GLOBAL CARBON COUNCIL

Driving Climate Actions

Project Verification Report

V3.1 - 2020

CONTENTS

COVER PAGE Project Verification Report Form (PVR)	
Complete this form in accordance with the instructions.	
BASIC INFORMATION	
Name of approved GCC Project Verifier / Reference No. (also provide weblink of approved GCC Certificate)	KBS Certification Services Limited (GCCV003/01) http://globalcarboncouncil.com/wp-content/uploads/2021/10/gcc-verifier-cert-kbs-certification-services-private-limited.pdf
Type of Accreditation	☐ Individual Track[1] ☒ CDM Accreditation ☐ ISO 14065 Accreditation Name of the entity that provided the accreditation: UNFCCC Date of validity: 29/11/2019 to 28/11/2024 Weblink of the active accreditation certificate and approval: https://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0051
Approved GCC Scopes and GHG Sectoral scopes for Project Verification	Scope 1 - Energy (renewable / non-renewable sources) E+/Environment Safeguard Standard S+/Social Sustainability Standard SDG+/United Nations Sustainable Development Goals
Validity of GCC approval of Verifier	04/01/2023 to 27/11/2024
Title, completion date, and Version number of the PSF to which this report applies	Title: 22.5 MW Solar Project in Tamil Nadu Dated: 27/11/2023 Version No. 3.0
Title of the project activity	22.5 MW Solar Project in Tamil Nadu
Project submission reference no. (as provided by GCC Program during GSC)	S00667
Eligible GCC Project Type[2] as per the Project Standard (Tick applicable project type)	☒ **Type A:** ☐ Type A1 ☒ Type A2 ☐ **Type B – De-registered CDM Projects:** ☐ Type B1

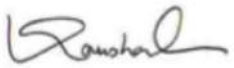
[1] **Note:** GCC Verifier under Individual tack is not eligible to conduct verifications for the GCC project that intends to supply carbon credits (ACCs) for CORSIA requirements.

[2] Project Types defined in Project Standard and Program Definitions on GCC website.

	☐ Type[3] B2
Date of completion of Local stakeholder consultation	20/06/2022
Date of completion and period of Global stakeholder consultation. Have the GSC comments been verified. Provide web-link.	19/12/2022 GSC was conducted between 05/12/2022 to 19/12/2022 https://www.globalcarboncouncil.com/global-stakeholders-consultation-6/ No comments were received during the GSC period.
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners)	M/s. Manikaran Power Limited on behalf of "GHCL Limited"
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	Primary Contact Person- NEELABHRA PAUL Contact details: 9599184354 Email ID: neel.paul@manikaranpowerltd.in Designation- President Contact Person- PIYUSH SHARMA Contact details: 8826966443 Email ID: piyush.s@manikaranpowerltd.in Designation- Asst. General Manager–Business Development
Country where project is located	India
GPS coordinates of the Project site(s)	**Latitude (N)** / **Longitude (E)** 11°5'33.5076" N (11.0926° N) / 78°25'0.5484" E (78.4168° E) 8°54'18.70" N (8.9051°N) / 78°02'57.20" E (78.0492°E)
Applied methodologies (approved methodologies of GCC or CDM can be used)	ACM0002 "Grid-connected electricity generation from renewable sources" (Version 20.0, EB 105 Annex 3)
GHG Sectoral scopes linked to the applied methodologies	GHG-SS #1. Energy (renewable/non-renewable sources)
Project Verification Criteria: Mandatory requirements to be assessed	☒ ISO 14064-2, ISO 14064-3 ☒ GCC Rules and Requirements ☒ Applicable Approved Methodology ☒ Applicable Legal requirements /rules of host country ☒ National Sustainable Development Criteria (if any)

[3] GCC Project Verifier shall conduct Project Verification for all project types except B_2.

	☒ Eligibility of the Project Type ☒ Start date of the Project activity ☒ Meet applicability conditions in the applied methodology ☒ Credible Baseline ☒ Additionality ☒ Emission Reduction calculations ☒ Monitoring Plan ☒ No GHG Double Counting ☒ Local Stakeholder Consultation Process ☒ Global Stakeholder Consultation Process ☒ United Nations Sustainable Development Goals (Goal No 13-Climate Change)
Project Verification Criteria: Optional requirements to be assessed	☒ Environmental Safeguards Standard and do-no-harm criteria ☒ Social Safeguards Standard do-no-harm criteria ☒ United Nations Sustainable Development Goals (in additional to SDG 13) ☒ CORSIA requirements
Project Verifier's Confirmation: The *GCC Project Verifier* has verified the GCC project activity and therefore confirms the following:	The GCC Project Verifier [KBS Certification Services Limited], certifies the following with respect to the GCC Project Activity [22.5 MW Solar Project in Tamil Nadu]. ☒ The Project Owner has correctly described the Project Activity in the Project Submission Form (version 3.0, dated 27/11/2023) including the applicability of the approved methodology [*ACM0002 "Grid-connected electricity generation from renewable sources" Version 20.0*] and meets the methodology applicability conditions and is expected to achieve the forecasted real and additional GHG emission reductions, complies with the monitoring methodology, has appropriately conducted local and global stakeholder consultation processes and has calculated emission reductions estimates correctly and conservatively. ☒ The Project Activity is likely to generate GHG emission reductions amounting to the estimated [415,148 tCO_2] as indicated in the PSF, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable GCC rules, including ISO 14064-2 and ISO 14064-3. ☒ The Project Activity is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard, and is likely to achieve the following labels: ☒ Environmental No-net-harm Label (**E⁺**) ☒ Social No-net-harm Label (**S⁺**)

	☒ The Project Activity is likely to contribute to the achievement of United Nations Sustainability Development Goals (SDGs), complies with the Project Sustainability Standard, and contributes to achieving a total of [3] SDGs, with the following[4] SDG certification label (**SDG+**): ☐ Bronze SDG Label ☒ Silver SDG Label ☐ Gold SDG Label ☐ Platinum SDG Label ☐ Diamond SDG Label ☒ The Project Activity complies with all the applicable GCC rules[5] and therefore recommends GCC Program to register the Project activity with above mentioned labels.
Project Verification Report, reference number and date of approval	Reference Number: GCC.22.VAL.039 B Version: 1.1 Date of approval: 05/12/2023
Name of the authorised personnel of GCC Project Verifier and his/her signature with date	 Mr. Kaushal Goyal Director Date: 05/12/2023

[4] SDG Certification labels: Bronze label (1 star): by achieving 2 out of 17 SDGs; Silver label (2 star): by achieving 3 out of 17 SDGs; Gold label (3 star): by achieving 4 out of 17 SDGs; Platinum label (4 star): by achieving 5 out of 17 SDGs; and Diamond label (5 star): by achieving more than 5 out of 17 SDGs.

[5] "GCC Rules" are defined in Project Definitions and refers to the rules and requirements set out by the GCC program related to GHG emission reductions and its voluntary certification labels and are available on the GCC Program's public website: https://www.globalcarboncouncil.com/resource-centre.html

1. PROJECT VERIFICATION REPORT

Section A. Executive summary

Summary of the Project Activity:
The project involves installation of 22.5MW_{AC} Solar Photovoltaic Power plant in Tamil Nadu state of India. The electricity generated from project activity is used for group captive consumption in the nearby textile facilities, through wheeling agreement with Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) /22/, there by displacing electricity from the regional grid which would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid.

This bundled project activity (7.5MW_{AC}+7.5MW_{AC}+7.5MW_{AC}) consists Photovoltaic panels and associated connection boxes, Inverters, transformers and electricity meters. Thus, the bundled project activity is estimated to generate an average of 44,616 MWh/year electricity and displacing 41,514 tCO_2/year. In the baseline scenario the equivalent amount of 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 main emission source in the baseline scenario is the power plants connected to the grid and main greenhouse gas involved is CO_2. The details of bundled project activity are provided below:

Sr. No	Project Activity and Location	Commissioning date of PA /18/	Latitude	Longitude	Use of electricity
1	Phase 1: 7.5MW Trichy District, Tamil Nadu	20/01/2022	11°5'33.5076" N (11.0926° N)	78°25'0.5484" E (78.4168° E)	Captive Consumption
2	Phase 2: 7.5MW Trichy District, Tamil Nadu	31/03/2022	11°5'33.5076" N (11.0926° N)	78°25'0.5484" E (78.4168° E)	
3	Phase 3: 7.5MW Thoothukudi District, Tamil Nadu	04/07/2023	8°54'18.70" N (8.9051°N)	78°02'57.20" E (78.0492°E)	

Scope of Verification:
The scope of the services provided by KBS Certification Services Limited for the project is to perform Project Verification of concerned GCC Project Activity and implemented safeguards aimed to achieve environmental and social impacts without causing any net harm. The contribution of the project activity towards the United Nations Sustainable Development Goals would also be verified. The scope of verification is to assess the claims and assumptions made in the Project Submission Form (PSF) /10/ and submitted documents, including the emission reduction calculation spreadsheets /11/, investment analysis spreadsheet /12/, letter of authorization against the GCC criteria /19/, including but not limited to, GCC PS, GCC VS, achievement of CORSIA label, applied GCC methodology and other relevant rules and requirements established under Program process.
Verification Process and Methodology:

The verification process was undertaken by a competent verification team and involved the following:

- the desk review of documents and evidence submitted by the project owner in context of the reference rules and guidelines issued by GCC,
- undertaking/conducting site visit, interview or interactions with the representative of the project owners/representatives,
- reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and
- preparing a draft and final verification opinion based on the auditing findings and conclusions
- technical review of the draft verification opinion along with other documents as appropriate by an independent competent technical review team
- finalization of the project verification opinion (this report)

Conclusion:
The review of the PSF, supporting documentation and the subsequent follow-up interviews have provided KBS with sufficient evidence to determine the project's fulfillment of all the stated criteria. In our opinion, the project activity "22.5 MW Solar Project in Tamil Nadu" meets all applicable GCC requirements for the PSF and correctly applied methodology the ACM0002, Version 20.0.

The Project Activity complies with all the applicable requirement of the GCC Program and ICAO's requirements on CORSIA Emissions Unit Eligibility Criteria and CORSIA Eligible Emissions Units, as per Clarification No 1., v1.3 paragraph 23-25, and the ACCs expected to be issued during the crediting period is likely to be CORSIA eligible and can be used by International Airlines for offsetting their emissions during all phases of CORSIA and therefore requests GCC Steering Committee to append CORSIA Certification label (C+) to this project

The Project Activity is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard and therefore requests GCC Steering Committee to append to this project Environmental No-net-harm Label (E+), Social No-net-harm Label (S+) to this project.

The Project Activity is likely to contribute to the achievement of United Nations Sustainable Development Goals (SDGs), complies with the Project Sustainability Standard and therefore requests GCC Steering Committee to append UN SDG Certification Labels (SDG+) to this project.

Section B. Project Verification team, technical reviewer and approver

B.1. Project Verification team

No.	Role	Last name	First name	Affiliation	Involvement in

					(e.g. name of central or other office of GCC Project Verifier or outsourced entity)	Desk/document review	On-site inspection	Interviews	Project Verification findings
1.	Team Leader (TA 1.2)	EI	Badaya	Rohit	Central Office	Y	Y	Y	Y
2.	Financial Expert	EI	S	Anuradha	Central Office	Y			Y
3.	Financial Expert	EI	Goyal	Satya Prakash	Central Office				Y
4.	Team Member	IR	Shrivastava	Shruti	Central Office	Y			

B.2. Technical reviewer and approver of the Project Verification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GCC Project Verifier or outsourced entity)
1.	Technical Reviewer (TA 1.2)	EI	Seshan	Ranganathan	Central Office
2.	Manager (Technical & Certification)	IR	Francis	Margaret	Central Office
3.	Approver	IR	Goyal	Kaushal	Central Office

Section C. Means of Project Verification

C.1. Desk/document review

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The report is based on the assessment of the PSF undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., on site visit, electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance and GCC decisions. Additionally, the cross checks were performed for information provided in the PSF using information from sources other than the verification sources, the verification team's sectoral or local expertise and, if necessary, independent background investigations

All the documents used for arriving project verification conclusion are listed in Appendix 03 and referenced accordingly in project verification report.

C.2. On-site inspection

Duration of on-site inspection: 09/02/2023 to 10/02/2023				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	The project verification team conducted interviews with the project owner, plant in-charge, other stakeholders to confirm the information and to resolve issues identified in the document review. An assessment was conducted as a part of project verification activity and involved: 1) An assessment of the implementation and operation of the project activity as per the PSF and GCC requirements 2) To validate that the project design, as documented is sound and reasonable, and meets the identified criteria GCC Standard Requirements and associated guidance 3) To assess conformance with the certification criteria as laid out in the GCC Standards; 4) To evaluate the conformance with the certification scope, including the GHG project and baseline scenarios, additionality; GHG sources, sinks, and reservoirs; and the physical infrastructure, activities, technologies and processes of the GHG project to the requirements of the GCC; 5) To evaluate the calculation of GHG emissions, including the correctness and transparency of formulae and factors used; assumptions related to estimating GHG emission reductions; and uncertainties; and 6) To determine whether the project could reasonably be expected to achieve the estimated GHG reduction/removals. 7) A review of information flows for generating, aggregating and reporting of the ex-ante monitoring parameters. 8) Interviews with relevant personnel to confirm that the operational and data collection procedures can be implemented in accordance with the Monitoring Plan 9) A cross-check between information provided in the submitted documents and data from other sources 10) A review of calculations and assumptions made in determining the GHG data and estimated ERs, and 11) An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters 12) Verification of Stakeholder Consultation by interviewing the stakeholders. 13) Additional labels (E+,S+ SDGs and C+) 14) Confirmation of legal ownership of the project activity and avoidance on double accounting	Trichy District, Tamil Nadu, Thoothukudi District, Tamil Nadu	09/02/2023 10/02/2023	Rohit Badaya

C.3. Interviews

No.	Interview			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Manikandan	P.	Dy. Manager, GHCL	09/02/2023 (on-site visit)	- Project Implementation status - Project Boundary - Methodology - Eligibility criteria - Host country Requirements - Monitoring Plan - Project activity start date and crediting period - Roles and responsibilities of the project owner - Local Stake holder consultation - Baseline assumptions - Additionality - Training to the Monitoring personnel - Emission reduction calculations - Legal Ownership of the project activity - Double counting of the carbon credits of the project activity - E+, S+, SDG+ and CORSIA aspects as per the PSF and GCC requirements	Rohit Badaya
2.	Kumar	R. Anantha	Site Incharge, GHCL			
3.	Gnanasekan	S	O&M Incharge, Prozeal			
4.	Sivanantham	J	Sr. Technician, Lucmen Energy			
5.	Nagarajan	G	Technician, Lucmen Energy			
6.	Sakthi	S	Technician, Lucmen Energy			
7.	Sakthivel	M	Technician, Lucmen Energy			
8.	Pandian	K	Technician, Lucmen Energy			
9.	Avinash	R	Technician, Lucmen Energy			
10.	Anandharaju	R	Security Person, Lucmen Energy			
11.	Prakash	Chandra	Local stakeholder			
12.	Balasubraim	R.	Local stakeholder			
13.	Sargunan	T.	Local stakeholder			
14.	Haran	A.	Local stakeholder			
15.		Sabulal	Labour, Lucmen Energy			
16.	Prasanth	R. Jauchai	Local stakeholder			

17.	Karunanithi	V.	Local stakeholder			
18.	Manikandan	P.	Dy. Manager, GHCL	10/02/2023 (on-site visit)		
19		Saravanan	PM, Prozeal			
20.	Kumar	Senthil	Supervisor, DSK			
21.	Karthi	Kalatai	Engineer, DSK			
22	Murugan	Vel	Fitter			
23	Sai	Senthil	Engineer			
24		Karthi	Supervisor			
25		Murali	Fitter			
26		Nelson	Fitter			
27.		Willson	Fitter			
28.		Karupusamu	Farmer			
29.		Mahesh	Engineer, Prozeal			
30		Ragupainy	Farmer			
31		Backuman	Farmer			
32		Karthik	Local Stakeholder			
33		Anandraj	Engineer, Luckmen			
34		Jugumer	Engineer, Luckmen			
35.	Kumar	Muthu	Sr. Engineer, Luckmen			
36.		Rajadmai	Driver			
37.	Panjiyara	Rohit	Dy. Manager-BD, MPL	16/02/2023 29/08/2023 01/12/2023 (telephonic/ zoom call)		
38	Kumar	N.	Senior General Manager, GHCL			

C.4. Sampling approach

Not applicable as no sampling has been used during the project verification.

C.5. Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	Applicable to Project Types	No. of CL	No. of CAR	No. of FAR
Green House Gas (GHG)				

Identification and Eligibility of project type	A_1, A_2, B_1, B_2			
General description of project activity	A_1, A_2, B_1, B_2	2	1	
Application and selection of methodologies and standardized baselines	A_1, A_2, B_1, B_2			
- Application of methodologies and standardized baselines	A_1, A_2, B_1, B_2	2		
- Deviation from methodology and/or methodological tool	A_1, A_2, B_1, B_2			
- Clarification on applicability of methodology, tool and/or standardized baseline	A_1, A_2, B_1, B_2			
- Project boundary, sources and GHGs	A_1, A_2, B_1, B_2			
- Baseline scenario	A_1, A_2, B_1, B_2			
- Demonstration of additionality including the Legal Requirements test	A_1, A_2, B_1, B_2	8		
- Estimation of emission reductions or net anthropogenic removals	A_1, A_2, B_1, B_2		2	
- Monitoring plan	A_1, A_2, B_1, B_2	2		
Start date, crediting period and duration	A_1, A_2, B_1, B_2	1		
Environmental impacts	A_1, A_2, B_1, B_2			
Local stakeholder consultation	A_1, A_2, B_1	1		
Approval & Authorization- Host Country Clearance	A_1, A_2, B_1, B_2			1
Project Owner- Identification and communication	A_1, A_2, B_1, B_2			
Global stakeholder consultation	A_1, A_2, B_1			
Others (please specify)	A_1, A_2, B_1, B_2			
VOLUNTARY CERTIFICATION LABELS				
Environmental Safeguards (E^+)	A_1, A_2, B_1	1		
Social Safeguards (S^+)	A_1, A_2, B_1	1		
Sustainable development Goals (SDG^+)	A_1, A_2, B_1	1		
Authorization on Double Counting from Host Country (only for CORSIA)	A_1, A_2, B_1			
CORSIA Eligibility (C^+)				
Total		19	03	01

Section D. Project Verification findings

D.1. Identification and eligibility of project type

Means of Project Verification	The project is eligible under Type A2 (Sub-Type1) category as per GCC Project standard /2/ and GCC Clarification No 01 /6/ which is acceptable since the project has not been registered under any GHG program/Non GHG Program and the project operations for all the 3 phases of project activity started after the year 2016 as follows: - Commissioning date of Phase-1 was 20/01/2022, - Commissioning date of Phase-2 was 31/03/2022 - Commissioning date of Phase-3 was 04/07/2023 The above dates have been verified through the commissioning certificates of the project activity and found in order. Further following project meets the Type A2 (Sub-Type 1) project category as: • It is not required by a legal mandate and it does not implement a legally enforced mandate as confirmed by the assessment team verification of the relevant policies pertaining to generation of energy in the host country i.e., Electricity Act 2003 /35/, National Electricity Policy 2005 /35/, National Solar Mission /36/, Integrated Energy Policy 2006 /37/, National Action Plan on climate Change (NAPCC) 2008 /38/, Renewable Energy Certificates (RECs), 2011 /39/. • It complies with all the applicable host country legal requirements and it ensures compliance with legal requirements. The project is a renewable energy project activity and meets the host country requirements of sustainable development criteria. The project owner has got approval from TANGEDCO /21/ for construction and executed wheeling agreement with TANGEDCO /22/ prior to start date or the commissioning date of the plant which is in line with the paragraph 16 (b) of Project Standard Version 3.1 /2/, the project owner has demonstrated that required approvals and authorizations are available or being processed prior to the start of commercial operations of the project activity which is acceptable to the verification team. • The project also delivers real, measurable and additional emission reduction of 41,514 tCO_2 /11/ annually (average value over the crediting period) as compared to the baseline scenario • Project applies an approved CDM monitoring and baseline methodology ACM0002 “Grid-connected electricity generation from renewable sources” - Version 20.0 /13/.
Findings	No findings raised in this context.
Conclusion	The project is eligible as per the requirements under section 4 and Section 5 of the GCC project standard Version 3.1 /2/ and Section 6 of the Clarification No 1 /6/ of GCC which was verified from the documents submitted by the project owner. Further verification team cross checked the other GHG Programme like Clean Development Mechanism (CDM) Registry /40/, VERRA Registry /41/, Gold Standard (GS) Registry /42/ and voluntary non-GHG Programs like I-REC /44/, Renewable Energy Certificate (REC) Mechanism /43/ in India, for the information regarding the consistency of the title of the project activity, GPS coordinates, Legal Ownership of the Project activity and confirmed that the project was not submitted or registered under any other GHG programmes and voluntary non-GHG Programs.

D.2. General description of project activity

Means of Project Verification	The project involves installation of 22.5MW_{AC} Solar Photovoltaic Power plant in Tamil Nadu state of India. The electricity generated from project activity is used for group captive consumption in the nearby textile facilities, through wheeling agreement with Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) /22/, there by displacing electricity from the regional grid which would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid. Based on the interviews, it was observed that the requirement of captive user is more than the solar power generation from the project activity, hence it is unrealistic that the power generation from plant exceeds the requirement of captive consumption. This project activity consists Photovoltaic panels and associated connection boxes, Inverters, transformers and electricity meters. Thus, the project activity generated average 44,616 MWh/year electricity and displacing 41,514 tCO_2/year. In the baseline scenario the equivalent amount of 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 main emission source in the baseline scenario is the power plants connected to the grid and main greenhouse gas involved is CO_2.The Location details of each project locations are mentioned in section A of this report. The location details have been verified during the onsite visit and geo coordinates verified through google earth/maps and found to be correct. Phase-1 (7.5 MW): The project uses 18,354 number of 545 Wp PV modules /20/, and associated connection boxes, Inverters, other field equipments in all the project premises. The Invoices/Bills /29/ placed by equipment suppliers to the project owner has been checked and technical details of the equipments /20/ has been verified during onsite visit and found in order. Phase-2 (7.5 MW): The project uses 18,342 number of 545 Wp PV modules /20/, and associated connection boxes, Inverters, other field equipments in all the project premises. The Invoices/Bills /29/ placed by equipment suppliers to the project owner has been checked and technical details of the equipments has been verified during onsite visit and found in order. Phase-3 (7.5 MW): The project uses 9,348 number of 545 Wp PV modules and 9,082 number of 540 Wp PV modules /20/, and associated connection boxes, Inverters, other field equipments in all the project premises. The Invoices/Bills /29/ placed by equipment suppliers to the project owner has been checked and technical details of the equipments has been verified during onsite visit and found in order. The project owner declared in the PSF the lifetime of the project activity is 25 Years as guaranteed by the suppliers of PV panels /20/ of the project activity and same has been verified in the technical data sheet provided by the project owner /24/ and found acceptable. Further the Wheeling Agreement /22/ is also valid for 25 years, hence the lifetime of 25 years is considered reasonable. However, the Project owner have fixed crediting period 10 years which is accordance GCC project manual version 03.1 paragraph 51. The crediting period start date of the project activity is 20/01/2022 and end date is 19/01/2032. The project activity described as Type A2 (Sub-Type 1) and applied ACM0002.: Grid-connected electricity generation from renewable sources – Version 20.0 /13/ falls into the Large-Scale category as per CDM methodology. In addition to generating emission reductions the project activity also qualifies for other voluntary certification labels, Achieving the United Nations Sustainable Development Goals (SDG+) – Silver Environmental No-net harm – (E+) Social No-net harm – (S+)

	CORSIA – C+. In the baseline scenario the main source of emission was found to be CO_2 as electricity was generated mainly through fossil-fuel based power plants whereas in project scenario the electricity is generated by the Solar Power plant thereby reducing the CO_2 emissions. Thus, non-application of GWP in this project activity was found to be acceptable as the project boundary does not include any of the GHG emissions in the project scenario as per the applied methodology. The description in the PSF includes sufficient details and provides clarity on the project activity Further verification team cross checked the other GHG programmes like Clean Development Mechanism (CDM) Registry /40/, VERRA Registry /41/, Gold Standard (GS) Registry /42/, and voluntary non-GHG Programs like I-REC /44/, Renewable Energy Certificate (REC) Mechanism /43/ in India for the information regarding the consistency of the title of the project activity , GPS coordinates, Legal Ownership of the Project activity to determine if the project was part of any other GHG/non GHG Program prior to commencement of this verification. It was confirmed that the involved project owners have not submitted the project under any other GHG /non GHG program apart from GCC.
Findings	CL 01, CL 18, CAR 01 raised in this context and closed successfully
Conclusion	The project description was verified based on the review of documents. Based on the review of documents and by means of onsite verification the details provided in the PSF is found acceptable and complete.

D.3. Application and selection of methodologies and standardized baselines

D.3.1 Application of methodology and standardized baselines

Means of Project Verification	Applicability criterion as per ACM0002 version 20.0 /10/	Verifier Assessment
	This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); I Involve a retrofit of (an) existing operating plants/units; (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); oI(e) Involve a replacement of (an) existing plant(s)/unit(s).	The project involves installation of 22.5MW_{AC} Solar Photovoltaic Power plant, where there was no renewable power plant operating prior to implementation of the project activity and hence the project is a Greenfield power project. The electricity generated from project activity is used for group captive consumption in the nearby textile facilities, through wheeling agreement with Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) /22/, there by displacing electricity from the regional grid which would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid. In the baseline scenario the equivalent amount of 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. Thus, the project activity generated average 44,616 MWh/year electricity and displacing 41,514 tCO_2/year over the crediting period. This was verified through the documents submitted by the Project owner and confirmed the requirement.
	The methodology is applicable under the following conditions: (a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit; (b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of	This is applicable as the project activity is the installation of greenfield solar power plant to generate electricity /18/21/ which was also confirmed through interviews during the site visit.

	the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	
	In case of hydro power plants, one of the following conditions shall apply: (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (7), is greater than 4 W/m2Ir (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m2; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m2, all of the following conditions shall apply: (i) The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m2; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m2 shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project.	This is not applicable as the project activity is the installation of greenfield solar power plant to generate electricity /18/21/ which was also confirmed through interviews during the site visit.
	In the case of integrated hydro power projects, project proponent shall: (a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the	This is not applicable as the project activity is the installation of greenfield solar power plant to generate electricity /18/21/, which was also confirmed through interviews during the site visit.

generation capacity of the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.	
The methodology is not applicable to: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units.	The project activity is the installation of solar power plant to generate electricity/18/21/ and it not does not involve switching from fossil fuels to renewable energy sources at the site of the project activity and installation of biomass fired power plant. Hence this applicability criterion is applicable or relevant for the project activity
In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	This the new installation of Solar Power Plant /18/21/and not a retrofit, rehabilitations replacement or capacity additions which was verified and confirmed through onsite verification and interviewed with project owner and their representatives. Hence it is not applicable to the project activity.

