Verification Report for

Project : 2.7MW Captive Solar Power Project GARL, Gujarat.

UCR Project ID : 363

Name of Verifier	SQAC Certification Pvt. Ltd.
Date of Issue	November 03, 2023
Project Proponent	M/s Gokul Agro Resources Limited (GARL)
Work carried by	Mr. Santosh Nair
Work reviewed by	Mr. Praful Shinganapurkar

Summary:

SQAC Certification Pvt. Ltd. has performed verification of the "2.7MW Captive Solar Power Project GARL, Gujarat" The purpose of the proposed project activity is to generate electricity using a clean and renewable source of energy i.e., solar radiation, for captive use in Bhuj district in the state of Gujarat.

The project activity meets the following UN SDG's:

Verification for the period**: 25/11/2020 to 31/12/2022** (2 years 01 month 05 days)

The GHG emission reductions were calculated on the basis of UCR Protocols which draws reference from UCR Protocol Standard Baseline & Emission Factor and Type I (Renewable Energy Projects) UNFCCC Methodology Category AMS-I.F. Small-scale Methodology, Renewable electricity generation for captive use and mini-grid Ver 05. The verification was done remotely by way of video calls / verification, phone calls and submission of documents for verification through emails.

SQAC is able to certify that the emission reductions from the 2.7MW Captive Solar Power Project GARL, Gujarat, (UCR ID – 363) for the period **25/11/2020 to 31/12/2022** amounts to **8,119 CoUs** (**8,119** tCO_2eq)

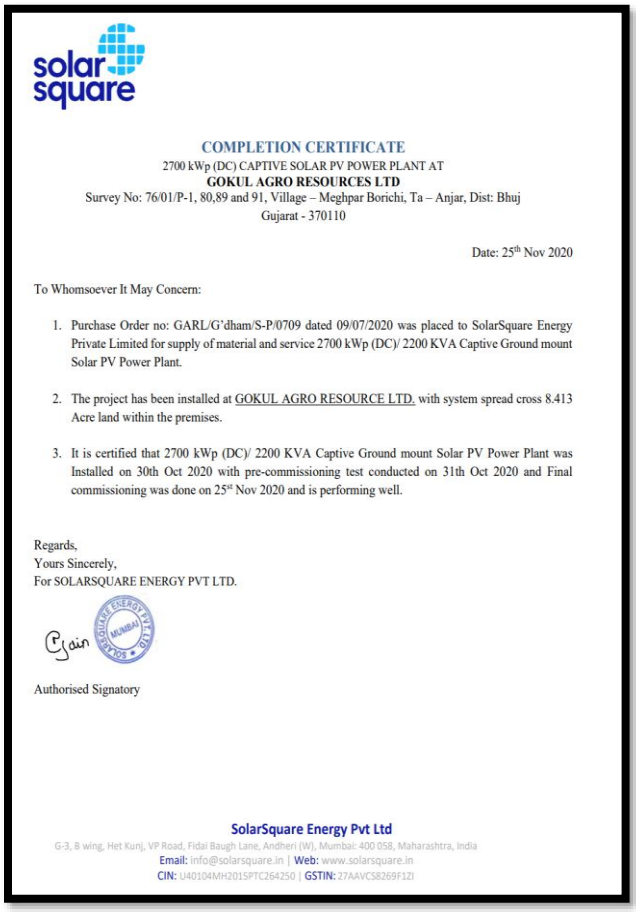
Detailed Verification Report:

Purpose:

This is a single project activity of total installed capacity 2.7 MW, which is a ground mounted captive solar power generation activity by M/s Gokul Agro Resources Limited (GARL, Project Proponent or PP). PP has the full ownership of the project activity. The project activity of 2.7 MW is the installation and operation of a solar power plant in Bhuj district in the state of Gujarat are per the details listed below:

Village	District	Type	Total installed capacity KW	Commissioning Date
Meghpar Borichi	Bhuj	Ground Mounted - Captive	2700 kWp (DC) / 2200 KVA	25-11-2020

The purpose of the proposed project activity is to generate electricity for captive usage using a clean and renewable source of energy i.e., solar radiation. The project activity generated approximately 9023 MWh of renewable electricity over the entire monitored period.



