Verification Report for

Project : 23 MW Bundled Solar Grid Power Project TNSPEPL, Tamil Nadu, India.

UCR Project ID : 420

Name of Verifier	SQAC Certification Pvt. Ltd.
Date of Issue	April 22, 2024
Project Proponent	M/s IndiGrid Limited.
Work carried by	Mr. Santosh Nair
Work reviewed by	Mr. Praful Shinganapurkar

Summary:

SQAC Certification Pvt. Ltd. has performed verification of the "23 MW Bundled Solar Grid Power Project TNSPEPL, Tamil Nadu, India." The purpose of the proposed project activity is to produce electricity through a sustainable and renewable energy source - solar radiation. Specifically, the project involves setting up and operating a total installed capacity of 23 MW of Solar PV plant. The project activity is developed at three sites of 10 MW, 8 MW and 5 MW at Chitthavanayakanpatti, Muthuramalingapuram and Perumpalli respectively, located at Tamil Nadu, India.

The project activity meets the following UN SDG's:

Verification for the period**: 29/09/2015 to 31/12/2023** (08 years, 03 months, 02 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 ACM0002: Grid-connected electricity generation from renewable sources - Version 21.0. 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 23 MW Bundled Solar Grid Power Project TNSPEPL, Tamil Nadu, India, (UCR ID – 420) for the period **01/03/2019 to 31/12/2023** amounts to **2,97,767 CoUs** (**2,97,767** tCO_2eq)

Detailed Verification Report:

Purpose:

The project activity titled, 23 MW Bundled Solar Grid Power Project TNSPEPL, Tamil Nadu, India is bundle of 3 (three) ground mounted renewable solar energy projects located at the following locations in Tamil Nadu, India:

Sr. No.	Village	District	Type	Installed Total Capacity	Commissioning Date
1	Perumpalli	Dindigul	Ground mounted	5 MW	28.12.2015
2	Muthuramalingapuram	Virudhunagar	Ground mounted	8 MW	28.09.2015
3	Chitthavanayakanpatti	Tuticorin	Ground mounted	10 MW	02.11.2015

The power produced by the 10MW, 8MW and 5MW is evacuated at the substation located at Vilathikulam, Muthuramalingapuram and Eriyodu respectively.

The project activity is promoted by TN Solar Power Energy Private Limited (TNSPEPL), which belongs to 'INDIGRID' also called the Project Proponent or PP. PP has the full ownership of the project activity.
The Project activity is a new facility (Greenfield) and the electricity generated by the project will be exported to the Indian electricity grid. The project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid.

The objective of the proposed project is to generate electricity using a clean and renewable source of energy i.e., solar radiation. The project activity displaces grid electricity consumption (e.g. grid import) at the user end. The project activity generated **3,30,859 MWh** of renewable electricity over the entire monitored period.

The commissioning date of the project activity is considered as 28.12.2015 which is the commissioning date of the first bundle of 5MW project activity.

5MW

8MW

10 MW

Commissioning Certificate

5 MW

TANGEDCO LTD

FROM
Er.S.Stephen Arockiaraj, B.E.,
Superintending Engineer,
Dindigul Electricity Distribution Circle,
Dindigul.2.

TO
The TN Solar Power Energy P)Ltd,
No:560-562,4-D, 4th Floor,
Century Plaza,Teynampet,
Chennai – 600 018

Lr.No:-SE/DEDC/DGL/AEE/GL/AE1/F.SPG/D.No.627/16,Dt.30.05.2016

Sir,

Sub :- Electy -DEDC-M/s. Tamil Nadu Solar Power Energy (P)Ltd-Estabilishment of 1 x5 MW solar Power Plant at SF No:97/2,97/3.99/1.99/2.101/1 to 101/3,104/1,105/1 to 105/8,106,107/1 to 107/3,127/1B and 133/1 of Perumpalli village,Dindigul District-Parallel operation with TANGEDCO Grid- Grid synchronization-Intimation-Regarding.

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We are glad to inform that 1 x 5 MW solar Power Plant at SF No: 97/2,97/3.99/1.99/2.101/1 to 101/3,104/1,105/1 to 105/8,106,107/1 to 107/3,127/1B and 133/1 of Perumpalli village, Dindigul District has been successfully synchronized with TANGEDCO GRID on 28.12.2015.

Superintending Engineer,
DEDC/Dindigul.

Copy Submitted to the Chief Engineer/Distribution/Madurai.
Copy submitted to the Chief Engineer/NCES/Chennai.
Copy to the Superintending Engineer/NCES/Udumalpet
Copy to the Executive Engineer/Distribution/North/Dindigul

Commissioning Certificate

8 MW

TAMILNADU GENERATION AND DISTRIBUTION CORPORATION LTD

From

Er. A. Ashok Kumar, B.E.,
Superintending Engineer,
Virudhunagar Elecy. Distn. Circle,
TANGEDCO / Virudhunagar

To

M/s. TN Solar Power Energy (P)Ltd,
Muthuramalingapuram **Village,**
Aruppukottai Taluk
Virudhunagar District.

