CoUs (12,080 tCO_2e)

SECTION - A - Description of project activity

A.1 Purpose and General description of Carbon offset Unit (CoU) project activity

The proposed project activity with title under UCR "3.787 MW Bundled Roof Top Solar Projects in Gujarat, India.", is a grid connected renewable power generation activity which incorporates installation and operation of roof top Solar Photovoltaic power generation project in the state of Gujarat in India. The project has aggregated installed capacity of 3780 kW DC. The project is an operational activity with continuous reduction of GHG, currently being applied under "Universal Carbon Registry" (UCR).

A.1.1 Purpose of the project activity:

The project activity aims to harness Solar radiation of sun which is a renewable source, to generate electricity. The net generated electricity from the project activity is consumed by the manufacturing facility of the PP. The promoters of the project activity are 'M/S. Radhalaxmi Spintex Pvt. Ltd. (999 kW), M/S. Vivekanand Cotspin LLP (998 kW), M/S. Orito Polyfab Pvt. Ltd (990 kW) and M/S. Dharti Cotspin Pvt. Ltd. (800 kW)' (herein after called as Project Proponent or PP). PP has the 100% ownership of the project activity. In pre-project scenario the State utility was importing the required electricity from the NEWNE grid to meet its requirement of electrical energy. Currently, NEWNE grid is connected to large numbers of fossil fuel-based power plants. Hence, project activity is displacing the gross electricity generation i.e., 13,424 MWh from the NEWNE grid, which otherwise would have been imported from the grid. The project activity doesn't involve any GHG emission sources.

The annual and the total CO_2e emission reduction by the project activity over the defined monitoring period is as per **Annexure I.**

A.1.2 Description of the installed technology and equipment:

The project activity involves roof top Photovoltaic (PV) Plant having aggregated installed capacity of 3787 kW DC. The project activity uses Monocrystalline solar photovoltaic technology to generate clean energy. Solar radiation is converted directly into electricity by solar cells (photovoltaic cells). In such cells, a small electric voltage is generated when light strikes the junction between a metal and a semiconductor (such as silicon) or the junction between two different semiconductors. Photovoltaic module consists of several photovoltaic cells connected by circuits and sealed in an environmentally protective laminate, which forms the fundamental building blocks of the complete PV generating unit. Several PV panels mounted on a frame are termed as PV Array.

A.1.3 Relevant dates for the project activity (e.g., construction, commissioning, continued operation periods, etc.)

The duration of the crediting period corresponding to the monitoring period is covered in this monitoring report. Here the start date of generation has been considered as commissioning date of project.

UCR Project ID	:	**098**
Start Date of Crediting Period	:	28/05/2020

Name of the Entity	DC Capacity of each Entity	Date of Commissioning
M/S. Radhalaxmi Spintex Pvt. Ltd.	999 kW	12/01/2021
M/S Vivekanand Cotspin LLP	998 kW	18/01/2021
M/S Orito Polyfab Pvt. Ltd	990 kW	11/06/2020
M/S Dharti Cotspin Pvt. Ltd.	800 kW	28/05/2020

A.1.4 Total GHG emission reductions achieved or net anthropogenic GHG removals by sinks achieved in this monitoring period

The total GHG emission reductions achieved in this monitoring period are as follows:

Summary of the Project Activity and ERs Generated for the Monitoring Period	
Start date of this Monitoring Period	28/05/2020
Carbon credits claimed up to	31/12/2022
Total ERs generated (tCO_2e)	12,080 tCO_2e
Leakage Emission	0
Project Emission	0

A.1.5 Baseline Scenario

As per the approved consolidated methodology AMS-I.D. Version 18, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: **"The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise, been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid".**