Tool 07: Tool to calculate the emission factor for an electricity system

Applicability condition	Assessment
This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid	This project involves electricity generation from the solar PV modules that generate electricity, which is used for group captive consumption in the nearby textile facilities, through wheeling agreement with Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) /22/, there by displacing electricity from the

	(e.g. demand-side energy efficiency projects).	regional grid which would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the Indian grid. The baseline emissions are calculated from electricity supplied to the grid by the project activity multiplied with emission factor of the National grid. The emission factor calculated using OM, BM and CM using this tool and same was explained in section D.3.4 of this report. Thus, the applicability criterion is met.
	Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in "Appendix 1: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	The project activity has chosen the emission factor based on calculation performed by CEA. The same has been confirmed from CEA CO_2 database User Guide Version 17.0 /34/. It is also further confirmed that the only grid connected power plant has been considered for OM, BM and CM calculations The point has been assessed in detail under section D.3.4 of the report. The criteria were found to be met.
	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	The project is located on the host country India, which is not Annex I country, hence the criterion is not applicable.
	Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.	This is not applicable as the project activity is the installation of greenfield solar power plant to generate electricity/18/21/.

Tool 01: Tool for the demonstration and assessment of additionality; Version 7.0.0

Applicability condition	Assessment
The use of the "Tool for the demonstration and assessment of additionality" is not mandatory for	

project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tThe methodology is approved in CDM and the tool is included by the same approved methodology viz., ACM0002 version 20.0.0 /13/. Thus, the application of this tool was found to be acceptable, and the applicability criterion is met. The project owner does not propose any new methodologies to demonstrate additionality	
Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory	The methodology is approved in CDM and the tool is included by the same approved methodology viz., ACM0002 version 20.0 /13/. Thus, the application of this tool was found to be acceptable and the applicability criterion is met.

Tool-24-Common Practice Version 03.1

Applicability condition	Assessment
This methodological tool is applicable to project activities that apply the methodological tool "Tool for the demonstration and assessment of additionality", the methodological tool "Combined tool to identify the baseline scenario and demonstrate additionality", or baseline and monitoring methodologies that use the common practice test for the demonstration of additionality.	Project activity applies "Tool for the demonstration and assessment of additionality". Hence this tool is applicable.
In case the applied approved baseline and monitoring methodology defines approaches for the conduction of the common practice test that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail	The approved baseline and monitoring methodology does not specify any approach which are different from those described in the methodological tool. Hence this tool is applicable.

Tool27: Investment analysis version 11.0

Applicability condition	Assessment
This methodological tool is applicable to project activities that apply the methodological tool "Tool for the demonstration and assessment of additionality", the methodological tool "Combined tool to identify the baseline	Project activity applies "Tool for the demonstration and assessment of additionality". Hence this tool is applicable

scenario and demonstrate additionality", the guidelines "Non-binding best practice examples to demonstrate additionality for SSC project activities", or baseline and monitoring methodologies that use the investment analysis for the demonstration of additionality and/or the identification of the baseline scenario.	
In case the applied approved baseline and monitoring methodology contains requirements for the investment analysis that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.	The approved baseline and monitoring methodology does not specify any approach which are different from those described in the methodological tool. Hence this tool is applicable.

Tool 5: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation – Version 03.0

Applicability condition	Assessment
Depending on their specific scope, methodologies which refer to this tool should: (a) Specify clearly which sources of project, baseline and leakage electricity consumption should be calculated with this tool; and/or (b) Provide the procedures to determine the most likely baseline scenario for each source of baseline electricity consumption; and/or I Provide the procedures to determine the most likely baseline scenario for electricity generated and supplied by the project power plant to the grid or consumers; and (d) Provide the procedures to determine the baseline CO2 emission factors for the electricity generated and supplied by the project power plant (*EFBL,grid,CO2,y* and *EFBL,facility,CI2,i,y*).	This tool is referred by the applied methodology i.e., ACM0002 Version 20.0 /13/. The quantity of electricity generated and supplied by the project power plant to the consumers/electricity consuming facility I in year y (MWh/yr) i.e. $EG_{PJ,facility,I,y}$ to determine the baseline emission of the project activity has been monitored as per procedures defined in this tool. Hence this tool is applicable.
If emissions are calculated for electricity consumption, the tool is only applicable if one out of the following three scenarios applies to the sources of electricity consumption: (a) Scenario A: Electricity consumption from the grid. The electricity is purchased from the grid only, and either no captive power plant(s) is/are	The emissions from the electricity consumption of the project activity is not calculated separately. Hence this criterion is not applicable.

	installed at the site of electricity consumption or, if any captive power plant exists on site, it is either not operating or it is not physically able to provide electricity to the electricity consumer; (b) Scenario B: Electricity consumption from (an) off-grid fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants are installed at the site of the electricity consumer and supply the consumer with electricity. The captive power plant(s) is/are not connected to the electricity gI; or (c) Scenario C: Electricity consumption from the grid and (a) fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants operate at the site of the electricity consumer. The captive power plant(s) can provide electricity to the electricity consumer. The captive power plant(s) is/are also connected to the electricity grid. Hence, the electricity consumer can be provided with electricity from the captive power plant(s) and the grid.	
	This tool can be referred to in methodologies to provide procedures to monitor amount of electricity generated in the project scenario, only if one out of the following three project scenarios applies to the recipient of the electricity generated: (a) Scenario I: Electricity is supplied to the grid; (b) Scenario II: Electricity is supplied to consumers/electricity consuming facIties; or (c) Scenario III: Electricity is supplied to the grid and consumers/electricity consuming facilities.	This tool is referred by the applied methodology i.e., ACM0002 Version 20.0 /13/. The electricity generated from the project activity is used for group captive consumption in the nearby textile facilities, thereby displacing electricity that would have otherwise been purchased from the grid and same has been monitored as per procedures defined in this tool. Hence this tool is applicable.
	This tool is not applicable in cases where captive renewable power generation technologies are installed to provide electricity in the project activity, in the baseline scenario or to sources of leakage. The tool only accounts for CO2 emissions.	The project activity is the installation of solar power plant to generate electricity, which is used for group captive consumption in the nearby textile facilities through wheeling, thereby displacing electricity that would have otherwise been purchased from the grid. Hence this criterion is not applicable for the project activity.

The project activity is the installation of three solar units ($7.5MW_{AC}$ + $7.5MW_{AC}$ + $7.5MW_{AC}$). As per section 4, GCC clarification Version 1.3 /6/, Two-level analysis is needed for determination of homogeneous bundles for a bundled project.

Level-1 analysis - A homogeneous bundle shall be formed based on the analysis of multiple activities to find out similarity in technological, economic, and environmental/methodological considerations. These are explained as follows:

Requirement	Assessment
Similarity in Technological Considerations: All activities in a bundle shall apply same type of technology as allowed by the applicable methodology or combination of methodologies, if allowed, addressing 'cross-effects' (e.g., a single project developed to include only solar PV technology and applying ACM0002 and AMSI.D).	All the activities under in this bundle project are using same type of technology (i.e., Solar PV) for the purpose of electricity generation and use for captive purpose through wheeling arrangement, hence this requirement is met.
Similarity in Economic and Policy Considerations: Activities under one bundle shall have same additionality approach (investment or barrier analysis as stipulated by the applicable methodology): In doing this, the Project Owners shall consider every element of the project design to ensure homogeneity. For example, following elements should be considered: • same investment analysis method (e.g. post tax project or equity IRR, or pretax project or equity IRR, NPV, etc.); • comparable key input values (which constitute more than 20% of total project investment costs and total project revenues, which is applicable as per the specific project situation) • same investment decision year; • investment benchmark • Location • supplying electricity to the different grids/ captive purposes • geographical location • project and spatial boundary • legal ownership of bundles	All activities under this bundled project are using same additionality approach as stipulated by the applicable methodology: • Project activities are using same investment analysis i.e., post-tax Equity IRR /12/ for the demonstration of additionality. • Same comparable key inputs are used for Sensitivity Analysis. • All the projects are having same Investment Decision Financial Year, i.e., 2021-22 /57/. • Same Investment Benchmarks /12/ has been selected. • The per MW cost for both the projects is similar, as evident from the Investment Analysis sheet. • All the 3 solar plants are located within the geographical boundary of India. • The projects are using electricity for captive consumption through wheeling agreement with TANGEDCO /22/. • The projects are in the geographical region of Republic of India (state of Tamil Nadu) and the legal owner of projects is GHCL Ltd. and its subsidiary[6].
Similarity in Environmental or Methodological Considerations: Activities in one bundle shall have:	• No cross effect of methodologies is expected to occur as the project applies only one methodology, i.e., ACM0002, ver. 20 /13/.

[6]The GHCL has confirmed the "Manikaran Power Limited" to be the project owner (as defined by the GCC Program) for both the projects through "Letter of Authorization of Project owners and Project representatives"

	• application of same methodology (or approved combinations where cross effects are addressed); • same baseline approach and the outcome • same monitoring approach and parameters for the part included for GHG.	• The same baseline and the outcomes have been demonstrated. Please refer to section B.4 of the PSF. • Same monitoring approach and outcome has been demonstrated. Please refer to section B.7 for the Monitoring approach.

As the project activities are similar in afore said criteria therefore, the project activities can be developed into a homogenous bundle.

Level-2 analysis – Criteria for differentiating the bundles: Formulate a separate bundle of activities if any of the following criteria is not complied with-

Requirement	Assessment
(a) Same baseline of each activity within a bundle	All the activities under in this bundle project are having the same baseline scenario in which the electricity delivered to the grid by the project activity would have otherwise been generated by the emission intensive sources which is reflected in the combined margin (CM) calculations.
(b) Same output of each activity (e.g., heat or power or cogeneration)	All activities in the bundle have same output, i.e., power generation.
(c) Same Technology of each activity (e.g., wind or solar	The project activities included in the bundle are using solar PV as the technology for electricity/power generation.
(d) Same additionality approach stipulated by the applicable methodology	Cost of Equity is used as the same investment benchmark for additionality analysis

As the project activities comply with the above criteria, so all the activities can be included in a homogenous bundle.

Findings	CL 17, CL19 was raised and closed successfully.
Conclusion	The project verification team confirms that approved methodology: ACM0002 "Grid-connected electricity generation from renewable sources" (Version 20.0) /13/ is applicable to the PSF which was valid and available at the time of uploading the project documentation for Global Stakeholder Consultation (GSC) process. This is inline with the paragraph 26 of the Project Standard, which states "*Under GCC Rules, any Project Owner seeking to design a GCC Project Activity shall apply the latest versions of either a GCC approved methodology or methodologies and tools approved under UNFCCC's Clean Development Mechanism, available at the time of submission of project documents to the GCC, as required by the Program Process, for conducting a Global Stakeholder Consultation (GSC). In doing so, the Baseline and Monitoring Methodologies shall be applied in full, including the full application of any tools or guidance referred to by a methodology*". Hence applying version 20 of the applied methodology was found appropriate. All applicability conditions of the applied methodology and applicable Tools are being met and the PSF are in line with all the requirements indicated in the methodology. Related eligibility criteria with respect to the applicability of the methodologies have been established and met by the PSF of the GCC Project activity.

D.3.2 Clarification on applicability of methodology, tool and/or standardized baseline

Means of Project Verification	Since the applicability of methodology was found to be fulfilled, further clarification to the methodology were not required.
Findings	No finding was raised.
Conclusion	Since the applicability of methodology was found to be fulfilled, further clarification to the methodology were not required.

D.3.3 Project boundary, sources and GHGs

Means of Project Verification	As per the applied methodology ACM0002 version 20.0 /13/, 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. The components of the project boundary mentioned in the PSF were found to be in compliance with para 20 of the applied methodology. The verification team conducted desk review of the implemented project to confirm the appropriateness of the project boundary identified. The verification team confirmed that all GHG sources required by the methodology have been included within the project boundary. It was assessed that no emission sources related to project activity will cause any deviation from the applicability of the methodology or accuracy of the emission reductions. The project boundary is clearly depicted with the help of a pictorial depiction in section B.3 of the PSF and duly verified by the verification team via commissioning certificates /18/ of the project activity & wheeling agreement between GHCL and state electricity utility/22/ which is found to be acceptable and appropriate.
Findings	No findings raised in this context.
Conclusion	• The verification team was able to assess that complete information regarding the project boundary has been provided in PSF and could be assured from the line diagram. • The verification team confirms that the identified boundary, selected emissions sources are justified for the project activity.

D.3.4 Baseline scenario

Means of Project Verification	As per applied methodology paragraph 22 if the project activity is the installation of a greenfield renewable power plant/unit, 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, as reflected in the combine margin(CM) calculations described in “TOOL07: Tool to calculate the emission factor for an electricity system” /14/. The project activity involved setting up of Solar plant to harness the power of sunlight to produce electricity and used for group captive consumption in the nearby textile facilities, through wheeling agreement with Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) /22/, there by displacing electricity from the regional grid which would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid. Based on the interviews, it was observed that the requirement of captive user is more than the solar power generation from the project activity, hence it is unrealistic that the power generation from plant exceeds the requirement of captive consumption. The baseline scenario selected is in compliance with all applicable legal and regulatory requirements as the implementation of project activity is a voluntary initiative and is not mandatory or a legal requirement. The regulations and policies referred in section B.5 of the PSF does not restrict or empower any authority to restrict the fuel choice for power generation and the applicable environmental regulations/45/ do not restrict the use of solar energy and there is no legal requirement on the choice of a particular technology. All the policies and regulations

	which gives comparative advantages to less emissions-intensive technologies over more emissions-intensive technologies. Hence as per CDM VVS paragraph 81(b) /51/ it can be concluded that the provincial and sectoral policies are E- policies that decrease GHG emissions. Also, these policies have been implemented since the adoption by the COP of the CDM M & P (decision 17/CP.7, 11 November 2001). Hence the project owner has not considered them in developing the baseline scenario for the project activity. Instead, the baseline scenario is based on hypothetical situation without the provincial and sectoral polices being in place. Based on the sectoral expertise of the verification team, the selection of baseline scenario by the project owner is more appropriate and acceptable. As per paragraph 39 of the applied methodology, 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 the product of electrical energy produced by the renewable generating unit expressed in MWh multiplied by the grid emission factor in tCO_2/MWh. <u>Determination of Grid Emission Factor (EFgrid,CM,y)</u> The project owner used the "Tool to calculate the emission factor for an electricity system" Version 7.0 /14/ to determine the combined margin emission factor. The value of combined margin is sourced from CO_2 Baseline Database for the Indian Power Sector version 17.0, October 2021 published by Central Electricity Authority (CEA) /34/, Government of India which is latest version publicly available during the submission of PSF to GCC Verifier for verification. In this case the Combined Margin emission factor (weighted average of Simple Operating Margin and Build Margin) is estimated based on three years average (2018-19,2019-20, 2020-21) of Simple Operating Margin and Build Margin of current year (2020-21) is in line with steps of "Tool to calculate the emission factor for an electricity system". Both the value of Simple Operating Margin and Build Margin are selected under ex-ante approach. The grid boundary with respect to the connected grid is INDIAN grid. In accordance with "Tool to calculate the emission factor for an electricity system", 'Dispatch Data Analysis' is the first methodological choice out of four options of calculating OM emission factor. Nevertheless the "Dispatch data analysis operating margin" is ruled out in India due to lack of necessary dispatch data of the grids. The same fact is also considered by the Central Electricity Authority (Ref the user guide for CO_2 Baseline Database for the Indian Power Sector version 17.0, October 2021) /34/. Out of other 3 options of calculating OM Project Owner have rightly selected simple OM emission factor calculation as the share of low cost / must run resources of the selected grid over the five most recent years (2016-17,2017-18,2018-19, 2019-20, 2020-21) which is less than 50% of the gross grid generation. For wind and solar projects, "Tool to calculate the emission factor for an electricity system" allows the usage of the default weights are as follows: wOM =0.75 and wBM = 0.25. Using the above values, the combined margin emission factor is estimated at 0.9305 tCO_2/MWh. The calculation of EFgrid,y is current and publicly available and published by the Central Electricity Authority on its web-site/34/. The verification team is convinced of the result of the emission factor calculation. It is deemed to be adequate and transparent. The grid emission factor for the project activity is calculated using the Tool 07: "Tool to calculate the emission factor for an electricity system" which is in line with the paragraph 8(a) of Clarification No. 03 (additional options to determine grid emission

	factor for renewable projects applying ACM0002 and AMS I.D) and is the most acceptable choice amongst other options that are mentioned under paragraph 8. The grid emission factor (OM, BM, CM) is published by CEA/34/ following the CDM approved methodological Tool (Tool to calculate the emission factor for an electricity system). The CEA is authority under Ministry of Power, Government of India. Additionally the CEA database, version 17 has been used, which is published within 3 years, at the time of submission of the project documentation for starting Global Stakeholder Consultation (GSC). The project applies the ex-ante option at the time of submission of project documentation for starting Global Stakeholder Consultation (GSC). Hence the project is also in line with the paragraph 8, 9, 11 of Clarification No. 03. The baseline scenario in the PSF is reported as the supply of electricity to Indian Grid by the project activity would have otherwise been generated by the operation of grid-connected power plants. The baseline scenario applied in the PSF was compared with the requirements of the baseline described in the applied methodology and found consistent.
Findings	No findings raised in this context.
Conclusion	The project verification team confirms the following; • All assumptions and data used by the project owner are listed in the PSF, including their references and sources; • All documentation used by project owner as the basis for assumptions and source of data for establishing the baseline scenario is correctly quoted and interpreted in the PSF; • The project verification team also concluded that the identified baseline scenario reasonably represents what would occur in the absence of the project activity.

D.3.5 Demonstration of additionality

Means of Project Verification	The demonstration of additionality under GCC the project activity is required to undergo the following two tests 1. Legal Requirement test: The relevant national acts and regulations pertaining to generation of energy in the host country i.e., India are Electricity Act 2003 /35/, National Electricity Policy 2005 /35/, National Solar Mission /36/, Integrated Energy Policy 2006 /37/, National Action Plan on climate Change (NAPCC) 2008 /38/, Renewable Energy Certificates (RECs) 2011 /39/ verified by the assessment team. It was confirmed that there are no enforced laws, statutes, regulations, court orders, environmental-mitigation agreements, permitting conditions or other legally binding mandates requiring its implementation, or requiring the implementation of a similar technology/measure that would achieve equivalent levels of GHG emission reductions. The assessment team assessed the relevant regulations of the host county to confirm the requirements and also confirmed based on the local expertise by the verification team the project is not implemented to meet any legal requirement. 2. An Additionality Test either based on a Positive List test or a projects-specific additionality test. As per the applied methodology ACM0002 (Version 20.0) additionality of the project activity demonstrated and assessed by the latest version of "Tool for the demonstration and assessment of additionality", Version 7.0.0. The Project owner has adopted the stepwise approach for demonstrating and assessing the additionality of the project activity as follows: **Step 0: Demonstration whether the proposed project activity is the first-of-its-kind.** This step is optional and not used for this project as this is not a first of its kind project activity. **Step 1: Identification of alternatives to the project activity consistent with current laws and regulations** As per the applied methodology paragraph 22 the project activity is the installation of a Greenfield power plant, and 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." Thus, the baseline scenario is applied as per the methodology and no alternative selection is required as per paragraph 59 of the CDM Project standard/51/. **Step 2: Investment Analysis** Under step 2, it is demonstrated that project activity is not economically or financially feasible, without the revenue from the sale of approved carbon credits. As per the paragraph 26 of the Project Standard, "*Under GCC Rules, any Project Owner seeking to design a GCC Project Activity shall apply the latest versions of either a GCC approved methodology or methodologies and tools approved under UNFCCC's Clean Development Mechanism, available at the time of submission of project documents to the GCC, as required by the Program Process, for conducting a Global Stakeholder Consultation (GSC). In doing so, the Baseline and Monitoring Methodologies shall be applied in full, including the full application of any tools or guidance referred to by a methodology*". Hence the Methodological tool: Investment analysis, version 11.0, EB 112 Annex 2 has been referred which is appropriate and acceptable to verification team and also in line with the paragraph 97 of VVS Version 3.0. Further version 11 of Tool was the latest version applicable at the time of submission of project activity for global stakeholder consultation (GSC) for additionality demonstration.

	Sub-step 2a: Determine appropriate analysis method: The project gets revenue from the sale of electricity from the project activity, hence cannot apply simple cost analysis as per Option I. Furthermore, Option II investment comparison analysis cannot be applied as the alternative to the project activity is the electricity generated by new and existing grid connected power plants. Hence the project owner has applied the Option III benchmark analysis method to demonstrate the additionality of the project activity in terms of decision-making context which is acceptable to the project verification team. The project cost involves total equity and hence project owner has selected Post tax equity IRR as a financial indicator to demonstrate the financial unattractiveness of the project. Furthermore, the financial indicator selected by the project owner is appropriate because the tool does not limit the project owner to use either the project IRR or the equity IRR. The project owner has the discretion to choose the best indicator based on their preference to know the IRR based on their equity or debt investment. The same is reasonable and acceptable to the verification team. **Sub-step 2b: Option III. Apply benchmark analysis:** Benchmark selection and its appropriateness: As per Paragraph 15 of the investment analysis version 11.0 "The *applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or WACC are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate. The DOE shall validate that the benchmarks used are applicable to the project activity and the type of IRR calculation presented".* The Project owner has chosen Equity IRR as the financial indicator, based on the above the appropriate benchmark is required/expected returns on equity which is correctly chosen by the project owner and it is acceptable. As per paragraph 19 of the Investment Analysis tool, version 11.0" '*If the benchmark is based on parameters that are standard in the market, the cost of equity should be determined either by: (a) selecting the values provided in Appendix; or by (b) calculating the cost of equity using CAPM.* The default value for expected return on equity of 10.55 % is as per the Appendix of Tool 27- Investment Analysis (EB 112 Annex 2) Version 11.0 /15/, which was the latest version applicable at the time of submission of project activity for global stakeholder consultation (GSC) for additionality demonstration. As per the paragraph 26 of the Project Standard, "*Under GCC Rules, any Project Owner seeking to design a GCC Project Activity shall apply the latest versions of either a GCC approved methodology or methodologies and tools approved under UNFCCC's Clean Development Mechanism, available at the time of submission of project documents to the GCC, as required by the Program Process, for conducting a Global Stakeholder Consultation (GSC). In doing so, the Baseline and Monitoring Methodologies shall be applied in full, including the full application of any tools or guidance referred to by a methodology*". However Project owner has taken a more conservative value of 10.24% based on the Appendix of Tool 27- Investment Analysis (EB 105 Annex 6), Version 10.0/15/ for the additionality demonstration, which was available at the time of investment decision and found acceptable to the assessment team. The benchmark return on equity in the tool is expressed in real terms. The post tax equity IRR calculated is in nominal terms as escalation is considered in O&M cost. Accordingly, Project owner converted the default benchmark which is in real terms into nominal terms by using the following equation:

Nominal Benchmark = {(1+Real Benchmark) *(1+Inflation rate)}-1. Verification team referenced the book 'Corporate Finance" 2nd edition, by Aswath Damodaran /55/. In page 320 of the book, the same equation is mentioned for converting real into nominal values. Hence the assessment team considers the above equation as appropriate for converting real benchmark into nominal benchmark.

As per paragraph 16 of the tool state that the inflation rate shall be obtained from the inflation forecast of the central bank of the host country for the duration of the crediting period, accordingly project owner has chosen the Reserve Bank of India (RBI) is Central Bank of host country (India) and it is India's monetary authority which is acceptable to the verification team. The CPI inflation forecasted by RBI for next 10 years is expected to be 4.50% as per Results of 51st Round of Survey of Professional Forecasters on Macroeconomic Indicators on 05/04/2018. Hence the nominal Benchmark estimated as = (1+10.24%) * (1 + 4.50%) -1 = 15.20%. The verification team has verified the sources and confirmed that the benchmark identified to compare the financial attractiveness of the project activity is appropriate.

Appropriateness of the input parameters:
The additionality has been demonstrated at the sub-bundle level (for each of the power plants). The input parameters in the financial analysis have been taken as per the values and assumptions applicable and available at the time of decision to invest in the project activity in line with Paragraph 10, investment analysis tool version 11.0/15/. All the input values are the latest available at the time of investment decision.

Further the input values have been cross-checked with alternate sources (actual Invoices /29/, which was signed after the investment decision) and found reasonable. Additional details on the same have been provided in the below sections.

