GLOBAL CARBON COUNCIL

Driving Climate Actions

Project Verification Report

V3.1 - 2020

www.globalcarboncouncil.com

CONTENTS

COVER PAGE Project Verification Report Form (PVR)	
BASIC INFORMATION	
Name of approved GCC Project Verifier / Reference No. (also provide weblink of approved GCC Certificate)	Carbon Check (India) Private Limited. / GCCV004/01 http://globalcarboncouncil.com/wp-content/uploads/2021/10/carbon-check-india-private-limited-ccipl.pdf
Type of Accreditation	☐ Individual Track[1] ☒ CDM Accreditation : E-0052 https://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0052 Valid until 01/06/2024 ☒ ISO 14065 Accreditation : GH004 https://nabcb.qci.org.in//accreditation/ghg/ghg004.php Valid from 28/06/2021 until 27/06/2024
Approved GCC Scopes and GHG Sectoral scopes for Project Verification	GCC Scopes: Environmental No-harm (E+) • Green House Gas (GHG) • Environmental No-net harm (E+) • Social No-harm (S+) • Sustainable Development Goals (SDG+) GHG Sectoral Scope: 1. Energy (renewable/non-renewable sources)
Validity of GCC approval of Verifier	08/03/2023 to 31/05/2024
Title, completion date, and Version number of the PSF to which this report applies	Mount Coffee hydropower project Version number 7.0, dated 01/02/2024
Title of the project activity	Mount Coffee hydropower project
Project submission reference no. (as provided by GCC Program during GSC)	S00868
Eligible GCC Project Type[2] as per the Project Standard	☒ **Type A:** ☐ Type A1

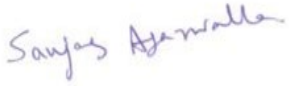
[1] **Note:** GCC Verifier under Individual tack is not eligible to conduct verifications for the GCC project that intends to supply carbon credits (ACCs) for CORSIA requirements.

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

(Tick applicable project type)	☒ Type A2 Sub-type 1: This type includes existing operational projects, not submitted to any GHG Program, which have started operations after 1 January 2016 ☐ **Type B – De-registered CDM Projects:** ☐ Type B1 ☐ Type[3] B2
Date of completion of Local stakeholder consultation	28/10/2012
Date of completion and period of Global stakeholder consultation. Have the GSC comments been verified. Provide web-link.	06/02/2023 – 20/02/2023 No comments were received. https://www.globalcarboncouncil.com/global-stakeholders-consultation-2/
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners)	Liberia Electricity Corporation (LEC)
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	Liberia Electricity Corporation Address: P.O Box 10 – 165 Waterside 1000 Monrovia, 10, Liberia Telephone: + 231-777999990 E-mail: mcaptan@lecliberia.com Contact Person: Monie Captan
Country where project is located	Liberia
GPS coordinates of the Project site(s)	6°30'17"N (decimal 48.8529) 10°38'54"W (decimal 2.3499)
Applied methodologies (approved methodologies of GCC or CDM can be used)	ACM0002: Grid connected electricity generation from renewable sources. Version 21.0
GHG Sectoral scopes linked to the applied methodologies	Scope 1 - Energy (renewable/non-renewable source)
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) ☐ Others (please mention below)
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 *Carbon Check (India) Private Limited*, certifies the following with respect to the GCC Project Activity *Mount Coffee hydropower project*. ☒ The Project Owner has correctly described the Project Activity in the Project Submission Form (version 7.0, dated 01/02/2024) including the applicability of the approved methodology *ACM0002: Grid connected electricity generation from renewable sources version 21.0* 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 113,928 tCO_2e annually, 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 Sustainable Development Goals (SDGs), complies with the Project Sustainability Standard, and contributes to achieving a total of 03 SDGs, with the following 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[4] and therefore recommends GCC Program to register the Project activity with above mentioned labels.
Project Verification Report, reference number and date of approval	Version 04.0 dated 05/02/2024. Date of approval: 05/02/2024
Name of the authorised personnel of GCC Project Verifier and his/her signature with date	 Sanjay Kumar Agarwalla, Technical Director Date: 05/02/2024

[4] "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

Liberia Electricity Corporation (LEC) has appointed the GCC Project Verifier, Carbon Check (India) Private Ltd., to perform an independent project verification/18/ of the Project "Mount Coffee hydropower project " (hereafter referred to as "project"). This report summarizes the findings of project verification of the project, performed on the basis of GCC rules and requirements as well as criteria given to provide for consistent project operations, monitoring and reporting. This report contains the findings and resolutions from the project verification and a verification opinion.
Liberia Electricity Corporation (LEC) has constructed the Mount Coffee hydropower project. Mt. Coffee Hydro Power Plant (MCHPP) rehabilitation project was launched by the Government of Liberia (GoL) in 2012 with the aim of rehabilitating Liberia's pre-war 64 MW power plant, which was destroyed during the civil crisis in 1990.The Mount Coffee Hydropower Rehabilitation Project is located on the St. Paul River about 25 km inland from Monrovia, Liberia. The GPS coordinates of the project site is as follows.

