



Verification Report for

Project : 2.0 MW Solar Grid Power Project by VSESPL,
Chittoor, Andhra Pradesh.

UCR Project ID : 325

Name of Verifier	SQAC Certification Pvt. Ltd.
Date of Issue	July 04, 2023
Project Proponent	M/s Vyshaka Solar Energy Systems Private Limited (VSESPL)
UCR Project Aggregator	M/s Climekare Sustainability Pvt. Ltd.
Work carried by	Mr. Santosh Nair
Work reviewed by	Mr. Praful Shinganapurkar

Summary:

SQAC Certification Pvt. Ltd. has performed verification of the “2.0 MW Solar Grid Power Project by VSESPL, Chittoor, Andhra Pradesh, India” is for generating renewable power to the Transmission Corporation of Andhra Pradesh Limited (APTRANSCO) in the District of Chittoor, in the state of Andhra Pradesh, in India. The purpose of this plant installation and power generation is for grid supply. Thus, project activity leads to reduce the GHG emissions as it displaces power from fossil fuel-based electricity generation in the regional grid.

The project activity meets the following UN SDG's:



Verification for the period: **31/03/2017 to 31/12/2022** (05 years 09 months)

The GHG emission reductions were calculated on the basis of UCR Protocols which draws reference from, UCR Protocol Standard Baseline & Emission Factor, Type I (Renewable Energy Projects)

Accredited by 5 Jupiter House, Callera Park, Aldermaston, Reading Berkshire RG7 8NN, United Kingdom (UK).



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UNFCCC Methodology Category y AMS I.D.: “Grid connected renewable electricity generation” Ver 18. 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 2.0 MW Solar Grid Power Project by VSESPL, Chittoor, Andhra Pradesh, India, (UCR ID – 325) for the period **31/03/2017 to 31/12/2022** amounts to **14,892 CoUs** (14892 tCO₂eq)

Detailed Verification Report:

Purpose:

This is a single project activity of installed capacity of 2.2 MWh (of which 2.0 MWh is supplied to the grid) ground mounted grid connected solar power generation project supplying renewable power to the Transmission Corporation of Andhra Pradesh Limited (APTRANSCO) in the District of Chittoor, in the state of Andhra Pradesh, in India. The purpose of this plant installation and power generation is for grid supply.

Village	District	Type	Total installed capacity KW	Commissioning date
M V Palli	Chittoor	Ground mounted	2000	31-03-2017

Hence, project activity is displacing the gross electricity generation from the Southern grid, which otherwise would have been imported from the Southern grid. The project activity doesn't involve any GHG emission sources. The annual and the total CO₂e emission reduction by the project activity over the defined monitoring period is as per Annexure I. Thus, project activity leads to reduce the GHG emissions as it displaces power from fossil fuel-based electricity generation in the regional grid.



**TRANSMISSION CORPORATION OF AP LIMITED
VIDYUT SOUDHA :: HYDERABAD**

From
Superintending Engineer/EBC
Room No 119/A, 'A' Block
APTRANSCO, Vidyut Soudha
Hyderabad-500 082.

To
The Divisional Engineer,
M & P Division/APSPDCL,
Tirupati.

Lr.No. CE/SLDC/SE/EBC/VS/HYD/D.No. 1031 / 2017, Dt. 30 -03-2017.

Sub:- APTRANSCO-SLDC-EBC-33KV Bays extension at 33/11KV Nutanakalava Substation for evacuation of 2.0 MW Wind Power Projects of M/s Vyshaka Solar Energy systems Pvt.Ltd., M.V.Palle(V) &(M),Chittoor District - Energy Meters Parameters MRI Compatibility to EBC database- Check of Sample MRI data- Reg.

Ref:- Lr.No.DE / M& P/TPT/AEE-Tech / F.No / D.No.261 /17, Dt 21 - 03-2017.

In the reference cited, the DE/M&P/Tirupati requested for arranging compatibility certificate for the following Energy meters for installation at 33KV Bays extension at 33/11KV Nutanakalava Substation for evacuation of 2.0 MW Wind Power Projects of M/s Vyshaka Solar Energy systems Pvt.Ltd., M.V.Palle(V)&(M),Chittoor District and the sample MRI data received by EBC on 28.03.2017. As per the request, the sample MRI data is verified and the following observations were made.