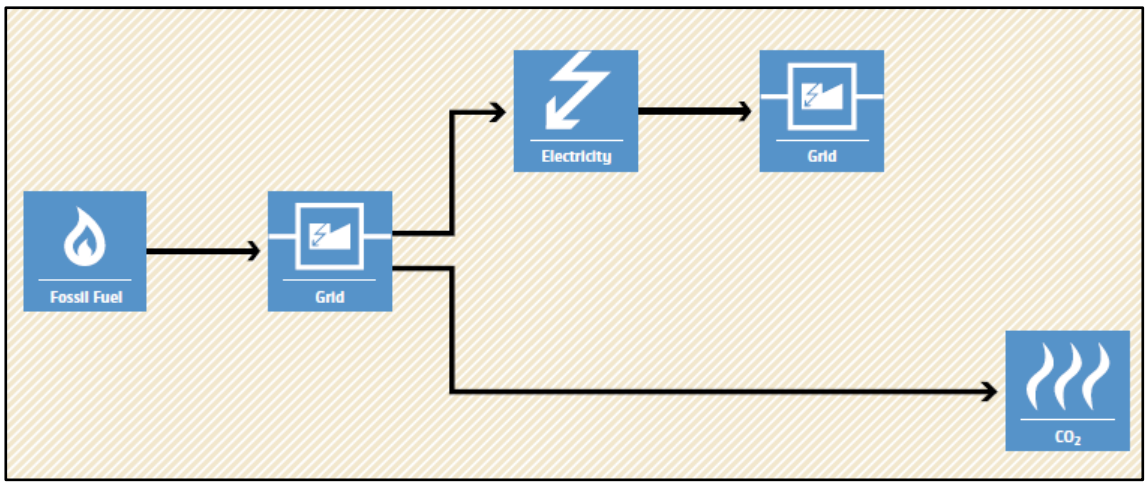


Figure 1 Baseline Scenario

A.2 Location of Project Activity

Country : India

State : Gujarat

The project sites are well connected from airport and railway station. The geographic co-ordinates of the project location have been given below:

Name of the Project	Village	District	Latitude and Longitude
M/S. Radhalaxmi Spintex Pvt. Ltd.	Lakhdhirgadh	Morbi	22°40'12.4"N, 70°44'28.4"E
M/S. Vivekanand Cotspin LLP	Rangpurda	Mehsana	23°15'28.4"N, 72°20'37.3"E
M/S. Orito Polyfab Pvt. Ltd	Agiyol	Sabarkantha	23°33'56.6"N, 73°02'16.3"E
M/S. Dharti Cotspin Pvt. Ltd.	Atkot	Rajkot	22°00'52.6"N, 71°07'17.8"E

The representative location map is included below:

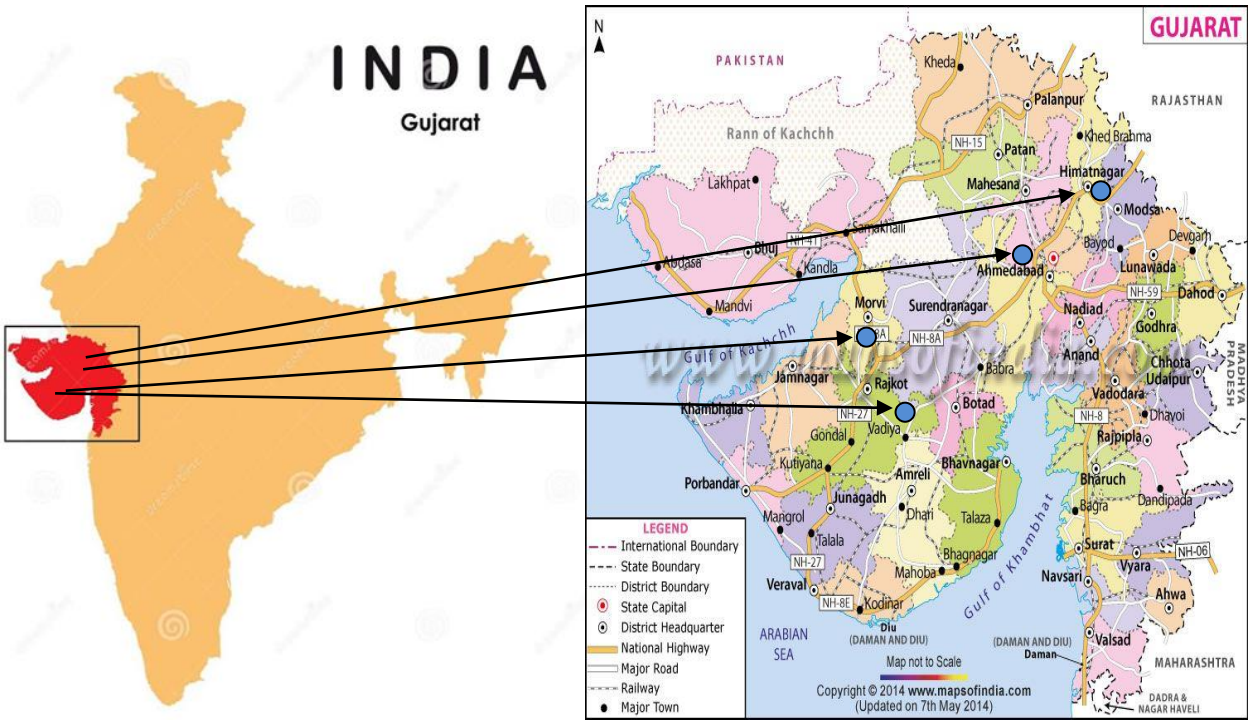


Figure-1- Location of the project activity (courtesy: google images and www.mapofindia.com)

A.3 Parties and project participants

Party (Host)	Participants
India	**Creduce Technologies Private Limited (Aggregator)** **Contact person** : Shailendra Singh Rao **Mobile** : +91 9016850742, 9601378723 **Address** : 2-O-13,14 Housing Board Colony, Banswara, Rajasthan -327001, India **M/S. Radhalaxmi Spintex Pvt. Ltd. (999 kW) (Project Owner)** Address: Sr.No.67, Nr. Khijadia Chokdi, Morbi - Rajkot Road, At: Lakhdhirgadh, Tal: Tankara, Dist: Morbi (Rajkot) Gujarat - 363650 India. **M/S Vivekanand Cotspin LLP (998 kW) (Project Owner)** Address: Surve No. 182/1, Thol Road, Rangpurda. Kadi, Mehsana - 382715. Gujarat India. **M/S Orito Polyfab Pvt. Ltd (990 kW) (Project Owner)** Address: NH-8, Agiol Desasan Road, Himatnagar, Sabarkantha, Gujarat - 383001 **M/S Dharti Cotspin Pvt. Ltd. (800 kW) (Project Owner)** Address: Sur No- 106/1- p1. ram sales, Nr. Bus station atkot road Jasdan, Ta. Jasdan, Dist. Rajkot, 360050, Gujarat, India

A.4 Methodologies and standardized baselines

Sectoral Scope : 01 Energy industries (Renewable/Non-Renewable Sources)

Type : Renewable Energy Projects

Category : AMS-I. D: "Grid connected renewable electricity generation", Version 18

A.5 Crediting period of project activity

Start date of the crediting period: 28/05/2020

Crediting period corresponding to this monitoring period: 28/05/2020 to 31/12/2022 (Both dates are inclusive)

A.6 Contact information of responsible persons/entities

Contact person : Shailendra Singh Rao
Mobile : +91 9016850742, 9601378723
Address : 2-O-13,14 Housing Board Colony, Banswara, Rajasthan -327001, India

SECTION - B - Implementation of project activity

B.1 Description of implemented registered project activity

B.1.1 Provide information on the implementation status of the project activity during this monitoring period in accordance with UCR PCN

The project consists of rooftop solar plant with an aggregated installed capacity of 3787 kW. The plant was commissioned on a different date by the respective authority of the Government of Gujarat. Here the start date of electricity generation is taken as the commissioning date, and the project wise commissioning date has been mentioned in Section A.1.3. The project generates clean energy by utilizing Solar Radiations.

B.1.2 For the description of the installed technology, technical process, and equipment, include diagrams, where appropriate

Photovoltaic module consists of several photovoltaic cells connected by circuits and sealed in an environmentally protective laminate, which forms the fundamental building blocks of the complete PV generating unit. Several PV panels mounted on a frame are termed as PV Array. The project activity has used the reliable and proven technology from supplier to ensure that an environmentally safe and sound technology is only being implemented in the proposed project activity leading to the GHG reduction.

Technical details of the machines installed are explained below:

Parameters	**999 kW**	**998 kW**	**990 kW**	**800 kW**
Total no of photovoltaic modules	2700 Nos	2243 Nos	2640 Nos.	1844 Nos.
Rating of Photovoltaic module	370 Wp	445 Wp	375 Wp	435 Wp
Module make	Solarium	Trina Solar	Renewsys	Longi solar
Technology	Mono- PERC	Mono-PERC	Mono-PERC	Mono-PERC
No. of Invertor	8 Nos	7 Nos	10 Nos.	9 Nos.
Invertor capacity	100 kW	120 kW	82.8 kW	82.8 kW
Invertors make	ABB	GoodWe	Solaredge	Solaredge
PV Connectors	MC4	MC4	MC4	MC4

B.2 Do no harm or impact test of the project activity

There was no harm identified from the project and hence no mitigation measures are applicable.