Latitude: 6°30'17" N (decimal 48.8529),
Longitude: 10°38'54" W (decimal 2.3499)

The project consists of four new Francis turbines, each one of them having a generating unit of 22 MW each, for a total installed capacity of 88 MW and with an overall estimated average gross electricity generation of 208 GWh per year and the project is expected to reduce CO_2 emissions by 113,928 tCO_2e per year and a total reduction of 1,139,285 tCO_2e throughout the crediting period of 10 years.

The project also contributes to Environmental No-net-harm Label (E+), Social No-net-harm Label (S+), CORSIA requirements (C+) and 3 United Nations Sustainable Development Goals (SDG+) i.e., SDG 7, 8, and 13.

The purpose of the project verification is to have a thorough and independent assessment of the proposed Project Activity against the applicable GCC rules and requirements, including those specified in the Project Standard, applied methodology/methodological tools and any other requirements, in particular, the project's baseline, monitoring plan and the host Party criteria. These are verified to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Verification requirement for all GCC projects activity is necessary to provide assurance to stakeholders of the quality of the Project and its intended generation of Approved Carbon Credits (ACCs).

Scope of project verification
The project verification scope is defined as the independent and objective review of the project submission form. The PSF /01/ is reviewed against the relevant criteria and decisions by the GCC, including the CDM approved baseline and monitoring methodology and tools. The verification team has, based on the recommendations in the GCC Project Standard, Version 3.1/B01-A/ and Project Verification Standard Version 3.1/B01-B/ employed a rule-based

approach, focusing on the identification of significant risks for project implementation and the generation of ACCs.
The verification is not meant to provide any consulting towards the project (owner)s. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the program design.
While carrying out the verification, CCIPL determines if the PSF complies with the requirements of the applicability conditions of the selected methodology/B02/, guidance issued by the GCC and also assess the claims and assumptions made in the PSF/01/ without limitation on the information provided by the project owner.

Project Verification Process
Strategic risk Analysis and delineation of the Project verification plan:
CCIPL employed the following validation (termed as “Project Verification” as per GCC) process:
1. Conflict of interest review at the time of contract review;
2. Selection of Audit Team at the time of contract review;
3. Kick-off meeting with the client;
4. Review of the draft PSF listed on GCC website for public consultation;
5. Development of the verification plan.
6. Desktop review and evaluation of emission reduction calculations;
7. Follow-up interaction with the client; and final statement and report development.

The validation process has utilized to gain an understanding of the:
• Project’s design, GHG emission sources and reductions,
• Baseline determination and additionality,
• GHG monitoring plan,
• Environmental & Social impacts,
• Stakeholder’s consultation,
• SD indicators integrated with the project and
• Verify the collection and handling of data, the calculations that lead to the results, and the means for reporting the associated data and results.

Development of the Project Verification Plan:
The Audit Team formally documented its verification plan:
The Project Verification plan was developed based on discussion of key elements of the verification process during the kick-off meeting and as per the criteria of engagement. Client had the opportunity to comment on key elements of this plan for verification. Based on items discussed above and agreed upon with the client in the signed contract, the plan identified the CCIPL audit team members based on following:
• Project level of assurance (which is reasonable as per GCC requirements),
• Materiality threshold and
• Standards of evaluation and reporting for the verification.

It also provides an outline of the Project Verification process and established project deliverables.
The project verification consists of the following four phases:
I. A desk review of the project submission form.

• A review of the data and information;
• Cross checks between information provided in the PSF /01/ and information from sources with all necessary means without limitations to the information provided by the project owner;

II. Follow-up interviews with project stakeholders
• Interviews with relevant stakeholders in host country with personnel having knowledge with the project development;
• Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project owner;

III. Reference to available information relating to projects or technologies similar projects under verification and review based on the approved methodology /B02/ being applied of the appropriateness of formulae and accuracy of calculations.
IV. The resolution of outstanding issues and the issuance of the final verification report and opinion.