COMPLETION CERTIFICATE

2700 kWp (DC) CAPTIVE SOLAR PV POWER PLANT AT
GOKUL AGRO RESOURCES LTD
Survey No: 76/01/P-1, 80,89 and 91, Village – Meghpar Borichi, Ta – Anjar, Dist: Bhuj
Gujarat - 370110

Date: 25th Nov 2020

To Whomsoever It May Concern:

1. Purchase Order no: GARL/G'dham/S-P/0709 dated 09/07/2020 was placed to SolarSquare Energy Private Limited for supply of material and service 2700 kWp (DC)/ 2200 KVA Captive Ground mount Solar PV Power Plant.
2. The project has been installed at GOKUL AGRO RESOURCE LTD. with system spread cross 8.413 Acre land within the premises.
3. It is certified that 2700 kWp (DC)/ 2200 KVA Captive Ground mount Solar PV Power Plant was Installed on 30th Oct 2020 with pre-commissioning test conducted on 31th Oct 2020 and Final commissioning was done on 25st Nov 2020 and is performing well.

Regards,
Yours Sincerely,
For SOLARSQUARE ENERGY PVT LTD.

Authorised Signatory

SolarSquare Energy Pvt Ltd
G-3, B wing, Het Kunj, VP Road, Fidai Baugh Lane, Andheri (W), Mumbai: 400 058, Maharashtra, India
Email: info@solarsquare.in | Web: www.solarsquare.in
CIN: U40104MH2015PTC264250 | GSTIN: 27AAVCS8269F1ZI

INSTOLATION AND CHARGING CERTIFICATE
2700kWp (DC) CAPTIVE SOLAR PV POWER PLANT AT

GOKUL AGRO RESOURCES LTD
Survey No: 76/01/P-1, 80,89 and 91, Village – MeghparBorichi, Ta – Anjar, Dist: Bhuj
Gujarat - 370110

Date: 25thNov 2020

To Whomsoever It May Concern:

1. Purchase Order no.: GARL/G'dham/S-P/1224 dated 24/12/2020 was placed to Solar Square Energy Private Limited for supply of material and service 2700kWp (DC)/ 2200 KVA Captive Ground mount Solar PV Power Plant.
2. It is certified that 2700kWp (DC)/ 2200 KVA Captive Ground mount Solar PV Power Plant was Installed, tested and Final charging of complete system was done on25st Nov 2020.

Regards,
Yours Sincerely,
For GOKUL AGRO RESOURCES LTD.

Authorised Signatory

Reg. Off : Office No. 801-805, Dwarkesh Business Hub, Survey No. 126/1, Opp. Visamo Society, B/H Atishay Belleview, Motera, Ahmedabad - 380 005. Gujarat (India)
079-67123500 / 501, Fax : 079-67123502, CIN : L15142GJ2014PLC080010
Plant : Survey No. 76/1/P-1, 80, 89 & 91. Near Sharma Resort, Galpadar Road, Meghpar – Borichi, Tal. – Anjar 370110, Dist – Kachchh, Gujarat (India).
9879112574
garl@gokulagro.com www.gokulagro.com

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

Summary of the Project Activity and ERs Generated for the Monitoring Period	
Start date of this Monitoring Period	25/11/2020
Carbon credits s (CoUs) claimed up to	31/12/2022
Total ERs generated in this crediting period (tCO_{2eq})	8,119 tCO_2eq (expressed as CoUs)
Project Emission	0
Leakage	0

As per the UNFCCC Methodology, eligible projects comprise of renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s).

The project activity displaces electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit, i.e., in the absence of the

project activity, the users would have been supplied electricity from:

(a) A national or a regional grid (grid hereafter)

The baseline scenario identified as per the approved consolidated methodology AMS-I.F. Version 05 is:

The product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor.