Sl. No.	Meter location	Location	Energy Meter No.	Remarks
1	Main Meter	33/11KV Nutanakalava	APX01192	Each 15 minutes time block load survey data contains KW (Export), KW (Import), KVA (Export), KVA (Import), KVAR (Ld) @ Wh(I), KVAR (Lg) @ Wh(I), KVAR(Lg) @ Wh(E) KVAR(Ld) @ Wh(E), PF(IMP), PF(EXP), Frequency, 3-Line currents, 3-Phase Voltages in KV, Average Voltage in KV, Total Voltage Harmonic Distortion components (THDV) and Total Current Harmonic Distortion components (THDL) in 3-Phases.
2	Check Meter		APX01193	
3	Standby Meter		APX01196	
4	Main Meter	Generator End	APX01165	Each 15 minutes time block load survey data contains KW (Export), KW (Import), KVA (Export), KVA (Import), KVAR (Ld) @ Wh(I), KVAR (Lg) @ Wh(I), KVAR(Lg) @ Wh(E) KVAR(Ld) @ Wh(E), PF(IMP), PF(EXP), Frequency, 3-Line currents, 3-Phase Voltages in KV, Average Voltage in KV, Total Voltage Harmonic Distortion components (THDV) and Total Current Harmonic Distortion components (THDL) in 3-Phases.
5	Check Meter		APX01183	
6	Standby Meter		APX01187	

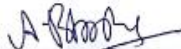
NOTE: All Meters are SECURE make and E3M024 Type

The sample load survey data of above Energy meters is compatible to EBC database. For the Periodical tests of energy meters follow as per the TOO.537, Dt.23.03.2010. Please follow the technical specifications of the DISCOM for the energy meters.

Further, it is requested to furnish the **weekly MRI data** with energy meter readings after receiving NOC for inter/intra state open access (if any) along with CT, PT details and MF particulars and location of the meters.

While installation, ensure the Energy meters sign convention as per the CEA regulations 2006 part II (f), New Delhi, Dated the 17th March 2006 (Website address <http://www.cea.nic.in>). It is requested to inform the meter change/installation status immediately to this office and CE/Transmission/APTRANSCO/VS/Hyderabad without fail.

This is for favor of information.

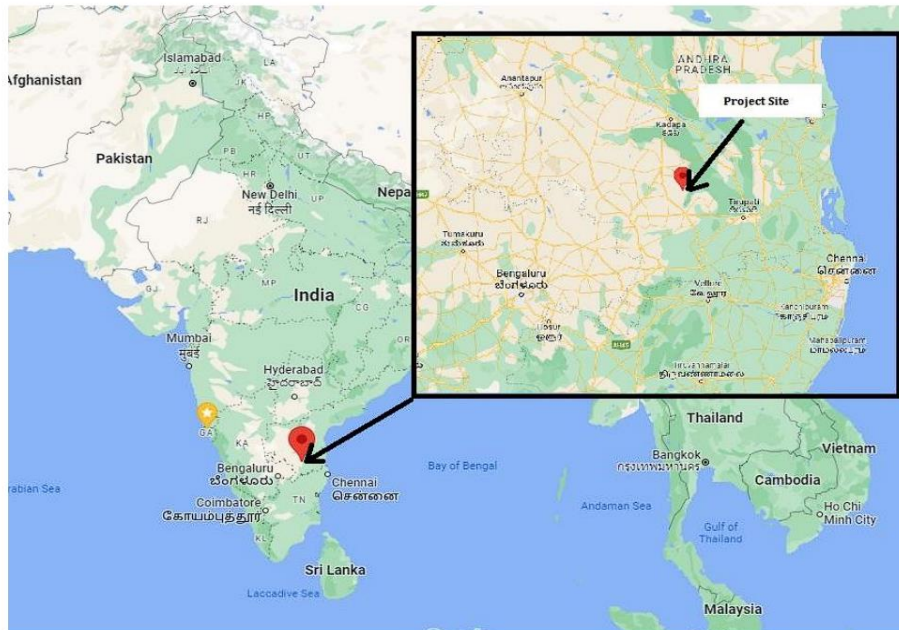

Superintending Engineer/EBC

Copy Submitted to:
The Chief Engineer/ IPC& PS / APTRANSCO/V.S/Hyderabad.
Conv to:-



Location of project activity:

Country : India
Village : M V Palli
Mandal : Kambam Vari Palle
District : Chittoor
State : Andhra Pradesh
Latitude : 13°52'05.2"N
Longitude : 78°55'12.0"E



**Scope:**

The scope covers verification of emission reductions from the project 2.0 MW Solar Grid Power Project by VSESPL, Chittoor, Andhra Pradesh, India (UCR ID – 325)

Criteria:

Verification criteria is as per the requirements of UCR Standard.

Description of project:

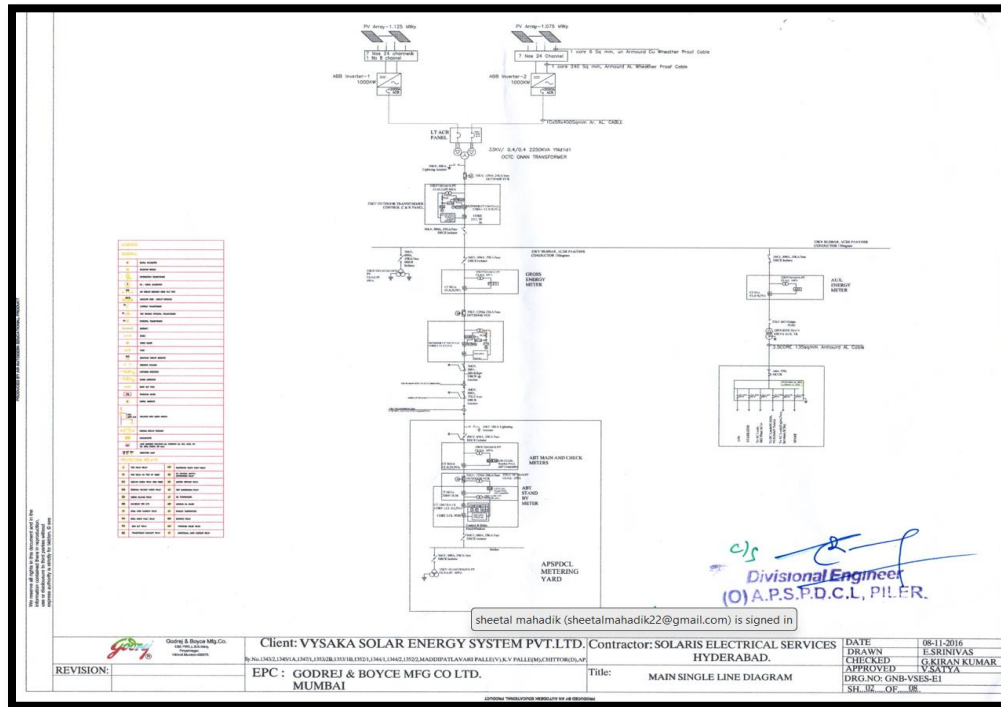
The purpose of the proposed project activity is to generate electricity using a clean and renewable source of energy i.e., solar radiation. The project activity uses Poly Crystalline solar photovoltaic technology to generate clean energy. The generation of power from solar photovoltaic is a clean technology as there is no fossil fuel fired or no GHG gases are emitted during the process. Solar radiation is converted directly into electricity by solar cells (photovoltaic cells).

The estimated annual average CO₂e emission reductions by the project activity is 14,892 tCO₂e. Since the project activity generates electricity through solar energy, a clean renewable energy source it will not cause any negative impact on the environment and thereby contributes to climate change mitigation efforts.

Project Site	M V Palli, Kambam Vari Palle, Chittoor, Andhra Pradesh.
Irradiation details considered	NASA
Type of System	Fixed structure with tilt
Type of PV Module	Poly Crystalline Silicon
Proposed Capacity	2.2 MWp
Capacity of each module	315 Wp ~ 320 Wp with Positive Tolerance (-0%, + 3%
Inverter Capacity	1000KW: ABB / Gamesa
Projected Energy Generation	35.00 Lakh Units (KWh)

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	31/03/2017
Carbon credits s (CoUs) claimed up to	31/12/2022
Total ERs generated in this crediting period (tCO ₂ eq)	14,892 (expressed as CoUs)
Project Emission (tCO ₂ eq)	0
Leakage (tCO ₂ eq)	0



POWER DEVELOPMENT IN ANDHRA PRADESH (STATISTICS) 2018-19					
6.4 (c) Commissioning Dates of Generating Units in Private Sector					
Sl. No.	Name of the Company	Location (District)	District	Connected Capacity (in MW)	Date of Commissioning
53	M/S "Vallala Sujatna" (SPROUTS Solar) Energy Pvt Ltd	Pamulapadu	Kurnool	2.00	8/9/2016
54	M/S Ushodaya Enterprises	Tadimarni (V) & (M)	Ananthapur	5.00	22/9/2016
55	Sumeru Energy Pvt Ltd	Jagadurthy(V) Dhone(M)	Kurnool	4.00	22/9/2016
56	M/S VBC Renewable Energy Pvt Ltd	Garividi	Vizianagaram(Dt)	3.00	22/7/2016
57	M/S Narasimha Swamy Solar Generations Pvt Ltd	Peravali Singanamala (M)	Ananthapur	5.00	26/9/2016
58	M/S Yashwanth Solar Energy Pvt Ltd	Kothapalli Mudunuru (M)	Kadapa	1.00	1/10/2016
59	Repal Renewables Pvt Ltd	Thanakallu (V&M)	Ananthapur	4.90	19/11/2016
60	Sri Varahalakshmi Narasimha Swamy Devasthanam	Simhachalam	Visakhapatnam	1.00	3/2/2017
61	Tirumala Tirupati Devasthanams	Kasavaripalli (V) Thamballapalle (M)	Chittoor	3.00	2/2/2017
62	Kanti Brothers oils Pvt Limited	Kurnool	Kurnool	3.00	11/2/2017
63	Sri Chakra cements Projects Co Private Limited	Perindesam (V) KVB Puram (M)	Chittoor	2.00	9/2/2017
64	IFMR	Sri Kalahasti, Chittoor District	Chittoor	0.50	10/3/2017
65	SVR Corporation Pvt Ltd	Jillelamanda(V), KV Pali(M), Chotoor Thimmapuram SS,	Chittoor	2.00	15/3/2017
66	Nateems Green Energy Pvt Ltd	Kadriavarapalli(V), Kambadar (M), Ananthapuram	Ananthapur	9.90	24/3/2017
67	GSL Educational Society	Mallampudi(V) & Tokanda (V), Rajamandry, East Godavari District	East Godavari	1.50	31/3/2017
68	Cyber Village Solutions (P) Ltd	Yeleswaram (V&M)	East Godavari	2.00	31/3/2017
69	Repal Renewables Pvt Ltd	Thanakallu (V&M)	Ananthapur	5.10	31/3/2017
70	Nateems Solar power Pvt Ltd	Elakolanu (V), Rangampeta (M), Goudanipalli	East Godavari	1.00	31/3/2017
71	B.G. Channappa, Class I, K.R.W.D.	Goudanipalli	Ananthapur	2.00	31/3/2017
72	Vyshaka Solar Energy System Pvt Ltd	Nuthanakaluvu SS, MV Pali(V), KV Pali (M), Chittoor District	Chittoor	2.00	31.03.2017
73	Tirumala Tirupati Devasthanams	Kasavaripalli	Chittoor	1.00	31.3.2017
74	Nateems Green Energy Pvt Ltd	Garividi	Vizianagaram	10.00	31.03.2017
75	M/s Aurobind Pharma Ltd	Pydibhimavaram	Srikakulam	30.00	21.05.2017