Rational: as per 'Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India)', final document on revised classification of Industrial Sectors under Red, Orange, Green and

White Categories (07/03/2016), it has been declared that Solar project activity falls under the "White category". White Category projects/industries do not require any Environmental Clearance such as 'Consent to Operate' from PCB as such project does not lead to any negative environmental impacts. Additionally, as per Indian Regulation, Environmental and Social Impact Assessment is not required for Solar Projects.

The Government of India has stipulated the following indicators for sustainable development in the interim approval guidelines for such projects which are contributing to GHG mitigations. The Ministry of Environment, Forests & Climate Change, has stipulated economic, social, environmental, and technological well-being as the four indicators of sustainable development. It has been envisaged that the project shall contribute to sustainable development using the following ways:

Social well-being: The project would help in generating direct and indirect employment benefits accruing out of ancillary units for installing and maintenance during operation of the project activity. It will lead to the development of infrastructure around the project area in terms of improved road network etc. and will also directly contribute to the development of renewable infrastructure in the region.

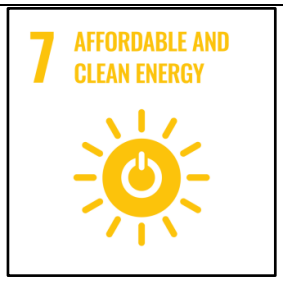
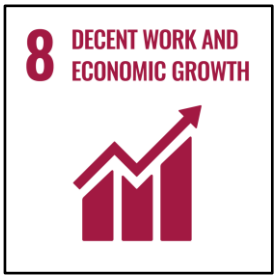
Environmental well-being: The project utilizes solar energy for generating electricity which is a clean source of energy. The project activity will not generate any air pollution, wind pollution or solid waste to the environment which otherwise would have been generated through fossil fuels. Also, it will contribute to the reduction of GHG emissions. Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.

Economic well-being: Being a renewable resource, using Solar energy to generate electricity contributes to the conservation of precious natural resources. The project contributes to economic sustainability through the promotion of decentralization of economic power, leading to the diversification of the national energy supply, which is dominated by conventional fuel-based generating units. Locally, improvement in infrastructure will provide new opportunities for industries and economic activities to be set up in the area. Apart from getting better employment opportunities, the local people will get better prices for their land, thereby resulting in overall economic development.

Technological well-being: The project activity leads to the promotion of 3787 kW PV power generation project into the region and will promote practice for small scale industries to reduce the dependence on carbon intensive grid supply to meet the captive consumption requirement of electrical energy and also increasing energy availability and improving quality of power under the service area. Hence, the project leads to technological well-being.

The project activity contributes to the following SDGs;

SDG	Description
Goal 7	➢ The project activity will generate 13,424 MWh of clean energy, which with increased shared will increase the affordability at a cheaper rate to end user.

	➢ The project activity will utilize Solar energy (renewal resource) to generate power. The project activity will increase the share of renewable resource-based electricity to global mix of energy consumption.
Goal 8 	➢ Decent work and economic growth. ➢ This project activity generates additional employment for skilled and unskilled, also the project situated in a remote area will provide employment opportunities to unskilled people from villages. Training on various aspects including safety, operational issues, and developing skill sets will also be provided to employees.
Goal 13 	➢ This 3.787 MW roof top solar power projects meets the SDG 13 goal by saving fossil fuel and producing clean energy. ➢ This project is expected to reduce 12,080 tons of CO_2 emissions during this monitoring period. ➢ **SDG 13** on clean energy is closely related and complementary. ➢ In a Greenfield project, electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants. Thereby the project activity reduces the dependence on fossil fuel-based generation units and as there are no associated emissions with this project it contributes to the reduction of greenhouse gases (GHG) emissions.