Location of project activity:

Country	: India
Survey No	: 76/01/P-1, 80, 89 and 91,
Village	: Meghpar Borichi,
Taluka	: Anjar,
District	: Bhuj
State	: Gujarat - 370110
Latitude	: 23.10
Longitude	: 70.09

The representative location map is included below:

Scope:

The scope covers verification of emission reductions from the project 2.7MW Captive Solar Power Project GARL, Gujarat (UCR ID – 363)

Criteria:

Verification criteria is as per the requirements of UCR Standard.

Description of project:

The project activity is using clean renewable solar energy to produce electricity. The applied technology is considered to be one of the most safe and sound environment friendly technologies. The purpose of the proposed project activity is to generate electricity for captive usage using a clean and renewable source of energy i.e., solar radiation. The generation of power from solar photovoltaic is a clean technology as there is no fossil fuel fired or no GHG gases are emitted during the process. Thus, project activity leads to reduce the GHG emissions as it displaces power from fossil fuel-based electricity generation in the regional grid.

Parameter	**Description**
Total number of Photovoltaic Modules	6836
Rating of Photovoltaic Module	0.395 KWP- Kilo watt peak / 395WP- watt peak
Technology	Poly Crystalline Silicon
Solar Panel Maker	Waaree Energies Limited
Meter Maker	Secure
Commissioning Date	25/11/2020

The project activity displaces electricity from an electricity distribution system that is supplied by at least one fossil fuel fired generating unit, i.e., in the absence of the project activity, the users would have been supplied electricity from: A national or a regional grid (grid hereafter).

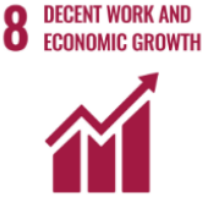
	Type	Serial Number	Manufacturer	Panel Name / Manufacturer
Meter Make and Details	Multifunction Meter	X1313197	SECURE	VCB / Siemens
	Multifunction Meter	X1050917	SECURE	LBS / Siemens
	Multifunction Meter	X1300279	SECURE	ACDB / SRR
	Multifunction Meter	X1926301	SECURE	ACDB2 / SRR

United Nations Sustainable Development Goals:

The project activity generates electrical power using solar energy there by displacing non-renewable fossil resources resulting in sustainable, economic and environmental development. In the absence of the project activity equivalent amount of power generation would have taken place through fossil fuel dominated power generating stations.

Thus, the renewable energy generation from project activity will result in reduction of the greenhouse gas emissions. Positive contribution of the project to the following Sustainable Development Goals:

- ✓ SDG13: Climate Action
- ✓ SDG 7: Affordable and Clean Energy
- ✓ SDG 8: Decent Work and Economic Growth

Development Goals	Targeted SDG	Target Indicator (SDG Indicator)
 SDG 13: Climate Action	13.2: Integrate climate change measures into national policies, strategies and planning Target: 8119 tCO_2 avoided for the Monitored Period 01	13.2.1: Number of countries that have communicated establishment or operationalization of an integrated policy/ strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
 SDG 7: Affordable and Clean Energy	7.2: By 2030, increase substantially the share of renewable energy in the global energy mix Target: 9023 MWh renewable power supplied for the Monitored Period 01	7.2.1: Renewable energy share in the total final energy consumption
 SDG 8: Decent Work and Economic Growth	8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value Target: Training, O&M staff	8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

Level of Assurance:

The verification report is based on the information collected remotely by way of video calls / verification, phone calls and submission of documents for verification through emails like Project Concept Note (PCN) / Monitoring Report (MR), submitted to SQAC. The verification opinion is assured provided the credibility of all the above.

Review of the following documentation was done by SQAC Lead Verifier Mr. Santosh Nair who is experienced in such projects.

Documentation Verified:

- Project Concept Note (PCN)
- Monitoring Report (MR)
- Commissioning Report
- Calibration reports
- Data provided upon request of all the documents of the related project.

Sampling:

Not applicable

Persons interviewed:

1. Mr. Hemal S. Sonigra – ISO Coordinator : Gokul Agro Resources Limited.
2. Mr. Vijay Vala - Solar plant Incharge (O/M engineer) : Gokul Agro Resources Limited.
3. Mr. Ashwin Patel - Electrical HOD : Gokul Agro Resources Limited.