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:

Development Goals	Targeted SDG	Target Indicator (SDG Indicator)
13 CLIMATE ACTION  SDG 13: Climate Action	13.2: Integrate climate change measures into national policies, strategies and planning Target: 14624 tCO ₂ for the MR 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)
7 AFFORDABLE AND CLEAN ENERGY  SDG 7: Affordable and Clean Energy	7.2: By 2030, increase substantially the share of renewable energy in the global energy mix Target: 16252 MWh for the MR 01	7.2.1: Renewable energy share in the total final energy consumption
8 DECENT WORK AND ECONOMIC GROWTH  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.

Verification Methodology:

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

- Project Concept Note (PCN)
- Monitoring Report (MR)
- Commissioning Report
- Calibration report
- JMR
- Invoices
- Data provided upon request of all the documents of the related projects.

Sampling:

Not applicable

Persons interviewed:

1. Mr. Sahit Reddy : Managing Director - M/s Vyshaka Solar Energy Systems Private Limited.

Documentation Verified:

- Project Concept Note (PCN)
- Monitoring Report (MR)
- Calibration Report of meters
- Energy Meter
- Commissioning Certificate
- JMR
- Invoices



SOUTHERN POWER DISTRIBUTION COMPANY OF A.P. LTD.
OPERATION CIRCLE :: TIRUPATI

To
From The Executive Engineer,
Operation PILER The Superintending Engineer,
Operation, TIRUPATI.

Lr. No. DE/O/PLR/AE/D.No. 538 /19 Dt. 3-04-19.

Sir,

Subj: APSDCIL - (O) Division / Piler - Joint Meter Reading of M/s Vyshaka Solar Energy Systems Private Limited taken on 01-04-2019 in operation Division Piler- Reg

Joint Meter Reading of Main, Check and Standby meters of M/s Vyshaka Solar Energy Systems Private Limited, Nuthanakulava (V), KV Pali (M), Chittoor (D) taken on 01-04-2019 are enclosed.

This is for favour of information please.

Encl: 1. JMR Readings of Meters in prescribed format.

EXECUTIVE ENGINEER
OPERATION-PILER

Copy to

- a) The Superintending Engineer, EBC/Billing Center, APTRANSCO, Vidut Soudha, Gunadala, Vijayawada - 520004
- b) The Chief Engineer, SLD, CAPTRANSCO, Vidut Soudha, Gunadala, Vijayawada - 520004
- c) The Dy. Chief Controller of Accounts/APCC, Vidut Soudha, Gunadala, Vijayawada - 520004
- d) The Superintending Engineer/O C/APTRANSCO/Tirupati
- e) The Chief General Manager/Operation/APSDCIL/Tirupati
- f) The Chief General Manager/Finance/APSDCIL/Tirupati
- g) The Chief General Manager/P&M,IPC/APSDCIL/Tirupati