CARs and CLs were raised on non-conformities and they were set right. With the corrections having been incorporated, the input values considered appear to be in order. All the input parameters considered in computation, the basis, correctness and appropriateness thereof are given in below table along with verification team comments. Verification Team, therefore, conforms to guidance given vide paragraphs paragraph 99 and 101 of VVS version 3.0/51/. The post-tax equity IRR for the project activity at the time of investment decision comes out as 12.06% (phase-1, 7.5MW), 12.24% (phase-2, 7.5MW) and 13.77% (phase-3, 7.5 MW). Verification team done detailed assessment of all the input parameters is as follows:

Phase 1 (7.5 MW_{AC})

Particulars	Value	Unit	Assessment
Capacity of the project	7.5	MW_{AC}	The capacity of 7.5MW_{AC} has been considered at the time of investment decision, which is confirmed through the submitted Letter of Intent from GHCL to Prozeal Infra Engineering Private Limited. The capacity is further verified through the approval letter from TANGEDCO for establishing plant /21/ and executed power wheeling agreement with TANGEDCO /22/. Further, the same has been confirmed during onsite visit by the verification team and found to be correct.
Project Lifetime	25	Years	The operational life time of the project activity is sourced from CERC Order /47/ which was available at the time of investment decision

				and It is crosschecked with the technical data sheet provided by the project owner/20/. Hence, the value considered by project owner is correct and appropriate for the project.
	Plant Load Factor	24.41	%	The PLF is considered as 24.41% based on the PVSYST Report submitted by Prozeal Infra Engineering Pvt. Ltd. to GHCL/23/, which is a third party contracted by PO. Hence the value considered by the project owner for demonstrating additionality of the project is deemed acceptable to the verification team and also in line with paragraph 3 (b) of "Guidelines for the reporting and Validation of Plant Load Factors" (Annex 11 of EB 48) /54/. Based on the CERC order/46/47/, the PLF recommended is of 19%, hence the PLF of 24.41% is on higher side and hence found appropriate.
	Annual Degradation	0.5	%	This value was sourced from CERC Order /46/47/ which was available at the time of investment decision. Further, verification team has cross verified with the NREL report/58/ on Photovoltaic Degradation Rates - An Analytical Review. The report covers nearly 2000 degradation rates all across the globe and degradation rates has a mean of 0.8% per year. Also, normally most of the PV panels manufacturer guaranteed 2-3% degradation in first year and 0.7% on each year up to 10 years. So, the value considered in the investment analysis is conservative compared to the above referred values and acceptable to the verification team.
	Project cost	398.40	INR million	As per the Offer Letter from Prozeal Infra Engineering Private Limited to GHCL/24/, the project cost is INR 367.5 million (excluding GST). Further the project cost is INR 354.1 million (excluding GST) as per the Letter of Intent placed by GHCL to Prozeal Infra Engineering Private Limited/57/, which was available at the time of investment decision. PO has considered GST on the project cost and hence total cost was arrived as INR 398.40 million, which was confirmed through the interviews during the audit. The project cost per MW arrives as INR 53.12 million/MW based on the above total project cost. The value has further been cross-checked through the CERC order /46/47/ available at the time of investment decision. The project

				cost per MW is INR 60.585 million as per the CERC order /46/47/. Hence the project cost (INR 53.12 million/MW) considered in the analysis has been found less than the CERC order and hence on a conservative side and found appropriate. The assessment involved checking the actual costs involved in the project from the Invoices/29/ and found the same as INR 387.48 million, which is only 2.73% lower than the cost considered in the investment analysis and the same is already covered under the sensitivity analysis and hence found appropriate. Additionally the verification team checked similar solar project in India registered with GCC Program (S00109), where the project cost works out as (INR 1150 million/20MW_{AC} = INR 57.5 million). The cost considered in the project activity (INR 53.12 million/MW) is less than the cost estimated on the above approved GCC projects (INR 57.5 million/MW) and hence found appropriate.
	Tariff	4.60	INR/kWh	PO considered the tariff rate of Rs 5.50 per unit based on prior experience on the agreed sale price to GHCL through a different wind power plant/32/, which was available at the time of investment decision. Additionally there are wheeling changes was considered based on the TNERC order/48/ and wheeling charges per unit of electricity arrives as INR 0.90/kWh, which is confirmed through the calculations (cost of generation spreadsheet) presented in the IRR sheet/12/. Hence the resultant tariff arrives as INR 4.60/kWh (INR 5.50/kWh – INR 0.90/kWh), which was found correct.
	Operation and Maintenance cost	4.00	INR Million /year	The O&M cost has been considered based on the Offer letter from Prozeal Infra Engineering Private Limited to GHCL/24/. As per the Offer letter, operation & maintenance charges@4 Laks/MWp/year is applicable. Since the plant is 10MWp, hence the operation & maintenance cost arrives as INR 4 million/year for the power plant (7.5 MW). Converting above O&M cost to AC capacity, it arrives as INR 0.53 million/MWac. The actual O&M cost for the year 2023 has been checked, which is found as INR 2.32 million for the plant and hence which is 42%

				less than the O&M cost considered in the Investment Analysis. As per the sensitivity analysis, the only decrease of O&M cost by 241% breach the benchmark, hence the operation & maintenance cost considered in the IRR calculations have been found to be reasonable. The O&M cost based on the CERC order /46/47/ has also been checked, which was available at the time of investment decision. As per the CERC order, the O&M cost is INR 1.3 million per MW, hence considering the O&M cost of INR 0.53 million/MW is found on a conservative side.
	Escalation in O&M cost	5.0	%	The escalation in the O&M cost has been considered based on the Offer letter from Prozeal Infra Engineering Private Limited to GHCL/24/. Further the escalation is 5.72% as per the CERC tariff order /46/47/, which was available at the time of investment decision of the power plant and hence found reasonable.
	Insurance	1.99	INR million	The insurance cost has been considered based on the CERC order /46/47/ available at the time of investment decision as 0.5% of the total projects cost. Hence the insurance cost arrives as INR 1.99 million for the project activity, which is found appropriate.
	Land cost	18.75	INR million	The Land cost as per the CERC order/46/47/ is INR 2.5 million/MW. Hence the land cost for this power plant arrives as INR 18.75 million. Since the CERC order was available at the time of investment decision and hence found appropriate.
	Salvage value	10%	%	The Salvage value of 10% has been considered based CERC order/46/47/ available at the time of investment decision, hence found correct.
	Net Depreciable value	341.69	INR Million	The Net Depreciable value has been calculated as follows: Net Depreciable value = Gross Depreciable value – Salvage value where Gross Depreciable value = Total Cost – Land cost Hence the Net Depreciable value is calculated as INR 341.69 million Hence the calculations for the Net Depreciable value was found correct based on the accounting principles.
	IT Depreciation Rate	7.69	%	The project owner considered the IT depreciation rate 7.69% for power generating units. This is as per Income Tax Act 1961

			stipulated for income tax calculation which is as per accounting practices followed in the host country. The following web link has been verified and found correct. https://incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm
Income tax rate	29.12 %	%	The final income tax rate is calculated based on the base corporate tax, Surcharge & educational cess based on the above rates which were available at the time of investment decision. The calculation based on the following values Corporate tax - 25% Surcharge – 12% of income tax Health & Education Cess - 4% of corporate tax. The corporate tax value considered is correct and applicable to the project activity. The same has been verified in the following weblink and found to be correct. https://www.hostbooks.com/in/income-tax-slabs-rate-2020-2021/ https://cleartax.in/s/tax-planning-under-mat https://www.hostbooks.com/in/income-tax-slabs-rate-2020-2021/
Effective MAT rate	17.47 %	%	The MAT payable based on the value which was available at the time of investment decision. The calculation based on the following values Minimum Alternate- Tax – 15% Surcharge – 12% of corporate tax Educational Cess- 4% of corporate tax Hence the MAT value considered is correct and applicable to the project activity. https://cleartax.in/s/tax-planning-under-mat

Phase 2 (7.5 MW_{AC})

Particulars	Value	Unit	Assessment
Capacity of the project	7.5	MW_{AC}	The capacity of 7.5MW_{AC} has been considered at the time of investment decision, which is confirmed through the submitted Letter of Intent from GHCL to Prozeal Infra Engineering Private Limited. The capacity is further verified through the approval letter from TANGEDCO for establishing plant /21/ and executed power wheeling agreement with TANGEDCO /22/. Further, the same has been confirmed during onsite visit by the verification team and found to be correct.
Project Lifetime	25	Years	The operational life time of the project activity is sourced from CERC Order /47/ which was available at the time of investment decision

				and It is crosschecked with the technical data sheet provided by the project owner/20/. Hence, the value considered by project owner is correct and appropriate for the project.
	Plant Load Factor	24.41	%	The PLF is considered as 24.41% based on the PVSYST Report submitted by Prozeal Infra Engineering Pvt. Ltd. to GHCL/23/, which is a third party contracted by PO. Hence the value considered by the project owner for demonstrating additionality of the project is deemed acceptable to the verification team and also in line with paragraph 3 (b) of "Guidelines for the reporting and Validation of Plant Load Factors" (Annex 11 of EB 48) /54/. Based on the CERC order/46/47/, the PLF recommended is of 19%, hence the PLF of 24.41% is on higher side and hence found appropriate.
	Annual Degradation	0.5	%	This value was sourced from CERC Order /46/47/ which was available at the time of investment decision. Further, verification team has cross verified with the NERL report/58/ on Photovoltaic Degradation Rates - An Analytical Review. The report covers nearly 2000 degradation rates all across the globe and degradation rates has a mean of 0.8% per year. Also, normally most of the PV panels manufacturer guaranteed 2-3% degradation in first year and 0.7% on each year up to 10 years. So, the value considered in the investment analysis is conservative compared to the above referred values and acceptable to the verification team.
	Project cost	398.40	INR million	As per the Offer Letter from Prozeal Infra Engineering Private Limited to GHCL/24/, the project cost is INR 367.5 million (excluding GST). Further the project cost is INR 354.1 million (excluding GST) as per the Letter of Intent placed by GHCL to Prozeal Infra Engineering Private Limited/57/, which was available at the time of investment decision. PO has considered GST on the project cost and hence total cost was arrived as INR 398.40 million, which was confirmed through the interviews during the audit. The project cost per MW arrives as INR 53.12 million/MW based on the above total project cost. The value has further been cross-checked through the CERC order /46/47/ available at the time of investment decision. The project

				cost per MW is INR 60.585 million as per the CERC order /46/47/. Hence the project cost (INR 53.12 million/MW) considered in the analysis has been found less than the CERC order and hence on a conservative side and found appropriate. The assessment involved checking the actual costs involved in the project from the Invoices/29/ and found the same as INR 422.95 million, which is higher than the estimated cost considered in the investment analysis and hence found appropriate. Additionally the verification team checked similar solar project in India registered with GCC Program (S00109), where the project cost works out as (INR 1150 million/20MW_{AC} = INR 57.5 million). The cost considered in the project activity (INR 53.12 million/MW) is less than the cost estimated on the above approved GCC projects (INR 57.5 million/MW) and hence found appropriate.
	Tariff	4.60	INR/kWh	PO considered the tariff rate of Rs 5.50 per unit based on prior experience on the agreed sale price to GHCL through a different wind power plant/32/, which was available at the time of investment decision. Additionally there are wheeling changes was considered based on the TNERC order/48/ and wheeling charges per unit of electricity arrives as INR 0.90/kWh, which is confirmed through the calculations (cost of generation spreadsheet) presented in the IRR sheet/12/. Hence the resultant tariff arrives as INR 4.60/kWh (INR 5.50/kWh – INR 0.90/kWh), which was found correct.
	Operation and Maintenance cost	4.00	INR Million /year	The O&M cost has been considered based on the Offer letter from Prozeal Infra Engineering Private Limited to GHCL/24/. As per the Offer letter, operation & maintenance charges@4 Laks/MWp/year is applicable. Since the plant is 10MWp, hence the operation & maintenance cost arrives as INR 4 million/year. Converting above O&M cost to AC capacity, it arrives as INR 0.53 million/MWac. The actual O&M cost for the year 2023 has been checked, which is found as INR 2.32 million for the plant and hence which is 42% less than the O&M cost considered in the Investment Analysis. As per the sensitivity

				analysis, the only decrease of O&M cost by 224% breach the benchmark, hence the operation & maintenance cost considered in the IRR calculations have been found to be reasonable. The O&M cost based on the CERC order /46/47/ has also been checked, which was available at the time of investment decision. As per the CERC order, the O&M cost is INR 1.3 million per MW, hence considering the O&M cost of INR 0.53 million/MW is found on a conservative side.
	Escalation in O&M cost	5.0	%	The escalation in the O&M cost has been considered based on the Offer letter from Prozeal Infra Engineering Private Limited to GHCL/24/. Further the escalation is 5.72% as per the CERC tariff order /46/47/, which was available at the time of investment decision of the power plant and hence found reasonable.
	Insurance	1.99	INR million	The insurance cost has been considered based on the CERC order /46/47/ available at the time of investment decision as 0.5% of the total projects cost. Hence the insurance cost arrives as INR 1.99 million for the project activity, which is found appropriate.
	Land cost	18.75 %	INR million	The Land cost as per the CERC order/46/47/ is INR 2.5 million/MW. Hence the land cost for this power plant arrives as INR 18.75 million. Since the CERC order was available at the time of investment decision and hence found appropriate.
	Salvage value	10%	%	The Salvage value of 10% has been considered based CERC order/46/47/ available at the time of investment decision, hence found correct.
	Net Depreciable value	341.69	INR Million	The Net Depreciable value has been calculated as follows: Net Depreciable value = Gross Depreciable value – Salvage value where Gross Depreciable value = Total Cost – Land cost Hence the Net Depreciable value is calculated as INR 341.69 million Hence the calculations for the Net Depreciable value was found correct based on the accounting principles.
	IT Depreciation Rate	7.69	%	The project owner considered the IT depreciation rate 7.69% for power generating units. This is as per Income Tax Act 1961 stipulated for income tax calculation which is as per accounting practices followed in the

			host country. The following web link has been verified and found correct. https://incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm
Income tax rate	29.12 %	%	The final income tax rate is calculated based on the base corporate tax, Surcharge & educational cess based on the above rates which were available at the time of investment decision. The calculation based on the following values Corporate tax - 25% Surcharge – 12% of income tax Health & Education Cess - 4% of corporate tax. The corporate tax value considered is correct and applicable to the project activity. The same has been verified in the following weblink and found to be correct. https://www.hostbooks.com/in/income-tax-slabs-rate-2020-2021/ https://cleartax.in/s/tax-planning-under-mat https://www.hostbooks.com/in/income-tax-slabs-rate-2020-2021/
Effective MAT rate	17.47 %	%	The MAT payable based on the value which was available at the time of investment decision. The calculation based on the following values Minimum Alternate- Tax – 15% Surcharge – 12% of corporate tax Educational Cess- 4% of corporate tax Hence the MAT value considered is correct and applicable to the project activity. https://cleartax.in/s/tax-planning-under-mat

Phase 3 (7.5 MW_{AC})

Particulars	Value	Unit	Assessment
Capacity of the project	7.5	MW_{AC}	The capacity of 7.5MW_{AC} has been considered at the time of investment decision, which is confirmed through the submitted Letter of Intent from GHCL to Prozeal Infra Engineering Private Limited. The capacity is further verified through the approval letter from TANGEDCO for establishing plant /21/ and executed power wheeling agreement with TANGEDCO /22/. Further, the same has been confirmed during onsite visit by the verification team and found to be correct.
Project Lifetime	25	Years	The operational life time of the project activity is sourced from CERC Order /47/ which was available at the time of investment decision and It is crosschecked with the technical data sheet provided by the project owner/20/.

				Hence, the value considered by project owner is correct and appropriate for the project.
	Plant Load Factor	24.41	%	The PLF is considered as 24.41% based on the PVSYST Report submitted by Prozeal Infra Engineering Pvt. Ltd. to GHCL/23/, which is a third party contracted by PO. Hence the value considered by the project owner for demonstrating additionality of the project is deemed acceptable to the verification team and also in line with paragraph 3 (b) of "Guidelines for the reporting and Validation of Plant Load Factors" (Annex 11 of EB 48) /54/. Based on the CERC order/46/47/, the PLF recommended is of 19%, hence the PLF of 24.41% is on higher side and hence found appropriate.
	Annual Degradation	0.5	%	This value was sourced from CERC Order /46/47/ which was available at the time of investment decision. Further, verification team has cross verified with the NERL report/58/ on Photovoltaic Degradation Rates - An Analytical Review. The report covers nearly 2000 degradation rates all across the globe and degradation rates has a mean of 0.8% per year. Also, normally most of the PV panels manufacturer guaranteed 2-3% degradation in first year and 0.7% on each year up to 10 years. So, the value considered in the investment analysis is conservative compared to the above referred values and acceptable to the verification team.
	Project cost	416.35	INR million	PO estimated the project cost (INR 416.35 million) for phase-3 based on the actual cost incurred for the phase-2 plant, which was available at the time of investment decision. As per the actual invoices, the total cost incurred for the phase-2 is INR 422.95 million and hence considering the estimated cost of INR 416.35 million) for phase-3 has been found reasonable. The above cost arrives as INR 55.51 million/MW. The value has further been cross-checked through the CERC order /46/47/ available at the time of investment decision. The project cost per MW is INR 60.585 million as per the CERC order /46/47/. Hence the project cost (INR 55.51 million/MW) considered in the analysis has been found less than the CERC order and hence on a conservative side and found appropriate.

				The assessment involved checking the actual costs involved in the phase-3 plant from the Invoices/29/ and found the same as INR 441.60 million, which is higher than the cost considered in the investment analysis and hence found reasonable. Additionally the verification team checked similar solar project in India registered with GCC Program (S00109), where the project cost works out as (INR 1150 million/20MW_{AC} = INR 57.5 million). The cost considered in the project activity (INR 55.51 million/MW) is less than the cost estimated on the above approved GCC projects (INR 57.5 million/MW) and hence found appropriate.
	Tariff	5.18	INR/kWh	PO considered the tariff rate of Rs 5.85 per unit based on prior experience on the agreed sale price to GHCL through a different wind power plant/32/. Additionally there are wheeling changes was considered based on the TNERC order/48/ and wheeling charges per unit of electricity arrives as INR 0.67/kWh, which is confirmed through the calculations (cost of generation spreadsheet) presented in the IRR sheet/12/. Hence the resultant tariff arrives as INR 5.18/kWh (INR 5.85/kWh – INR 0.67/kWh), which was found correct.
	Operation and Maintenance cost	4.00	INR Million /year	The O&M cost has been considered based on the Offer letter from Prozeal Infra Engineering Private Limited to GHCL/24/. As per the Offer letter, operation & maintenance charges@4 Laks/MWp/year is applicable. Since the plant is 10MWp, hence the operation & maintenance cost arrives as INR 4 million/year. Converting above O&M cost to AC capacity, it arrives as INR 0.53 million/MWac. The actual O&M cost for the year 2023 has been checked, which is found as INR 2.32 million for the plant and hence which is 42% less than the O&M cost considered in the Investment Analysis. As per the sensitivity analysis, the only decrease of O&M cost by 115% breach the benchmark, hence the operation & maintenance cost considered in the IRR calculations have been found to be reasonable. The O&M cost based on the CERC order /46/47/ has also been checked, which was available at the time of investment decision.

				As per the CERC order, the O&M cost is INR 1.3 million per MW, hence considering the O&M cost of INR 0.53 million/MW is found on a conservative side.
	Escalation in O&M cost	5.0	%	The escalation in the O&M cost has been considered based on the Offer letter from Prozeal Infra Engineering Private Limited to GHCL/24/. Further the escalation is 5.72% as per the CERC tariff order /46/47/, which was available at the time of investment decision of the power plant and hence found reasonable.
	Insurance	2.08	INR million	The insurance cost has been considered based on the CERC order /46/47/ available at the time of investment decision as 0.5% of the total projects cost. Hence the insurance cost arrives as INR 2.08 million for the project activity, which is found appropriate.
	Land cost	18.75 %	INR million	The Land cost as per the CERC order/46/47/ is INR 2.5 million/MW. Hence the land cost for this power plant arrives as INR 18.75 million. Since the CERC order was available at the time of investment decision and hence found appropriate.
	Salvage value	10%	%	The Salvage value of 10% has been considered based CERC order/46/47/ available at the time of investment decision, hence found correct.
	Net Depreciable value	357.84	INR Million	The Net Depreciable value has been calculated as follows: Net Depreciable value = Gross Depreciable value – Salvage value where Gross Depreciable value = Total Cost – Land cost Hence the Net Depreciable value is calculated as INR 357.84 million Hence the calculations for the Net Depreciable value was found correct based on the accounting principles.
	IT Depreciation Rate	7.69	%	The project owner considered the IT depreciation rate 7.69% for power generating units. This is as per Income Tax Act 1961 stipulated for income tax calculation which is as per accounting practices followed in the host country. The following web link has been verified and found correct. https://www.hostbooks.com/in/income-tax-slabs-rate-2020-2021/
	Income tax rate	29.12 %	%	The final income tax rate is calculated based on the base corporate tax, Surcharge & educational cess based on the above rates which were available at the time of

			investment decision. The calculation based on the following values Corporate tax - 25% Surcharge – 12% of income tax Health & Education Cess - 4% of corporate tax. The corporate tax value considered is correct and applicable to the project activity. The same has been verified in the following weblink and found to be correct. https://www.hostbooks.com/in/income-tax-slabs-rate-2020-2021/ https://cleartax.in/s/tax-planning-under-mat https://www.hostbooks.com/in/income-tax-slabs-rate-2020-2021/
Effective MAT rate	17.47 %	%	The MAT payable based on the value which was available at the time of investment decision. The calculation based on the following values Minimum Alternate- Tax – 15% Surcharge – 12% of corporate tax Educational Cess- 4% of corporate tax Hence the MAT value considered is correct and applicable to the project activity. https://cleartax.in/s/tax-planning-under-mat

Financial calculation and conclusion

The Equity IRR calculations were provided in a spreadsheet. The calculation was verified and found to be correct by project verification team; as well as the assumptions used in the calculation were deemed to be correct. The Equity IRR without carbon credit revenues is 12.06% for Phase 1 (7.5 MW), 12.24% for Phase 2 (7.5MW_{AC}) and 13.77% for Phase-3 which confirms that the proposed project activity in absence of the carbon credit benefits and compared to the benchmark return on equity 15.20% is not financially attractive.

Sensitivity Analysis

The Guidance on Assessment of Investment Analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation. The project developer has identified generation, project cost, O&M cost, tariff as critical assumptions. These constitute more than 20% of the project cost/revenue. Guidance 28 of Tool 27 states that as a general point of departure, variations in the sensitivity analysis should at least cover a range of +10% and –10%, unless this is not deemed appropriate in the context of the specific project circumstances. Since project has already been implemented any variation in project cost is hypothetical. Nevertheless, the project cost has also been subjected to 10% variation.

As the project revenue is bound to increase, hence the IRR under following set of conditions and vice versa-

- Increase in expected PLF/ CUF values
- Increase in expected Tariff Rate
- Decrease in expected Project Cost
- Decrease in expected Tariff rates

Addressing the same, following parameters have been chosen to conduct the sensitivity tests-

1. PLF

2. O&M Cost
3. Project Cost
4. Tariff Rate

The results of the sensitivity analysis are summarized below for the Phase 1 (7.5MW)

Sensitivity Analysis	**Equity IRR**			
Variation %	**-10%**	**Normal**	**+10%**	**Variation needed to reach benchmark**
PLF	10.19%	12.06%	13.87%	**17.50%**
O&M	12.20%	12.06%	11.92%	**-241.00%**
Project Cost	13.69%	12.06%	10.69%	**-17.68%**
Tariff Rate	10.41%	12.06%	13.67%	**19.65%**

The likelihood of IRR crossing the benchmark for Phase-1 is discussed as follows:

8. PLF- The annual electricity generation for the power plant (from the date of commissioning) was recorded at 14,911 MWh, which is less than the expected annual value of electricity generation, i.e., 16,038 MWh. Thus, the actual realized PLF is lower than that considered in investment analysis, which is conservative, hence accepted by the assessment team.

8. O&M Cost- The O&M cost per year that is incurred in realization of project is 40% less than as that anticipated in the Investment analysis. Hence the decrease of O&M cost by 241% is not possible.

3. Project Cost- The actual project cost incurred is INR 387.48 million which is nearly same as the value that has been assumed during the Project Investment decision (~2.73% less than the anticipated cost), hence the project will remain additional as it is already verified during sensitivity analysis.

4. Tariff Rate- The tariff can only be changed if TANGEDCO revise the tariff rate, but if there are any changes in the tariff rate, then as a result the operation charges (including transmission charges, wheeling charges, scheduling charges etc.) also increases and as a result there is no significant increase in net tariff rate.
From above, it can be safely concluded that project will remain financially unattractive despite significant changes in the key performance drivers. Hence, it is additional.

The results of the sensitivity analysis are summarized below for the Phase 2 (7.5MW)

Sensitivity Analysis	**Equity IRR**			
Variation %	**-10%**	**Normal**	**+10%**	**Variation needed to reach benchmark**
PLF	10.35%	12.24%	14.07%	16.30%
O&M	12.38%	12.24%	12.10%	-224.00%
Project Cost	13.89%	12.24%	10.86%	-16.65%
Tariff Rate	10.57%	12.24%	13.86%	19.10%

The likelihood of IRR crossing the benchmark for Phase-2 is discussed as follows:

1. PLF- The annual electricity generation for the power plant (from the date of commissioning) was recorded at 14,272 MWh, which is less than the expected annual value of electricity generation, i.e., 16,038 MWh. Thus, the actual realized PLF is lower than that considered in investment analysis, which is conservative.

2. O&M Cost- The O&M cost per year that is incurred in realization of project is 40% less than as that anticipated in the Investment analysis. Hence the decrease of O&M cost by 224% is not possible.

3. Project Cost- The actual project cost incurred is INR 422.95 million which is more than the value that has been assumed during the Project Investment decision, hence the project will remain additional.

4. Tariff Rate- The tariff can only be changed if TANGEDCO revise the tariff rate, but if there are any changes in the tariff rate, then as a result the operation charges (including transmission charges, wheeling charges, scheduling charges etc.) also increases and as a result there is no significant increase in net tariff rate.
From above, it can be safely concluded that project will remain financially unattractive despite significant changes in the key performance drivers. Hence, it is additional.

From above, it can be safely concluded that project will remain financially unattractive despite positive changes in the key performance drivers. Hence, it is additional.

The results of the sensitivity analysis are summarized below for the Phase 3 (7.5MW)

Sensitivity Analysis	**Equity IRR**			
Variation %	**-10%**	**Normal**	**+10%**	**Variation needed to reach benchmark**
PLF	11.78%	13.77%	15.71%	7.35%
O&M	13.90%	13.77%	13.64%	-115.00%
Project Cost	15.57%	13.77%	12.27%	-8.12%
Tariff Rate	11.98%	13.77%	15.52%	8.20%

The likelihood of IRR crossing the benchmark for Phase-3 is discussed as follows:
1. PLF- The actual electricity generation for the power plant (from the date of commissioning) is less than the anticipated annual value of electricity generation, i.e., 16,038 MWh. Thus, the actual realized PLF is lower than that considered in investment analysis. Furthermore, if we take the actual cost that has been incurred in this project, then the benchmark would breach if the PLF is increased by 12.90% which is not realistic.

2. O&M Cost- The O&M cost per year that is incurred in realization of project is nearly the same as anticipated in the Investment analysis, hence accepted by the assessment team.

3. Project Cost- The actual project cost incurred is INR 441.60 million which is more than the value that has been assumed during the Project Investment decision, hence the project will remain additional as it is already verified during sensitivity analysis that benchmark will breach only when the project cost reduces to -8.75% of the total cost assumed during investment decision.

	4. Tariff Rate- The tariff can only be changed if TANGEDCO revise the tariff rate, but if there are any changes in the tariff rate, then as a result the operation charges (including transmission charges, wheeling charges, scheduling charges etc.) also increases and as a result there is no significant increase in net tariff rate. From above, it can be safely concluded that project will remain financially unattractive despite significant changes in the key performance drivers. Hence, it is additional as the project cannot breach the benchmark and shall remain additional throughout the crediting period. From above, it can be safely concluded that project will remain financially unattractive despite significant changes in the key performance drivers. Hence, it is additional. From above, it can be safely concluded that project will remain financially unattractive despite positive changes in the key performance drivers. Hence, it is additional. The results of sensitivity analysis show that even with a variation of ±10% in tariff, PLF, project cost, and O&M cost, Post Tax equity IRR is significantly lower than the benchmark. And it is evident from the results given above; the project remains additional even under the most favorable conditions. **Step 3: Barrier Analysis** The additionality of the project has been demonstrated by applying the investment analysis, thus no barrier analysis is carried out. **Step 4: Common practice analysis** As per para 57 of Tool for demonstration and assessment of additionality" (Version 07.0.0), Step 2 analysis shall be complemented with an analysis of extent to which the proposed project type (e.g., technology or practice) has already diffused in the relevant sector and region. This test is a credibility check to complement the investment analysis (Step 2)[7]. **Sub-step 4a: The proposed CDM project activity(ies) applies measure(s) that are listed in the definitions section above-** The project activity meets the following criteria for TOOL24 Common Practice; Version 03.1 /52/. • **Applicable geographical area:** The state of **Tamil Nadu** has been considered as the geographical area. In India even though there is one national grid, but states have their own RE policies. Besides, solar insolation and other geographic conditions change from state to state which might make a state more or less favourable than others for project implementation. Hence, a comparable area would be the state and not the host country. • **Output:** It is the electricity generated by the project activity. • **Technology:** Large scale solar power based on PV is the applicable technology. Now, step wise approach as suggested in the tool is applied to the project activity: ***Step 1: Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.*** The installed capacity of the project is 22.5 MW hence the applicable output range is from 11.25 MW to 33.75 MW. The common practice analysis has been conducted for the complete project (all phases: phase-1, phase-2, phase-3 combined together).

[7] As the individual project is not a large-scale project, so no Common Practice Analysis is required to be conducted but as per the Tool 24, Common Practice Analysis shall be conducted on the total capacity of the bundle.