Lr.No.SE/VREDC/VDR/AEE/GL/AE.1/F. SOLAR/D.NO: 1871 /15, DT 19.10.2015

Sir,

Sub: VDR Solar HT SC No: 015 - Commissioning on 28 .09.2015

intimation - Reg

Ref:1. Memo.No:DIR/GEN/CE/NCES/SE/Solar/EE/SCB/A3/F. M/s TN Solar /D.1125/15 dt: 26.09.2015
2. Lr.No:EE/D/APK/TA1/F.Solar/D.No:808/15 dt: 19.10.2015

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8 MW Capacity Solar Power Plant of M/s. TN Solar Power Energy (P)Ltd, **has been commissioned on 28.09.2015 . The Particulars of ~~Generation~~** commissioning **are as below:**

Sl No	Village	Capacity	HT.SC.No. & Date Of Commissioning
1	Muthuramalingapuram Village, Aruppukottai (Taluk) Virudhunager (Dist)	8 MW	VDR Solar HT SCNo :015, DT:28.09.2015

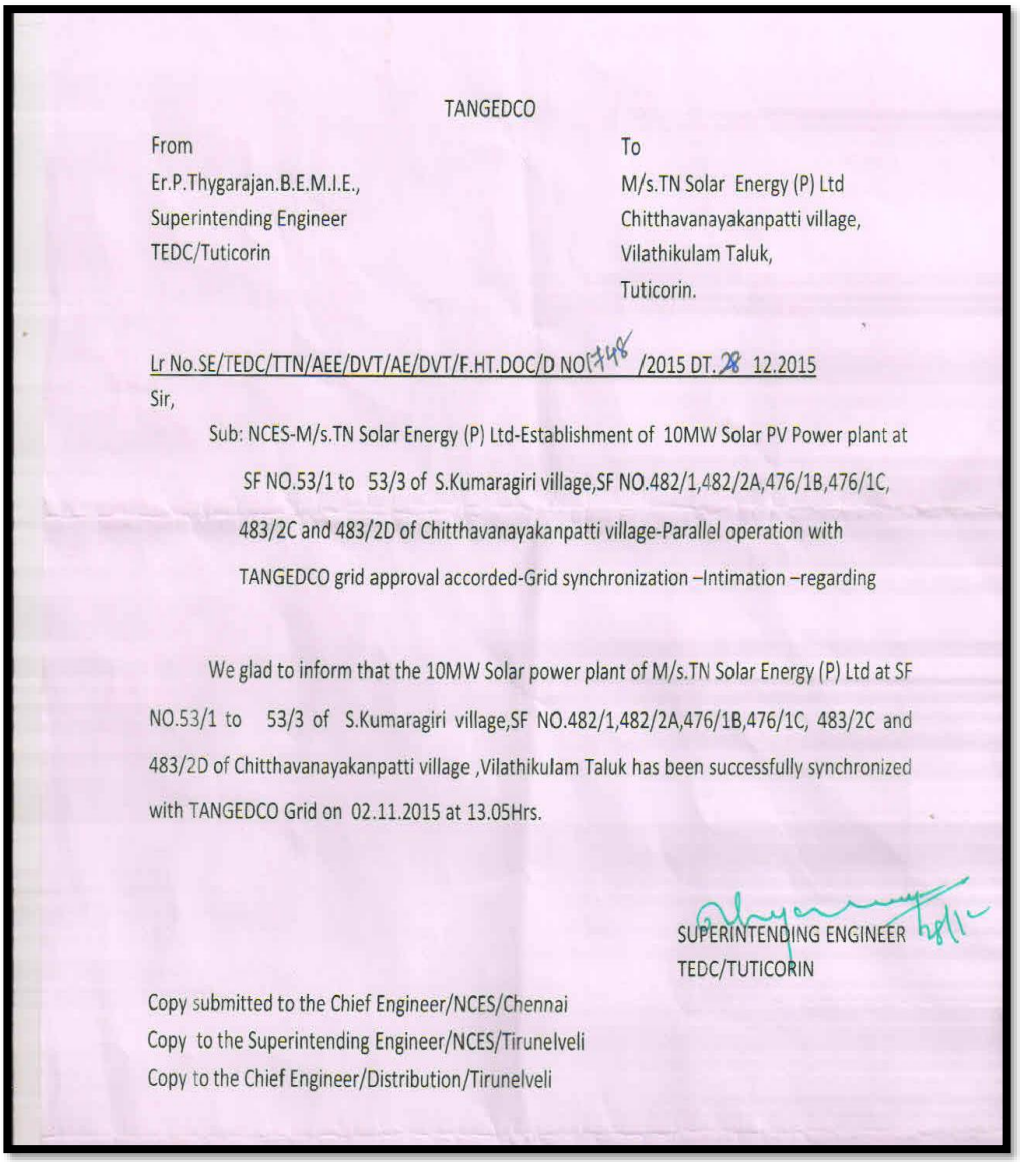
:

Superintending Engineer,
Virudhunagar Elecy. Distn. Circle
TANGEDCO / Virudhunagar

Copy to: The Executive Engineer / Distn / Aruppukottai.
Copy to: The Asst Executive Engineer / Rural/Aruppukottai
Copy to: DFC/CO/Virudhunagar & A. O / REV / VREDC / VDR

Commissioning Certificate

10 MW



TANGEDCO

From
Er.P.Thygarajan.B.E.M.I.E.,
Superintending Engineer
TEDC/Tuticorin

To
M/s.TN Solar Energy (P) Ltd
Chitthavanayakanpatti village,
Vilathikulam Taluk,
Tuticorin.

Lr No.SE/TEDC/TTN/AEE/DVT/AE/DVT/F.HT.DOC/D NO(748 /2015 DT.28 12.2015

Sir,

Sub: NCES-M/s.TN Solar Energy (P) Ltd-Establishment of 10MW Solar PV Power plant at SF NO.53/1 to 53/3 of S.Kumaragiri village,SF NO.482/1,482/2A,476/1B,476/1C, 483/2C and 483/2D of Chitthavanayakanpatti village-Parallel operation with TANGEDCO grid approval accorded-Grid synchronization –Intimation –regarding

We glad to inform that the 10MW Solar power plant of M/s.TN Solar Energy (P) Ltd at SF NO.53/1 to 53/3 of S.Kumaragiri village,SF NO.482/1,482/2A,476/1B,476/1C, 483/2C and 483/2D of Chitthavanayakanpatti village ,Vilathikulam Taluk has been successfully synchronized with TANGEDCO Grid on 02.11.2015 at 13.05Hrs.