30	H2 MVA (Import)	History 2 Fund Active Import Energy Register	6725.30	6724.04	6725.12
31	H2 MVA (Export)	History 2 Fund Active Export Energy Register	27.51	27.61	27.89
32	H2 MVA (Import)	History 2 Apparent While Active Import Energy Register	6727.18	6725.88	6725.99
33	H2 MVA (Export)	History 2 Apparent While Active Export Energy Register	27.58	27.48	27.25
34	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 0-24hrs)	1.848	1.848	1.848
35	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 0-24hrs)	22.02.19.12.45	22.02.19.12.45	22.2.19.12.15
36	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 1)	No Data	No Data	No Data
37	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 1)	22.02.19.12.45	22.02.19.12.45	22.02.19.12.45
38	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 2)	03.02.19.10.00	03.02.19.10.00	03.2.19.10.00
39	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 2)	03.02.19.10.00	03.02.19.10.00	03.2.19.10.00
40	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 3)	1.848	1.848	1.848
41	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 3)	22.02.19.12.45	22.02.19.12.45	22.02.19.12.45
42	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 4)	1.700	1.700	1.700
43	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 4)	22.02.19.12.45	22.02.19.12.45	22.2.19.12.15
44	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 5)	0.008	0.008	0.008
45	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 5)	14.02.19.18.15	14.02.19.18.15	14.02.19.18.15
46	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 6)	No Data	No Data	No Data
47	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 6)	No Data	No Data	No Data
48	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 7)	0.008	0.008	0.008
49	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 7)	21.02.19.18.30	21.02.19.18.30	21.2.19.18.30
50	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 8)	0.004	0.004	0.004
51	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 8)	02.02.19.08.30	02.02.19.08.30	02.02.19.08.30
52	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 9)	0.004	0.004	0.004
53	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 9)	27.02.19.07.00	27.02.19.07.00	27.02.19.07.00
54	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 10)	0.004	0.004	0.004
55	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 10)	09.02.19.14.00	09.02.19.14.00	09.2.19.14.00
56	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 11)	0.004	0.004	0.004
57	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 11)	01.02.19.18.00	01.02.19.18.00	01.02.19.18.00
58	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 12)	0.004	0.004	0.004
59	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 12)	21.02.19.18.30	21.02.19.18.30	21.2.19.18.30
60	H1 TOD MVA (M)	History 1 TOD Apparent While Active Import MD Register (Reg 13)	0.004	0.004	0.004
61	Date/Time	History 1 TOD Apparent While Active Import MD Occurrence Time and Date (Reg 13)	01.02.19.02.15	01.02.19.02.15	01.02.19.02.15
62	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 0-24hrs)	1.840	1.840	1.840
63	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 1)	No Data	No Data	No Data
64	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 2)	1.300	1.300	1.300
65	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 3)	1.840	1.840	1.840
66	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 4)	1.636	1.636	1.636
67	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 5)	0.008	0.008	0.008
68	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 6)	No Data	No Data	No Data
69	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 7)	0.008	0.008	0.008
70	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 8)	0.008	0.008	0.008
71	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 9)	0.008	0.008	0.008
72	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 10)	No Data	No Data	No Data
73	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 11)	0.004	0.004	0.004
74	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 12)	0.008	0.008	0.008
75	H2 TOD MVA (M)	History 2 TOD Apparent While Active Import MD Register (Reg 13)	0.004	0.004	0.004
76	MVA (Import)	High Resolution Energy Fund Active Import	6776.7198	6775.1229	6775.3073
77	MVA (Export)	High Resolution Energy Fund Active Export	28.3183	28.3507	28.6000

ANNEXURE-B A READINGS OF MAIN, CHECK & STAND BY METERS FOR THE BILLING MONTH OF MARCH - 2019						
Name & Location of the Plant: M/s Vyshaka Solar Energy Systems (P) Ltd.			Solar Power Plant, Project setup by M/s Vyshaka Solar Energy Systems (P) Ltd.			
Location of Metering : Nuthanakulava			Name of the Sub-Station: 33/11 KV SS, Nuthanakulava			
Fuel: Solar			PPA / PPWA / PPWA / GA :		PPA	
Date of Reading: 01.04.2019			Time of Reading:		0:15	
Parameters	Main Meter (APX01192)		Check Meter (APX01193)		Standby Meter (APX01196)	
	Import to AP TRANSCO	Export from AP TRANSCO	Import to AP TRANSCO	Export from AP TRANSCO	Import to AP TRANSCO	Export from AP TRANSCO
Readings before Manual Reset of MD						
MD (Present) (A)	1.748	0.008	1.748	0.008	1.748	0.008
MD (Cumulative MD) (B)	48.020	2.440	48.004	1.956	48.264	1.900
Reset Count (C)	27		27		27	
Readings after Manual Reset of MD						
MD (Present) (D)	0	0	0	0	0	0
MD (Cumulative MD) (E)	49.788	2.448	49.752	1.964	50.012	1.908
Reset Count (F)	28		28		28	
Readings of MD after manual reset in the previous JMR						
MD (Cumulative MD) (G)	48.020	2.440	48.004	1.956	48.264	1.900
Reset Count (H)	27		27		27	
Comparative Statement (Readings of "Export from APTRANSCO" of Main Meter						
Cumulative MD reading after RESET in the present JMR (I)						
Cumulative MD reading after RESET in the previous JMR (J)						
Difference in Cumulative MD (I) - (J) = (K)						
Whether the difference in Cumulative MD (I) = (K)						
(I) YES, the current month MD to be billed = (K)						
(I) NO, 60 Annexure-B						
Whether RESET count difference (F) - (H) equal to 1						
If NO, give the reasons:						