Step 2: identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:
(a) The projects are located in the applicable geographical area;
(b) The projects apply the same measure as the proposed project activity.
(c) The projects use the same energy source/fuel and feedstock as the proposed project activity if a technology switch measure is implemented by the proposed project activity
(d) The plants in which the projects are implemented produce goods or services with comparable quality, properties, and applications areas (e.g., clinker) as the proposed project plant
(e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
(f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

Following large scale solar power projects in the state of Tamil Nadu are considered for analysis because:

(a) These fall in the applicable geographical location i.e., state of **Tamil Nadu** in India
(b) These apply the same measure i.e., utility scale **Solar power** generation
(c) These use the same source of input energy i.e., **Solar energy**
(d) These produce the same goods/services i.e., **electricity supplied to the connected grid**
(e) The capacity of these projects is in the range as defined in Step 1 i.e**., 11.25 MW to 33.75 MW**
(f) These projects started commercial operation before the start date of proposed project activity i.e., **23/04/2021[8].**

A total **of 10 solar projects[9]** excluding this project have been commissioned in the applicable geographical area, which falls in the desired capacity range. Out of which**, 8 projects** are different based on scale of proposed project activity, i.e., capacity of the power plant and are also entitled to a higher tariff due to promotional policies[10].

List of Projects identified falling under the applicable criteria-

Name of Plant	Reason for Difference	Installed Capacity (MW)
M/s.Universal Mine Developers & Service Providers Pvt Ltd	Different based on scale of project and entitlement to higher promotional tariff	12
M/s.Crescent Power Ltd	Different based on scale of project and entitlement to higher promotional tariff	15
M/s.Universal Mine Developers & Service Providers Pvt Ltd	Different based on scale of project and entitlement to higher promotional tariff	13
M/s.Shapoorji Pallonji Solar PV Pvt Ltd	Different based on project entitlement to higher promotional tariff as project was commissioned before 31/3/2016.	30

[8] This date represents the date of signing of purchase orders which represents the first financial commitment which was made by Project owner toward development of this project, which is inline with the GCC Clarification No.1.
[9] https://cea.nic.in/wp-content/uploads/2020/04/Plant-wise-details-of-RE-Installed-Capacity-merged.pdf
[10] https://cercind.gov.in/2015/orders/SO4.pdf

	M/s.RT Renewable Energy India Pvt Ltd	Different based on scale of project and entitlement to higher promotional tariff	15	
	M/s Edison Energy India Pvt Ltd	Different based on scale of project and entitlement to higher promotional tariff.	15	
	M/s. Vaibhav Jyothi Power Utility Services Pvt Ltd	Different based on scale of project and entitlement to higher promotional tariff	15	
	M/s. SEI Kathiravan Power Pvt Ltd	Different based on scale of project and entitlement to higher promotional tariff	15	
	M/s. SEI Kathiravan Power Pvt Ltd	Identified similar project	25	
	JKM Solrad Entech Pvt Ltd	Identified similar project	25	

Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number, N_{all}.
So, N_{all} = 10

Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number as N_{diff} = 8
There are 08 projects (as explained above) that are deemed to apply technologies that are different (by virtue of size of installation) as compared to the technology applied in the proposed project activity as per para 12 c) of Tool 24. Hence, N_{diff} = 08

Step 5: calculate factor $F=1-N_{diff}/N_{all}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

Hence, F = 1-8/10 = 0.2
And $N_{all} - N_{diff}$ = 2

Since F is not > 0.2 and $N_{all} - N_{diff}$ = 2 which is not greater than 3, hence project activity is not a common practice in the region.

Findings	CL 03, CL04, CL05, CL06, CL07, CL08, CL09, CL10 was raised in this context and closed successfully.
Conclusion	• The benchmark used in the project activity is found appropriate and all the sources used to arrive the benchmark have been thoroughly assessed by the verification team and found to be correct. • All the parameters and assumptions used in the financial analysis were verified and found appropriate. The input parameters were verified and crosschecked with authentic resources as referenced in the relevant parameters and found to be correct • The results of the investment analysis along with sensitivity analysis (variables being the PLF, O&M cost, Project cost and Tariff) confirms that the project activity (without ACCs benefits) generates returns less than the benchmark value. • Based on the information provided in the PSF and guidance by GCC Project Standard version 03.1/2/, Tool for demonstration and assessment of additionality version 7.0 /16/, Investment Analysis Tool Version 11.0 /15/ verification team confirmed the project activity is deemed additional.

D.3.6 Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	The verification team checked whether the equations and parameters used to calculate GHG emission reductions or net anthropogenic GHG removals for PSF is in accordance with applied methodology. Verification team checked section B.6 of the PSF to confirm whether all formulae to calculate baseline emissions, project emission and leakage have been applied in line with the underlying methodology. **Baseline Emissions**: The baseline emissions as discussed in B.6.1 mentioned that the emission would have occurred in the absence of the project activity. The emission reduction calculation has been done as per the Large-scale Consolidated Methodology ACM0002, Version 20.0 /13/. The baseline emissions of the project activity according to the paragraph 39 of the applied methodology is, $BEy=EGPJ,y\times EFgrid,CM,y$ Where, BEy = Baseline Emissions in year y; tCO_2 EGPJ y = Quantity of net electricity displaced as a result of the implementation of the GCC project activity in year y (MWh/year) $EFgrid,CM,y$= Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system Version 7.0" (t CO2/MWh) /14/ As per paragraph 41 of the applied methodology, If the project activity is the installation of a greenfield power plant EGPJ,y = EGfacility,y Where EGfacility,y = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/year) As per PSF the estimated net electricity generation from the project activity is 44,616 MWh (annual average over the crediting period) and calculated combined margin emission factor based on the Tool is 0.9305 tCO_2/MWh. Hence the baseline emission value will be 41,514 tCO_2 (annual average over the crediting period) /11/. The basis for electricity generation from the project activity is calculated based on the values of PLF and annual degradation 0.70% as discussed in the ERs Excelsheet. Hence the value considered for the calculation of emission reductions for the project activity is reasonable and appropriate. For ex-post, this parameter (EGfacility,y) is being calculated as difference of electricity exported to the grid by the project activity and electricity imported from the grid by the project activity and those are being measured by energy meters of accuracy class 0.2s. **Project emissions**: As per paragraph 31 of the applied methodology, For most renewable energy project activities, PEy = 0. Since Solar power is a GHG emission free source of energy project emission considered as Zero for the project activity. **Leakage Emissions**: As per the paragraph 53 of the applied methodology, there are no emissions related to leakage in this project. **Emission reductions** As per Paragraph 54 of the applied methodology, emission reductions are calculated as follows ERy = BEy − PEy 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 (t CO_2/y) Based on the above estimation ERy = BEy, Hence the annual emission reductions based on the ex-ante parameters is 41,514 tCO_2 (annual Average over the crediting period).
Findings	CAR 02, CAR03 was raised and closed successfully
Conclusion	Project verification team confirm that the algorithms and formulae proposed to calculate project emissions, baseline emissions, leakage and emission reductions in the PSF is in line with the requirements of the selected methodology ACM0002 Version 20.0, For ex-ante calculation, the assessment team confirms that • All assumptions and data used by the project owner are listed in the PSF including their references and sources. • All documentation used by project owner as the basis for assumptions and source of data is correctly quoted and interpreted in the PSF. • All values used in the PSF are considered reasonable in the context of the proposed project activity. • The baseline methodology and the applicable tool(s) have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; • All estimates of the emissions can be replicated using the data and parameter values provided in the PSF. • The grid emission factor for the project activity is in line with the Clarification No. 03 (additional options to determine grid emission factor for renewable projects applying ACM0002 and AMS I.D). • All calculations are complete and without any omissions.

D.3.7 Monitoring plan

Means of Project Verification

The monitoring plan described in the PSF is in compliance with the applied methodology ACM0002 Version 20.0 /13/. The monitoring plan has been found to be in compliance with the requirements of the applied methodology for calculation of GHG emission reductions, GCC Environment and-Social-Safeguards-Standard-v3.0 /4/ and Project-Sustainability-Standard-v3.1 /5/. The assessment team has reviewed all the parameters in the monitoring plan against the requirements of the applied methodology and confirmed that monitoring parameters are applied in line with the requirement of the methodology and relevant in the context of the program. The procedures have been reviewed by the assessment team through document review and interviews with the respective monitoring personnel. The information provided has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the project owner. Specifically, these points include the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the project. Therefore, the project owner will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

The parameters that are fixed ex-ante are:

Parameter	Value	Source
Operating margin emission factor (tCO_2/MWh)	0.9522	Sourced from Baseline CO_2 Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India /34/
Build margin emission factor (tCO_2/MWh)	0.8653	Sourced from Baseline CO_2 Emission Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India/34/
Combined margin emission factor (tCO_2/MWh)	0.9305	Database, Version 17.0, October 2021 published by Central Electricity Authority (CEA), Government of India/34/

The parameters that are to be monitored ex-post as per applied methodology & parameters identified as harmless and harmful under Environmental and Social Safeguard section in the PSF and the applicable SDG parameters are given below.

1	$EG_{P\,j,\,y}$	Quantity of net electricity displaced in year y in MWh/y: The power generated from the project activity is exported to grid. The electricity exported is measured through the electricity meters located at the Plant end. The Net electricity supplied by the project activity is the difference between export and import of the electricity from the project activity. The export and import readings of the project activity will be sourced from joint meter reading (JMR) reading issued by the state utility. The energy meters sealed by the state utility and its representatives. These meters are bi-directional tri-vector energy meters (Main and Check Meters) of 0.2s accuracy class. These meters are continuously measured the electricity generated from the projects and readings of meters shall be taken on monthly basis by authorized officer of State utility in the presence of project owner or representative of Project owner. Thereafter, TANGEDCO submits a monthly report (monthly statement) /31/ and based on the JMR, invoices /32/ will be raised. These invoices can be used for cross checking the meter readings taken for the respective project activity. The

			meter details are provided in the PSF which was verified during the onsite visit of the project activity.
	2.	Employment Generation	This parameter is monitored based on the number of jobs created by the project owner and ensures that twenty employments will be provided from the project activity. This will be verified using the HR and payroll records of the employees who worked on the project activity. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity and its acceptable to the assessment team
	3	Emission reductions achieved per year	The parameter is calculated based on the net electricity generation from the project activity and grid emission factor. Reduction of CO_2 emissions due to implementation of project activity that would otherwise been emitted by thermal power plants. The monitoring parameter will be continuously monitored by means of energy meters as mentioned above monitoring parameter $EG_{Pj,y}$.
	4	Replacing fossil fuels with renewable sources of energy-	The parameter is calculated based on the net electricity generation from the project activity. The monitoring parameter will be continuously monitored by means of energy meters as mentioned above monitoring parameter EGPJ,facility,y.
	5	Long-term jobs (> 1 year) created	This parameter is monitored based on the duration for which the employment is generated. It will involve the employments generated with the number of persons with salaries paid for more than 12 months. This will be verified using the HR and payroll records /27/ of the employees who worked on the project activity. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity
	6	Short-term jobs (< 1 year) created	This parameter is monitored based on the duration for which the employment is generated. It will involve the employments generated with the number of persons with salaries paid for less than 12 months. This will be verified using the HR and payroll records of the employees who worked on the project activity. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity
	7	Sources of income generation increased/reduced-	This parameter is monitored based on the job opportunities created during the operation and O&M activities due to implementation of project activities. The parameter will determine whether the sources of income has increased due to the project activity or not. The parameter will only consider the number of persons with salaries paid, atleast once in the monitoring period and minimum wages in compliance with the Labour Act. This will be verified using the HR and payroll records of the employees who worked on the project activity. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the

			monitoring practices followed by the project owner is appropriate in relation to the project activity.
	8	Occupational health hazards	This parameter will monitor the cause of physical hazards in project sites due to human intervention or technical failure or emergency and as a result this parameter will also monitor number of trainings imparted (technical, non-technical and/or general awareness). Standards like OH&S and EHS standards will be followed to monitor the parameter. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity.
	9	Reducing / increasing accidents /Incidents/ fatality	This parameter will monitor the number of workplace accidents recorded after providing training. This parameter is monitored on yearly basis based on the number of trainings provided by the project owners to the employees and staffs of the project activity to reduce the accidents at site. This will be verified using the training records /registers maintained in the project site. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity and its acceptable to the assessment team.
	10	Specialized training to local personnel-	This parameter will monitor the number of technical and non-technical trainings provided to local employees as per the training needs. At least 1 training per year shall be provided to the employees identified as needing training. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity and its acceptable to the assessment team.
	11	Hazardous waste storage and disposal records	As per monitoring plan, solid waste pollution from Hazardous wastes like transformer oil disposal / replacement or any other hazardous from the project activity will be disposed as per guidance given in the Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2016 which is the applicable laws/regulations in the host country. This will be monitored by means of the records by the project owner in the installation site as and when there is a need of disposal/replacement of transformer oil and other hazardous. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity and its acceptable to the assessment team.
	12	Quantity of E-waste generated (tons)	As per monitoring plan E-waste generated from the project activity shall be stored and disposed-off as per the guidance of E-waste management and Handling Rules/35/ in the host country. As per the guidance the E-waste generated from the project activity will be collected

			by the dealer of producer or dismantler or recycler or through the designated take back service provider of the producer to authorized dismantler or recycler. This will be monitored by means of the records by the project owner in the installation site when E waste will be disposed of or sent for refurbishment. This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity and its acceptable to the assessment team.
	13	Solid waste Pollution from end-of-life products/ equipment	This parameter is monitored on continuous basis based on the solar PV modules after ending lifecycle or damaged/defunct solar PV modules which could not be reused in the project activity. There is no prevailing law in place in regard to how the ending lifecycle or damaged/defunct solar PV modules shall be stored or replaced in the host country. The impact is unlikely to cause any harm because the generated solid waste shall be channelized through authorized channels (authorized scrap-dealers/ dismantlers/ recyclers etc.). This was confirmed by interviewing the monitoring personnel of the project activity during on site visit and the monitoring practices followed by the project owner is appropriate in relation to the project activity and its acceptable to the assessment team.
Findings	CL 11, CL12 were raised and closed successfully		
Conclusion	The verification team confirms that, • The project verification team confirms that the monitoring plan based on the approved monitoring methodology is correctly applied to the PSF. • The monitoring plan will give opportunity for real measurements of achieved emission reductions. The verification team considers that monitoring arrangements described in the monitoring plan is feasible within the project design. • The means of implementation of the monitoring plan are sufficient to ensure that the emission reduction and other voluntary labels achieved from the project activity is verifiable and thereby satisfying the requirement of Verification Standard. • The monitoring plan will give opportunity for real measurements of achieved emission reductions. There are no host country requirements pertaining to monitoring of any sustainable development indicators. Therefore, there are no such parameters identified in the PSF.		

D.4. Start date, crediting period and duration

Means of Project Verification	The start date of the project activity is 20/01/2022/18/ which is the earliest commercial operation date of the project activity. The Commissioning certificates/18/ of the installation of the project activity has been verified and confirmed start date as per PSF is found correct and acceptable to verification team. A crediting period of a maximum length of 10 years has been selected by project owner. The start date of the crediting period is stated as 20/01/2022, which is appropriate as per paragraph 40(b) of the Project Standard version 03.1. The expected lifetime of the project activity is 25 years which is verified by the technical details of the PV panels and confirmed based on the sectoral expertise.

Findings	CL 03 were raised and closed successfully
Conclusion	The start dates and the crediting period type & length have been verified and found to be in accordance with GCC project standard version 03.1 /2/.

D.5. Environmental impacts

Means of Project Verification	As the guidelines on Environmental Impact Assessment have been published by Ministry of Environment, Forests and Climate Change (MoEF&CC), Government of India (GOI) under Environmental Impact Assessment notification 14/09/2006/45/. Further amendments to the notification have been done on 14/07/2018/45/, the Solar power projects are not listed in any of the categories of the schedule, hence the NO EIA required as per host country legislation. The project activity is implemented on the barren lands and there is no forest land or any protected land involved in the project activity. Also, necessary approvals have been obtained by the project owner before implementation and of the project activity. This has been evident from the verification of the documents and during onsite site by the verification team. The project was already implemented and there is no possibility of any negative impact during operation phase of the project activity.
Findings	No findings raised in this context.
Conclusion	In the opinion of the assessment team, in the project activity environmental impacts is not significant as per host country legislation. Further analysis not required in this context.

D.6. Local stakeholder consultation

Means of Project Verification	A LSC was conducted for the project activity on 20/06/2022 at the project site. A Public invitation for local stakeholder consultation was published in leading regional newspaper (Daily Thanthi) and national newspaper (The Hindu) inviting various stakeholders to attend the physical meeting on site. An introductory briefing was given to the participating stakeholders (32 people). The scope of LSC includes- • Objective of stakeholder consultation and encouraging stakeholders to share their opinion. • Introduction to Global warming, its effect and carbon market. • Brief introduction to the project activity and its benefits both environmental and socio- economic The consultation was performed to meet the requirement of the GCC since there are no Host country requirement to conduct consultation for such projects. With reference to the CPCB modified direction No. B29012/ESS(CPA)/2015-16, dated March 07, 2016 (Table G-5) solar power project falls in White category and there shall be no necessity of obtaining the “Consent to Operate’ for White category of industries. So, a Local Stakeholder Consultation is not mandated for the Solar Power Projects as per the host country’s legal requirements. The verification team confirms that the local stakeholder consultation process was performed by the project owner before the submission of the project activity for global stakeholder consultation. The objective of the local stakeholder consultation carried out to comply with GCC requirements and identify the comments/concerns that might be required to be addressed by project owner. The representative of GCC project owner explained technical aspects and GCC mechanism & its requirement of project to stakeholders, also explained about Social, Environmental benefits and UN sustainable development goal impacts of the project. Furthermore, the project owner was asked to provide feedback on the project activity, including whether the project will have a positive, negative, or no impacts The

	stakeholder consultation responses/26/ were received by the assessment team. The verification team confirmed by review of the stakeholder responses that the summary of stakeholders' comments reported in PSF was accurate. There was no negative feedback received. The list of the relevant stakeholders who were requested for feedback is also provided in the PSF.
Findings	CL 13 is raised and closed successfully
Conclusion	The project verification team confirms that the summary of stakeholders' comments reported in PSF is complete. In the opinion of the team, the local stakeholder consultation process was adequately conducted by the project owner considering the ongoing pandemic to receive unbiased comments from the all the stakeholders. The project verification team confirms that the local stakeholder consultation process performed for the project activity fulfils the requirements and all the LSC documents /26/ are verified and found acceptable.

D.7. Approval and Authorization- Host Country Clearance

Means of Project Verification	As per the GCC program guidelines the submission of HCA on double counting is required by CORSIA labelled project after 31/12/2020 as verified under section D.13 of this report. For carbon credits issued during 01/01/2016 to 31/12/2020 the host country approval is not required. Thus, for this project activity Host country approval on double counting is not required at the time of project verification.
Findings	CL 14 raised and closed, Also FAR 01 raised.
Conclusion	The project verification team confirms that no Host Country approval is required by the CORSIA labelled project activity and the HCA will be required during the first or subsequent verification, when the issuance of carbon credit is considered beyond 1st January 2021.

D.8. Project Owner- Identification and communication

Means of Project Verification	The information and contact details of the project owner and project owners themselves has been appropriately incorporated in Appendix 1 of the PSF which was checked. The Authorization letters /19/ signed by the project owners has been verified and also the company registration documents/19/ and project owner valid passports /19/56/ have been checked. The legal owner of the project is "GHCL Ltd." same is demonstrated by the project owner through the approval document from TANGEDCO /21/, commissioning certificates/18/, wheeling agreement /22/.. The project verification team interviewed the authorized personnel & proposed project owners as per LoA and confirmed the authenticity of the Letter of Authorization (LoA)/19/ and ownership of the project activity. As per GCC requirement, only the legal owner of the project can hold or assign/transfer the ownership of the ACCs. The legal owner of the project is "GHCL Ltd. /18/21/22/23/24/32. Further, the majority of renewable energy projects in the host country that supply power to the grid or third-party sale via grid, executing power purchase agreements with state utilities or any power purchaser, only carbon credits revenue is shared with the parties involved in the projects, but ownership of the carbon credits will always lies with the legal owner/investor of the project. Based on the verification team's sectoral and local expertise, the "GHCL Ltd." ownership of Carbon Credits claim is acceptable and reasonable. Further "GHCL Ltd." has authorized "Manikaran Power Limited" to act as a project owner for this GCC project activity. Hence as per the GCC requirement, the project owner has filled and submitted the "Declaration by Authorized Project Owner and Focal Point at Initial Submission and Request for Registration of GCC Project activity" for further process which is acceptable to the verification team. All information were consistent between in these documents and acceptable to the project verification team.
Findings	No findings raised in this context.

Conclusion	The project verification team confirms that the information of the project owners has been appended as per the template and the information regarding the project owners stated in the PSF and authorization letter were found to be consistent.

D.9. Global stakeholder consultation

Means of Project Verification	The PSF was made available through the dedicated interface on the GCC website. The duration of the period for submission of comments for the global stakeholder consultation was from 05/12/2022 to 19/12/2022. https://www.globalcarboncouncil.com/global-stakeholders-consultation-6/ There were no comments received during this period
Findings	No findings raised.
Conclusion	The PSF had been made public for receiving stakeholder feedback and no comments were raised during the GSC process.

D.10. Environmental Safeguards (E+)

Means of Project Verification	The Project owner has chosen to apply for the Environmental No-net-harm Label (E+). The assessment of the impact of the project activity on the environmental safeguards has been carried out in section E.1 of the PSF. Out of all the safeguards no risks were identified to the environment due to the project implementation and operation and the following impacts/indicators have been considered for the monitoring purpose - Environment – Air- CO_2 emissions. - Environment – Land- *Solid waste Pollution from Hazardous wastes* - Environment – Land- *Solid waste Pollution from E-wastes* - Environment – Land - *Solid waste Pollution from end-of-life products/ equipment* Few risks identified regarding Solid waste Pollution from PV module waste generated at the end of life or damaged/defunct module generation during operational life of the project activity and project owner provided mitigation plan to reduce the risk is not likely to cause any harm in section B.7.2 of the PSF. The appropriate monitoring plan has been put in place to monitor the elements marked positive and risks identified due to implementation of the project activity and the parameter compliance with local regulations/laws i.e., Solid waste like disposal of Transformer oil and other hazardous, E-Waste generated from the project activity, water consumption of the project activity for the solar panels cleaning purpose will be also monitored to ensure the compliance of the laws during the crediting period has been provided in Section B.7.1 of the PSF. The detailed matrix has been included in Appendix 5 of the report.
Findings	CL 15 was raised and closed successfully
Conclusion	Based on the documentation review the project verification team can confirm that Project Activity is not likely to cause any negative harm to the environment but would have a positive impact (scored as +4), hence, is eligible to achieve additional E+ certifications. It is therefore concluded that project meets the requirements of Appendix-1 of the Environment and Social Safeguards Standard/4/.

D.11. Social Safeguards (S+)

Means of Project Verification	The Project owner has chosen to apply for the Social No-net-harm Label (S+). The assessment of the impact of the project activity on the social safeguards has been carried out in section E.2 of the PSF. Out of all the safeguards no risks were identified to the society due to the project implementation and operation. Only positive impacts

	identified by the Project owner which is not likely to cause any harm. The following impacts/indicators have been considered for the monitoring purpose. Social – Jobs - *Long-term jobs (> 1 year) created/ lost* Social – Jobs - *New short-term jobs (< 1 year) created/ lost* Social – Jobs - *Sources of income generation increased / reduced (including avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities)* Social - Health & Safety - *Occupational health hazards* Social - Health & Safety - *Reducing / increasing accidents/Incidents/fatality* Social – Education - *Specialized training / education to local personnel* The parameters scored in the social safeguard section is the voluntary initiative by the project owner and not planning to achieve this social parameter by complying with 2% CSR compliance of Ministry of Corporate affairs. Also, as per section 135, Companies Act 2013, the employment and their salaries paid to regular staffs will not counted as CSR expenditure. The employment provided here is for O&M and other activities associated with this project activity, If any Salaries paid by the companies to regular CSR staff as well as to volunteers of the companies (in proportion to company's time/hours spent specifically on CSR) can be factored into CSR project cost as part of the CSR expenditure. Also, activities undertaken by the company in pursuance of its normal course of business will not considered as CSR expenditure. This is verified in the following weblink, https://www.mca.gov.in/MinistryV2/faq+on+csr+cell.html and also verified from the Notification General Circular No. 21/2014 No: 05/01/2014 dated 18/06/2014 by Ministry of Corporate Affairs, Govt of India. The appropriate monitoring plan has been put in place to monitor the elements marked positive in social safeguard section E .2 of the PSF. The detailed matrix has been included in appendix 6 of the report.
Findings	CL 16 was raised and closed successfully
Conclusion	Based on the documentation review the verification team can confirm that Project Activity is not likely to cause any negative harm to the society but would have a positive impact (scored as +5), hence, is eligible to achieve additional S+ certifications. It is therefore concluded that project meets the requirements of Appendix-1 of the Environment and Social Safeguards Standard/4/.

D.12. Sustainable development Goals (SDG+)

Means of Project Verification	The assessment of the contribution of the project activity on United Nations Sustainable Development Goals has been carried out in section F of the PSF. Out of the 17 Goals project activity has no adverse effect on any of the goal and contribute to 3 SDGs: Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all Goal 13. Take urgent action to combat climate change and its impacts The detailed matrix has been included in appendix 7 of the report.
Findings	CL 13 was raised and closed successfully
Conclusion	Based on the documentation review the verification team can confirm that Project Activity is likely to contribute to the United Nations Sustainable Development Goals and would have a positive impact (certification label scored as Silver), hence, is eligible to achieve additional SDG+ certifications. It is therefore concluded that project meets the requirements of Appendix-1 of the Project Sustainability Standard/5/.

D.13. Authorization on Double Counting from Host Country (for CORSIA)

Means of Project Verification	The project aims to achieve E+, S+, SDG+ and CORISA label inline with the GCC requirements. A declaration under section A.5 of the PSF has been included for offsetting the approved carbon credits (ACCs) for the entire crediting period from 20/01/2022 to 19/01/2032.
Findings	FAR 01 was raised for future verification.
Conclusion	The project owner has clarified the intent of use of carbon credits for CORSIA hence no double counting will take place. The project owner declared that no host country attestation is required for the pilot phase of 2021-23 (accepting credits issued for monitoring periods between 2016 and 2020), which is appropriate and acceptable according to paragraph 16 of the Standard on Avoidance of Double Counting, V1.0. Also, the verification team raised to Forward Action request to project owner to submit Host Country Authorization beyond the issuance period 31/12/2020 and also the host country must ensure that no emission reductions from the corresponding monitoring period of project are claimed under NDC during issuance of HCLOA for the project activity as per the guidance.