SUPERINTENDING ENGINEER
TEDC/TUTICORIN

Copy submitted to the Chief Engineer/NCES/Chennai
Copy to the Superintending Engineer/NCES/Tirunelveli
Copy to the Chief Engineer/Distribution/Tirunelveli

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	29/09/2015
Carbon credits s (CoUs) claimed up to	31/12/2023
Total ERs generated in this crediting period (tCO_{2eq})	2,97,767 tCO_2eq (expressed as CoUs)
Project Emission	0
Leakage	0

As per the UNFCCC Methodology, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:
"The electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources."

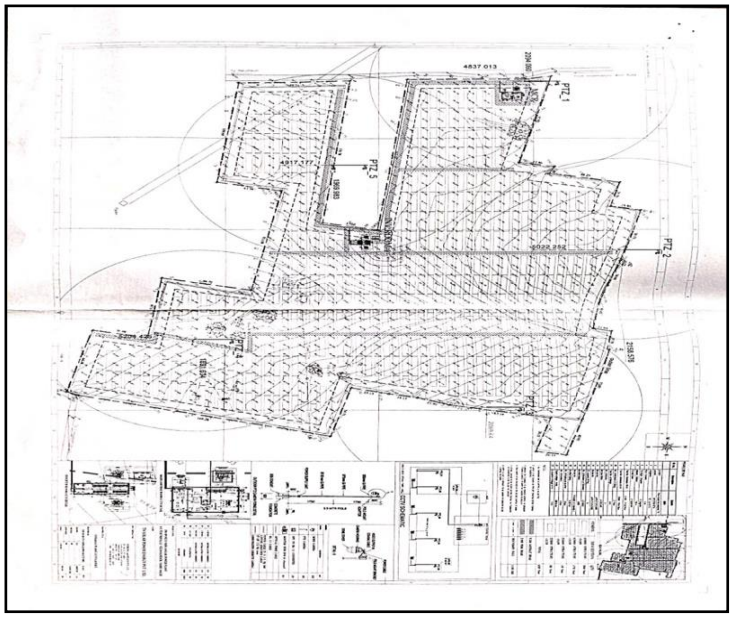
Location of project activity:

Country : India.
State : Tamil Nadu

The representative location map is included below:

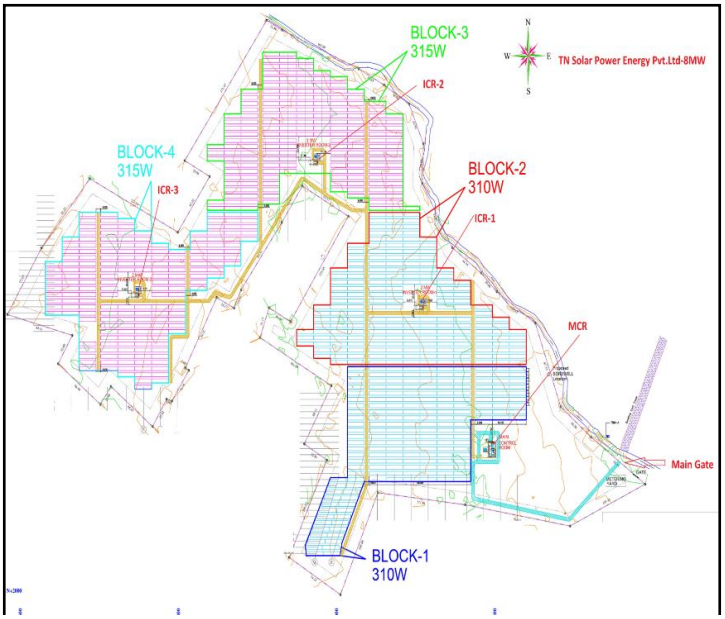
5 MW Solar Project

District	: Dindigul
Village	: Perumpalli
Taluka	: Vedasandur
State	: Tamil Nadu
Latitude	: 10°28'50.90"N
Longitude	: 78°3'42.87"E
Project Commissioning Year	: 28.12.2015