EEO & MCHITTOOR
O&M & PTRANSCO
CHITTOOR



EE/Operation/Plant
Executive Engineer
(O) & PTRANSCO

Vyshaka Solar Energy Systems (P) Ltd

EE Operation Piler
S. A. P. TRANSCO
CHITTOOR

EEO M. CHITTOOR
S. A. P. TRANSCO
CHITTOOR

Vyshaka
SOLAR ENERGY SYSTEMS (P) LTD
NUTHANAKULAVA

ANNEXURE-B READINGS OF MAIN, CHECK & STAND BY METERS FOR THE BILLING MONTH OF MARCH - 2019					
Name & Location of the Plant: M/s Vyshaka Solar Energy Systems (P) Ltd.		Solar Power Plant, Project setup by M/s Vyshaka Solar Energy Systems (P) Ltd.			
Location of Metering: Nuthanakulava		Name of the Sub-Station: 33/11 KV SS, Nuthanakulava			
Fuel: Solar		PPA / PPWA / PPWA / GA		PPA	
Date of Reading: 01.04.2019		Time of Reading: 0:15		Time of Reading: 0:15	
Details of Metering CTS & Pts		Details of Billing Energy Meters		Details of Billing Energy Meters	
Class	CTS	PTS	Main Meter	Check Meter	Standby Meter
Burden	5 VA	10 VA	SECURE	SECURE	SECURE
			APX01192	APX01193	APX01196
			E3M024	E3M024	E3M024
			501 A	501 A	501 A
CT Ratio	501 A	501 A	33 KV/3110V/3	33 KV/3110V/3	33 KV/3110V/3
PT Ratio	33 KV/3110V/3	33 KV/3110V/3	1000	1000	1000
Details of Billing Energy Meters					
Sl. No.	Display ID	MANUAL DISPLAY	MAIN METER	CHECK METER	STANDBY METER
1	All Segment on display		01.04.2019	01.04.2019	01.04.2019
2	Date		0:15	0:15	0:15
3	Time		0776.71	0775.17	0776.35
4	MVA/Import/14	Fund Active Import Energy Register	28.31	28.35	28.60
5	MVA/Export/20	Fund Active Export Energy Register	0776.71	0775.17	0776.35
6	MVA	Apparent While Active Import Energy Register	28.71	28.74	28.93
7	MVAH	Apparent While Active Export Energy Register	15.49	15.39	15.51
8	MVAH Lag	Reactive Import While Active Import Energy Register	231.60	232.04	232.58
9	MVAH Lead	Reactive Import While Active Export Energy Register	0.02	0.08	0.09
10	MVAH Lag	Reactive Export While Active Import Energy Register	88.39	88.47	88.70
11	MVAH Lead	Reactive Export While Active Export Energy Register	3.11	2.69	3.39
12	MVAH	Reactive High Net Energy Register	18.15	18.26	18.35
13	MVAH	100 Apparent While Active Import MD Register (Reg 0-24hrs)	1.748	1.748	1.748
14	MVA	100 Apparent While Active Import MD Occurrence Time and Date (Reg 0-24hrs)	08.03.19.12.45	08.03.19.12.45	08.03.19.12.45
15	MVA	100 Apparent While Active Import MD Register (Reg 1)	0.008	0.008	0.008
16	MVA	100 Apparent While Active Import MD Occurrence Time and Date (Reg 1)	01.03.19.18.00	01.03.19.18.00	01.03.19.18.00
17	MVA/Import	Raising Demand With Elapsed Time Apparent while active import	0	0	0
18	MVA/Export	Raising Demand With Elapsed Time Apparent while active export	48.02049.788	48.00449.752	48.26450.012
19	MVA/Import	Apparent While Active Import Cumulative MD Register	24602.448	19591.864	19001.908
20	MVA/Export	Apparent While Active Export Cumulative MD Register	27028	27028	27028
21	BIB	MD Reset Or Bit Count	0	0	0
22	CIP MVA/Import	Last IP Demand With Elapsed Time Apparent while active import	0	0	0
23	CIP MVA/Export	Last IP Demand With Elapsed Time Apparent while active export	0	0	0
24	CIP MVA/Import	Last IP Demand With Elapsed Time Apparent while active import	50.04	50.04	50.04
25	Frequency	Last Block Frequency	6431.38	6428.85	6431.38
26	H1 MVA/Import	History 1 Fund Active Import Energy Register	27.92	27.95	28.24
27	H1 MVA/Export	History 1 Fund Active Export Energy Register	6431.31	6431.82	6432.89
28	H1 MVA/Import	History 1 Apparent While Active Import Energy Register	28.31	28.35	28.62