D.14. CORSIA Eligibility (C+)

Means of Project Verification	The project activity meets the CORSIA Eligibility since the crediting period is after 01/01/2016 and the project is applying for registration under GCC which is one of the approved programmes for eligibility. It was also confirmed that the project activity does not fall under the excluded unit types, methodologies, programme elements, and/or procedural classes. The Project Activity does not cause any net harm to the environment and/or society and therefore achieves Environmental No-net-harm Label (E+) and Social No-net-harm Label (S+) as per the Environmental and Social Safeguards Standard also make contributions for achieving United Nations Sustainable Development Goals (SDGs) to achieving at least three SDGs as per Project Sustainability Standard to achieve SDG+ Label
Findings	FAR 01 was raised for future verification.
Conclusion	The project activity meets the CORSIA Label (C+) eligibility: a) The Project Activity complies with all the requirements for the Emission Unit Criteria of CORSIA b) A written attestation from the host country's national focal point on double counting is not required for Emission units till 31st December 2020; c) The Project Activity complies with all the applicable requirement of the GCC Program and ICAO's requirements on CORSIA Emissions Unit Eligibility Criteria and CORSIA Eligible Emissions Units, as per Clarification No 1., v1.3 paragraph 23-25, and the ACCs expected to be issued during the crediting period is likely to be CORSIA eligible and can be used by International Airlines for offsetting their emissions during all phases of CORSIA and therefore requests GCC Steering Committee to append CORSIA Certification label (C+) to this project. d) The Project Activity is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard and will achieve Environmental No-net-harm Label (E+), Social No-net-harm Label (S+) for this project activity e) The Project Activity is likely to contribute to the achievement of United Nations Sustainable Development Goals (SDGs), complies with the Project Sustainability Standard and will achieve UN SDG Certification Labels (Silver SDG+ Label) for this project activity

Section E. Internal quality control

The project verification report prepared by team leader is reviewed by an independent technical reviewer (having competence of relevant technical area himself/herself or through an independent technical area expert) to confirm the internal procedures established by KBS are duly followed and the Verification report/opinion is reached in an objective manner and complies with the applicable GCC requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team. The independent technical reviewer(s) may approve or reject the draft verification report. The findings may be identified even at this stage, which needs to be satisfactorily resolved, before submit final report to GCC. The final approval decision is taken by the Head of the DOE/Director.

Section F. Project Verification opinion

KBS has been contracted by 'Manikaran Power Limited' to undertake verification of the project activity "22.5 MW Solar Project in Tamil Nadu" in India. The verification was performed based on rules and requirements defined by GCC for the project activity.

The bundled project involves installation of 22.5 MWac Solar Photovoltaic (SPV) Panels in the state of Tamil Nadu. The electricity generated from project activity is used for group captive consumption in the nearby textile facilities, through wheeling agreement with Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) /22/, there by displacing electricity from the regional grid which would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid. This bundled project activity consists PV modules, and associated connection boxes, Inverters, transformers and other field equipments. Thus, the project activity is estimated to generate an average of 44,616 MWh/year electricity and displacing 41,514 tCO_2/year. The project correctly applies the approved baseline and monitoring ACM0002 version 20.0 and is assessed against latest valid PS, VS and Environment and Social Safeguards Standard, Project-Sustainability-Standard and/or other applicable GCC/CDM Decisions/Tools/Guidance/Forms.
The project activity is likely to achieve the anticipated emission reductions stated in the PSF provided the underlying assumptions do not change. The expected emission reductions (annual average) from the project activity are estimated to be 41,514 tCO_2/year over the 10 years fixed crediting period starting from 20/01/2022.
KBS has verified and hereby certifies that the GCC bundled project activity "22.5 MW Solar Project in Tamil Nadu":

- has correctly described the Project Activity in the Project Submission Form (version 3.0, dated 27/11/2023) including the applicability of the approved methodology ACM0002, version 20.0 and meets the methodology applicability conditions, is additional and is expected to achieve the forecasted real measurable and additional GHG emission reductions, complies with the monitoring methodology, has appropriately conducted local and global stakeholder consultation processes and has calculated emission reduction estimates correctly and conservatively;
- is likely to generate GHG emission reductions amounting to the estimated 415,148 tCO_2 over the fixed crediting period of ten years, as indicated in the PSF, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable GCC rules, including ISO 14064-2 and ISO 14064-3, and therefore requests the GCC Program to register the Project Activity
- is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard, and therefore requests the GCC Program to register the Project Activity, which is likely to achieve the requirements of the Environmental No-net-harm Label (E+) and the Social No-net-harm Label (S+); and
- is likely to contribute to the achievement of United Nations Sustainable Development Goals (SDGs), comply with the Project Sustainability Standard, and contribute to achieving a total of 3 SDGs, which is likely to achieve the Silver SDG certification label (SDG+).

- The Project Activity complies with all the applicable requirement of the GCC Program and ICAO's requirements on CORSIA Emissions Unit Eligibility Criteria and CORSIA Eligible Emissions Units, as per Clarification No 1., v1.3 paragraph 23-25, and the ACCs expected to be issued during the crediting period is likely to be CORSIA eligible and can be used by International Airlines for offsetting their emissions during all phases of CORSIA and therefore requests GCC Steering Committee to append CORSIA Certification label (C+) to this project.
- is likely to contribute to CORSIA Eligible Emission Units and has CORSIA Label (C+) certification valid till 31 December 2020. A written attestation from the Host country on double counting is not required until 31 December 2020 and the project was found meeting the applicable requirements prescribed by ICAO.

Appendix 1. Abbreviations

Abbreviations	Full texts
ACC	Approved Carbon Credits
ACM	Approved Large Scale Consolidated Methodologies
BE	Baseline Emission
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CL	Clarification Request
CM	Combined Margin
CPCB	Central Pollution Control Board
CO_2	Carbon dioxide
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CP	Crediting Period
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Green House Gas
GW	Giga Watt
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
kW	kilo Watt
kWh	kilo Watt hour
LSC	Local Stakeholder Consultation
MCA	Ministry of Corporate Affairs
MoV	Means of Verification
MoEFCC	Ministry of Environment, Forest and Climate Change
MP	Monitoring Plan
MPL	Manikaran Power Limited
MW	Mega Watt

MWh	Mega Watt hour
OM	Operating Margin
PA	Project Activity
PSF	Project Submission Form
PS	Project Standard
PE	Project Emission
PLF/CUF	Plant Load Factor/Capacity utilization factor
PO	Project Owner
PS	Project Standard
SEIPL	SEIPL
SECI	Solar Energy Corporation of India Limited
SDG	Sustainable Development Goal
tCO_2	Tonnes of Carbon dioxide equivalent
TANGEDCO	Tamil Nadu Generation and Distribution Corporation
TNERC	Tamil Nadu Electricity Regulatory Commission
UNFCCC	United Nations Framework Convention on Climate Change
VS	Verification Standard
VVS	Validation and Verification Standard (CDM)

Appendix 2. Competence of team members and technical reviewers

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Personnel Name:		**Rohit Badaya**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☒
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2: Energy generation from renewable energy sources		
Energy distribution	TA 2.1: Energy distribution		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Solid waste and wastewater TA 13.2 Manure		
Approved By	Manager Competency & Training		
Approval date:	29/12/2018		

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Personnel Name:		**Shruti Shrivastava**	
Qualified to work as:			
Team Leader	☐	Technical Expert	☐
Validator/Verifier (trainee)	☒	Financial Expert	☐
Technical Reviewer	☐	Local Expert	☐
Area(s) of Technical			

Expertise	
Sectoral Scope	**Technical Area**
-	-
Approved by (Manager C & T)	Shikha Sharma
Approval date:	18/11/2021

Personnel Name	**Anuradha S**			
Schemes	☒ CDM	☒ GCC	☒GS	☒VCS	☐ Other GHG Schemes (mention here)
Qualified to work as				
Team Leader	☐	Technical Expert	☐	
Validator/Verifier	☐	Financial Expert	☒	
Technical Reviewer	☐	Local Expert	☐	
Area(s) of Technical Expertise				
Sectoral Scope	**Technical Area**			
-	-			
Approved by (Manager Competence & Training)	Shikha Sharma			
Approval date	12-05-2022			

Personnel Name	**Satya Prakash Goyal**			
Schemes	☒ CDM	☒ GCC	☒GS	☒VCS	☐ Other GHG Schemes (mention here)
Qualified to work as				
Team Leader	☐	Technical Expert	☐	
Validator/Verifier	☐	Financial Expert	☒	
Technical Reviewer	☐	Local Expert	☐	
Area(s) of Technical Expertise				
Sectoral Scope	**Technical Area**			
-	-			

Approved by (Manager Competence & Training)	Shikha Sharma
Approval date	13-01-2022

Personnel Name:		**S. Ranganathan**	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	**Technical Area**		
SS 01: Energy industries (renewable/non-renewable sources)	GHG-SS 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	GHG-SS 1.2: Energy generation from renewable energy sources		
SS 2: Energy distribution	TA 2.1. Energy distribution		
SS 3: Energy demand	TA 3.1. Energy Demand		
SS 5: Chemical industry	TA 5.1 Chemical industry		
SS 12: Solvents use	TA 12.1 Chemical industry		
SS 13: Waste handling and disposal	TA 13.1 Waste Handling and Disposal		
	TA 13.2 Manure		
Approved by (Manager C& T)	Shikha Sharma		
Approval date:	05/05/2022		

Appendix 3. Document reviewed or referenced

No.	Author	Title	References to the document	Provider
1	GCC	GCC Program Manual	Version 04.0	Publically available
2	GCC	Project Standard	Version 03.1	Publically available
3	GCC	Project Verification Standard	Version 03.1	Publically available
4	GCC	Environment and Social Safeguards Standard	Version 3.0	Publically available
5	GCC	Project-Sustainability-Standard	Version 3.1	Publically available
6	GCC	GCC Clarification No. 01	Version 1.3	Publically available
7	GCC	Template for Letter of Authorization of Project Owners and Project Representatives	Version 01.1	Publically available
8	GCC	Project Submission Form (PSF)- Template	Version 4.0	Publically available
9	GCC	Project Verification Report Template	Version 03.1	Publically available
10	Project Owner	PSF Version 2.0 (Initial Version) PSF Version 3.0 (Final Version)	Dated 01/12/2022 Dated 27/11/2023	Project Owner
11	Project Owner	ER Sheet related PSF (initial version) : (ER_Calculator_MPL_project_GHCL) ER Sheet related to PSF (final version) : ER_Calculator_MPL_project_GHCL_v2	Version 1.0 Version 2.0	Project Owner
12	Project Owner	IRR Sheet corresponding to the PSF (initial version) for all the three phases - Investment Analysis_GHCL (Phase-1) - Investment Analysis_GHCL (Phase-2) - Investment Analysis_GHCL (Phase-3) IRR Sheet corresponding to the PSF (final version) for all the three phases - Investment Analysis_Phase1_Revised - Investment Analysis_Phase_2_Revised - Investment Analysis_Phase3_Revised	Version 1.0 Version 3.0	Project Owner
13	UNFCCC	Methodology: ACM0002 Grid connected electricity generation from renewable sources Version 20.0	Version 20.0	Publically available
14	UNFCCC	Tool to calculate the emission factor for an electricity system	TOOL 07	Publically available

15	UNFCCC	Tool 27- Methodological Tool Investment Analysis Version 11.0 Tool 27- Methodological Tool Investment Analysis Version 10.0	TOOL-27	Publically available
16	UNFCCC	Tool for the demonstration and assessment of additionality Version 7.0	TOOL 01	Publically available
17	UNFCCC	Tool-05 Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation.	Version 03.0	Publically Available
18	Project Owner	Commissioning Certificate (Phase-1) Commissioning Certificate (Phase-2) Commissioning Certificate (Phase-3)	Dated 29/04/2022 Dated 31/03/2022 Dated 18/07/2023	Project Owner
19	Project Owner	Authorization Letter regarding Project Owner between GHCL Limited and Manikaran Power Limited Incorporation Certificate of Manikaran Power Limited Passport copy of representatives of MPL (Mr. Mr. Neelabhra Paul and Mr. Piyush Sharma) Passport copy of Mr. R. Balakrishnan, CEO, GHCL	Dated 20/05/2022	Project Owner
20	Project Owner	Technical Details & Data sheets of Major Equipments involved in the project activity	-	Project Owner
21	TANGEDCO	Approval from TANGEDCO for establishing the 7.5 MW power plant (phase-1) Approval from TANGEDCO for establishing the 7.5 MW power plant (phase-2) Approval from TANGEDCO for establishing the 7.5 MW power plant (phase-3)	Dated 05/01/2022 Dated 30/03/2022 Dated 13/01/2023	Project Owner
22	Project Owner	Solar Energy Wheeling Agreement between GHCL Limited and TANGEDCO (phase-1) Solar Energy Wheeling Agreement between GHCL Limited and TANGEDCO (phase-2) Solar Energy Wheeling Agreement between GHCL Limited and TANGEDCO (phase-3)	Dated 19/01/2022 Dated 31/03/2022 Dated 25/07/2023	Project Owner
23	Project Owner	PVSYST Report submitted from Prozeal Infra Engineering Pvt. Ltd. to GHCL (Phase-1, Phase-2, Phase-3)	11/12/2020	Project Owner
24	Project Owner	Offer Letter from Prozeal Infra Engineering Private Limited to GHCL (Phase-1, Phase-2)	December 2020	Project Owner
25	Project Owner	Solid Waste handling Records/Register	-	Project Owner
26	Project Owner	Local Stakeholder Consultation documents like invitation, Notes on LSC, Meeting Photos, MOM	-	Project Owner
27	Project Owner	Employee Records / HR Records (year 2022) Grievance Register maintained at Site (year 2022)	-	Project Owner

28	Project Owner	CEIG Certificate from Government of Tamil Nadu, Electrical Inspectorate	Dated 29/12/2021 Dated 30/03/2022	Project Owner
29	Equipment suppliers	Bills/Invoices for the purchase of major equipments installed in the project activity	-	Project Owner
30	Project Owner	Actual generation details of the project activity during the operation years Phase-1 (April 2022 – July 2023) Phase-2 (April 2022 – July 2023) Phase-3 (July 2023)	-	Project Owner
31	Project Owner	Sample Calibration Certificates	-	Project Owner
32	Project Owner	Letter from Shri Santosh Meenakshi Textiles Private Limited to GHCL on the Sale of wind power through GCP MoU for supply of wind power from SSMTPPL to GHCL	15/02/2019 09/03/2023	Project Owner
33	CPCB	Revised Categorization of the Industrial Sector namely "Solar power generation through solar photovoltaic cell, wind power and mini hydel power (less than 25 MW)"- Policy CPCB modified direction No. B29012/ESS(CPA)/2015-16.	Dated 17/11/2017	Publically Available
34	CEA	Baseline CO_2 Emission Database, Version 17.0, – October-2021	Version 17.0	Publically available
35	Govt of India	Electricity Act 2003 National Electricity Policy 2005 E-Waste Management and Handling Rules, 2016	Dated 26/05/2003 Dated 12/02/2005	Publicly available
36	Govt of India	Jawaharlal Nehru National Solar Mission (JNNSM) 2010	-	Publically available
37	Govt of India	Integrated Energy Policy, 2006	-	Publically available
38	Govt of India	National Action Plan on Climate Change (NAPCC), 2008		Publically available
39	Govt of India	Renewable Energy Certificates (RECs), 2011		Publically available
40	CDM	CDM Website https://cdm.unfccc.int/Projects/projsearch.html https://cdm.unfccc.int/Projects/Validation/index.html	-	Publically Available.
41	VERRA	Verra Registry https://registry.verra.org/app/search/VCS/All%20Projects		Publically Available
42	Gold Standard	GS Website https://registry.goldstandard.org/projects?q=&page=1		Publically Available
43	Indian REC	Renewable Energy Certificate Registry https://www.recregistryindia.nic.in/index.php/publics/registered_regens		Publically Available
44	I.REC Standard	International REC Standard (I-REC) https://www.irecstandard.org/registries/		Publically Available.
45	MoEFCC	Environmental Impact Assessment notification Environmental Impact Assessment Notification Amendment	Dated 14/09/2006 Dated 14/07/2018	Publically Available

46	CERC order	Order (Petition No. SM/004/2015(Suo-Motu))	Dated 31/03/2015	Project Owner
47	CERC order	Determination of Benchmark Capital Cost Norm for Solar PV power projects and Solar Thermal power projects applicable during FY 2015-16	Dated 31/03/2015	
48	TNERC	TNERC Order on the following: - Approval of True Up for the period from FY 2016-17 to FY 2020-21 and Annual Performance Review for the FY 2021-22 - Approval of Aggregate Revenue Requirement for the period from FY 2022-23 to FY 2026-27 of TANGEDCO and - Determination of Tariff for generation and distribution for FY 2022-23 to FY 2026-27	-	Project Owner
49	TNERC	Comprehensive Tariff Order on Solar Power (Order No. 2 of 2016) Order on generic tariff for Solar power and related issues (Order No. 5 of 2018)	Dated 28/03/2016 Dated 28/03/2018	Project Owner
50	TNERC	Order (M.P. No.25 of 2020 and M.P.No.26 of 2020 and M.P.No.25 of 2020)	Dated 20/07/2021	Project Owner
51	UNFCCC	CDM validation and verification standard for project activities, version 3.0 CDM project standard for project activities, version 3.0	Version 3.0	Publically Available
52	UNFCCC	Methodological Tool 24: Common Practice	Version 3.1	Publically Available
53	UNFCCC	CDM Glossary Terms	Version 11.0	Publically Available
54	UNFCCC	Guidelines for the reporting and validation of plant load factors EB 48 Annex 11	Version 1.0	Publically Available
55	Project owner	Corporate Finance" 2nd edition, by Aswath Damodaran page 320 of the book	-	Publically Available
56	MCA	Ministry of Corporate Affairs https://www.mca.gov.in/content/mca/global/en/home.html	-	Publically Available
57	Project owner	Letter of Intent from GHCL to Prozeal Infra Engineering Private Limited (phase-1) Letter of Intent from GHCL to Prozeal Infra Engineering Private Limited (phase-1) Letter of Intent from GHCL to Prozeal Infra Engineering Private Limited (phase-3)	31/03/2021 19/11/2021 18/02/2022	
58	NREL	https://www.nrel.gov/docs/fy12osti/51664.pdf https://www.solarquotes.com.au/blog/solar-panel-degradation/		Publically Available
59	Project owner	Single Line Diagram for the project activity	-	Project Owner
60	TANGEDCO	No Objection Certificate on the Generation of Solar Power	Dated 28/10/2021 Dated 04/02/2022	Project Owner

61	CEA	Plant-wise details of All India Renewable Energy Projects	20/03/2020	Project Owner

Appendix 4. Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

CL ID	**CL 01.**	**Section no.**	Section D.2	**Date:** 24/02/2023
Description of CL				
1. PSF (Basic Information section): The complete and correct name of the GHG Sectoral Scope 01 shall be provided on the cover page of PSF. 2. PSF (Basic information section): The older version of the "*Project Sustainability Standard*" has been applied, while a more latest version is available on the GCC website. Check and clarify how the older version are still applicable. 3. The description on the project is provided as "*The first phase of the project activity was commissioned on 20/01/2022, second phase was commissioned on 31/03/2022 and third phase is expected to be commissioned on 30/10/2022*". PP shall provide current status of the third phase plant as on date in the PSF. 4. The project activity uses the electricity generated the solar plant in the GHCL facility at other location through wheeling as observed during the site visit. However no such information is tracable from the PSF. Hence the complete project description shall be provided in the PSF. Further the justification to the methodology applicability criteria shall be updated in Section B.2 of the PSF accordingly. 5. The technical specifications detail for the Phase-3 power plant is not provided in Section A.3 of PSF. Check. 6. The "state of Tamil Nadu" has been considered as the physical boundary of the project activity. However it shall be noted that for the calculation of emission factor, the power plants all over India has been considered. Hence it is not clear as why the India has not been considered as the physical project boundary of the project activity. Further as per the definition of the project boundary (as per ACM0002, ver20), "*the spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system4 that the CDM project power plant is connected to*". Since it is a unified grid in India (Indian Grid), hence all the power plants/units are physically connected physically to the electricity system (Indian Grid), hence it is not clear as why India not considered as the project boundary. Hence it shall be clarified as how the project boundary is inline with the requirements of the applied methodology. Check and Clarify. 7. Section A.2: The host country is not available in Section A.2 as per the PSF filling guidelines. Check.				
Project participant response			**Date:** 27/11/2023	
1. The PSF cover page has been revised. *2.* The PSF has been revised as per the latest Project sustainability standard v3.0, which was the latest version when the project was submitted for GSC, hence the version can be applied within 1-year GSC deadline. *3.* The PSF has been revised. *4.* Section B.2 and other relevant sections of the PSF have been updated to include wheeling details of project activity. *5.* The PSF has been revised and relevant information has been added. *6.* The statement has been updated, please refer to section B.3 of PSF, "According to the methodology, the spatial extent of the project boundary includes the solar power plant and all power plants / units connected physically to the electricity system that the project power plant is connected to. Although the project is situated in the state of Tamil Nadu, the project boundary is being considered as India because the project exports power to singular unified national Grid of India."				

7. The map of host country (India) has been added.
Documentation provided by project participant
Revised_PSF_revised-GHCL_version3
DOE assessment **Date:** 29/11/2023
1. The complete name of the GHG Sectoral Scope 01 is provided on the cover page of PSF and found correct. 2. The latest version of "*Project Sustainability Standard*" has been provided applicable at the time of GSC process and found appropriate. 3. The date of commissioning date for the third phase is now provided in the PSF. 4. Additional information with respect to the wheeling is now provided in the PSF and found appropriate. 5. The technical specifications have now been provided in the PSF, which was confirmed during the site visit and found appropriate. 6. The description on the project boundary has now been revised in the Section B.3 of the PSF and found appropriate. 7. The host country details have now been provided in the Section A.2 of the PSF and found appropriate. The comment is closed.

CL ID	**CL 02.**	**Section no.**	Section D.3.1	**Date:** 24/02/2023
Description of CL				
1. PSF (Section B.1): The reference of all the Clarifications (GCC Clarifications) referred by the project activity shall also be included in the Section B.1 of PSF. The Standards (including GCC Standard on double accounting etc.) referred by the project shall also be included. 2. PSF (Section B.2): The following Applicability criteria of the "*Methodological Tool: Tool to calculate the emission factor for an electricity system, version 07.0*" has not been discussed in the PSF. "*Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in "Appendix 1: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity*". Check and additional details may be provided. 3. PSF (Section B): The Eligibility Criteria related to the "Common Eligibility Criteria for all the Project Types (Section 5.1 of Project Standard)", "GCC Clarifications" etc. shall also be demonstrated in the PSF. 4. PSF (Section B): The Eligibility Criteria related to the "Specific Eligibility Criteria for Type A Projects (Section 5.2 of Project Standard)" shall also be demonstrated in the PSF. 5. PSF (Section B.4): It shall also be described as how the relevant national and/or sectoral policies, regulations and circumstances are taken into account in the determination of the Baseline scenario. Hence more details shall be provided in this regard.				
Project participant response			**Date:** 27/11/2023	

1.	*The PSF has been revised, please refer to section B.1 and B.2 of the PSF.*
2.	*Please refer to section B.2 wherein it has been confirmed that the emission factor has been calculated (considering only grid connected power plants.*
3.	*The PSF has been revised, please refer to section B.2 of the PSF.*
4.	*The PSF has been revised, please refer to section B.2 of the PSF.*
5.	*The PSF has been revised, please refer to section B.4 of the PSF.*

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3

DOE assessment	**Date:** 29/11/2023

1. The reference to all the Clarifications/GCC Standards have now been provided in the Section B.1/B.2 of the PSF, which is found appropriate.

2. All the relevant paragraph related to the "*Methodological Tool: Tool to calculate the emission factor for an electricity system, version 07.0*" have now been discussed in the PSF and found appropriate.

3. The Eligibility Criteria related to the Project Standard/GCC Clarifications have now been discussed in the Section B of the PSF and found appropriate.

4. The Eligibility Criteria related to the Project Standard/GCC Clarifications have now been discussed in the Section B of the PSF and found appropriate

5. The relevant national and/or sectoral policies, regulations and circumstances are now taken into account, while determining the baseline scenario and found appropriate.

The comment is closed.

CL ID	**CL 03.**	**Section no.**	Section D.3.5	**Date:** 24/02/2023

Description of CL

1. PSF (Section B.5): The Step (Step 1: Legal requirement test) related to the Additionality (Section 6.4.8 of Project Standard: Project Additionality) shall be discussed in detail, so as to conclude as how the Additionality is inline with the GCC requirements. Hence details related to the GCC Additionality requirements shall be provided in the PSF.

2. Section B.5 (Sub-step 2b): As per the Sub-step 1a of the "Methodological Tool: Tool for the demonstration of additionality, version 7.0, the following alternatives available to the project participants that provide outputs or services comparable with the project activity has not been discussed.
(b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services (e.g. cement) or services (e.g. electricity, heat) with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;
Check and Clarify.

3. PSF (Section B.5): The relevant evidences for the "investment decision date" (31/03/2021) for the power plants (Letter of Intent) shall be submitted as per PSF. Further it shall also be explained as how the submitted document may be considered as relevant for the investment decision of the project activity. Clarify.

4. Section B.5 (Step-2): The version 11 of the Tool 27 (Investment Analysis) has been referred, however the version 11 of Tool came on 01/10/2021, which is after the investment decision date (31/03/2021) and hence it is not clear how the default value of expected return on equity in real terms as 10.55% may be considered as appropriate. Check and Clarify.

5. Section B.5 (Step-2): The inflation forecast (4%) for a period of 10 years have been considered through the following link:
https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=50747

However the such value is not tracable in the above document. Check.

Project participant response	**Date:** 27/11/2023

1. *The section B.5 of the PSF has been updated, please refer to section B.5.*
2. *The alternate scenario has been added as per the applied methodology ACM 0002, please refer to section B.5 of the PSF.*
3. *The company has submitted a LOI only after considering offer from vendors that were working in this area. A detailed report was prepared and based on it only the decision to go with a particular vendor was taken. The project proposal report is being submitted.*
4. *Please refer to the IA sheet, a conservative value amongst the tool 27 Version 10 and 11 has been selected.*
5. *The link for inflation forecast has been updated, please refer to the updated IA sheet or PSF. Moreover, the PO was not able to find the 10 yr inflation forecast by RBI which was more recent than the one used by PO.*

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3

DOE assessment	**Date:** 29/11/2023

1. PO has provided additional details on the Legal requirements in the Section B.5 of PSF. The details on the approvals sought during the implementation of project activity has been provided. It is clarified that how the project meets the legal requirement in the revised PSF.

2. The alternatives available to the project participants that provide outputs or services comparable with the project activity has now been discussed in Section B.5 of the PSF, which is found appropriate.

3. The basis for the investment decision was the Proposal report submitted by Project Owners to the technology supplier and the same has been submitted and confirmed on the investment decision.

4. PO has now chosen a conservative default value of 10.24% (between the values published in version 10 and 11 of the Investment Analysis Tool) on the expected return on equity and hence which is found appropriate for the IRR calculations and accepted.

5. The correct weblink for the inflation forecast has now been submitted and found appropriate.

The comment is closed.