The Verification team confirms the contractual relationship signed between the GCC Project Verifier, CCIPL and the Project Owner. The team assigned to the verification meets the CCIPL's internal procedures including the GCC requirements for the team composition and competence. The verification team has conducted a thorough contract review as per GCC and CCIPL's procedures and requirements.
The report is based on the assessment of the PSF /01/ undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews and stakeholder interviews, review of the applicable/applied methodology and their underlying formulae and calculations.
This report contains the findings (which need to be resolved by the PO) from the verification and a verification opinion on the proposed Project will be provided once all the raised findings are successfully resolved by the project owner to confirm the program design in the documents is sound and reasonable and meets the stated requirements and identified criteria.

Conclusion
The CDM baseline and monitoring methodology ACM0002: Grid connected electricity generation from renewable sources. Version 21.0 /B02/ has been applied to the project.
Carbon Check (India) Private Ltd. is able to conclude the verification with a positive opinion that the GCC Project Activity "Mount Coffee hydropower project" as described in the PSF (Version 7.0, dated 01/02/2024) /01/, meets all applicable GCC rules and requirements , including those specified in the Project Standard /B01-A/, applied CDM methodology, tools and guidelines from GCC (please refer to Appendix 4 for the details of the raised findings). Carbon Check (India) Private Ltd. therefore will be able to recommend the project to the GCC for registration subject to closure of all the raised findings (please refer to Appendix 4 for the details of the raised findings).

Section B. Project Verification team, technical reviewer and approver

>>

B.1. Project Verification team

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)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Project Verification findings
1.	Team Leader /technical Expert	IR	Choudhary	Aparna	CCIPL	X	X	X	X
2.	Assessor	IR	K V	Kiran	CCIPL	X	X	X	X
3.	Local Expert	ER	Toe Dahn	Mcrina	CCIPL		X	X	

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	IR	C	Indumathi	CCIPL
2	Approver	IR	Agarwalla	Sanjay Kumar	CCIPL

Section C. Means of Project Verification

C.1. Desk/document review

The project verification was performed primarily as a document review of the initial PSF/01-a/ and revised/final PSF /01-b/. The verification of information provided in the PSF was performed using the source of information provided by the project owner. 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.

List of all documents reviewed or referenced during the project verification is provided in Appendix-3.

C.2. On-site inspection

Duration of on-site inspection: 14/06/2023				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Opening Meeting and brief project description by the PO			
2.	Project implementation and legal requirements			
3.	Discussion on Monitoring plan, monitoring			

	process, operational and management structure for monitoring, and responsibility and institutional arrangement for data collection and archiving. Implementation of monitoring plan as per the Project submission Form (PSF).	Mount coffee Hydro power plant, White plains, Montserrado county, Liberia	14/06/2023	Aparna Choudhary (Team leader/Technical expert) Kiran K V (Assessor) Mcrina Toe Dahn (local expert)
4.	Discussion on Environmental Impacts, Social Impacts ,United Nations Sustainable Development Goals , and CORSIA requirements			
5.	Discussion on Baseline determination, Methodological applicability, Additionality requirement, Emission reduction calculation, Local Stakeholder Consultation			
6.	Interview with local stakeholders.			
7.	Physical site visit (to check project implementation and operation)	Mount coffee Hydro power plant, White plains, Montserrado county, Liberia	14/06/2023	Aparna Choudhary (Team leader/Technical expert) Kiran K V (Assessor) Mcrina Toe Dahn (local expert)
8.	Closing meeting	Mount coffee Hydro power plant, White plains, Montserrado county, Liberia	14/06/2023	Aparna Choudhary (Team leader/Technical expert) Kiran K V (Assessor) Mcrina Toe Dahn (local expert)

C.3. Interviews

During the on-site visit, the project site was visited and interviews with relevant stakeholders were conducted. Stakeholders include the project owners, employes and local stakeholders who attended the LSC conducted by the PO. List of interviewed personal is mentioned in the table below.

No.	Interview			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Brunner	Urs	HOI	14/06/2023	• Implementation of monitoring plan as per PSF. • Baseline determination. • Additionality requirement • Emission reduction calculation • Legal requirements. • Project implementation • Operation and management structure • Implementation of monitoring plan • Data collection and archiving, • E+, S+ and SDGs	Aparna Choudhary (Team leader/Technical expert) Kiran K V (Assessor) Mcrina Toe Dahn (local expert)
2.	B. Gaveline	Jonathan	LEC	14/06/2023		
3.	L. B Freeman	Abraham	LEC	14/06/2023		
4.	Garwoloquoi	Sam Y	LEC	14/06/2023		
5.	Sumo	Bendu	LSC attendee	14/06/2023	Local stakeholder consultation discussions, grievances,	
6.	T Bunduo	David	LSC attendee	14/06/2023		
7.	K Sumo	Harrison	LSC attendee	14/06/2023		