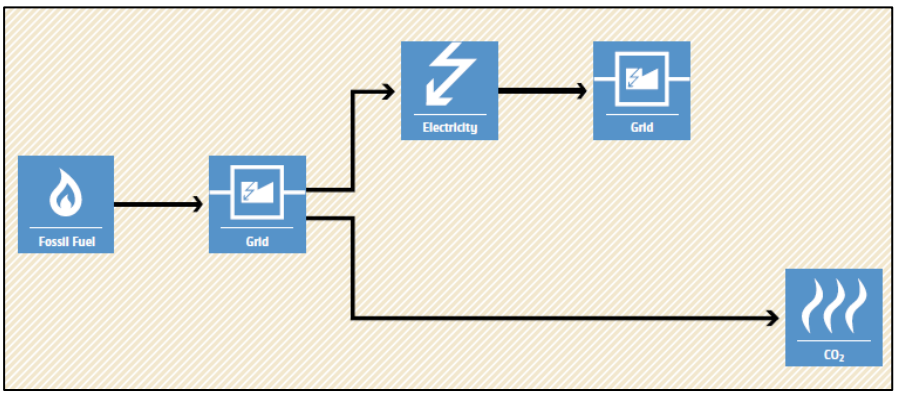
B.3 Baseline Emissions

The baseline scenario identified at the MR stage of the project activity is:

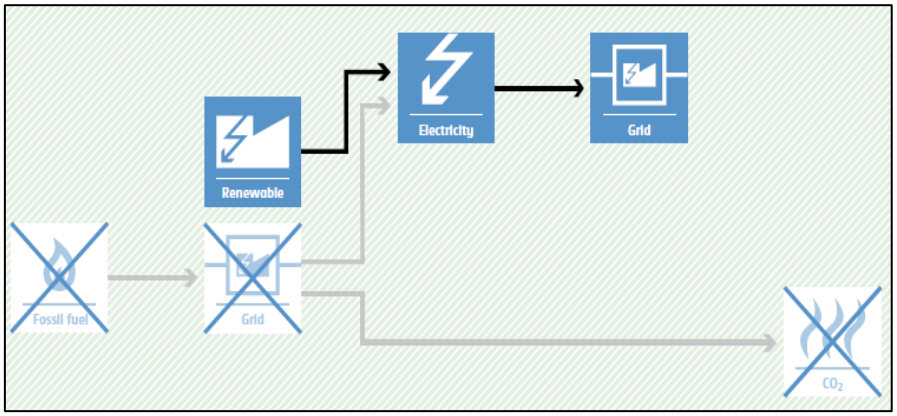
In the absence of the project activity, the equivalent amount of electricity would have been imported from the grid (which is connected to the unified Indian Grid system (NEWNE Grid)), which is carbon intensive due to being predominantly sourced from fossil fuel-based power plants. Hence, the baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario.

Schematic diagram showing the baseline scenario:

Baseline Scenario:



Project Scenario:



Thus, this project activity was a voluntary investment that replaced an equivalent amount of electricity from the Indian grid. The project proponent was not bound to incur this investment as it was not mandatory by national and sectoral policies. Thus, the continued operation of the project activity would continue to replace fossil fuel-based power plants and fight against the impacts of climate change. The Project Proponent hopes that revenues from the carbon credits generated will help repay the loans and help in the continued maintenance of this project activity.

B.4. De-bundling

This project activity is a bundled component of a four-project activity.

SECTION - C - Application of methodologies and standardized baselines

C.1 References to methodologies and standardized baselines

Sectoral scope	:	01, Energy industries (Renewable/Non-renewable sources)
Type	:	I-Renewable Energy Projects
Category	:	AMS. I.D. (Title: "Grid connected renewable electricity generation", version 18)

C.2 Applicability of methodologies and standardized baselines

The project activity involves the generation of grid-connected electricity from the construction and operation of a Solar Power based project for captive consumption.

The project activity has an installed capacity of 3.787 MW which will qualify for a small-scale project activity under Type-I of the Small-Scale methodology. The project status is corresponding to the methodology AMS-I.D., version 18, and the applicability of the methodology is discussed below:

Applicability Criterion	Project Case
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project activity is a Renewable Energy Project i.e., a roof top solar power projects which falls under applicability criteria option 1 (b) i.e., "Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling". Hence the project activity meets the given applicability criterion.
2. This methodology is applicable to project activities that: (a) Install a Greenfield plant; (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s).	The option (a) of applicability criteria 2 is applicable as project is a Greenfield plant/Unit. Hence the project activity meets the given applicability criterion.

3. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: a) The project activity is implemented in the existing reservoir, with no change in the volume of the reservoir; or b) The project activity is implemented in the existing reservoir, where the volume of the reservoir(s) is increased and the power density as per definitions given in the project emissions section, is greater than 4 W/m^2. c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m^2	The project activity involves installation of Solar PV (SPV). Hence, this criterion is not applicable.
4. If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	The proposed project is 3.787 MW Roof top solar power projects, i.e., only component is renewable power project below 15 MW, thus the criterion is not applicable to this project activity.
5. Combined heat and power (co-generation) systems are not eligible under this category.	This is not relevant to the project activity as the project involves only solar power generating units.
6. In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	The proposed project is a greenfield 3.787 MW Roof top solar power projects, i.e., the only component is a renewable power project below 15 MW, thus the criterion is not applicable to this project activity.
7. In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	This is a green field project and no expansion and retrofitting were carried out. Hence this criterion is not applicable.
8. In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid, then the baseline for the electricity component shall be in accordance with procedure prescribed	The proposed project is a greenfield 3.787 MW Roof top solar power projects; hence, this criterion is not applicable to this project activity.

under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	
9. In case biomass is sourced from dedicate plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	No biomass is involved, the project is only a roof top solar power projects and thus the criterion is not applicable to this project activity.

C.3 Applicability of double counting emission reductions

The project was not applied under any other GHG mechanism. Hence the project will not cause double accounting of carbon credits (i.e., CoUs).

C.4 Project boundary, sources, and greenhouse gases (GHGs)

As per applicable methodology AMS-I.D. Version 18.0, "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system."

Thus, the project boundary includes the Solar Photovoltaic Plant and the Indian grid system.

Source		Gas	Included?	Justification/Explanation
Baseline	Grid-connected electricity generation	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
		Other	No	No other GHG emissions were emitted from the project
Project	Greenfield Electric solar Power project Activity	CO_2	No	No CO_2 emissions are emitted from the project
		CH_4	No	Project activity does not emit CH_4
		N_2O	No	Project activity does not emit N_2O
		Other	No	No other emissions are emitted from the project

C.5 Establishment and description of the baseline scenario

As per the approved consolidated methodology AMS-I.D. Version 18, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

"The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid".

The project activity involves setting up of a new Solar power plant to harness the solar energy and use it for captive consumption i.e., the Indian grid system through wheeling and banking arrangement. In the absence of the project activity, the equivalent amount of power would have been generated by the operation of grid-connected fossil fuel-based power plants and by the addition of new fossil fuel-based generation sources into the grid. The power produced from other conventional sources which are predominantly fossil fuel-based. Hence, the baseline for the project activity is the equivalent amount of power produced at the Indian grid.

A "grid emission factor" refers to a CO_2 emission factor (tCO_2/MWh) that will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO_2/MWh for the 2013 - 2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2021, the combined margin emission factor calculated from the CEA database in India results in higher emissions than the default value. Hence, the same emission factor has been considered to calculate the emission reduction under a conservative approach.

C.5.1 Net GHG Emission Reductions and Removals

Thus, $ER_y = BE_y - PE_y - LE_y$

Where:

ER_y = Emission reductions in year y (tCO_2/y)

BE_y = Baseline Emissions in year y (t CO_2/y)

PE_y = Project emissions in year y (tCO_2/y)

LE_y = Leakage emissions in year y (tCO_2/y)

- ***Baseline Emissions***

Baseline emissions include only CO_2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,y}$$

BE_y = Baseline emissions in year y (t CO_2)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)

$EF_{grid,y}$ = UCR recommended emission factor of 0.9 tCO_2/MWh has been considered. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4)

Hence

Baseline Emissions Calculation				
Sr.No	Year	EGpy (MWh)	EFgrid,y	BEy
1	2020	1633.09	0.9	1469
2	2021	5771.81	0.9	5194
3	2022	6019.38	0.9	5417
4	BE (tCO_2e) for the period of 2020 to 2022			12080

Estimated annual baseline emission reductions (BE_y)

= 13,424 MWh/year *0.9 tCO_2/MWh

= 12,080 tCO_2/year

- ***Project Emissions***

As per Paragraph 39 of AMS-I.D. version-18, only emissions associated with fossil fuel combustion, emissions from the operation of geothermal power plants due to the release of non-condensable gases, emissions from a water reservoir of Hydro should be accounted for the project emission. Since the project activity is a Solar electric power project, project emission for renewable energy plants is nil.

Thus, PE = 0

- ***Leakage Emission***

As per paragraph 42 of AMS-I.D. version-18, 'If the energy generating equipment is transferred from another activity, leakage is to be considered.' In the project activity, there is no transfer of energy-generating equipment and therefore the leakage from the project activity is considered zero.