SECURE

METER TEST CERTIFICATE

Serial number : X1050917

Accuracy Class : 0.2s Ref. Standard : IEC : 62053-22

1. AC VOLTAGE TEST :- PASS
2. TEST OF NO LOAD CONDITION :- PASS
3. TESTING OF STARTING CURRENT CONDITION :- PASS
4. INSULATION RESISTANCE TEST :- PASS
5. POWER CONSUMPTION TEST :- PASS
6. TEST OF METER CONSTANT :- PASS
7. LIMITS OF ERROR

7(a) Conditions-Vref = 57.7-240V Ib = 1-5A Amb. Temp. = 23°C +/- 2°C Relative Humidity < 70%.
7(b) Errors shown in the tables are given after accounting the error of reference meter.
7(c) Reference meter serial no. 05004B407 class 0.02S traceable to national & international standards.
7(d) Errors shown in the tables are taken at Ib = 1A(100%)

IMPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.02	0.04	0.03
500	0.02	0.03	0.03
100	0.02	0.02	0.06
50	0.09	0.02	0.04
10	0.08	0.01	0.03
5			0.01
2	0.05	-0.10	
1			-0.18

(f) %Reactive Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead
1000	0.03	-0.01
500	0.02	0.03
100	0.03	0.02
50	0.01	0.09
10	0.03	0.10

EXPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	0.01	0.03	0.02
500	0.02	0.03	0.03
100	0.05	0.03	0.03
50	0.08	0.02	0.03
10	0.12	0.03	0.05
5			0.05
2	0.26	0.02	
1			-0.03

Date :- 22/04/2019

This is a computer generated test certificate.No signature required.

Secure Meters Limited
F 373-380
Bhamashah Industrial Area
Kaladwas, Udaipur 313 003, India

p: +91 294 2650301-305
f: +91 294 2650310
e: udaipur@securemeters.com

Regd. & Head Office
"E" Class
Pratapnagar Industrial Area
Udaipur 313 003, India
CIN No.: U74899RJ1987PLC029106

p: +91 294 2492300-305
f: +91 294 2492310
e: mktg@securemeters.com
www.securemeters.com

SECURE

METER TEST CERTIFICATE

Serial number : X1313197

Accuracy Class : 0.2s Ref. Standard : IEC : 62053-22

1. AC VOLTAGE TEST :- PASS
2. TEST OF NO LOAD CONDITION :- PASS
3. TESTING OF STARTING CURRENT CONDITION :- PASS
4. INSULATION RESISTANCE TEST :- PASS
5. POWER CONSUMPTION TEST :- PASS
6. TEST OF METER CONSTANT :- PASS
7. LIMITS OF ERROR

7(a) Conditions-Vref = 57.7-240V Ib = 1-5A Amb. Temp. = 23°C +/- 2°C Relative Humidity < 70%.
7(b) Errors shown in the tables are given after accounting the error of reference meter.
7(c) Reference meter serial no. 05004B407 class 0.02S traceable to national & international standards.
7(d) Errors shown in the tables are taken at Ib = 1A(100%)

IMPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.05	0.03	0.01
500	0.01	0.02	0.02
100	0.01	0.00	0.05
50	0.06	0.01	0.03
10	0.07	-0.01	0.02
5			0.00
2	0.02	-0.06	
1			-0.16

(f) %Reactive Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead
1000	0.00	-0.04
500	0.00	0.02
100	0.02	0.01
50	0.01	0.06
10	0.00	0.08

EXPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	0.00	0.03	0.02
500	0.01	0.02	0.02
100	0.03	0.02	0.03
50	0.05	0.02	0.02
10	0.11	0.02	0.04
5			0.05
2	0.25	0.06	
1			0.00