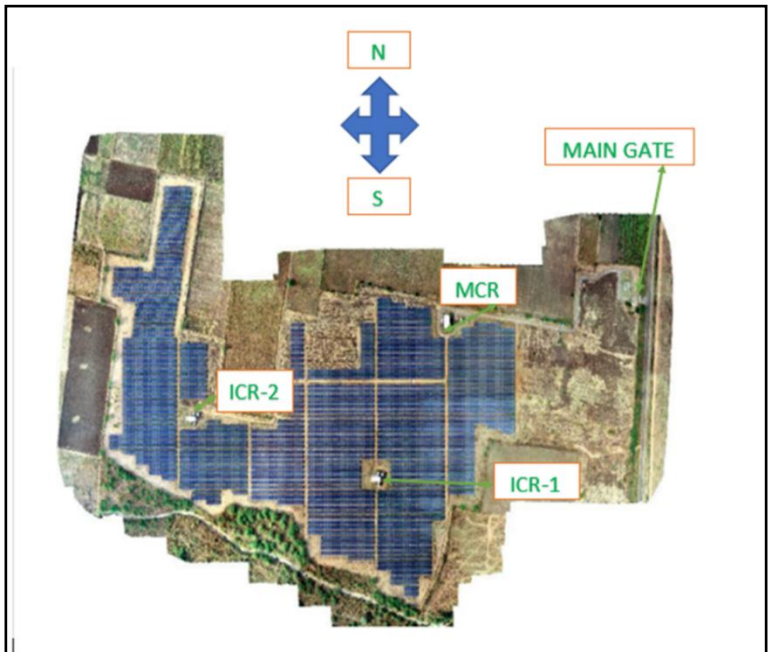
8 MW Solar Project

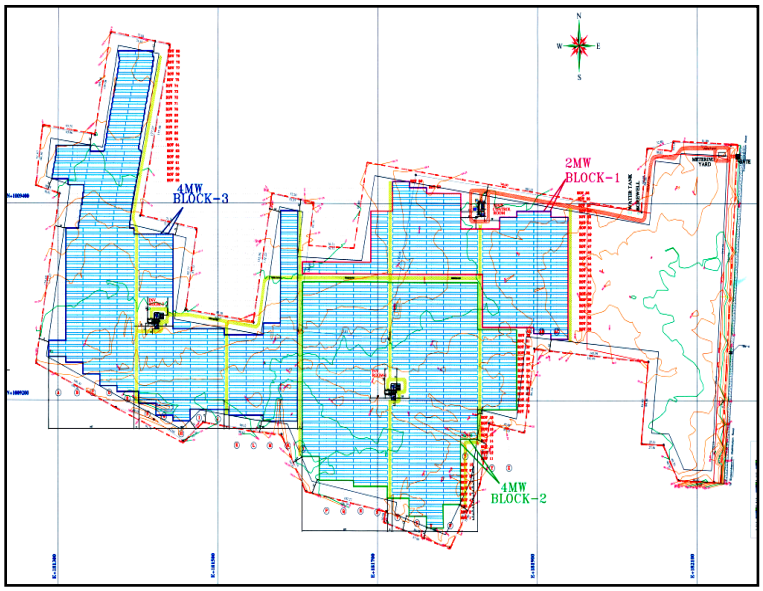
Country	: India.
District	: Virudhunagar
Village	: Muthuramalingapuram
State	: Tamil Nadu
Latitude	: 9°26'25.38°N
Longitude	: 78°10'4.71°E
Project Commissioning Year	: 28.09.2015



10 MW Solar Project

Country	: India.
District	: Tuticorin
Village	: Chitthavanayakanpatti
Taluka	: Vilathikulam
State	: Tamil Nadu
Latitude	: 9°07'3.98°N
Longitude	: 78°6'28.52°E
Project Commissioning Year	: 01.11.2015





Scope:

The scope covers verification of emission reductions from the project 23 MW Bundled Solar Grid Power Project TNSPEPL, Tamil Nadu, India, (UCR ID – 420)

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 safest and sound environment friendly technologies. The project activity involves the generation of grid-connected electricity from renewable solar energy. The project activity has a total installed capacity of 23 MW which qualifies for a large-scale project, i.e., solar radiation. The details are shown below:

Installed Total Capacity	Village	District	State	Type	Coordinates	Commissioning Date
5 MW	Perumpalli	Dindigul	Tamil Nadu	Ground mounted	10°28'50.90"N 78°3'42.87"E	28.12.2015
8 MW	Muthuramalingapuram	Virudhunagar			9°26'25.38°N 78°10'4.71°E	28.09.2015
10 MW	Chitthavanayakanpatti	Tuticorin			9°07'3.98°N 78°6'28.52°E	02.11.2015

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		
	5 MW	8 MW	10 MW
Total number of Photovoltaic Modules	11508 + 7518	15456 + 15288	23184 + 15288
Rating of Photovoltaic Module	310 Wp and 315 Wp		
Module Model no. for 310 W	JA P6-72-310/3BB		
Module Model no. for 315 W	JA P6-72-315/3BB		
Technology	Poly Crystalline Silicon		
Solar Panel Maker	JA Solar		
Commissioning Date	28.12.2015	28.09.2015	02.11.2015
HT SC No.	DGL 007	015/VDR	243/TTN
Inverter Make	ABB		
Inverter model no.	PVS-800-57-1000kW		
Inverter Rooms	2	4	3
Inverter Transformer Make	VoltAmp		
Rating	1100 & 2200 kva		22000 kva
Sub-Station Details	Eriyodu 110kV/33kV/11kV	Muthuramalingapuram 110kV/33kV/11kV	Villathikulam 110kV/33kV/11kV

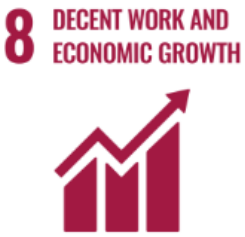
The project activity displaces electricity from an electricity distribution system that is supplied by at least one fossil fuel fired generating unit, i.e., in the absence of the project activity, the users would have been supplied electricity from a national or a regional grid (grid hereafter).

United Nations Sustainable Development Goals:

The project generates electrical power by harnessing solar energy through photovoltaic cells, effectively replacing non-renewable fossil resources. This transition contributes to sustainable economic and environmental development. Without the project, the equivalent power generation would have relied on fossil fuel-dominated power stations.

Consequently, the renewable energy generation from the project leads to a reduction in 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: **2,97,767 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: **3,30,859 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 Certificate
- Calibration Certificate
- Solar Panel layout
- Power Purchase Agreement
- JMR's
- Invoices
- Data provided upon request of all the documents of the related project.

Sampling:

Since the total installed capacity of 23 MW of Solar PV plants are situated at 3 different sites, 2 sites i.e., 10 MW in Chitthavanayakanpatti, 8 MW in Muthuramalingapuram have been selected for complete site monitoring through video.