Hence, LE = 0

The actual emission reduction achieved during the first CoU period is calculated below:

Hence Net GHG emission reduction, = 12,080-0-0 = 12,080 tCO_2/year (i.e., 12,080 CoUs/year)

C.6 Prior History

The project was not applied under any other GHG mechanism. Hence the project will not cause double accounting of carbon credits (i.e., CoUs).

C.7 Changes to the start date of crediting

The crediting period under UCR has been considered from the date of the generation of electricity. Hence, the start date of crediting period is changed to 28/05/2020.

C.8 Permanent changes from MR monitoring plan, applied methodology, or applied standardized baseline

Not applicable.

C.9 Monitoring period number and duration

Total Monitoring Period: 02 Years and 08 Months

Date: 28/05/2020 to 31/12/2022 (inclusive of both dates).

C.10 Monitoring Plan

The project activity essentially involves generation of electricity from Solar Radiations, the employed SPV can only convert Solar energy into electrical energy and cannot use any other input fuel for electricity generation, thus no special ways and means are required to monitor leakage from the project activity. The recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the state power utility.

Data and Parameters available :

Data / Parameter	UCR recommended emission factor
Data unit	tCO_2 /MWh
Description	A "grid emission factor" refers to a CO_2 emission factor (tCO_2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO_2/MWh for the 2013 - 2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.
Source of data	https://a23e347601d72166dcd6-16da518ed3035d35cf0439f1cdf449c9.ssl.cf2.rackcdn.com//Documents/UCRCoUStandardAug2022updatedVer6_090822220127104470.pdf
Value applied	0.9
Measurement methods and procedures	-
Monitoring frequency	Fixed parameter
Purpose of Data	For the calculation of the Emission Factor of the grid
Additional Comment	The combined margin emission factor as per CEA database (current version 16, Year 2021) results into higher emission factor. Hence for 2021 vintage UCR default emission factor remains conservative.

Data and Parameters to be monitored (ex-post monitoring values):

Data / Parameter	$EG_{PJ,facility, y}$
Data unit	MWh
Description	Net electricity supplied to the NEWNE grid facility by the project activity during 28/05/2020 to 31/12/2022.
Source of data	Invertor generated data through the computer monitoring system
Measurement procedures (if any):	Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring Recording Frequency: Continuous monitoring and Monthly recording from Energy Meters, Summarized Annually Archiving Policy: Paper & Electronic Calibration frequency: 5 years (as per CEA provision) The total electricity generation by the Solar power plant is recorded at the plant facility, at the end of every month,
Measurement Frequency:	Monthly
Value applied:	13,424 (Ex-post estimate)
QA/QC procedures applied:	Continuous monitoring, hourly measurement monthly recording. Tri-vector (TVM)/ABT energy meters with accuracy class 0.2s
Purpose of data:	The Data/Parameter is required to calculate the baseline emission.
Any comment:	Data will be archived electronically for a period of 36 months beyond the end of crediting period.

ANNEXURE I (Emission Reduction Calculation)

3.787 MW Bundled Roof Top Solar Projects in Gujarat, India.

Month - Wise Energy Delivered to Grid (in kWh)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2020	0	0	0	0	1,850	1,83,892	2,36,440	1,70,312	2,53,080	2,85,300	2,49,748	2,52,468
2021	3,53,107	4,80,979	6,23,451	6,11,777	6,10,276	5,15,854	4,31,968	4,29,639	3,59,870	5,11,373	4,32,201	4,11,311
2022	4,77,790	4,93,336	6,02,418	6,10,644	6,15,410	5,55,954	3,38,622	4,04,332	4,79,905	5,32,272	4,59,593	4,49,103

Year-Wise Emission reduction calculation for the project activity

Year	Total No. of Electricity delivered in kWh	Recommended emission factor	Total CoUs generated
2020	16,33,090	0.9	1,469
2021	57,71,806	0.9	5,194
2022	60,19,379	0.9	5,417
Total CoUs to be issued for the first monitoring period (Year: 2020 to 2022)			12,080

Electricity Generation (kWh)

Year	Radhalaxmi	Vivekanand	Orito	Dharti	Total
2020	0	0	820512	812578	16,33,090
2021	1461060	1234428	1534848	1541470	57,71,806
2022	1579687	1344344	1552448	1542900	60,19,379