Date :- 04/02/2020

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Secure Meters Limited
F 373-380
Bhamashah Industrial Area
Kaladwas, Udaipur 313 003, India

p: +91 294 2650301-305
f: +91 294 2650310
e: udaipur@securemeters.com

Regd. & Head Office
"E" Class
Pratapnagar Industrial Area
Udaipur 313 003, India
CIN No.: U74899RJ1987PLC029106

p: +91 294 2492300-305
f: +91 294 2492310
e: mktg@securemeters.com
www.securemeters.com

SECURE

METER TEST CERTIFICATE

Serial number : X1300279

Accuracy Class : 0.5s Ref. Standard : IEC : 62053-22

1. AC VOLTAGE TEST :- PASS
2. TEST OF NO LOAD CONDITION :- PASS
3. TESTING OF STARTING CURRENT CONDITION :- PASS
4. INSULATION RESISTANCE TEST :- PASS
5. POWER CONSUMPTION TEST :- PASS
6. TEST OF METER CONSTANT :- PASS
7. LIMITS OF ERROR

7(a) Conditions-Vref = 57.7-240V Ib = 1-5A Amb. Temp. = 23°C +/- 2°C Relative Humidity < 70%.
7(b) Errors shown in the tables are given after accounting the error of reference meter.
7(c) Reference meter serial no. MET00016 class 0.2S traceable to national standards.
7(d) Errors shown in the tables are taken at Ib = 1A(100%)

IMPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.03	0.03	0.02
500	-0.04	0.01	0.00
100	-0.02	-0.01	0.01
50	0.06	0.07	0.05
10	-0.02	-0.01	0.03
5			-0.05
2	-0.21	-0.14	
1			-0.14

(f) %Reactive Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead
1000	0.09	0.02
500	-0.06	0.00
100	-0.02	-0.07
50	0.03	0.09
10	0.05	-0.03

EXPORT MODE ERRORS

(e) %Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.03	0.03	0.02
500	-0.04	0.00	-0.01
100	0.01	-0.04	-0.01
50	0.00	0.08	0.04
10	0.04	-0.06	0.01
5			0.01
2	0.18	-0.17	
1			-0.12

Date :- 15/01/2020

This is a computer generated test certificate.No signature required.

Secure Meters Limited
F 373-380
Bhamashah Industrial Area
Kaladwas, Udaipur 313 003, India

p: +91 294 2650301-305
f: +91 294 2650310
e: udaipur@securemeters.com

Regd. & Head Office
"E" Class
Pratapnagar Industrial Area
Udaipur 313 003, India
CIN No.: U74899RJ1987PLC029106

p: +91 294 2492300-305
f: +91 294 2492310
e: mktg@securemeters.com
www.securemeters.com

SECURE

METER TEST CERTIFICATE

Serial number : X1926301

Accuracy Class : 0.5s Ref. Standard : IEC:62053-22

1. AC VOLTAGE TEST :- PASS
2. TEST OF NO LOAD CONDITION :- PASS
3. POWER CONSUMPTION :- PASS
4. STARTING CURRENT :- PASS
5. TEST OF METER CONSTANT
6. LIMITS OF ERROR

6(a) Conditions-Vref = 57.7-240V Ib = 1-5A Amb. Temp. = 23°C +/- 2°C Relative Humidity < 70%.
6(b) Errors shown in the tables are given after accounting the error of reference meter.
6(c) Reference meter serial no. MET00010 class 0.2S traceable to national standards.
6(d) Errors shown in the tables are taken at Ib = 1A(100%)

IMPORT MODE ERRORS

%Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.15	-0.14	-0.14
100	-0.07	-0.09	-0.07
10	0.01	-0.02	-0.01
5			-0.12
2	0.05	-0.24	
1			-0.27

%Reactive Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead
100	-0.14	-0.14
10	-0.09	-0.07
	-0.03	-0.01

EXPORT MODE ERRORS

%Active Errors(Balance Mode)

Load % Ib	0.5 Lag	0.8 Lead	UPF
1000	-0.10	-0.07	-0.08
100	-0.02	-0.07	-0.05
10	0.06	-0.06	-0.03
5			-0.03
2	0.17	-0.08	
1			0.00

Date :- 25/03/2023

This is a computer generated test certificate.No signature required.