Persons interviewed:

1. Mr. Ramchandran : DGM – Asset Maintenance - M/s IndiGrid Limited.
2. Mr. Pon Karthik : Site Manager – 8MW - M/s TN Solar Power Energy Private Limited.
3. Mr. Pon Pandian : Site Eng. – 10MW - M/s TN Solar Power Energy Private Limited.

5 MW

TN SOLAR POWER ENERGY PRIVATE LIMITED

Admin & Branch Office: Sreyas Virat, No. 14, Third Cross Street, Raja Annamalaipuram, Chennai- 600 028, Tamil Nadu

Project Office: Ondipulinayakkanur Village,Amathur Post, Virudhunagar, 626 005, Tamil Nadu

DATE : 29-05-2017

TO :

The Superintending Engineer,
Dindigul Distribution Circle,
Dindigul

INVOICE NO : TNSPEPL/SPG-007 /2017~18/02

Sl.No	PARTICULARS		No.of Units	Rate/unit (Rupees)	Amount in Rupees
1	Energy Generated by 5MW Solar PV Plant at **HTSC NO: SPG-DGL-007** of Dindigul Electricity Distribution Circle for the period from 27-04-2017 to 27-5-2017		813060.00	7.01	5699551
	E-TAX				0.00
2	Power Factor = 0.99				
3	LESS: No. of RKVAH Units Consumed		34620.00	0.13	4500.60
4	LESS: System Operating Charges				18600.00
5	LESS: Meter Reading Charges				300.00
6	kWh Export to TNEB	817380.00			5676150.00
	LESS: kWh Import from TNEB	4320.00			
	Net Export of kWh	813060.00	Total Rounded Off		5,676,150

Rupees Fifty Six Lakhs Seventy Six Thousand One Hundred And Fifty Only.

Note: **A)** As per Article 6(b) of the Energy Purchase Agreement, any delayed payment beyond the Due Date(**28-07-2017**) for payment of this invoice shall attract interest at the rate of 1% (one percent)

Note: **B)** TN VAT is exempted under commodity code No.725

Cheque in favour of TN Solar Power Energy Private Limited.

For TN Solar Power Energy Private Limited

(R. Ramachandran)

TANGEDCO

DINDIGUL ELECTRICITY DISTRIBUTION CIRCLE/METRO, DINDIGUL

STATEMENT OF SOLAR POWER GENERATION

MONTH 05/17

DATE OF READING : 27.04.2017 to 27.05.2017

CATEGORY : Solar (Sale to BOARD)

NAME OF THE GENERATOR : M/s.TN Solar Power Energy (P.) LTD.

HT Sc.No : SPG DGL 007

Parallel Operation Approval : Memo.No.CE/NCES/SE/SOLAR/EE/SCB/AEE.2/F.M/STN Solar.P.LTD./D.1028/15. Dt.01.09.2015

No.of days in the month 31

Capacity: 5 MW Inj. Voltage : 22 M.Factor : 9000

Reading Details	Reading Date	Export					
		C1	C2	C3	C4	C5	C
Final Reading	27.05.2017	237.28	1.27	0.00	2947.38	0.00	2285.93
Initial Reading	27.04.2017	229.47	1.21	0.00	1928.02	0.00	2149.70
Difference		18.81	0.06	0.00	119.36	0.00	136.23
Resultant		100680.00	360.00	0.00	716160.00	0.00	817380.00

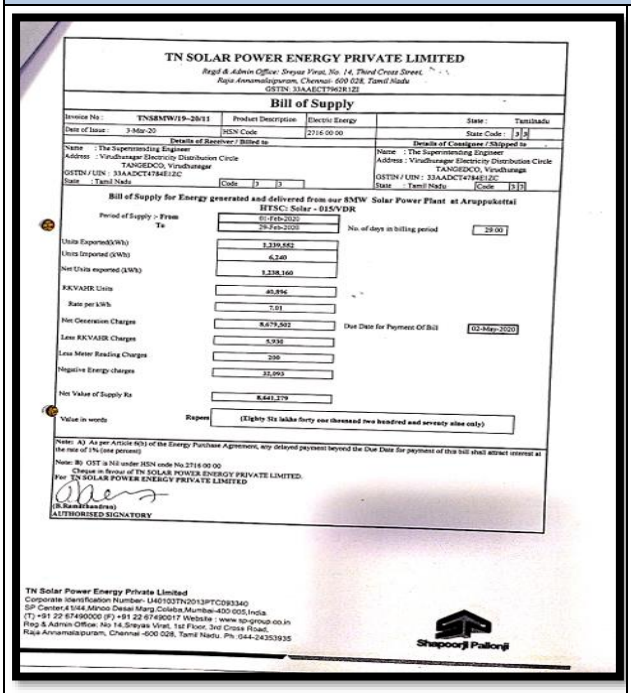
Reading Details	Reading Date	Import						RKVAH (Import)
		C1	C2	C3	C4	C5	C	
Final Reading	27.05.2017	0.33	3.19	1.08	2.39	6.99	13.99	102.99
Initial Reading	27.04.2017	0.32	2.99	1.01	2.34	6.58	13.27	97.22
Difference		0.01	0.20	0.07	0.05	0.41	0.72	5.77
Resultant		60.00	1200.00	420.00	180.00	2460.00	4320.00	34620.00

PARTICULARS	UNITS
TOTAL EXPORT	817380.00
(-) IMPORT	4320.00
NET EXPORT	813060.00
Claim @ Rs.7.01 p.u	5699551.00
Less payable charges	23400.60
Net Payable Amount	5676150.40

LT import charges	UNITS
EXCESS IMPORT	0.00
CC Charges @ 12 pu	0.00
E.Tax on CC	0.00
System Operating Charges:	18600.00
Reactive Power charges	4500.60
Meter reading Charges	300.00
Total amount payable	23400.60