CL ID	**CL 04.**	**Section no.**	Section D.3.5	**Date:** 24/02/2023

Description of CL

Phase-1 (7 MW Plant):

1. PSF (Section B.5, page-25): The following issues have been observed with respect to the input values/cost for the IRR calculation of the Phase 1 (7 MW) power plant.

a. Section B.5 (Sub-step 2c): It shall be clarified as how the PLF is inline with the “Guidelines for the reporting and validation of plant load factors, ver01” (EB48 Annex 11). Additional details shall be provided in this regard.
b. Section B.5 (Sub-step 2c): The “annual degradation per year” is considered as 0.70%. Clarify.
c. The “Tariff rate-transmission and wheeling charges” has been considered based on the “actual rate as per wheeling agreement”. PP shall clarify whether this agreement was available at the time of investment decision.
d. No source of data is provided for the “transmission & wheeling losses”. Hence the reference of source of data shall be provided.
e. The O&M Expenses (3.75 INR million) have been considered based on the Wheeling Agreement as per the PSF. However the wheeling agreement has been checked, however no such charges are traceable. Clarify.
Further how the same was applicable at the time of investment decision. Clarify.
f. The source of project cost is provided as “expected project cost”, however specific source of data which was used at the time of investment decision shall be provided. Clarify.
g. Please clarify with the help of relevant evidences that the plant was funded through the 100% equity investment.

h. The source for the land cost available at the time of investment decision shall be clarified.
i. The basis for the IT Depreciation Solar PV modules as 20% based on "*Project is eligible to claim half of accelerated depreciation of solar power plants*" shall be clarified.
j. For the Land, the unit shall be provided for the value (15.50) provided in the PSF and ERs Excelsheet.
k. The following weblink provided for the IT act does not work. https://www.incometaxindia.gov.in/_layouts/15/dit/mobile/viewer.aspx?path=https://www.incometaxindia.gov.in/charts%20%20tables/depreciation%20rates.htm&k=&IsDlg=0 Check.

2. (Section B.5, page-27, Sensitivity Analysis, O&M cost and Project Cost): The "Breaching value" is provided as "-326.00%" and "-23.40%" for O&M cost and Project Cost respectively in the PSF, however the same is "326.00%" and "23.40%" in the ERs Excelsheet. Check and Clarify.

3. PSF (Section B.5, page-25, Sensitivity Analysis): PP has discussed the sensitivity analysis and also determined the breaching value of the critical parameters affecting the IRR calculations. PP shall also clarify as how it is unlikely that parameters reach the breaching value as determined in the PSF and hence the project will always remain additional throughout the crediting period. More details may be provided.

Project participant response | **Date:** 27/11/2023

a) The PLF has been corrected and has been sourced from the third-party study (Prozeal)as a proposal for the project, the evidence for the same is being submitted. It is inline with the Guidelines for the reporting and validation of plant load factors, ver01" (EB48 Annex 11).
b) The value has been corrected and has been sourced from CERC order and product specifications.
c) The tariff rate has been sourced from the price that the Group Captive users were paying at that time, the evidence for the same is being shared.
d) The transmission and wheeling loss have been sourced from the document which was prepared when the proposal of vendor was under consideration and was available at the time of investment decision.
e) The O&M expenses are sourced from the proposal for the solar project of vendors.
f) The source for the data is being provide, please refer to "Solar Power project- Proposal.pdf"
g) Since no loan was used for funding of this project, this clearly shows that the project is 100% equity funded.
h) The land cost has been sourced from CERC order, please refer to the link in IA sheet
i) It was erroneously reported in the previous version and now has been corrected. Please refer to revised IA sheet.
j) The unit of land cost has been added in IA and PSF.
k) The IT link has been updated and is now functional.

2. The values have been made consistent with IA and PSF, both IA and PSF have been revised.

3. The section B.5 of PSF has been revised, please refer to section B.5 wherein the comparison has been done based on the actual/ realistic scenario explaining how the benchmark is still valid today.

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3 and IA sheets

DOE assessment | **Date:** 29/11/2023

1 (a) The PLF is considered as 24.41% based on the PVSYST Report submitted by Prozeal Infra Engineering Pvt. Ltd. to GHCL, which is a third party contracted by PO. Hence the value considered by the project owner for demonstrating additionality of the project is deemed acceptable to the verification team and also in line with paragraph 3 (b) of "Guidelines for the reporting and Validation of Plant Load Factors" (Annex 11 of EB 48).

1 (b) This value was sourced from CERC Order /46/47/ which was available at the time of investment decision. Further, verification team has cross verified with the NERL report on Photovoltaic Degradation Rates - An Analytical Review. The report covers nearly 2000 degradation rates all across the globe and degradation rates has a mean of 0.8% per year. Also, normally most of the PV panels manufacturer

guaranteed 2-3% degradation in first year and 0.7% on each year up to 10 years. So, the value considered in the investment analysis is conservative compared to the above referred values and acceptable to the verification team.

1 (c) PO considered the tariff rate based on prior experience on the agreed sale price to GHCL through a different wind power plant, which was available at the time of investment decision.

Additionally there are transmission and wheeling charges was considered based on the TNERC order and found correct.

1 (d) PO considered the tariff rate based on prior experience on the agreed sale price to GHCL through a different wind power plant, which was available at the time of investment decision.

Additionally there are transmission and wheeling charges was considered based on the TNERC order and found correct.

1 (e) The O&M cost has been considered based on the offer letter provide by Prozeal to the GHCL and found correct.

1 (f) The project cost has been considered based on the offer letter provide by Prozeal to the GHCL and found correct.

1 (g) PO has confirmed that no loans have been taken for the project activity and the same was also confirmed during the site visit.

1 (h) The land cost has been sourced based on the CERC order, which was available at the time of decision making and found appropriate.

1 (i) The correct rate of IT depreciation based on IT Act has now been provided in the IRR sheet and found appropriate.

1 (j) The unit of land cost now added in the IRR sheet and PSF and found correct.

1 (k) The reference weblink for the IT Act has now been corrected in the IRR sheet and found appropriate.

2. The sensitivity analysis has now been revised in the PSF/IRR sheet and found appropriate.

3. PO has now discussed the sensitivity analysis and determined the breaching value of the critical parameters affecting the IRR calculations. PO has now provided more information on the breaching value and how the project will remain additional in the revised PSF.

The comment is closed.

CL ID	**CL05**	**Section no.**	Section D.3.5	**Date:** 24/02/2023
Description of CL				

Phase 1 (7 MW):

Please address the following comments with respect to the IRR Calculations of 7 MW Plant (Phase 1):

1. The source for the cost of insurance is ‘assumed’, clarify how the same is relevant source for the input value of Rs.2.20 million per year.

2. The source stated for rate of GST is Income tax Rules; however, GST is an indirect tax. Also, clarify the HSN/SAC under which the rate of 15% is considered as GST rate.

3. The O & M workings for Mar-48 is not clean in P&L Stat.

4. The insurance cost considered for year 25 is Rs.2.20 million, to pro-rate the cost for 294 days.

5. The total of book depreciation as per P&L Stat is Rs.319.17 million and the value to be depreciated is Rs.316.71 million as per assumptions tab.

6. Section 80IA benefit is allowed for a time period of 10 consecutive years out of 15 years from the date of commencement of the project and not for 12 years as claimed in the analysis.

7. What is the difference between Income tax rate and corporate tax as stated in assumptions tab? Also, both have the same source and link.

8. MAT is considered in P&L Stat; however, MAT rate reference is linked corporate tax rate in the assumptions tab.

9. The number of days for first year is 71 days for calculation of revenues and 70 days for O & M expenses, clarify.

10. The IT depreciation rate for solar generating power system to be re-checked as the rate is not 15%.

Project participant response	**Date:** 27/11/2023

1. The source of insurance cost has been corrected, please refer to revised IA sheet.
2. The GST has been removed and corrected with MAT
3. The IA sheet has been revised.
4. *The IA sheet has been corrected.*
5. *The IA sheet has been corrected.*
6. *The IA sheet has been corrected.*
7. *The tax rates have been corrected, please refer to revised IA sheets.*
8. *The linking has been corrected, please refer to revised IA sheet.*
9. *The O&M days are now corrected in the revised IA sheet.*
10. *The link for IT depreciation rate has been corrected, please refer to the revised IA sheet*

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3 and IA sheets

DOE assessment	**Date:** 29/11/2023

1. The insurance cost has now been considered based on the CERC order, which was available at the time of investment decision and found appropriate.

2. The reference of GST has now been removed and MAT is applied, which is found reasonable.

3. The O&M working for March 48 has been removed and found appropriate.

4. The working in the IRR sheet has now been corrected and found appropriate.

5. The depreciation calculations in the IRR sheet has now been corrected and found appropriate.

6. The 80IA benefit has been conservatively in the IRR calculations and found correct.

7. The Tax rate is now corrected to the Income Tax rate, which is found appropriate.

8. The MAT rate is now correctly linked in the IRR sheet, which is found appropriate.

9. The O&M expenses have now been corrected in the IRR sheet and found appropriate.

10. The link for IT depreciation rate is now corrected in the IRR sheet and found appropriate.

The comment is closed.

CL ID	**CL06**	**Section no.**	Section D.3.5	**Date:** 24/02/2023

Description of CL

Phase-2 (7 MW Plant):

1. PSF (Section B.5, page-26): The following issues have been observed with respect to the input values/cost for the IRR calculation of the Phase-2 (7 MW power plant).
   a. Section B.5 (Sub-step 2c): The PLF is mentioned as 23% and the source provided is DPR, however the value of 23% is not traceable in the DPR. Check. It shall also be clarified as how the PLF is inline with the “Guidelines for the reporting and validation of plant load factors, ver01” (EB48 Annex 11). Additional details shall be provided in this regard.

b. Section B.5 (Sub-step 2c): The "annual degradation per year" is considered as 0.70%. However the DPR is checked and found "annual power attenuation" as 0.55%. Clarify.
c. The "Tariff rate-transmission and wheeling charges" has been considered based on the "actual rate as per wheeling agreement". PP shall clarify whether this agreement was available at the time of investment decision.
d. No source of data is provided for the "transmission & wheeling losses". Hence the reference of source of data shall be provided.
e. The O&M Expenses (3.75 INR million) have been considered based on the Wheeling Agreement as per the PSF. However the wheeling agreement has been checked, however no such charges are traceable. Clarify.
Further how the same was applicable at the time of investment decision. Clarify.
f. The source of project cost is provided as "expected project cost", however specific source of data which was used at the time of investment decision shall be provided. Clarify.
g. Please clarify with the help of relevant evidences that the plant was funded through the 100% equity investment.
h. The source for the land cost available at the time of investment decision shall be clarified.
i. The basis for the IT Depreciation Solar PV modules as 20% based on "*Project is eligible to claim half of accelerated depreciation of solar power plants*" shall be clarified.
j. For the Land, the unit shall be provided for the value (15.50) provided in the PSF and ERs Excelsheet.

2. (Section B.5, page-25, Sensitivity Analysis, O&M cost and Project Cost): The "Breaching value" is provided as "-198.00%" and "-13.00%" for O&M cost and Project Cost respectively in the PSF, however the same is "198.00%" and "13.00%" in the ERs Excelsheet. Check and Clarify.

3. PSF (Section B.5, page-25, Sensitivity Analysis): PP has discussed the sensitivity analysis and also determined the breaching value of the critical parameters affecting the IRR calculations. PP shall also clarify as how it is unlikely that parameters reach the breaching value as determined in the PSF and hence the project will always remain additional throughout the crediting period. More details may be provided.

Project participant response | **Date:** 27/11/2023

a) The PLF has been corrected and has been sourced from the third-party study (Prozeal)as a proposal for the project, the evidence for the same is being submitted. It is inline with the Guidelines for the reporting and validation of plant load factors, ver01" (EB48 Annex 11).
b) The value has been corrected and has been sourced from CERC order and product specifications.
c) The tariff rate has been sourced from the price that the Group Captive users were paying at that time, the evidence for the same is being shared.
d) The transmission and wheeling loss have been sourced from the document which was prepared when the proposal of vendors was under consideration and was available at the time of investment decision.
e) The O&M expenses are sourced from the proposal for the solar project of vendor.
f) The source for the data is being provide, please refer to "Solar Power project- Proposal.pdf"
g) Since no loan was used for funding of this project, this clearly shows that the project is 100% equity funded.
h) The land cost has been sourced from CERC order, please refer to the link in IA sheet
i) It was erroneously reported in the previous version and now has been corrected. Please refer to revised IA sheet.
j) The unit of land cost has been added in IA and PSF.

2. The values have been made consistent with IA and PSF, both IA and PSF have been revised.

3. The section B.5 of PSF has been revised, please refer to section B.5 wherein the comparison has been done based on the actual/ realistic scenario explaining how the benchmark is still valid today.

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3 and IA sheets

DOE assessment	Date: 29/11/2023

1 (a) The PLF is considered as 24.41% based on the PVSYST Report submitted by Prozeal Infra Engineering Pvt. Ltd. to GHCL, which is a third party contracted by PO. Hence the value considered by the project owner for demonstrating additionality of the project is deemed acceptable to the verification team and also in line with paragraph 3 (b) of "Guidelines for the reporting and Validation of Plant Load Factors" (Annex 11 of EB 48).

1 (b) This value was sourced from CERC Order /46/47/ which was available at the time of investment decision. Further, verification team has cross verified with the NERL report on Photovoltaic Degradation Rates - An Analytical Review. The report covers nearly 2000 degradation rates all across the globe and degradation rates has a mean of 0.8% per year. Also, normally most of the PV panels manufacturer guaranteed 2-3% degradation in first year and 0.7% on each year up to 10 years. So, the value considered in the investment analysis is conservative compared to the above referred values and acceptable to the verification team.

1 (c) PO considered the tariff rate based on prior experience on the agreed sale price to GHCL through a different wind power plant, which was available at the time of investment decision.

Additionally there are transmission and wheeling charges was considered based on the TNERC order and found correct.

1 (d) PO considered the tariff rate based on prior experience on the agreed sale price to GHCL through a different wind power plant, which was available at the time of investment decision.

Additionally there are transmission and wheeling charges was considered based on the TNERC order and found correct.

1 (e) The O&M cost has been considered based on the offer letter provide by Prozeal to the GHCL and found correct.

1 (f) The project cost has been considered based on the offer letter provide by Prozeal to the GHCL and found correct.

1 (g) PO has confirmed that no loans have been taken for the project activity and the same was also confirmed during the site visit.

1 (h) The land cost has been sourced based on the CERC order, which was available at the time of decision making and found appropriate.

1 (i) The correct rate of IT depreciation based on IT Act has now been provided in the IRR sheet and found appropriate.

1 (j) The unit of land cost now added in the IRR sheet and PSF and found correct.

2. The sensitivity analysis has now been revised in the PSF/IRR sheet and found appropriate.

3. PO has now discussed the sensitivity analysis and determined the breaching value of the critical parameters affecting the IRR calculations. PO has now provided more information on the breaching value and how the project will remain additional in the revised PSF.

The comment is closed.

CL ID	CL07	Section no.	Section D.3.5	Date: 24/02/2023
Description of CL				

Phase 2 (7 MW Plant):

Please address the following comments with respect to the IRR Calculations of 7 MW Plant (Phase 2).

1. The source for the cost of insurance is 'assumed', clarify how the same is relevant source for the input value of Rs.2.42 million per year.

2. The source stated for rate of GST is Income tax Rules; however, GST is an indirect tax. Also, clarify the HSN/SAC under which the rate of 15% is considered as GST rate.

3. The O & M workings for Mar-48 to be removed in P&L Stat.

4. The total of book depreciation as per P&L Stat is Rs.349.59 million, to check the rounding off as the value to be depreciated is Rs.349.56 million as per assumptions tab.

5. Section 80IA benefit is allowed for a time period of 10 consecutive years out of 15 years from the date of commencement of the project and not for 13 years as claimed in the analysis.

6. What is the difference between Income tax rate and corporate tax as stated in assumptions tab? Also, both have the same source and link.

7. MAT is considered in P&L Stat; however, MAT rate reference is linked corporate tax rate in the assumptions tab.

8. The number of days for first year is 1 day for calculation of revenues and zero days for O & M expenses, clarify.

9. The IT depreciation rate for solar generating power system to be re-checked as the rate is not 15%.

Project participant response	**Date:** 27/11/2023

1. The source of insurance cost has been corrected, please refer to revised IA sheet.
2. The GST has been removed and corrected with MAT
3. The IA sheet has been revised.
4. *The IA sheet has been corrected.*
5. *The IA sheet has been corrected.*
6. *The tax rates have been corrected, please refer to revised IA sheets.*
7. *The linking has been corrected, please refer to revised IA sheet.*
8. *The O&M days are now corrected in the revised IA sheet.*
9. *The link for IT depreciation rate has been corrected, please refer to the revised IA sheet.*

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3 and IA sheets

DOE assessment	**Date:** 29/11/2023

1. The insurance cost has now been considered based on the CERC order, which was available at the time of investment decision and found appropriate.

2. The reference of GST has now been removed and MAT is applied, which is found reasonable.

3. The O&M working for March 48 has been removed and found appropriate.

4. The working in the IRR sheet has now been corrected and found appropriate.

5. The 80IA benefit has been conservatively in the IRR calculations and found correct.

6. The Tax rate is now corrected to the Income Tax rate, which is found appropriate.

7. The MAT rate is now correctly linked in the IRR sheet, which is found appropriate.

8. The O&M expenses have now been corrected in the IRR sheet and found appropriate.

9. The link for IT depreciation rate is now corrected in the IRR sheet and found appropriate.

The comment is closed.

CL ID	CL08	Section no.	Section D.3.5	Date: 24/02/2023

Description of CL

Phase-3 (7 MW Plant):

1. PSF (Section B.5, page-29): All the supporting documents/evidences based on which input values for IRR calculations of the Phase-3 plant has been sourced shall be submitted.
As the project is not commissioned yet and plant location is different from the earlier plant locations, hence it is not clear as how the input values have been assumed for this huge investment. Hence the relevant actual sources used for the investment decision shall be submitted.

2. (Section B.5, page-31, Sensitivity Analysis, O&M cost and Project Cost): The "Breaching value" is provided as "-223.00%" and "-14.50%" for O&M cost and Project Cost respectively in the PSF, however the same is "223.00%" and "14.50%" in the ERs Excelsheet. Check and Clarify.

3. PSF (Section B.5, page-31, Sensitivity Analysis): PP has discussed the sensitivity analysis and also determined the breaching value of the critical parameters affecting the IRR calculations. PP shall also clarify as how it is unlikely that parameters reach the breaching value as determined in the PSF and hence the project will always remain additional throughout the crediting period. More details may be provided.

Project participant response	Date: 27/11/2023

1. *Since the PO had already developed 2 phases and the third phase was also present in the state of Tamil Nadu, it was assumed that the third phase would have a equivalent electricity production capacity. Other input values are sourced from CERC and TNERC orders.*
2. *The PSF and IA sheet are now revised and are consistent with each other*
3. *The section B.5 of PSF has been revised, please refer to section B.5 wherein the comparison has been done based on the actual/ realistic scenario.*

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3 and IA sheets

DOE assessment	Date: 29/11/2023

1. The supporting documents/evidences based on which the input values have been source in IRR calculations are provided for the Phase-3 plant. The IRR sheet has been submitted and found appropriate.

2. The Sensitivity analysis is revised and found correct.

3. Additional details clarify as how it is unlikely that parameters reach the breaching value as determined in the PSF and hence the project will always remain additional throughout the crediting period has been provided.

Hence the comment is closed.

CL ID	CL09	Section no.	Section D.3.5	Date: 24/02/2023

Description of CL

Phase 3 (7 MW Plant):

Please address the following comments with respect to the IRR Calculations of 7 MW Plant (Phase 3).

1. The source for most of the input values is 'assumed' values, clarify.

2. The source stated for rate of GST is Income tax Rules; however, GST is an indirect tax. Also, clarify the HSN/SAC under which the rate of 15% is considered as GST rate.

3. The O & M workings for Mar-48 to be removed in P&L Stat.

4. The O & M cost is considered for 25 years 153 days, to pro-rate it up to 25 years.

5. The insurance cost considered for year 25 is Rs.2.42 million, to pro-rate the cost for 213 days.

6. The total of book depreciation as per P&L Stat is Rs.355.42 million and the value to be depreciated is Rs.349.56 million as per assumptions tab.

7. Section 80IA benefit is allowed for a time period of 10 consecutive years out of 15 years from the date of commencement of the project and not for 13 years as claimed in the analysis.

8. What is the difference between Income tax rate and corporate tax as stated in assumptions tab? Also, both have the same source and link.

9. MAT is considered in P&L Stat; however, MAT rate reference is linked corporate tax rate in the assumptions tab.

10. The number of days for first year is 153 days for calculation of revenues and 152 days for O & M expenses, clarify.

11. The IT depreciation rate for solar generating power system to be re-checked as the rate is not 15%.

Project participant response	**Date:** 27/11/2023

1. *Since the decision to invest in all these 3- phases were made within one year, hence the values that were obtained in phase-2 were used in Phase 3, but now the IA sheet has been revised. Please refer to the updated IA sheet.*
2. *The IA sheet has been corrected and the parameter has been corrected to MAT.*
3. *The IA sheet has been corrected to remove O&M workings for Mar 48*
4. *The IA sheet has been corrected*
5. *The IA sheet has been revised to correct the insurance cost*
6. *This has been corrected in the revised IA sheet*
7. *The IA sheet has been revised*
8. *The parameter name has been corrected also the linkages has been changed*
9. *The IA sheet has been revised and linking has been corrected*
10. *The IA sheet has been revised.*
11. *The IT depreciation rate for Solar generating units have been corrected,*

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3 and IA sheets

DOE assessment	**Date:** 29/11/2023

1. The correct source of input values are now provided in the PSF/IRR sheet.

2. The reference of GST has now been removed and MAT is applied, which is found reasonable.

3. The O&M working for March 48 has been removed and found appropriate.

4. The working in the IRR sheet has now been corrected and found appropriate.

5. The insurance cost has now been considered based on the CERC order, which was available at the time of investment decision and found appropriate.

6. The depreciation calculations in the IRR sheet has now been corrected and found appropriate.

7. The 80IA benefit has been conservatively in the IRR calculations and found correct.

8. The Tax rate is now corrected to the Income Tax rate, which is found appropriate.

9. The MAT rate is now correctly linked in the IRR sheet, which is found appropriate.

10. The O&M expenses have now been corrected in the IRR sheet and found appropriate.

11. The link for IT depreciation rate is now corrected in the IRR sheet and found appropriate.

The comment is closed.

CL ID	**CL10**	**Section no.**	Section D.6	**Date:** 24/02/2023
Description of CL				

Common Practice Analysis

1. PSF (Section B.5): The project is a bundled project and consists of three separate power plants (7 MW + 7 MW + 7 MW). As the separate IRR calculations have been conducted for each of the power plants, hence it not clear as why separate common practice analysis not conducted for each of the plants. Clarify.

2. PSF (Section B.5): The following justification is provided for determining the projects satisfying the Step-2 of the Common Practice Analysis in the PSF:

"*A total of 10 solar projects24 excluding this project have been commissioned in the applicable geographical area, which falls in the desired capacity range. Out of which, 8 projects are different based on scale of proposed project activity, i.e., capacity of the power plant or/ and are entitled to a higher tariff due to promotional policies25. So, Nall = (10-8 = 2).*".

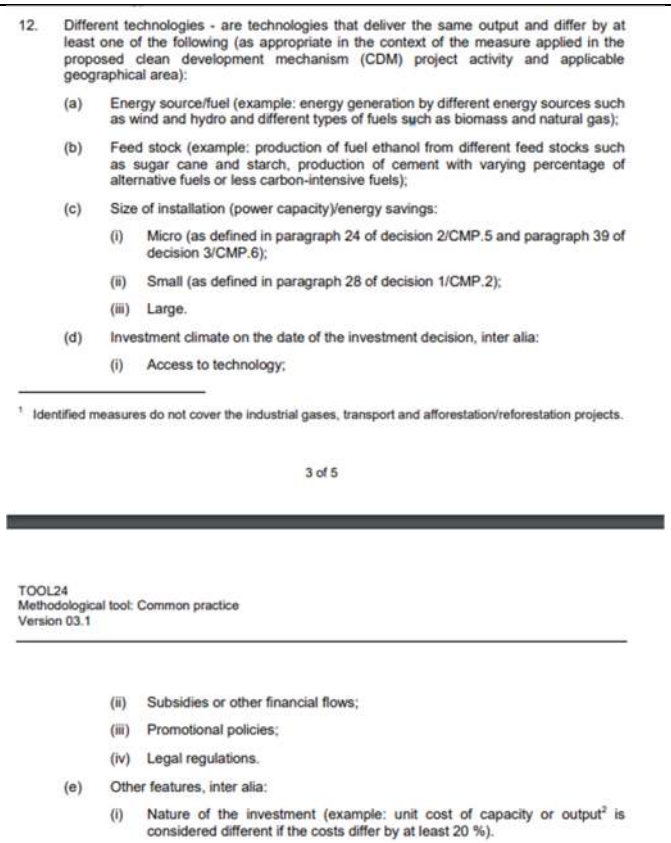
The Step-1 mentions that "*calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity*". Hence the capacity in the range (11.25 MW to 33.5 MW) has been considered in the analysis, which is inline with the requirements. However there is no specific criteria, which eliminates some of the projects based on above criteria (capacity, higher tariff) from the Common Practice Analysis. Hence clarify why all the projects not considered in the analysis. Check and Clarify.

3. (Section B.5, Step-2): It is mentioned that "*These projects started commercial operation before the start date of proposed project activity i.e., 20/01/2022*", however since the project is not yet commissioned in year 2023, hence why the power plants during year 2023 and before year 2023 not considered in the analysis. Clarify.

4. (Section B.5, Step-3): PP shall clarify which are the Carbon registries/standards considered for the evaluation of the projects, which may fall under N_{all}. Clarify.

Project participant response	**Date:** 27/11/2023

1. *As per the tool 24, para 13: "Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity". That's why the CPA has been conducted taking into account the total capacity of project instead of individual plant capacity of 7.5 MW. Moreover for small scale projects (taking capacity of individual phase), CPA is not required.*
2. *As per the Tool 24: para 12 (d), if the proposed project activity differs from the plants identified in CPA based on the promotional policies or subsidies or other financial flows, those power plants can be considered as different technologies based on the difference in Investment climate on the date of investment decision.*



12. Different technologies - are technologies that deliver the same output and differ by at least one of the following (as appropriate in the context of the measure applied in the proposed clean development mechanism (CDM) project activity and applicable geographical area):

(a) Energy source/fuel (example: energy generation by different energy sources such as wind and hydro and different types of fuels such as biomass and natural gas);

(b) Feed stock (example: production of fuel ethanol from different feed stocks such as sugar cane and starch, production of cement with varying percentage of alternative fuels or less carbon-intensive fuels);

(c) Size of installation (power capacity)/energy savings:

(i) Micro (as defined in paragraph 24 of decision 2/CMP.5 and paragraph 39 of decision 3/CMP.6);

(ii) Small (as defined in paragraph 28 of decision 1/CMP.2);

(iii) Large.

(d) Investment climate on the date of the investment decision, inter alia:

(i) Access to technology;

[1] Identified measures do not cover the industrial gases, transport and afforestation/reforestation projects.

3 of 5

TOOL24
Methodological tool: Common practice
Version 03.1

(ii) Subsidies or other financial flows;

(iii) Promotional policies;

(iv) Legal regulations.

(e) Other features, inter alia:

(i) Nature of the investment (example: unit cost of capacity or output[2] is considered different if the costs differ by at least 20 %).