Secure Meters Limited
Unit II, Village Bated,
Off Haripur Road, Barotiwala
Dist. Solan 174 103 (HP), India

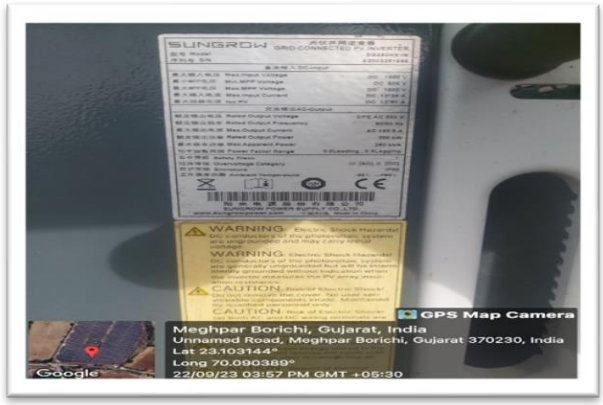
p: +91 1792 255591
f: +91 1792 255593
e: unit2@securemeters.com

Regd. & Head Office
"E" Class
Pratapnagar Industrial Area
Udaipur 313 003, India
CIN No: U74899RJ1987PLC029106

p: +91 294 2492300-305
f: +91 294 2492310
e: mktg@securemeters.com
www.securemeters.com


TRANSFORMER
VOLTAMP TRANSFORMERS LIMITED
VADODARA (INDIA)
GPS Map Camera
Meghpar Borichi, Gujarat, India
Unnamed Road, Meghpar Borichi, Gujarat 370230, India
Lat 23.103536°
Long 70.090346°
22/09/23 03:58 PM GMT +05:30
Google


GPS Map Camera
Meghpar Borichi, Gujarat, India
Unnamed Road, Meghpar Borichi, Gujarat 370230, India
Lat 23.102724°
Long 70.090241°
22/09/23 04:00 PM GMT +05:30
Google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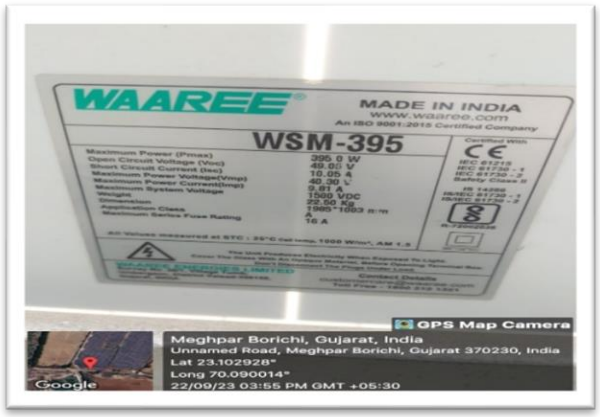
WAAREE
MADE IN INDIA
WWW.waaree.com
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GPS Map Camera
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Unnamed Road, Meghpar Borichi, Gujarat 370230, India
Lat 23.102928°
Long 70.090014°
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Google


GPS Map Camera
Meghpar Borichi, Gujarat, India
Unnamed Road, Meghpar Borichi, Gujarat 370230, India
Lat 23.102727°
Long 70.090237°
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Google


GPS Map Camera
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Unnamed Road, Meghpar Borichi, Gujarat 370230, India
Lat 23.102724°
Long 70.090241°
22/09/23 04:00 PM GMT +05:30
Google

Application of methodologies and standardized baselines

References to methodologies and standardized baselines

SECTORAL SCOPE – 01 Energy industries (Renewable/Non-renewable sources)

TYPE I – Renewable Energy Projects

Applied UNFCCC CDM Modified Baseline Methodology: AMS-I.F. – Renewable electricity generation for captive use and mini-grid, ver 05.

This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s). The project activity will displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit, i.e., in the absence of the project activity, the users would have been supplied electricity from:

(a) A national or a regional grid (grid hereafter)

Methodology key elements

Typical project(s)	Production of electricity using renewable energy technologies such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s).
Type of GHG emissions mitigation action.	Renewable energy: displacement of electricity that would be provided to the user(s) by more-GHG-intensive means.