C.4. Sampling approach

Not applicable

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	CL01, CL02	CAR02, CAR03	
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	CL04	CAR01, CAR04, CAR05, CAR06	
- 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		CAR07	
- Baseline scenario	A_1, A_2, B_1, B_2		CAR08, CAR11	
- Demonstration of additionality including the Legal Requirements test	A_1, A_2, B_1, B_2		CAR09	
- Estimation of emission reductions or net anthropogenic removals	A_1, A_2, B_1, B_2	CL05	CAR10, CAR11. CAR12, CAR14	
- Monitoring plan	A_1, A_2, B_1, B_2		CAR13, CAR15,	
Start date, crediting period and duration	A_1, A_2, B_1, B_2		CAR16	
Environmental impacts	A_1, A_2, B_1, B_2			
Local stakeholder consultation	A_1, A_2, B_1			
Approval & Authorization- Host Country Clearance	A_1, A_2, B_1, B_2			
Project Owner- Identification and communication	A_1, A_2, B_1, B_2	CL03		
Global stakeholder consultation	A_1, A_2, B_1			
Others (Supporting documents)	A_1, A_2, B_1, B_2	CL07		
VOLUNTARY CERTIFICATION LABELS				
Environmental Safeguards (E^+)	A_1, A_2, B_1	CL06	CAR17	
Social Safeguards (S^+)	A_1, A_2, B_1			
Sustainable development Goals (SDG^+)	A_1, A_2, B_1			
Authorization on Double Counting from Host Country (only for CORSIA)	A_1, A_2, B_1			01
CORSIA Eligibility (C^+)				
Total		07	17	01

Section D. Project Verification findings

D.1. Identification and eligibility of project type

Means of Project Verification	Desk Review and on-site inspection
Findings	No findings raised
Conclusion	The Verification team reviewed the PSF /01-b/ and confirms that the Project Owner determines the type of proposed GCC project activity as Type A2. Such project activity shall have the start date of operations after 1 January 2016. The sub-type 1 under type A2 has been defined for the project activity. This This type includes existing operational projects, not submitted to any GHG Program, which have started operations after 1 January 2016. The proposed project activity has started its operations on 12/12/2016 (date of commissioning /19/, its start date of crediting period is 12/12/2016. The initial submission to the GCC program has been done on 04/07/2022 and the GSC period was from 06/02/2023 to 20/02/2023. This complies with the requirement of §11 of the

	GCC Project Standard (version 03.1) /B01-A/ and § 25 (b) of GCC Project Verification Standard (version 03.1) /B01-B/ and § 3(c) of GCC clarification no.1 (version 1.1).

D.2. General description of project activity

Means of Project Verification	Desk Review and on-site inspection
Findings	CL01, CL02, CAR02 was raised and closed successfully
Conclusion	The description of the project activity contained in the PSF /1-b/ can be considered transparent, detailed and provides a clear overview of the project (subject to revision in the PSF against the raised findings. please refer to Appendix 4 for further details of the findings). Liberia Electricity Corporation developed Mt. Coffee Hydro Power Plant (MCHPP) rehabilitation project, 2012 with the aim of rehabilitating Liberia's pre-war 64 MW power plant, which was destroyed during the civil crisis in 1990. The project consists of four new Francis turbines, each one of them having a generating unit of 22 MW each, for a total installed capacity of 88 MW and with an overall estimated average gross electricity generation of 208 GWh per year. The project verification team has confirmed the same by cross verifying the commissioning report /19/, and physical verification of project site /17/ Since, the hydropower project produces clean energy, the project activity does not involve any fossil fuel firing and hence no greenhouse gases are involved in the project activity. The power generation from the project activity replaces the equal amount of power which otherwise would have been supplied from the fossil fuel dominated grid. Estimated electricity generation and corresponding annual estimated emission reduction values are 200,000 MWh and 113,928 tCO_2e per annum respectively. The project site is located at White Plains, Montserrado County, Liberia. Geo-coordinates of the location is given below. 6°30'17" N (decimal 48.8529), 10°38'54" W (decimal 2.3499) The location of the project activity has been cross verified by the verification team with the use of remote sensing software (Google earth) and confirm that the location given by the Project Owner is appropriate. The owners of the project activities are Liberia Electricity Company, Aera Group, and Hydro Operational International SA. The letter of Authorization submitted to GCC VERIFIER/16/ is duly signed by all the PO. The technology used in the project consist of 4 unit of 22 MW New Francis Turbines manufactured by Voith Hydro. The technical specification of the project is confirmed from the technical specification document/23/ and onsite visit/17/. The project activity is the rehabilitation of an existing plant, as confirmed through various means such as site visit, discussion with the project owner, independent review (web search), review of past photographs, review of documents such as environmental permit/05/. The project has been connected to the grid and started its first delivery to the grid on 12/12/2016 and the project verification team confirms the same from commissioning report /19/. Baseline scenario for retrofit or rehabilitation or replacement of an existing power plant applies to this project which