3. *Since the earliest start date amongst the bundle was 20/01/2022, hence only those power plants that started COD prior to this date were used in CPA. The list of power plants in Tamilnadu has been sourced from the link https://cea.nic.in/wp-content/uploads/2020/04/Plant-wise-details-of-RE-Installed-Capacity-merged.pdf*
This approach is inline with CDM tool 24, para 14 (f). Please refer to the screenshot shared below:

14. Step 2: identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:

(a) The projects are located in the applicable geographical area;

(b) The projects apply the same measure as the proposed project activity;

(c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;

(d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;

(e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;

(f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.[3]

4. *For the evaluation of projects the registry of Voluntary GHG programs like Verra, GS and CDM was used.*

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3 and IA sheets	
DOE assessment	**Date:** 29/11/2023
1. The common practice analysis has been conducted considering the total project capacity instead of individual capacities of the plant. The same is inline with the *Tool 24, para 13: "Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity".* Hence the common practice analysis at the total project capacity level has been found appropriate. 2. The justification provided by the PO has been found appropriate. As per the Tool 24: para 12 (d), "*if the proposed project activity differs from the plants identified in CPA based on the promotional policies or subsidies or other financial flows, those power plants can be considered as different technologies based on the difference in Investment climate on the date of investment decision*". Hence project eliminated based on the above criteria in the common practice analysis has been found reasonable. 3. The earliest start date among the solar bundle is 20/01/2022 among the solar bundled project, hence the power plants that started COD prior to this date has been considered in the common practice analysis and hence found appropriate. 4. The various carbon registries have been checked for the evaluation of the projects for the calculation of N_{all} and the analysis presented in the PSF has been found appropriate. Hence the comment is closed.	

CL ID	**CL11**	**Section no.**	Section D.3.7	**Date:** 24/02/2023
Description of CL				
1. PSF (Section B.6.2): The "Data/Parameter Table 2" and "Data/Parameter Table 3" refers to the same parameter ("$EF_{grid,BM,y}$"). Check. 2. PSF (Section B.7.1): For the parameter ($EG_{P\,j,\,y}$), the SDG7 and SDG9 has been indicated, however SDG9 is related to "*Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation*". Hence how the linking of parameter ($EG_{P\,j,\,y}$) directly to SDG9 may be considered as appropriate, Check. 3. PSF (Section B.7.1, Phase-1, Phase-2, Phase-3): Please refer to the section "*measurement/monitoring equipment*" in the table of the monitoring parameter ($EG_{PJ,y}$). The meter serial number provided in the monitoring parameter table of the parameter ($EG_{P\,j,\,y}$) does not matches with the serial number available at the project site as well as the serial number available in the latest calibration certificate. Check and Clarify. Hence the latest correction details shall be provided including the accuracy class, calibration details in the rows (location of meter, calibration related details, calculation method etc.) in the monitoring parameter table in Section B.7.1 of the PSF 4. PSF (Section B.7.1, 15 MW): The ex-ante details available at the time of validation for the monitoring parameters is not provided in the monitoring parameter table in Section B.7.1, 7.2 of the PSF. Check. 5. PSF (Section B.7.4): As per the PSF filling guidelines, "*Describe the other elements of the monitoring plan as outlined in the Project Standard and the applied methodology(ies) and, where applicable, the applied standardized baseline, including the operational and management structure for monitoring, provisions for data archiving, and responsibilities and institutional arrangements for data collection and archiving*". Hence the missing additional details shall be provided in the Section B.7.4 of PSF. 6. PSF (Section B.7.4): The monitoring plan provided in section B.7.4 of the PSF is specific to GHG emission reduction and how the other monitoring parameters related Environmental & Social Safeguards and SDG parameter will be monitored by the project owner w.r.t to the project activity to be explained. Additional details shall be provided in this regard.				
Project participant response			**Date:** 27/11/2023	
1. The PSF has been revised, the data parameter table 03 has been corrected to "$EF_{grid,BM,y}$". Please refer to section B.6.2 of the PSF				

2. The PO is not claiming any contributions to SDG 9. The only SDGs that are being targeted are SDG 7,8 and 13 3. Section B.7.1 of the PSF has been revised to include the correct metering details. Please refer to section B.7.1 of PSF. 4. *The PSF has been revised, please refer to section B.7.1 and B.7.2 of the PSF.* 5. *Section B.7.4 of the PSF has been revised to include the requested information.* 6. *Section B.7.4 of the PSF has been revised to include the requested information.*
Documentation provided by project participant
Revised_PSF_revised-GHCL_version3
DOE assessment **Date:** 29/11/2023
1. The parameter in the "Data/Parameter Table 3" in Section B.6.2 of PSF has now been corrected and found appropriate. 2. PO has confirmed that claims for the SDG09 has not been considered in the project and hence the same has been corrected in the PSF and found appropriate. 3. The correct serial number of the meters and other details including calibration details are now provided in Data/Parameter table under Section B.7.1 of the PSF and found appropriate. 4. The ex-ante values as per the requirements of the parameter table is now provided in the PSF and found correct. 5. The additional details related to the monitoring plan inline with the Project Standard/methodology is now provided in the PSF and found appropriate. 6. The additional details related to the monitoring plan inline with the Project Standard/methodology is now provided in the PSF and found appropriate. Hence the comment is closed.

CL ID	**CL12**	**Section no.**	Section D	**Date:** 24/02/2023
Description of CL				
1. PSF (Section E): How the waste oil (from transformer etc.) will be disposed from the project activity during oil filtration and same to be assessed in the relevant indicator in Section E of the PSF. 2. PSF (Section E): There is a usage of water for the cleaning of the solar modules and also usage of water for personal use at the project site, hence the disposal of waste water shall be discussed in Section E of the PSF. 3. PSF (Section E): The various rules (like 'E-waste Management and Handling Rules' etc.) shall be taken into account while assessing the indicators in Section E of the PSF. Hence it shall be explained as how the wastes are being disposed in a legal manner as it is indicated in the PSF. 4. PSF (Section F): For SDG Goal 8, Project Owner needs to demonstrate that activities mentioned under these goals are beyond CSR commitment made by Organization under Companies' Act.				
Project participant response **Date:** 27/11/2023				
1. The PSF has been revised, please refer to section E in the PSF. 2. The PSF has been revised, please refer to section E in the PSF. 3. The PSF has been revised, please refer to section E in the PSF. For the disposal part, the Legal owner/ PO are contracting a government authorized recycler who will be responsible for handling the E waste as per the standard industry practices. 4. *The employment generation under the project activity is totally voluntary and beyond any CSR commitment.*				
Documentation provided by project participant				
Revised_PSF_revised-GHCL_version3				

DOE assessment	Date: 29/11/2023

1. The information related to the disposal of waste oil (from transformer) is now provided in the Section E.1 of the PSF and found appropriate.

2. The additional information related to the usage of waster for cleaning of the solar modules/other use is now provided in the PSF and found appropriate.

3. It is now clarified as how the various rules like 'E-waste Management and Handling Rules' are taken into account during the operation of the project activity.

4. PO has now added a footnote in the PSF confirming that all the SDGs that are being claimed are beyond the scope of CSR requirements and hence the same has been found appropriate.

Hence the comment is closed.

CL ID	CL13	Section no.	Section D.6	Date: 24/02/2023

Description of CL

1. PSF (Section G.1, G.2, G.3): As the project involves three power plants, hence please clarify whether the stakeholder consultation meetings have been conducted for all the three power plants simultaneously. How the stakeholder consultation of all the three phase plants simultaneously have been considered as sufficient. Clarify.

2. PSF (Section G.2): As per the PSF filling guidelines, "*Prepare a summary report of the comments received during the local stakeholder consultation and attach the report as* ***Error! Reference source not found.****" as reference template guideline*. Hence additional details shall be provided in the PSF in this regard.

Project participant response	Date: 27/11/2023

1. The local stakeholders were invited through newspaper advertisements. At the time of LSC only 2 phases were operational, and third plant was non existing. Since phase 1 and phase 2 are located in the same village, hence villagers of Devanur were identified as a direct stakeholder.
2. Appendix 6 of the PSF contains the list of Attendees that participated in the event. However, the comments of the stakeholders (verbal) were recorded and MOM was prepared during the LSC and no hand written forms were used.

Documentation provided by project participant

Revised_PSF_revised-GHCL_version3

DOE assessment	Date: 29/11/2023

1. The stakeholder consultation was carried out at the project site of phase-1 and phase-2 since the phase-3 site was not operational. Further it was also confirmed that through the invitations that consultation was for the complete capacity of 22.5 MW and advertisement was provided in the newspaper which was circulated in the state of Tamil Nadu. Hence all the stakeholders of the project were provided opportunity to submit their comments in the project.

2. The summary of the comments is now provided in the PSF, which is found Ok.

Hence the comment is closed.

CL ID	CL14	Section no.	Section D.7, D.13	Date: 24/02/2023

Description of CL

1. PSF (Section H): The Letter of Nomination or Authorization corresponding to all the power plants shall be submitted.

Project participant response	Date: 27/11/2023

The same is being submitted, please refer to the folder "LoA", that has been shared alongside other supporting documents.

Documentation provided by project participant	
Supporting evidences- LoA	
DOE assessment	**Date:** 29/11/2023
The Letter of Authorization has now been submitted and found correct. Hence the comment is closed.	

CL ID	CL15	Section no.	Section D.12	Date: 24/02/2023
Description of CL				
As per the para 21 of the "*Project Sustainability Standard*", "*Project Owners shall submit all information listed in section F of the PSF in Appendix 1, Table 2.* Hence additional details shall be provided inline with the requirements of the Project Sustainability Standard.				
Project participant response	**Date:** 27/11/2023			
As per the guidelines for completing the PSF, no further information is required to be added in the PSF. As for section F, the targeted SDGs are in line with the Project Sustainability Standard. The same can be confirmed from Project Sustainability standard.				
Documentation provided by project participant				
Revised_PSF_revised-GHCL_version3				
DOE assessment	**Date:** 29/11/2023			
The requirements of the "Project Sustainability Standard" has now been taken into account in the information provided in the Section F of PSF and found correct. Hence the comment is closed.				

CL ID	CL16	Section no.	Section D.10, D.11	Date: 24/02/2023
Description of CL				
As per the Section 4.2 of the "*Environmental and Social Safeguards Standard*", "*the project owner shall conduct a Net-harm Assessment and complete the PSF as stipulated in the following eight-step procedure*". Check and additional information may be provided in this regard.				
Project participant response	**Date:** 27/11/2023			
Please refer to section E.1 and E,2 of the PSF wherein a detailed assessment has been conducted as stipulated under the Environmental and social safeguard standard. Also refer to section B.7.1 and B.7.2 regarding the monitoring of parameters that have been assessed to cause any harmless or harmful impacts. Therefore, it is in line with the requirements and procedure laid down in Environmental and Social Safeguard Standards.				
Documentation provided by project participant				
Revised_PSF_revised-GHCL_version3				
DOE assessment	**Date:** 29/11/2023			
The requirements of the "Environmental and Social Safeguards Standard" has now been taken into account in the information provided in the Section F of PSF and found correct. Hence the comment is closed.				

CL ID	CL17	Section no.		Date: 29/11/2023
Description of CL				

1. PO does not assess suitability of applied methodology (ACM0002) for captive consumption in view of clarification issued by CDM methodologies panel (AM_CLA_297). Clarify. 2. The latest applicable version is version 21 of the applied methodology (ACM0002), however an older version 20 has been applied to the project activity. Clarify how the older version of applied methodology is suitable to the project activity.
Project participant response **Date:**
1. *AM_CLA_0304, refers to the earlier clarification CLA_297 wherein Meth Panel has disallowed the use of the methodology for cases where power from the project activity is supplied to a captive consumer via the connected grid. The Board also requested the secretariat to **continue to apply the current practice to project assessment in relation to wheeling and banking.** Since many renewable projects involving captive consumption are already claiming carbon benefits and are included in CDM, so the current practice is deemed as continuation of the methodology ACM0002 for the projects involving captive consumption. Hence the same has been used in methodology application.* 2. *Since the project was listed on version 20 of ACM 0002 during Global Stakeholder Consultation, hence the applicability of the same is deemed eligible within one year of the completion of the date of GSC.*
Documentation provided by project participant
DOE assessment **Date:** 29/11/2023
1. The justification provided has been accepted since the methodology ACM0002 was applicable at the time of submission of project for GSC process. Further lot of CDM projects having captive generation were already registered and approved by UNFCCC. Further the clarification CLA_297 has recently published and hence continuation of project with ACM0002 has been accepted. 2. The project verification team confirms that approved methodology: ACM0002 “Grid-connected electricity generation from renewable sources” (Version 20.0) is applicable to the PSF which was valid and available at the time of uploading the project documentation for Global Stakeholder Consultation (GSC) process. This is inline with the paragraph 26 of the Project Standard, which states “*Under GCC Rules, any Project Owner seeking to design a GCC Project Activity shall apply the latest versions of either a GCC approved methodology or methodologies and tools approved under UNFCCC’s Clean Development Mechanism, available at the time of submission of project documents to the GCC, as required by the Program Process, for conducting a Global Stakeholder Consultation (GSC). In doing so, the Baseline and Monitoring Methodologies shall be applied in full, including the full application of any tools or guidance referred to by a methodology*”. Hence accepted. Hence the comment is closed.

CL ID	**CL18**	**Section no.**	-	**Date:** 04/12/2023
Description of CL				
PP shall clarify on the scenario, in cases, where there is a solar power generation from project activity, however there is no corresponding captive consumption for that electricity generation. Clarify and relevant details shall be provided in this regard.				
Project participant response		**Date:** 04/12/2023		
The scenario in which solar power generation from the project activity exceeds the requirement of captive user is unrealistic because the electricity requirement of the captive user is much more than the electricity the project is supplying.				
Documentation provided by project participant				

DOE assessment	Date: 04/12/2023
Based on the interviews, it was observed that the requirement of captive user is more than the solar power generation from the project activity, hence it is unrealistic that the power generation from plant exceeds the requirement of captive consumption. Hence the comment is closed.	

CL ID	CL19	Section no.	-	Date: 04/12/2023
Description of CL				
PP shall clarify as how the GCC Clarification No. 03 has been taken into account in the calculation of calculation of Grid Emission Factor. Clarify.				
Project participant response		**Date:**		
The Grid emission factor for the project activity is calculated using the Tool 07: ""Tool to calculate the emission factor for an electricity system" which is in line with the paragraph 8. Sub point (a) and is the most acceptable choice amongst other options that are mentioned under paragraph 8.				
Documentation provided by project participant				
DOE assessment				**Date:** 04/12/2023
The grid emission factor for the project activity is calculated using the Tool 07: "Tool to calculate the emission factor for an electricity system" which is in line with the paragraph 8(a) of Clarification No. 03 (additional options to determine grid emission factor for renewable projects applying ACM0002 and AMS I.D) and is the most acceptable choice amongst other options that are mentioned under paragraph 8. The grid emission factor (OM, BM, CM) is published by CEA/34/ following the CDM approved methodological Tool (Tool to calculate the emission factor for an electricity system). The CEA is authority under Ministry of Power, Government of India. Additionally the CEA database, version 17 has been used, which is published within 3 years, at the time of submission of the project documentation for starting Global Stakeholder Consultation (GSC). The project applies the ex-ante option at the time of submission of project documentation for starting Global Stakeholder Consultation (GSC). Hence the project is also in line with the paragraph 8, 9, 11 of Clarification No. 03. Hence the comment is closed.				

Table 2. CARs from this Project Verification

CAR ID	CAR 01	Section no.	Section D.2	Date: 24/02/2023
Description of CAR				
1. PSF (Section A.2): As per the Commissioning Certificate for the Phase-1 plant, the project is located in "Devanoor & Serugudi" village. However, Phase-2 plant is located at Devanoor village. The phase-wise (phase-1, phase-2, phase-3) location details (village, district, Taluk etc.) shall be separately provided (with correct spelling) for all the three plants in Section A.2 of the PSF. The Latitude and Longitude shall also be provided based on each phases of the power plant. 2. PSF (Section A.3): The total number of modules and inverters installed in each phase of power plant of the project shall also be provided. Further the module capacity of the module (also other technical parameters) installed in the phase-2 does not matches with the module capacity installed at the plant site. Check. Hence consistent information shall be provided and other technical related details shall be updated in the PSF accordingly. The lifetime of the installed equipments shall also be presented along-with the relevant evidences.				
Project participant response		**Date:** 27/11/2023		

1. *The section A.2 of the PSF has been revised to correct the information of the location of the project activity. Phase 1 as well as Phase-2 are located on the same place, that is Devanur Village, Musiri Taluk, Trichy District and phase-3 is located in Ottapidaram village, Ottapidaram taluk, Thoothukudi District. Further a KML file has been shared to confirm the project location. The latitude and longitude of the project activities have also been revised.* 2. *The number of modules and inverters installed in each phase of power plant have been corrected, please refer to section A.3 of the PSF. Further for technical lifetime please refer to CERC orders and product specifications.*
Documentation provided by project participant
Revised_PSF_revised-GHCL_version3
DOE assessment **Date:** 29/11/2023
1. The plant-wise location details has been separately provided for all the phases (phase-1, phase-1, phase-1) in the Section A.2 of the PSF and found correct. 2. The correct details on the number of modules/inverters have now been provided in the PSF. Hence the comment is closed.

CAR ID	**CAR 02**	**Section no.**	Section D.3.6	**Date:** 24/02/2023
Description of CAR				
1. PSF (Section B.4): In the Step-4, it is mentioned that "*a three-year weighted average based on the most recent available data is calculated*", however please refer to the Cell C22 of the "Emission Factor" spreadsheet, where the simple average (=AVERAGE(Results!Q14:S14)) has been used, instead of weighted average. Check and provide appropriate corrections in this regard. Further it shall be confirmed in the PSF, whether the Operating margin is calculated "incl. Imports" or "excl. Imports". Hence more clarity to be provided in the PSF. 2. PSF (Section B.6.3): How the ex-ante electricity generation is calculated shall also be provided in the Section B.6.3 of PSF.				
Project participant response		**Date:** 27/11/2023		
1. *The ER sheet has been revised to calculate the Operating margin as a three-year weighted average. Please refer to the tab "Emission factor" cell C20 to confirm the same.* *OM has been calculated using the option including Imports, the same can be verified from CEA database.* 2. *The PSF has been revised, please refer to section B.6.3 wherein the footnote has been added to confirm the source for electricity generation.*				
Documentation provided by project participant				
Revised_PSF_revised-GHCL_version3 and Ex Ante Er calculator				
DOE assessment				**Date:** 29/11/2023
1. The ERs sheet has been revise to calculate the operating margin as a three-year weighted average, which is found correct. 2. The details on the ex-ante electricity generation has now been provided in the PSF/ERs sheet. Hence the comment is closed.				

CAR ID	**CAR 03**	**Section no.**	Section D.3.6	**Date:** 24/02/2023
Description of CAR				
1. PSF (Section C.1) & ERs Excelsheet: The start date of the crediting period is provided as 20/01/2022, however please refer to the "Column G" of the "Values" spreadsheet of the ERs Excelsheet, where the crediting period is started from 19/01/2023. Check and provide appropriate corrections. 2. Please refer to the Cell C3, C4 in the "Emission Factor" spreadsheet, where the details are provided as follows:				

Commissioning Year: 2022 Year of CDM registration: 2022 CDM methodology: ACM0002, version 19 Check and provide appropriate corrections.
Project participant response **Date:** 27/11/2023
1. The start date of project is 20/01/2022, whereas in the ER sheet Column G represents the end dates for respective Monitoring periods. Example- 1st monitoring period starts from 20/01/2022 and ends on 19/01/2023. Likewise, the end dates of successive monitoring periods are represented in ER sheet. 2. The ER sheet has been corrected.
Documentation provided by project participant
Revised_PSF_revised-GHCL_version3 and Ex Ante Er calculator
DOE assessment **Date:** 29/11/2023
1. The crediting period dates are now updated in the PSF and ERs sheet and found correct. 2. The ERs excelsheet is now corrected. Hence the comment is closed.

Table 3. FARs from this Project Verification

FAR ID	**FAR 01**	**Section no.**	-	**Date:** 29/11/2023
Description of FAR				
Project Owners shall demonstrate the compliance to CORSIA requirements for the credits claimed beyond 31 December 2020 with respect to double counting and HCLOA requirements and also future CORSIA requirements applicable time to time for the project activity.				
Project participant response				**Date:** DD/MM/YYYY
HCLOA shall be provided at the earliest opportunity, prior to submission of requesting issuance of ACC after 31/12/2020 to the GCC Program.				
Documentation provided by project participant				
NA.				
DOE assessment				**Date:** DD/MM/YYYY
NA.				

Appendix 5. Matrix for Identifying Environmental Impacts, Establishing Safeguards and Performing Do-No-Harm Risk Assessments in the PSF and GCC Verifier's conclusion

Impact of Project Activity on		**Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards**								**Project Owner's Conclusion**		**GCC Project Verifier's Conclusion** **(to be included in Project Verification Report only)**
		Description of Impact *(positive or negative)*	**Legal/ voluntary corporate requirement / regulatory/ voluntary corporate threshold Limits**	**Do-No-Harm Risk Assessment (choose which ever is applicable)**			**Risk Mitigation Action Plans for aspects marked as Harmful**		**Performance indicator for monitoring of impact**	***Ex-ante* scoring of environmental impact**	***Explanation of the Conclusion***	**3rd Party Audit**
				Not Applicable	**Harmless**	**Harmful**	**Operational Controls**	**Program of Risk Management Actions**	**Monitoring parameter and frequency of monitoring**	**Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)**	**Ex- Ante description and justification/explanation of the scoring of the environmental impact**	**Verification Process**
Environmental Aspects on the identified categories [11] ***indicated below.***	*Indicators for environmental impacts*	*Describe and identify anticipated and actual significant environmental impacts, both positive and negative from all sources (stationary and mobile) during normal and abnormal/emergency conditions, that may result from the construction and operations of the Project Activity, within and outside the project boundary, over which the Project Owner(s) has/have control.*	*Describe the applicable national regulatory requirements /legal limits / voluntary corporate limits related to the identified risks of environmental impacts.*	*If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable***	*If environmental impacts exist, but are expected to be in compliance with applicable national regulatory /stricter voluntary corporate requirements and will be within legal/ voluntary corporate limits by way of plant design and operating principles, then the*	*If negative environmental impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as* ***'Harmfu'l*** *at least to a level that is in compliance with applicable legal/regulator requirements or industry best practice or stricter voluntary*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce or eliminate the risk of impacts that have been identified as* ***Harmful****.*	*Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless of harmful. The frequency of monitoring to be specified as well including the data source.*	*-1* *0* *+1*	*Confirm the score of environmental impact of the project with respect to the aspect and its monitored value in relation to legal /regulatory limits (if any) including basis of conclusion.*	*Describe how the GCC Verifier has assessed that the impact of the Project Activity against the particular aspect and in case of "harmful impacts" how has the project adopted Risk Mitigation Action Plans to mitigate the risks of negative environmental impacts to levels that are unlikely to cause any harm as well as the net positive impacts of the project with respect to the most likely baseline alternative.* .

[11] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

					Project Activity is unlikely to cause any harm (is safe) and shall be indicated as ***Harmless*** */If the project has an positive impact on the environment mark it as "harmless" as well.*	*harm (may be un-safe) and shall be indicated as* ***Harmful***	*corporate requirements*					
Reference to paragraphs of Environmental and Social Safeguards Standard		*Paragraph 12 (a)*	*Paragraph 13 (c)*	*Paragraph 13 (d) (i)*	*Paragraph 13 (d) (ii)*	*Paragraph 13 (d) (iii)*	*Paragraph 13 (e) (i)*	*Paragraph 13 (e) (ii)*	*Paragraph 12 (c) and Paragraph 13 (f)*	*Paragraph 22*		*Paragraph 24 and Paragraph 26 (a) (i)*
Environment - *Air*	*SO_x emissions (EA01)*	*In India, majority of electricity is obtained from thermal power plants using coal, which is around 75% of the total power generation[12], since the electricity generated using coal is emission intensive and there is a production of fly ash (SPM) and other gaseous pollutants. The project activity* ***will reduce the emissions when compared with the baseline****, but this impact is not rated positive because the PO has opted not to quantify this impact*	NAAQS, 2019	Not Applicable	-	-	-	-	-	0	Not Applicable	No risks identified
	NO_x emissions (EA02)	*In India, majority of electricity is obtained from thermal power plants using coal, which is around 75% of the total power generation, since the electricity generated using coal is emission*	NAAQS, 2019	Not Applicable	-	-	-	-	-	0	Not Applicable	No risks identified

[12] https://coal.nic.in/en/major-statistics/generation-of-thermal-power-from-raw-coal

		*intensive and there is a production of fly ash (SPM) and other gaseous pollutants. The project activity **will reduce the emissions when compared with the baseline**, but this impact is not rated positive because the PO has opted not to quantify this impact*										
	CO_2 emissions (EA03)	*The project is expected to reduce CO2 emissions w.r.t. the baseline scenario of generation of equivalent amount of power in grid connected power plan*	-	-	Harmless- The overall impact is positive with respect to the baseline alternative	-	-	-	GHG emission reduction (tonnes of CO_2e / Yr.) The parameter will be monitored on monthly basis	+1	The overall impact is positive with respect to the baseline and hence the impact is harmless	The project will have a positive impact by reducing measurable amount of CO_2 emissions. This amount of emission reduction will be monitored as per monitoring plan in the PSF in Section B.7.1
	CO emissions (EA04)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Suspended particulate matter (SPM) emissions (EA05)	*In India, majority of electricity is obtained from thermal power plants using coal, which is around 75% of the total power generation, since the electricity generated using coal is emission intensive and there is a production of fly ash (SPM) and other gaseous pollutants. The project activity **will reduce the emissions when compared with the baseline**, but this impact is not rated positive because the PO has opted not to quantify this impact*	NAAQS, 2019	Not Applicable	-	-	-	-	-	0	-	No risks identified

	Fly ash generation (EA06)	*In India, majority of electricity is obtained from thermal power plants using coal, which is around 75% of the total power generation, since the electricity generated using coal is emission intensive and there is a production of fly ash (SPM) and other gaseous pollutants. The project activity* ***will reduce the emissions when compared with the baseline****, but this impact is not rated positive because the PO has opted not to quantify this impact*	-	Not Applicable	-	-	-	-	-	0	-	No risks identified
	Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Odor (EA08)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Noise Pollution (EA09)	-	NAAQS, 2019	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Others (EA10)	-	-	-	-	-	-	-	-	-	-	No risks identified
	Add more rows if required and corresponding notation with EA as prefix)	-	-	-	-	-	-	-	-	-	-	No risks identified
Environment - *Land*	*Solid waste Pollution from*	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified

	Plastics (EL-01)										
	Solid waste Pollution from Hazardous wastes (EL02)	*Improper disposal of solid waste generated due to end of life of products or damaged products (solar PV module etc.) or waste oil (from transformer etc.) may lead to soil contamination. So, the generated waste shall be stored separately and shall be managed in compliance with applicable laws.*	Hazardous waste management and Handling Rules, 2018	-	Harmless- Improper disposal of solid waste generated due to end of life of products (solar PV module etc.) may lead to soil contamination. So, the generated waste shall be channelized through authorized channels (authorized scrap-dealers/ dismantlers/ recyclers etc.). The practice will be in line with legal requirements / standard industry practices	-	Recording all electrical & electronics waste of projects sites	Project owner is responsible to maintain records and filling of records as per applicable law	Quantity of damaged modules and leaking batteries shall be maintained and there is separate vendor to filtrate the oil and reuse it, otherwise they remove the waste oil properly from the site.	+1	The impact is unlikely to cause any harm because the generated solid waste shall be channelized through authorized channels (authorized scrap-dealers/ dismantlers/ recyclers etc.). The practice will be in line with legal requirements / standard industry practices.	The hazardous waste will be disposed as per applicable laws and regulations in the host country . Hence there is no impact considered for the project activity however to ensure to compliance of the laws and regulations the project owner monitored the same throughout the crediting period by means of records of oil disposed /replaced from the project activity. The monitoring plan provided is provided in section B.7.1 is appropriate and acceptable to the verification team.
	Solid waste Pollution from Bio-medical wastes (EL03)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Solid waste Pollution from E-wastes (EL04)	*E- waste generation from the Solar Power Project in terms of damaged solar panels, electronic equipment wires and computer auxiliary etc.*	E-Waste Management and Handling Rules, 2018	-	Harmless- Improper disposal of solid waste generated due to end of life of products	-	Records all electrical & electronics waste of projects sites	Project owner is responsible to maintain records and filling of records as per applicable law	Quantity of waste discarded at the end of lifetime will be monitored and recorded	+1	The impact is unlikely to cause any harm.	The e waste generated from the Project activity will be disposed as per prevailing laws and regulations applicable in the host country .