Applicability of methodologies and standardized baselines

The project status is corresponding to the methodology AMS-I.F., version 05 and applicability of methodology is discussed below:

Table 2. Applicability of AMS-I.D, AMS-I.F and AMS-I.A based on project types

	Project type	AMS-I.A	AMS-I.D	AMS-I.F
1	Project supplies electricity to a national/regional grid		√	
2	Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)			√
3	Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)		√	
4	Project supplies electricity to a mini grid[5] system where in the baseline all generators use exclusively fuel oil and/or diesel fuel			√
5	Project supplies electricity to household users (included in the project boundary) located in off grid areas	√		

- This project is included within the UCR Standard Positive List of technologies and are within the small-scale CDM thresholds (e.g., installed capacity up to 15 MW). The positive list comprises of: (a) renewable electricity generation technologies of installed capacity up to 15 MW, (b) Solar technologies (photovoltaic and solar thermal electricity generation);
- Project activity involves installation of captive use solar photovoltaic power generation with capacity 2.7 MW which is less than 15MW.
- The project activity involves installation of Solar PV (SPV). Hence, the activity is not a Hydro power project or combined heat and power (co-generation) systems.
- Project displaces grid electricity consumption (e.g., grid import).
- The project activity is a new installation, it does not involve any retrofit measures nor any replacement.
- Landfill gas, waste gas, wastewater treatment and agro-industries projects are not relevant to the project activity. No biomass is involved, the project is only a solar power project.

- The technology/measure allowed under the grid connected Solar PV based generation systems displace equivalent quantity of electricity from the regional grid in India. The testing/certifications; all the equipment of the solar project activity will be complying with applicable national/ international standards. The above details may be verified from one or more of the following documents:
    - Technology Specification provided by the technology supplier.
    - Purchase order copies
    - EPC contracts
    - Project commissioning certificates, etc.
- The project activity is a voluntary coordinated action
- As per the Ministry of Environment and Forest (MoEF), Govt. of India Office Memorandum dated 13/05/2011, it had received specific clarification regarding the applicability of EIA Notification, 2006 in respect of Solar Photo Voltaic (PV) Power plants. It was further clarified in the above memorandum that both Solar PV power projects are not covered under the ambit of EIA Notification, 2006 and no environment clearance is required for such projects under provisions thereof.
- This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s). Hence this methodology is applicable and fulfilled for the solar project activity.
- The project activity involves installation of new power plants at listed sites where there was no renewable energy power plant operating prior to implementation of project.
- Project and leakage emissions from biomass are not applicable.

Applicability of double counting emission reductions

The renewable electricity units are monitored with a unique energy meter located within the project activity boundary. The project activity will not apply to India's NDC carbon ecosystem/market and has not been registered under any other GHG mechanism for carbon offsets/credits in the past. Agreement for Double Counting Avoidance from Proponent has been provided duly signed on 09.10.2023.

Project boundary, sources and greenhouse gases (GHGs)

The spatial extent of the project boundary includes industrial, commercial facilities consuming energy generated by the system. In the case of electricity generated and supplied to distributed users (e.g., residential users) via mini/isolated grid(s) the project boundary may be confined to physical, geographical site of renewable generating units. The boundary also extends to the project power plant and all power plants connected physically to the electricity system as per the requirements provided in TOOL07 to which the project power plant is connected.

	Source	GHG	Included?	Justification/Explanation
Baseline	Grid connected electricity.	**CO_2**	**Included**	**Major source of emission**
		CH_4	Excluded	Excluded for simplification. This is conservative.
		N_2O	Excluded	Excluded for simplification. This is conservative.
Project Activity	Greenfield Solar Power Project	CO_2	Excluded	Excluded for simplification. This is conservative.
		CH_4	Excluded	Excluded for simplification. This is conservative.
		N_2O	Excluded	Excluded for simplification. This is conservative.