ACCOUNTS OFFICER/REVENUE
FOR SUPERINTENDING ENGINEER

8 MW



TN SOLAR POWER ENERGY PRIVATE LIMITED

Regd & Admin Office: Sreyas Virat, No. 14, Third Cross Street, Raja Annamalaipuram, Chennai- 600 028, Tamil Nadu
GSTIN: 33AAECT7963E1ZJ

Bill of Supply

Invoice No :	TNSRMW/19–20/11	Product Description : Electric Energy	State : Tamilnadu
Date of Issue :	3-Mar-20	HSN Code 2716 00 00	State Code : 3 3

Details of Receiver / Billed to
Name : The Superintending Engineer
Address : Virudhunagar Electricity Distribution Circle TANGEDCO, Virudhunagar
GSTIN / UIN : 33AADCT4784E1ZC
State : Tamil Nadu Code 3 3

Details of Consignee / Shipped to
Name : The Superintending Engineer
Address : Virudhunagar Electricity Distribution Circle TANGEDCO, Virudhunagar
GSTIN / UIN : 33AADCT4784E1ZC
State : Tamil Nadu Code 3 3

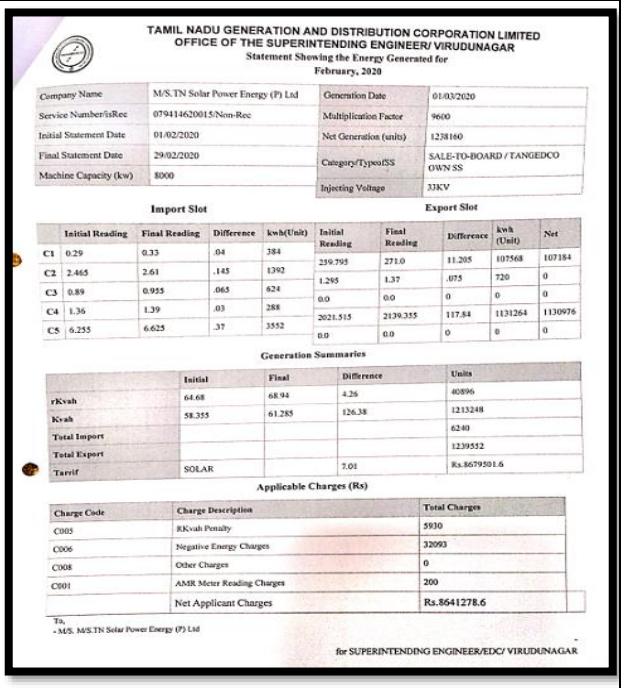
Bill of Supply for Energy generated and delivered from our 8MW Solar Power Plant at Aruppukottai HTSC: Solar - 015/VDR

Period of Supply :- From	01-Feb-2020
To	29-Feb-2020
No. of days in billing period	29.00
Units Exported(kWh)	1,239,662
Units Imported (kWh)	6,240
Net Units exported (kWh)	1,238,160
RKVAHR Units	40,896
Rate per kWh	7.01
Net Generation Charges	8,679,502
Due Date for Payment Of Bill	02-May-2020
Less RKVAHR Charges	5,930
Less Meter Reading Charges	200
Negative Energy charges	32,093
Net Value of Supply Rs	8,641,279
Value in words	Rupees (Eight Six lakhs forty one thousand two hundred and seventy nine only)

Note: A) As per Article 8(b) of the Energy Purchase Agreement, any delayed payment beyond the Due Date for payment of this bill shall attract interest at the rate of 1% (one percent)
Note: B) GST is Nil under HSN code No.2716 00 00
Cheque in favour of TN SOLAR POWER ENERGY PRIVATE LIMITED.
For TN SOLAR POWER ENERGY PRIVATE LIMITED
(S.Ramkrishnan)
AUTHORISED SIGNATORY

TN Solar Power Energy Private Limited
Corporate Identification Number- U40103TN2013PTC093340
SP Center,4/144,Minoo Desai Marg,Colaba,Mumbai-400 005,India.
(T) +91 22 67490000 (F) +91 22 67490017 Website : www.sp-group.co.in
Reg & Admin Office: No 14,Sreyas Virat, 1st Floor, 3rd Cross Road, Raja Annamalaipuram, Chennai -600 028, Tamil Nadu. Ph: 044-24353935

Shapoorji Pallonji



TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED
OFFICE OF THE SUPERINTENDING ENGINEER/ VIRUDUNAGAR
Statement Showing the Energy Generated for February, 2020

Company Name	M/S.TN Solar Power Energy (P) Ltd	Generation Date	01/03/2020
Service Number/isRec	079411620015/Non-Rec	Multiplication Factor	9600
Initial Statement Date	01/02/2020	Net Generation (units)	1238160
Final Statement Date	29/02/2020	Category/TypeofSS	SALE-TO-BOARD / TANGEDCO OWN SS
Machine Capacity (kw)	8000	Injecting Voltage	33KV

Import Slot

	Initial Reading	Final Reading	Difference	kwh(Unit)
C1	0.29	0.33	.04	384
C2	2.465	2.61	.145	1392
C3	0.89	0.955	.065	624
C4	1.36	1.39	.03	288
C5	6.255	6.625	.37	3552

Export Slot

Initial Reading	Final Reading	Difference	kwh (Unit)	Net
259.795	271.0	11.205	107568	107184
1.295	1.37	.075	720	0
0.0	0.0	0	0	0
2021.515	2139.355	117.84	1131264	1130976
0.0	0.0	0	0	0