78	MVAH (Import)	High Resolution Energy Apparent while active import	6776.7127	6777.1106	6776.2493
79	MVAH (Export)	High Resolution Energy Apparent while active export	28.7160	28.7419	28.9366
80	MVAH (Import Lag)	High Resolution Energy Lag: Reactive Import while Active Import	15.4980	15.3987	15.5138
81	MVAH (Export Lead)	High Resolution Energy Lead: Reactive Export while Active Export	88.3967	88.4707	88.7115
82	MVAH (Import Lag)	High Resolution Energy Lag: Reactive Import while Active Import	0.9070	0.8956	0.9005
83	MVAH (Export Lead)	High Resolution Energy Lead: Reactive Export while Active Export	231.6078	232.0433	232.5847
84	KV	Phase To Neutral Voltage R	19.66	19.65	19.64
85	KV	Phase To Neutral Voltage Y	19.64	19.64	19.64
86	KV	Phase To Neutral Voltage B	19.67	19.68	19.69
87	Amps	Phase Line Current	0.30	0.30	0.30
88	Amps	V Phase Line Current	0.30	0.30	0.30
89	Amps	Phase Line Current	0.29	0.29	0.29
90	Power Factor	Instantaneous Average Power Factor	-0.039	-0.044	-0.044
91	Frequency	50.00	50.11	49.98	
92	Power Factor Q1	-0.000	0.001	-0.001	
93	Power Factor Q2	-0.004	-0.006	-0.003	
94	Power Factor Q3	-0.006	-0.004	-0.000	
95	Power Factor Q4	-0.001	0.000	0.000	
96	Power Factor Q5	0.001	0.001	0.001	
97	MVA	Instantaneous Load Apparent	0.01	0.01	0.01
98	KV	Primary Voltage	3.902	3.947	3.982
99	Amps	Primary Current	50 A	50 A	50 A
100	Modbus ID	0001	0001	0001	
101	Modbus ID	0000	0000	0000	
102	Modbus ID	0000	0000	0000	
103	Modbus ID	0000	0000	0000	
104	Modbus ID	0000	0000	0000	
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317	Modbus ID	0			



ANNEXURE - IV

Details of IN-HOUSE Captive consumption For the Billing Month
of March - 2019

Name of the Plant & Location	: M/s Vyshaka Solar Energy Systems (P) Ltd., Nuthanakaluva		
Location of Metering	: Nuthanakaluva		
Type Of Fuel	: Solar	PPA/AWPA/PPWA/PA:	PPA
Date of Reading	01.04.2019	0-16	

DETAILS OF ENERGY METER

Make:	Type:	SL No:
CT Ratio:	PT Ratio:	Class:

In-House Captive Consumption meter readings for the month

DESCRIPTION	MWH/KWH	MVAH/KVAH
Final reading on Dt.	0	0
Previous reading on Dt.	0	0
Difference	0	0
MF for KWH/KVAH	1000	1000
Total In-House Captive Consumption (Units)	0	0

DE/Operation/Piler
Executive Engineer
104-P.S.P.D.C.L. Piler

EE/O&M/CTR
Executive Engineer
O&M/ATRANSCO,
CHITTOOR

Vyshaka Solar Energy Systems (P) Ltd.
Nuthanakaluva

APX01192 - Readings

Date: 01/04/2019 09:00:00 AM

Time of Day Energy

Current

Param 1: Active1 (Channel 1) (1.0.129.8.0.255)
 Param 2: Active2 (Channel 2) (1.0.129.8.0.255)
 Param 3: Apparent-Active1 (Type 2 (Channel 3) (1.0.129.8.0.255)
 Param 4: Apparent-Active2 (Type 2 (Channel 4) (1.0.129.8.0.255)

Time of Day	Param 1 kwh	Param 2 kwh	Param 3 kVAh	Param 4 kVAh
TODSLAB 1	440.00	138900.00	710.00	1.7150.00
TODSLAB 2	138910.00	1790.00	138900.00	2140.00
TODSLAB 3	367720.00	50.00	367720.00	0.00
TODSLAB 4	1710420.00	600.00	1711280.00	630.00
TODSLAB 5	4510.00	8750.00	4610.00	8770.00
TODSLAB 6	0.00	4270.00	0.00	4420.00
TODSLAB 7	0.00	0.00	0.00	0.00
TODSLAB 8	0.00	0.00	0.00	0.00

History 1

Param 1: Active1 (Channel 1) (1.0.129.8.0.101)
 Param 2: Active2 (Channel 2) (1.0.129.8.0.101)
 Param 3: Apparent-Active1 (Type 2 (Channel 3) (1.0.129.8.0.101)
 Param 4: Apparent-Active2 (Type 2 (Channel 4) (1.0.129.8.0.101)

Time of Day	Param 1 kwh	Param 2 kwh	Param 3 kVAh	Param 4 kVAh
TODSLAB 1	440.00	138900.00	710.00	1.7150.00
TODSLAB 2	138910.00	1790.00	138900.00	2140.00
TODSLAB 3	367720.00	50.00	367720.00	0.00
TODSLAB 4	1710420.00	600.00	1711280.00	630.00
TODSLAB 5	4510.00	8750.00	4610.00	8770.00
TODSLAB 6	0.00	4270.00	0.00	4420.00
TODSLAB 7	0.00	0.00	0.00	0.00
TODSLAB 8	0.00	0.00	0.00	0.00