Net GHG Emission Reductions and Removals

Thus, **ERy = BEy – PEy – LEy**

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)

According to AMS-I.F, Project Emissions (PEy) for the following categories of project activities, including relevant definitions, shall be considered following the procedure described in the ACM0002:

- Emissions related to the operation of geothermal power plants (e.g., non-condensable

gases, electricity/fossil fuel consumption);

- Emissions from water reservoirs of hydro power plants.
- For the other types of renewable energy projects, PEy = 0

Hence PEy = 0 since the project is a solar power project.

LEy = Leakage emissions in year y (tCO2/y)

Annual Emission Reductions: $BE_y = EG_{BL,yl} \times EF_{CO2, GRID, y}$

BEy = Emission reductions in a year y.

where:

$EG_{BL,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the UCR project activity in year y (MWh)

$EF_{Grid,CO2,y}$ = CO_2 emission factor of the Indian grid in year y (tCO_2/MWh) as determined by the UCR Standard.

Establishment and description of baseline scenario (UCR Protocol)

The baseline scenario is the product of amount electricity displaced with the electricity produced by the renewable generating unit and an emission factor.

Total Installed Capacity: 2.7 MW

Commissioning Date of first installation: 25/11/2020

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.

Annual Emission Reductions: **$BE_y = EG_{BL,yl} \times EF_{CO2, GRID, y}$**

Where:

BE_y = Emission reductions in year y (tCO_2)

$EG_{PJ,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the UCR project activity in year y (MWh)

$EF_{Grid,CO2,y}$ = CO_2 emission factor of the grid in year y (t CO_2/MWh) as determined by the UCR Standard.

$EF_{y,grid}$ = UCR recommended conservative Indian grid emission factor of 0.9 tCO_2/MWh has been considered, this is conservative as compared to the current combined margin Indian grid emission factor of 0.9185 tCO_2/MWh (assuming 50% equal distribution between OM and BM) which can be derived from Database of Central Electricity Authority (CEA), India. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4), and higher still if considered as an intermittent form of energy. Hence, the same emission factor has been considered to calculate the emission reduction.

For the other types of renewable energy projects, such as solar energy, PEy = 0

Net GHG Emission Reductions and Removals

Thus, ERy = BEy – PEy – LEy

Where:

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

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

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

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

Project Emissions

PE_y = 0

Leakage Emissions

All projects other than Biomass projects have zero leakage.

Hence, LE_y = 0

Issuance Period: (02 years 01 months 05 days) **25/11/2020 to 31/12/2022**

Total Emission Reduction (ER) by the project activity for the current monitoring period is calculated as below:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total KWH	Total MWH	ER (tCO_2)
2020	-	-	-	-	-	-	-	-	-	-	244287.79	335516.00	579803.79	579.80379	**521**
2021	378034.00	285792.00	459877.00	415468.00	421844.00	364131.00	292232.00	311228.00	252605.00	373512.00	319954.00	321762.00	4196439.00	4196.439	**3776**
2022	354453.00	364860.00	425587.00	423797.00	438253.00	383258.00	281526.00	272746.00	333364.00	350284.00	310760.00	308508.00	4247396.00	4247.396	**3822**
														Total	**8119**

Total Emission Reductions (ER_y) = 8,119 CoUs (8,119 tCO_2eq)

Conclusions:

Based on the audit conducted on the basis of UCR Protocol, which draws reference from UCR Protocol Standard Baseline & Emission Factor, UNFCCC Methodology Category AMS-I.F. Small-scale Methodology, Renewable electricity generation for captive use and mini-grid Ver 05, the audit conducted remotely by way of video calls / verification, phone calls and the documents verified and submitted during the verification including the Data, Project Concept Note (PCN) / Monitoring Report (MR), SQAC is able to certify that the emission reductions from the project - 2.7MW Captive Solar Power Project GARL, Gujarat, (UCR ID – 363) for the period **25/11/2020 to 31/12/2022** amounts to **8,119 CoUs (8,119 tCO_2eq)**

SQAC Certification Pvt. Ltd. Mapusa-Goa

Santosh Nair
Lead Verifier
(Signature)

Praful Shinganapurkar
Senior Internal Reviewer
(Signature)

Date: 03/11/2023