					(solar PV module etc.) may lead to soil contamination. So, the generated waste shall be channelized through authorized channels (authorized scrap-dealers/ dismantlers/ recyclers etc.). The practice will be in line with legal requirements / standard industry practices							Hence this parameter will be scored and monitoring plan is provided in section B.7.1 of the PSF to ensure the compliance of the regulations which will be harmless during entire crediting period of the project activity which is appropriate and acceptable
	Solid waste Pollution from Batteries (EL05)	*No battery waste is anticipated throughout the operation of the project*	-	Not Applicable	-	-	-	-	-	0	The impact is unlikely to cause any harm because the generated waste shall be generated only after the lifetime of batteries and that impact is already considered in solid waste pollution due to lifetime of product	No risks identified
	Solid waste Pollution from end of life products/ equipment (EL06)	*In the absence of the project activity no Solid waste Pollution from end-of-life products/ equipment will be generated. Project activity may result in the E-waste from the panels and other electronic products at the end of its lifetime.*	E-Waste Management and Handling Rules, 2018	-	Harmless- The lifetime of the project activity is 25 years. So, at the end life of products (solar PV module etc.) the E-waste shall be	-	Records all electrical & electronics waste of projects sites	Project owner is responsible to maintain records and filling of records as per applicable law	Quantity of waste discarded at the end of lifetime will be monitored and recorded	+1	The impact is unlikely to cause any harm because the generated solid waste shall be channelized through authorized channels (authorized scrap-dealers/ dismantlers/ recyclers etc.). The practice will	Project owner provided mitigation plan to reduce the risk is not likely to cause any harm to the environment The appropriate monitoring plan has been put in place to monitor the risks identified due to the implementation of the project activity

					channelized through authorized channels (authorized scrap-dealers/ dismantlers/ recyclers etc.). The practice will be in line with legal requirements / standard industry practice.						be in line with legal requirements / standard industry practices	This will be monitored as per monitoring plan in the PSF section B.7.2 and assessment of the same is provided in section D.3.7 of the Project Verification Report.
	Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	land use change (change from cropland /forest land to project land) (EL08)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Others (EL09)	-	-	-	-	-	-	-	-	-	-	No risks identified
	Add more rows if required	-	-	-	-	-	-	-	-	-	-	
Environment - *Water*	*Reliability/ accessibility of water supply (EW01)*	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified

	Water Consumption from ground and other sources (EW02)	*Ground water will be consumed only for cleaning of modules, but care shall be taken not to over utilize the resource*	-	-	Harmless – Ground water will be consumed for the cleaning of PV modules. Project is not expected to impact the existing usage pattern. Project owner also obtained the required permissions for the use of groundwater as per the local rules and regulations	-	-	-	No Action required	0	No Action required	The project owner uses the ground water for the domestic use and clean of solar panels. The project owner has taken necessary approvals for consent to operate from Tamil Nau Pollution Control Board Additionally the project owner has declared that "Water (Prevention and Control of Pollution) Act, 1974" shall also be followed during the operation of the project activity.
	Generation of wastewater (EW03)	*The project generates wastewater caused by the cleaning of PV modules, but it is disposed within the prescribed limits as per the national and regional regulations/ requirements*	The Water (Prevention and Control of Pollution) Act, 1974	Not applicable	Harmless	Not applicable	Not applicable	Not applicable	No action required	Not applicable	There is no significant effect as provisions of septic tank is provided onsite for treatment and disposal of sewage *and* the ground water shall be used for cleaning the PV modules. However, in the baseline scenario (grid) some of the fossil fuel power plants may have generation of wastewater or its treatment on which data is not available and can't be quantified and therefore the emission	No risks identified

											reductions cannot be quantified and therefore this parameter will not be scored	
	Wastewater discharge without/with insufficient treatment (EW04)	*The project generates wastewater caused by the cleaning of PV modules, but it is disposed within the prescribed limits as per the national and regional regulations/ requirements*	The Water (Prevention and Control of Pollution) Act, 1974	Not applicable	Harmless	Not applicable	Not applicable	Not applicable	No action required	Not applicable	There is no significant effect as provisions of septic tank is provided onsite for treatment and disposal of sewage *and* the ground water shall be used for cleaning the PV modules. However, in the baseline scenario (grid) some of the fossil fuel power plants may have generation of waste water or its treatment on which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored	No risks identified
	Pollution of Surface, Ground and/or Bodies of water (EW05)	*The project generates wastewater caused by the cleaning of PV modules but it is disposed within the prescribed limits as per the national and regional regulations/ requirements*	The Water (Prevention and Control of Pollution) Act, 1974	Not applicable	Harmless	Not applicable	Not applicable	Not applicable	No action required	Not applicable	There is no significant effect as provisions of septic tank is provided onsite for treatment and disposal of sewage *and* the ground water shall be used for cleaning the PV modules. However, in the baseline scenario (grid) some of the fossil fuel power plants may have generation of waste water or its treatment on	No risks identified

											which data is not available and can't be quantified and therefore the emission reductions cannot be quantified and therefore this parameter will not be scored	
	Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)	*The project is not anticipated to discharge any harmful chemical/ toxic waste*	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Others (EW07)	-	-	-	-	-	-	-	-	-	-	No risks identified
	Add more rows if required	-	-	-	-	-	-	-	-	-	-	
Environment – *Natural Resources*	*Conserving mineral resources (ENR01)*	-	-	Not Applicable	-	-	-	-	-	-	-	
	Protecting/ enhancing plant life (ENR02)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Protecting/ enhancing species diversity (ENR03)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Protecting/ enhancing forests (ENR04)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Protecting/ enhancing other depletable natural resources (ENR05)	*This is a renewable energy power project generating power through the solar energy which is renewable source of energy and hence there is no impact*	-	Not Applicable	-	-	-	-	-	-	-	

	Conserving energy (ENR06)	*There is no scope for energy conservation since it is a solar power plant generating and supplying electricity through the grid.* *Hence not applicable.*	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Replacing fossil fuels with renewable sources of energy (ENR07)	*The proposed project replaces fossil fuel with the renewable solar energy for the power generation by installing the solar power plant which would have been otherwise generated from the fossil fuel dominant*	-	-	Harmless- The overall impact is positive compared to the baseline alternative	-	-	-	Considering the occurrence of emission reductions through the electricity generation form the Solar power project. This parameter will be monitored through the monthly Power generation from the proposed Solar Project. Monthly electricity generation will be monitored through the energy meters installed at the substation. Energy Generation reports will be provided for the verification of generation.	0	The parameter is not scored because its impact is already rated positive for parameter EA03	The project will have a positive impact by equally replacing the energy generated by fossil fuels with renewable energy sources (solar). This amount of energy generation from the project activity will be monitored as per monitoring plan in the PSF Section B.7.1 for the parameter $EG_{PJ,facility,y}$ and assessment of the same is provided section D.3.7 of the Project Verification Report.
	Replacing ODS with non-ODS refrigerants (ENR08)	-	-	Not Applicable	-	-	-	-	-	-	-	No risks identified
	Others (ENR09)	-	-	-	-	-	-	-	-	-	-	
	Add more rows if required	-	-	-	-	-	-	-	-	-	-	
Net Score:				**+4**								

Project Owner's Conclusion in PSF:		The Project Owner confirms that the Project Activity will not cause any net harm to Environment.
GCC Project Verifier's Opinion:		The GCC Verifier certifies that the Project Activity is not likely to cause any net harm to the environment...

Appendix 6. Matrix for Identifying Environmental Impacts, Establishing Safeguards and Performing Do-No-Harm Risk Assessments in the PSF and GCC Verifier's conclusion

Impact of Project Activity on		**Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards**							**Project Owner's Conclusion**		**GCC project Verifier's Conclusion** **(to be included in Project Verification Report only)**
		Description of Impact (*positive or negative*)	**Legal requirement /Limit, Corporate policies / Industry best practice**	**Do-No-Harm Risk Assessment** **(choose which ever is applicable)**			**Risk Mitigation Action Plans (for aspects marked as Harmful)**	**Performance indicator for monitoring of impact.**	**Ex-ante scoring of environmental impact**	**Explanation of the Conclusion**	**3rd Party Audit**
				Not Applicable	**Harmless**	**Harmful**	**Operational / Management Controls**	**Monitoring parameter and frequency of monitoring (as per scoring matrix Appendix-02)**	**Ex- Ante scoring of social impact of the project**	**Ex- Ante description and justification/explanation of the scoring of social impact of the project**	**Verification Process** **Will the Project Activity cause any harm?**
Social Aspects on the identified categories[13] indicated below.	*Indicators for social impacts*	*Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all source during normal and abnormal/emergency conditions that may result from constructing and operating of the Project Activity within or outside the project boundary, over which the project Owner(s) has/have control*	*Describe the applicable national regulatory requirements / legal limits or organizational policies or industry best practices related to the identified risks of social impacts*	*If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable***	*If social impacts exist, but are expected to be in compliance with applicable national regulatory requirements/ stricter voluntary corporate limits by way of plant design and operating principles then the Project Activity is unlikely to cause any harm (is safe) and shall be*	*If negative social impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits then the Project Activity is likely to cause harm and shall be*	*Describe the operational or management controls that can be implemented as well as best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless of harmful. The frequency of monitoring to be specified as well. Monitoring parameters can be quantitative or qualitative in nature along with the data source*	*-1* *0* *+1*	*Confirm the score of the social impacts of the project with respect to the aspect and its monitored value in relation to legal/regulatory limits (if any) including basis of conclusion*	*Describe how the GCC Verifier has assessed that the impact of Project Activity on social aspects (based on monitored parameters, quantitative or qualitative) and in case of "harmful aspects how has the project owner adopted Risk Mitigation Action / management actions plans and policies to mitigate the risks of negative social*

[13] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

					*indicated as **Harmless**), project having positive impact on society wrt. To the BAU / baseline scenario must also mark their aspect as **"harmless"***	*indicated as **Harmful***					*impacts to levels that are unlikely to cause any harm.* *Also describe the positive impacts of the project on the society as compared to the baseline alternative or BAU scenario.*
Reference to paragraphs of Environmental and Social Safeguards Standard		*Paragraph 12 (a)*	*Paragraph 13 (c)*	*Paragraph 13 (d) (i)*	*Paragraph 13 (d) (ii)*	*Paragraph 13 (d) (iii)*	*Paragraph 13 (e) (i)*	*Paragraph 12 (c) and Paragraph 13 (f)*	*Paragraph 23*		*Paragraph 24 and Paragraph 26 (a) (ii)*
Social - *Jobs*	*Long-term jobs (> 10 year) created/ lost (SJ01)*	*The project activity generates long term job opportunities during the operation the project activity.*	The project has ensured to meet the criteria and requirement defined in applicable Indian labor laws.	-	Harmless- As the impact is positive in nature	-	-	No. of Permanent Jobs to be monitored on an annual basis. Approximately 10 jobs are expected to be created	+1	The project is unlikely to cause any harm.	The project operation has created new job opportunities in the area during operational phase of the project activity. The number of persons employed would be monitored through HR records/ payroll records. . Also project owner ensures that at least five employment will be provided in the project activit This will be monitored as per monitoring plan in the PSF section B.7.1 and assessment of the same is provided section D.3.7 of the Project Verification Report.
	New short-term jobs	*Project has created short term job opportunity which is less*	The project has ensured to meet the criteria and	-	Harmless-	-	-	No. of short-term jobs to be monitored on an	0	The project is unlikely	No risks identified

	(< 1 year) created/ lost (SJ02)	*than a year to the skilled and unskilled people in the project region during the construction of the project activity through contractor.*	requirement defined in applicable Indian labor laws		This is a positive impact			annual basis. Approximately 10 jobs are expected to be created		to cause any harm.	
	Sources of income generation increased / reduced (SJ03)	*By creating additional employment and O&M services in the project region it creates additional sources of income for the people employed for the project activity.*	None	-	Harmless- This is a positive impact	-	-	Payroll Records	+1	The project is unlikely to cause any harm.	No risks identified
	Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04) *(human rights)*	*The Project activity is open to hire people from different race, gender, ethnics, religion, marginalized groups, people with disabilities*	There is no legal requirement from local authorities to create employment	Not applicable	Harmless	-	-	Since the Project activity is open to hire people from different race, gender, ethnics, religion, marginalized groups, people with disabilities. Hence it is rated positive.	+1	The project is unlikely to cause any harm.	No risks identified
Social - *Health & Safety*	*Disease prevention (SHS01)*	-	-	Not Applicable	-	-	-	-	-	-	
	Occupational health hazards (SHS02)	*There is a possibility of physical hazards in project sites due to human intervention or technical failure or emergency*	EHS policy, OSHA and OHSAS	-	Harmless- By establishing EHS policy guidelines, and imparting periodic trainings and providing PPE kits to employees	-	Establishing EHS Guidelines Imparting Trainings, Keeping Sign boards Providing PPE Kits.	1. PPEs 2. Trainings to Employees	+1	By implementing Risk mitigation measures the project is unlikely to cause any harm	The Project owner will provide regular safety training to the employees and also encouraging tto do the work with always with PPE kits for avoiding the accidents at the project site which is assessed as positive impacts of the

											project activity and hence the score claim by the project owner is acceptable and appropriate This will be monitored as per monitoring plan in the PSF section B.7.1 and assessment of the same is provided section D.3.7 of the Project Verification Report.
	Reducing / increasing accidents /Incidents/fatality (SHS03)	*There is a possibility of accidents in project sites due to human intervention or technical failure or emergency*	EHS policy and OHSAS	-	Harmless- By establishing SOPs, EHS policy guidelines, and imparting periodic trainings and providing PPE kits to employees	-	Establishing SOPs, EHS Guidelines Imparting Trainings, Keeping Sign boards Providing PPE Kits	1. PPEs 2.Trainings to Employees	0	This parameter is not scored positive because this impact is already scored for SHS02	The Project owner will provide regular safety training to the employees and also encouraging tto do the work with always with PPE kits for avoiding the accidents at the project site which is assessed as positive impacts of the project activity and hence the score claim by the project owner is acceptable and appropriate This will be monitored as per monitoring plan in the PSF section B.7.1 and assessment of the same is provided section D.3.7 of the Project Verification Report.
	Reducing / increasing crime (SHS04)	-	-	-	-	-	-	-	-	-	No risks identified
	Reducing / increasin	-	-	-	-	-	-	-	-	-	No risks identified

	g food wastage (SHS05)										
	Reducing / increasing indoor air pollution (SHS06)	*This is a renewable energy power generation project through solar energy. Hence there is no impact on indoor air pollution*	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Efficiency of health services (SHS07)	-	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Sanitation and waste management (SHS08)	*Project will generate sanitation waste during construction and operation of the project*	As per Factories Act, Solid waste management rules	-	Harmless- The project will have proper sanitation facilities (during construction portable toilets, during operation permanent toilets) as per factories act and domestic waste generated will be disposed as per local regulations.	-	-	-	0	The project is unlikely to cause any harm. This is not rated positive because this is mandated by law.	No risks identified
	Other health and safety issues (SHS09)	-	-	-	-	-	-	-	-	-	No risks identified
Social - *Education*	*Specialized training / education to local*	*The local employees will receive on-the-job training[14] as per their training needs.*	None	-	Harmless- It has a positive impact.	-	-	No of Trainings	+1	This has a positive impact.	No risks identified

[14] Some of the examples of technical trainings but are not limited to - HV electrical equipment maintenance, IV-curve testing and analysis of PV modules, training on electrical equipment thermography etc. Similarly non-technical trainings and general awareness trainings include but are not limited to- Training on EPRP &First Aid, Training on LOTO (Lock out/Tag out), Electrical safety, Snake bite awareness training and Training on ISO standards.

	personnel (SE01)	*It imparts a positive impact by helping employees in all-round development*									
	Educational services improved or not (SE02)	-	-	-	-	-	-	-	-	-	No risks identified
	Project-related knowledge dissemination effective or not (SE03)	*The Project owner has conducted a Local Stakeholder Consultation in which project related information was disseminated to Local people.*	None	-	Harmless- As the local stakeholder consultation have already been conducted, so this parameter is not rated as positive	-	-	-	0	The project is unlikely to cause any harm	No risks identified
	Other educational issues (SE03)	-	-	-	-	-	-	-	-	-	
	Add more rows if required (SE04)	-	-	-	-	-	-	-	-	-	
Social - *Welfare*	*Improving/ deteriorating working conditions (SW01)*	*Project Owner will create and maintain the healthy and working conditions and try to maintain the work life balance for all the employees working for the project*	None	-	Harmless- Project Owner ensures and maintains the HR policy to ensure that all the employees are provided with healthy and non-deteriorating working conditions both at the corporate office and the project site as well.	-	Taking the employee feedback on work life balance. Conducting the employee employer interactive sessions. Addressing the employee grievances, if any, on an immediate basis.	Policy of the company	0	The project is unlikely to cause any harm.	The project owner confirmed that women are paid equally and that there is no discrimination against female employees on the project site. This parameter is verifiable during the monitoring period. Based on the pay slips employment records and complaint register maintained by the project owner, this parameter will be

											monitored This will be monitored as per monitoring plan in the PSF section B.7.1 and assessment of the same is provided section D.3.7 of the Project Verification Report.
	Community and rural welfare (indigenous people and communities) (SW02)	*Though there is a positive impact on the community and rural welfare from the implementation of project, but as such there are no additional community development activities undertaken by project owner*	-	-	-	-	-	-	-	-	No risks identified
	Poverty alleviation (more people above poverty level) (SW03)	*Though the project creates employment, the impact is not considerable in scale.*	-	-	-	-	-	-	-	-	No risks identified
	Improving / deteriorating wealth distribution/ generation of income and assets (SW04)	*Though the project creates employment, the impact is not considerable in scale.*	As per the Industrial Relations Code 2020, The Code on Social Security 2020, The Occupational Safety, Health and Working Conditions Code, 2020 and The Code on Wages 2019.	-	-	-	-	-	-	There is no chance of deteriorating working conditions as Project owner maintains best working environment for Employees, complying with the national laws, hence this parameter	No risks identified

										will not be scored.	
	Increased or / deteriorating municipal revenues (SW05)	-	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Women's empowerment (SW06) *(human rights)*	-	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Reduced / increased traffic congestion (SW07)	-	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Exploitation of Child labour *(human rights)* *(SW08)*	*The project owner values the human rights and child labor is prohibited inside premises of project*	Labour Act	-	Harmless- Child Labour and forced labour are strictly prohibited by law	-	-	Since none of the employed person is below the age of 16 years during construction or operational phase of the project so there is no chance of exploitation of child labour. As this activity is prohibited by law, so this parameter is not rated positive.	0	The project is unlikely to cause any harm.	No risks identified
	Minimum wage protection *(human rights) (SW09)*	*The project owner will ensure that all the unskilled labor gets a minimum wage set by the government and pays all the employees as per the skill set and contract between both parties.*	As per the Industrial Relations Code 2020, The Code on Social Security 2020, The Occupational Safety, Health and Working Conditions Code, 2020 and The Code on Wages 2019.	-	Harmless	-	-	Since the minimum wage is mandated by law, hence this parameter is not scored.	0	The project is unlikely to cause any harm	No risks identified

	Abuse at work place.(with specific reference to women and people with special disabilities / challenges) *(human rights) (SW10)*	-	-	-	-	-	-	-	-	-	No risks identified
	Other social welfare issues (SW11)	-	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Avoidance of human traffickin g and forced labour *(human rights)* *(SW12)*	-	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs *(human rights)*	*The land acquired from the villagers to set up the Power plant, was mostly barren land with no human settlements. Hence, no forced eviction measures imply*	-	Not Applicable	-	-	-	-	-	-	No risks identified

	(CW13)										
	Provisions of resettlement and human settlement displacement *(human rights)* *(CW14)*	*The land acquired from the villagers to set up the Power plant, was mostly barren land with no human settlements. Hence, no provisions of resettlement were laid down but the villagers whose land was acquired were compensated by monetary means as per the land (area) which was purchased from them*	-	Not Applicable	-	-	-	-	-	-	No risks identified
	Add more rows if required	-	-	-	-	-	-	-	-	-	

Net Score:	**+5**
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to society.
GCC Project Verifier's Opinion:	The GCC Verifier certifies that the Project Activity is not likely to cause any net harm to society.

Appendix 7. Matrix for Demonstration of Contribution of Project to Sustainable Development

UN-level SDGs	UN-level Target	Declared Country-	Defining Project-level SDGs	GCC Project Verifier's Conclusion

		level SDG						(to be included in Project Verification Report only)	
			Project-level SDGs	**Project-level Targets/Actions**		**Contribution of Project-level Actions to SDG Targets**	**Monitoring**	**Verification Process**	**Are Goal/ Targets Likely to be Achieved?**
Describe UN SDG targets and indicators *See: https://unstats.un.org/sdgs/indicators/indicators-list/*	*Describe the UN-level target(s) and correspo-nding indicator no(s)*	*Has the host country declared the SDG to be a national priority? Indicate Yes or No*	*Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope or creating a new indicator(s). Refer to previous column of guidance.*	*Define project-level targets/actions in line with nee project level indicators chosen. Define the target date by which the project Activity is expected to achieve the project-level SDG target(s).*		*Describe and justify how actions taken under the Project Activity are likely to result in a direct positive effect that contributes to achieving the defined project-level SDG targets*	*Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG indicator and its correspondi ng target, frequency of monitoring and data source*	*Describe how the GCC Verifier has verified the claims that the project is likely to achieve the identified Project level SDGs target(s).*	*Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or No)*
Goal 1: End poverty in all its forms everywhere	-	-	-	-	-	-	-		
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	-	-	-	-	-	-	-		
Goal 3. Ensure healthy lives and promote well-being for all at all ages	-	-	-	-	-	-	-		
Goal 4. Ensure inclusive and	-	-	-	-	-	-	-		

equitable quality education and promote lifelong learning opportunities for all									
Goal 5. Achieve gender equality and empower all women and girls	-	-	-	-	-	-	-		
Goal 6. Ensure availability and sustainable management of water and sanitation for all	-	-	-	-	-	-	-		
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	Target 7.2[15]: Increase global percentage of renewable energy. KPIs: Amount of renewable energy supplied to grid for consumption.	Yes	Project activity directly contributes to increase in share of renewable energy through generation of renewable electricity and exporting Net electricity generated to grid by the project	Total renewable electricity being generated and fed to the national grid to replace the emission intensive electricity	Approximately **446,160 MWh** of renewable electricity is expected to be generated over a time period of 10 years	Project activity contributes directly to SDG target by increasing the share of renewable energy in energy mix	Net electricity exported to grid by the project	This project is renewable solar power project started operation from 20/01/2022 and same was verified with the commissioning certificates provided by the project owner. The generated power from the project activity is the clean energy and continuously monitored by the energy meters installed at the site and included in	Yes

[15] https://sustainabledevelopment.un.org/content/documents/26279VNR_2020_India_Report.pdf

								the monitoring plan in the PSF.	
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	**Target 8.5**: Full employment and decent work with equal pay. **KPIs:** Average earning of females and male employees engaged in the project and segregated by age and persons with disabilities.	Yes	Project activity has generated employment during its construction phase (temporary jobs) as well as in operational phase (permanent jobs)	Construction**, operation and** maintenance of Power plant (Project Activity) has resulted in employment generation	The project is generating employment to 20 individuals	Project activity contributes directly to SDG target by providing employment and paying the individuals equally who are engaged in the work of equal value	Maintaining record of staff employed/ pay roll records	This is an direct positive impact of the project activity, which will help to reduce unemployment in the host country, This parameter is verifiable during the monitoring period. The total number of persons working in the project activity along with details of female-male break up, age and role and persons with disabilities, if any will be monitored and Payroll/ HR records will be used to monitor this parameter.. The relevant monitoring plan is included in the section B.7.1	Yes

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	-	-	-	-	-	-	-		
Goal 10. Reduce inequality within and among countries	-	-	-	-	-	-	-		
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	-	-	-	-	-	-	-		
Goal 12. Ensure sustainable consumption and production patterns	-	-	-	-	-	-	-		
Goal 13. Take urgent action to combat climate change and its impacts	Target 13.A: Implement the UN Framework Convention on climate change. KPIs: Amount of emission reduction achieved by project under UNFCCC / GORD /	Yes	Project activity directly contributes to this SDG as Project is generating zero emission electricity in the Project scenario	Installation of **22.5 MW** Solar Power generation capacity	Approximately **41,514 tCO_2e** annual reduction in the Greenhouse gas emissions. The project is generating zero emission electricity", thereby, aiding in combating the climate change	Project activity contributes directly to SDG target by reducing greenhouse gas emissions which are associated with the production of equivalent amount of electricity	As per the applied methodology	This is direct positive impact of the project which will avoid around 41,514 tCO_2 annual average over the crediting period. The generated power from the project activity is the clean energy and continuously monitored by the energy meters installed at	Yes

	Domestic market mechanism							the site and included in the monitoring plan in the PSF.	
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	-	-	-	-	-	-	-		
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	-	-	-	-	-	-	-		
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	-	-	-	-	-	-	-		
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	-	-	-	-	-	-	-		

SUMMARY	Targeted	Likely to be Achieved
Total Number of SDGs[16]	**3**	**3**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	**Silver**	**Silver**

DOCUMENT HISTORY

Version	Date	Comment
V 3.1	31/12/2020	▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.
V 3.0	23/08/2020	▪ Revised version released on approval by the Steering Committee as per the GCC Program Process; ▪ Revised version contains the following

[16] All SDGs that are being claimed are beyond the scope of CSR requirements.

		changes: ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC); ○ Considered and addressed comments raised by the Steering Committee: ➢ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➢ electronic consultations EC01-Round 04 (17.08.2020 – 22.08.2020). ▪ Feedback from the Technical Advisory Board (TAB) of ICAO on GCC submissions for approval under CORSIA[17];
V 2.0	25/06/2019	▪ Revised version released for approval by the GCC Steering Committee. ▪ This version contains details and information to be provided, consequent to the latest worldwide developments (e.g., CORSIA EUC).
v1.0	01/11/2016	▪ Initial version released for approval by the GCC Steering Committee under GCC Program Version 1

[17]See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf

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