Generation Summaries

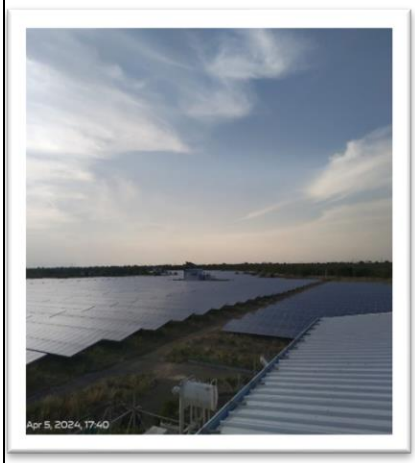
	Initial	Final	Difference	Units
rKvah	64.68	68.94	4.26	40896
Kvah	58.355	61.285	126.38	1213248
Total Import				6240
Total Export				1239552
Tarrif	SOLAR		7.01	Rs.8679501.6

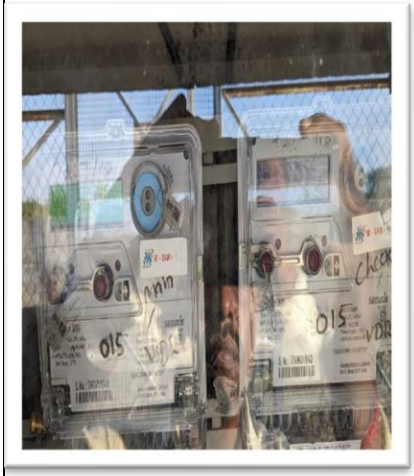
Applicable Charges (Rs)

Charge Code	Charge Description	Total Charges
C005	RKvah Penalty	5930
C006	Negative Energy Charges	32093
C008	Other Charges	0
C001	AMR Meter Reading Charges	200
	Net Applicant Charges	Rs.8641278.6

To,
- M/S. M/S.TN Solar Power Energy (P) Ltd

for SUPERINTENDING ENGINEER/EDC/ VIRUDUNAGAR





10 MW

TN SOLAR POWER ENERGY PRIVATE LIMITED
3RD FLOOR, 471 ANNASALAI, VATIKA BUSINESS CENTRE,PRESTIGE POLYGON
MOUNT ROAD, TEYNAMPET,CHENNAI 600018 TAMIL NADU
GSTIN : 33AAECT7962R1ZI

Bill of Supply

Invoice No : TN1000000027	Product Description	Electric Energy	State : Tamilnadu
Date of Issue : 01-Nov-23	HSN Code	2716 00 00	State Code : 33
IRN No.	dc5567e06945ff6453b964fc3215c56ef071f9435602ea6847c23281eee7238fad	Ack No.	152316149746458

Details of Receiver / Billed to	Details of Consignee / Shipped to
Name : The Superintending Engineer(Solar Energy)	Name : The Superintending Engineer
Address : 2nd Floor ,Eastern Wing ,No:144,Anna Salai, Chennai-600002	Address: 2nd Floor,EasternWing,No:144,Anna Salai, Chennai-600002
GSTIN / UIN : 33AADCT4784E1ZC	GSTIN / UIN : 33AADCT4784E1ZC
State : Tamil Nadu Code 33	State : Tamil Nadu Code 33

Bill of Supply for Energy generated and delivered from our 10MW Solar Power Plant at Villathikulam
HTSC: Solar - 079414700243

Period of Supply :- From	01-Oct-2023		
To	31-Oct-2023	No. of days in billing period	31.00
Units Exported(kWh)	13,16,040		
Units Imported (kWh)	6,780		
Net Units exported (kWh)	13,15,140		
RKVAHR Units	36,780		
Rate per kWh	7.01		
Net Generation Charges	92,19,131.4	Due Date for Payment Of Bill	31-Dec-2023
Less RKVAHR Charges	6069		
Less Meter Reading Charges	410		
Negative Energy charges	45,618		
Net Value of Supply Rs	91,67,034.40		
Value in words	Rupees (Ninety One Lakh Sixty Seven thousand Thirty Four rupees Forty paise only)		

Note: A) As per Article 6(b) of the Energy Purchase Agreement, any delayed payment beyond the Due Date for payment of this bill shall attract interest at the

01 Nov 2023 16:29

TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION LIMITED
OFFICE OF THE SUPERINTENDING ENGINEER/ TUTICORIN

Statement Showing the Energy Generated for October,2023

Company Name	M/s.TN SOLAR POWER ENERGY PVT LTD	Generation Date	01/11/2023
Service Number/isRec	079414700243/Non-Rec	Multiplication Factor	12000
Initial Statement Date	01/10/2023	Net Generation (units)	1315140
Final Statement Date	31/10/2023	Category/TypeofSS	STB / TANGEDCO OWN SS
Machine Capacity (kw)	10000	Injecting Voltage	11KV

Import Units

	Initial Reading	Final Reading	Difference	kwh(Unit)
C1	1.005	1.035	.03	360
C2	8.97	9.165	.195	2340
C3	2.39	2.39	0	0
C4	3.42	3.465	.045	540
C5	19.675	19.97	.295	3540

Export Units

	Initial Reading	Final Reading	Difference	kwh(Unit)	Net
C1	1031.81	1060.985	29.175	350100	349740
C2	5.14	5.14	0	0	0
C3	0.0	0.0	0	0	0
C4	6673.415	6753.91	80.495	965940	965400
C5	0.0	0.0	0	0	0

Net Units

C1 : 349740 C2 : 0 C3 : 0 C4 : 965400 C5 : 0

Generation Summaries

	Initial	Final	Difference	Units
rKvah	245.625	248.69	3.065	36780
Kvah	139.81	142.02	107.62	1291440
Total Import				6780
Total Export				1316040
Tariff	SOLAR		7.01	Rs.9219131.4

Applicable Charges (Rs)

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: ACM0002, "(Title: Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources, Ver 21.0).