History 2

Param 1: Active1 (Channel 1) (1.0.129.8.0.102)
 Param 2: Active2 (Channel 2) (1.0.129.8.0.102)
 Param 3: Apparent-Active1 (Type 2 (Channel 3) (1.0.129.8.0.102)
 Param 4: Apparent-Active2 (Type 2 (Channel 4) (1.0.129.8.0.102)

Time of Day	Param 1 kwh	Param 2 kwh	Param 3 kVAh	Param 4 kVAh
TODSLAB 1	440.00	138900.00	710.00	1.7150.00
TODSLAB 2	1319760.00	1740.00	1320310.00	2130.00
TODSLAB 3	3491800.00	50.00	3491800.00	0.00
TODSLAB 4	1614930.00	600.00	1615730.00	630.00
TODSLAB 5	4130.00	8600.00	4500.00	8620.00
TODSLAB 6	0.00	4240.00	0.00	4320.00
TODSLAB 7	0.00	0.00	0.00	0.00
TODSLAB 8	0.00	0.00	0.00	0.00

Time of Day Maximum Demand

Current

Applied methodologies and standardized baselines:

UCR Protocol Standard Baseline e & Emission Factor

AMS-I. D: "Grid connected renewable electricity generation", Version 18.0

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

CATEGORY – AMS-I. D: "Grid connected renewable electricity generation", Version 18.0

Applicability of methodologies and standardized baselines

- 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) The grid-connected 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 grid-connected solar photovoltaic power generation with totalled installed capacity 2.2 MW which is less than 15MW.
- The project activity involves installation of Solar PV (SPV). Hence, the activity is not



a Hydro power project.

- The project activity was commissioned in 31/03/2017 and is below the 15 MW methodology threshold.
- 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
 - Power Purchase Agreement
 - Project commissioning certificates
- 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.
- 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.

Applicability of double counting emission reductions

The project was not applied under any other GHG mechanism. Hence project will not cause double accounting of carbon credits (i.e., CoUs). Agreement for Double Counting Avoidance from Proponent has been provided duly signed on 12.06.2023.

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	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 ₂ O	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 ₂ O	Excluded	Excluded for simplification. This is conservative.

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.

Total Installed Capacity: 2.2 MWh

Total Grid Connected Capacity: 2.0 MWh

Commissioning Date of first installation: 31/03/2017

Annual Emission Reductions: $BE_y = EG_{BL,y} \times EF_{CO_2, GRID, y}$

BE_y = 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)

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

Establishment and description of baseline scenario (UCR Protocol)

As per para 19 of the approved consolidated methodology AMS-I.D. Version 18.0, 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 Photovoltaic Plant to harness the green power from Solar energy and sell it to the grid. 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 at grid from the 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 CO₂ emission factor (tCO₂/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO₂/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 2021-22, the combined margin emission factor calculated from CEA database in India results into same emission factors as that of the default value. Hence, the same emission factor has been considered to calculate the emission reduction.

Net GHG Emission Reductions and Removals

Thus, $ER_y = BE_y - PE_y - LE_y$

Where:

ER_y = Emission reductions in year y (tCO₂/y)

BE_y = Baseline Emissions in year y (t CO₂/y);

PE_y = Project emissions in year y (tCO₂/y)

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



Baseline Emissions

Baseline emissions include only CO₂ 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: $BE_y = EG_{PJ,y} \times EF_{grid,y}$

Where:

BE_y = Baseline emissions in year y (tCO₂)

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

$EF_{y,grid}$ = Emission factor of the grid (t CO₂e/MWh) = 0.9 (UCR Standard)

Project Emissions

As per paragraph 39 of AMS-I.D. (Version 18.0), for most renewable energy project activities emission is zero.

Hence, $PE_y = 0$

Leakage Emissions

As per paragraph 42 of AMS-I.D. version-18, all projects other than Biomass projects have zero leakage.

Hence, $LE_y = 0$

Issuance Period: 5 years 9 months – 31/03/2017 to 31/12/2022

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

Year	2017	2018	2019	2020	2021	2022
MWh Supplied to grid	2247.996	3559.2	3144.63	2585.67	2299.51	2711.94
ER (tCO ₂)	2023	3203	2830	2327	2069	2440
					Total	14892

Total Emission Reductions (ER_y) = 14,892 CoUs (14,892 tCO₂eq)



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.D.: “Grid connected renewable electricity generation” Ver 18, 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 - 2.0 MW Solar Grid Power Project by VSESPL, Chittoor, Andhra Pradesh (UCR ID – 325) for the period **31/03/2017 to 31/12/2022** amounts to 14,892 **CoUs** (14,892 **tCO₂eq**)

Santosh Nair
Lead Verifier
(Signature)



Praful Shinganapurkar
Senior Internal Reviewer
(Signature)

Date: 04/07/2023