The project activity involves the generation of grid-connected electricity from renewable solar energy. The project activity has an installed capacity of 23 MW which qualifies for a large-scale project. The project status corresponds to the methodology ACM0002., version 21.

Methodology key elements

Typical project(s)	Retrofit, rehabilitation (or refurbishment), replacement or capacity addition to an existing power plant or construction and operation of a new power plant/unit that uses renewable energy sources and supplies electricity to the grid. Battery energy storage system can be integrated under certain conditions
Type of GHG emissions mitigation action.	Renewable energy: Displacement of electricity that would be provided to the grid by more-GHG-intensive means.

Applicability of methodologies and standardized baselines

The project activity involves the generation of grid-connected electricity from the construction and operation of a new solar power-based power project. The project activity has an installed capacity of 23 MW which will qualify for a large-scale project. The project status corresponds to the methodology ACM0002., version 21, and the applicability of the methodology is discussed below:

- This project is included within the UCR Standard Positive List of technologies and qualifies for the large-scale CDM thresholds (i.e., installed capacity above 15 MW). The positive list comprises of the project being a greenfield plant /unit.
- Project activity involves installation of 23 MWh renewable electricity generation plant (solar farm) connected to the regional power grid.
- 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 is not an activity that involves switching from fossil fuels to renewable energy at the site of the project activity.
- 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

There is no double accounting of emission reductions in the project activity due to the following reasons:

- Uniquely Identifiable Project,
- Dedicated Commissioning Certificate and Connection Point,
- Dedicated Energy Meters.

Agreement for Double Counting Avoidance from Proponent has been provided duly signed on 22.04.2024.

Project boundary, sources and greenhouse gases (GHGs)

As per applicable methodology ACM0002. version - 21, “The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project power plant is connected to.”

Thus, the project boundary includes the Solar Power 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_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.

Project Emissions (PEy)

As per ACM0002. version - 21, only emissions associated with fossil fuel combustion, emissions from the operation of geothermal power plants due to the release of non-condensable gases, and emissions from a water reservoir of Hydro should be accounted for the project emission. Since the project activity is a solar electric power project, it's emission from renewable energy plants is nil. Thus, **PE = 0**

Leakage Emission

As per ACM0002. version - 21, '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**

Establishment and description of baseline scenario (UCR Protocol)

As per the approved consolidated methodology ACM0002. version - 21, 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 a new solar power plant to harness the green power from solar energy and utilize the generated electricity as a captive source for PP, In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel-fired plants. Hence, the baseline for the project activity is the equivalent amount of power produced at the Indian grid.

Grid Emission Factor: The term "grid emission factor" refers to the CO_2 emission factor (measured in tCO_2/MWh) associated with each unit of electricity provided by an electricity system. For Indian projects not previously verified under any GHG program, the UCR recommends using a conservative estimate of 0.9 tCO_2/MWh for the years 2013-2020. Additionally, for the vintage 2021-2022, the combined margin emission factor calculated from the CEA database in India indicates higher emissions than the default value. Consequently, the same emission factor has been applied to calculate emission reductions using a conservative approach.

Total Installed Capacity: 23 MW

Commissioning Date of first installation: 29/09/2015

Baseline Emission Reductions:

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:

$BEy = EG\ PJ,y \times EFgrid,y$

Where

BEy = Baseline emissions in year y (tCO_2)
$EGPJ,y$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the UCR project activity in year y (MWh)
$EFgrid,y$ = UCR recommended emission factor of 0.9 tCO_2/MWh has been considered.

Year	Net Export Units in MWh (5 MW)	Net Export Units in MWh (8 MW)	Net Export Units in MWh (10 MW)	Total Net Export in MWh (23 MWh)	BEy (tC02)
2015	0	2,580	1,995	4,575	4,117.00
2016	9,487	14,318	17,192	40,997	36,896.00
2017	9,365	14,485	15,790	39,640	35,676.00
2018	9,259	14,438	18,214	41,911	37,719.00
2019	9,336	14,475	17,883	41,694	37,524.00
2020	9,232	14,338	17,177	40,747	36,671.00
2021	9,032	13,880	17,434	40,346	36,311.00
2022	8,843	13,959	17,616	40,418	36,375.00
2023	8,827	13,822	17,884	40,532	36,478.00
Total	**73,381**	**1,16,293**	**1,41,185**	**3,30,859**	**2,97,767.00**

BEy = 3,30,895 MWh x 0.9 tCO_2/MWh

BEy = 2,97,767 tCO_2

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: (08 years, 03 months, 02 days) **29/09/2015 to 31/12/2023**

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

ERy = BEy – PEy – LEy

ERy = 2,97,767 - 0 - 0

Ery = 2,97,767 tCO_2

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Emission Reduction ERy ($tC0_2$)	4117	36896	35676	37719	37524	36671	36311	36375	36478	**2,97,767**

Total Emission Reductions (ER_y) = 2,97,767 CoUs (2,97,767 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 ACM0002: Grid-connected electricity generation from renewable sources - Version 21.0, 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 - 23 MW Bundled Solar Grid Power Project TNSPEPL, Tamil Nadu, India., (UCR ID – 420) for the period **29/09/2015 to 31/12/2023** amounts to **2,97,767 CoUs (2,97,767 tCO_2eq)**

SQAC Certification Pvt. Ltd. Mapusa-Goa

Santosh Nair
Lead Verifier
(Signature)

Praful Shinganapurkar
Senior Internal Reviewer
(Signature)

Date: 22/04/2024