	has been demonstrated by PO in the PSF. The same complies with the applied methodology /B02/ ACCs issued will be used to create additional revenue stream for the investment and for reducing the project financial risks and thus enabling the sustainability of the project. During the 25 years lifetime/22/, the project is expected to supply an average of 200,000 MWh electricity to India national grid per year. As stated in the PSF /1-b/, the project activity also voluntarily contributes to Environmental No-net-harm Label (E+), Social No-net-harm Label (S+) and 3 United Nations Sustainable Development Goals (SDG+). As per the PSF /1-b/, start date of the Project Activity is 12/12/2016 (commissioning date) /19/. The same is in accordance with requirements of §38 of Project Standard (version 03.1) /B01-A/. Crediting period is a fixed crediting period for the Project Activity, from 12/12/2016 to 11/12/2026 i.e., of 10 years. This is cross checked by PSF /1/ and confirms the requirement of §39 and §40 of Project Standard Version 03.1 /B01-A/. CCIPL is able to confirm that the description of the proposed Project Activity in the PSF is accurate and complete and it provides an understanding of the Project Activity.

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

D.3.1 Application of methodology and standardized baselines

Means of Project Verification	Desk Review and on-site inspection
Findings	CL04, CAR01, CAR04, CAR05, and CAR06 was raised and closed successfully
Conclusion	The CDM methodology applied is ACM0002 version 21.0 /B02/. It is to project activities that include retrofitting, rehabilitation (or refurbishment), replacement or capacity addition of an existing power plant or construction and operation of a Greenfield power plant. Applicability of the methodology has been confirmed by means of interviews with the project owner representatives, physical site visit and document review. The applied methodology is correctly quoted and is identical to the version available on the UNFCCC website. The applied version of the baseline and monitoring methodology /B02/ is valid at the time of submission of the PSF for global stakeholder consultation. All applicability criteria in the methodology are assessed in the below table:

S.N.	Applicability Condition of applied methodology ACM0002 version 21.0	Project owner justification	GCC Verifier assessment

	1.	This methodology is applicable to grid-connected renewable energy power generation project activities that: • Install a Greenfield power plant; • Involve a capacity addition to (an) existing plant(s); • Involve a retrofit of (an) existing operating plants/units; • Involve a rehabilitation of (an) existing plant(s)/unit(s); or • Involve a replacement of (an) existing plant(s)/unit(s).	The project is a rehabilitation of an existing plant, thus the methodology is applicable	Project verification team based on the on-site visit, interviews, desk review and independent research (web search) confirms that the project activity is the rehabilitation of existing plant, therefore, this applicability condition is met.	
	2.	In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Integrate BESS with a Greenfield power plant (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic1 or wind power plant(s)/unit(s) (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s) (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s)	The project activity does not involve the integration of a BESS. Thus, none of the options is applied.	GCC VERIFIER, through desk review and on-site visit assessment confirms that the project activity does not involves integration of BESS, thus this criteria is not applicable.	

	3.	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;	The hydropower plant does have a reservoir. Thus, the methodology is applicable.	Project verification team based on the on-site visit, interviews, desk review and independent research (web search) confirms that the project activity is hydropower plant with a reservoir, therefore the applicability condition is met.
	4.	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 the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	MCHPP was destroyed during the civil crisis, in 1990. The rehabilitation started in 2012. Thus the methodology is applicable.	Project verification team based on the on-site visit, interviews, desk review and independent research (web search) confirms that the project activity is the rehabilitation of existing plant, therefore, this applicability condition is met.

	5.	In case of Greenfield project activities applicable under paragraph 5 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g. by referring to feasibility studies or investment decision documents)	The project activity does not involve a greenfield project activity under paragraph 5 (a). Thus, the methodology is applicable	Project verification team based on the on-site visit, interviews, desk review and independent research (web search) confirms that the project activity is the rehabilitation of existing plant, therefore, this condition is not applicable
	6.	The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies 2 may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g. week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period.	The project activity does not involve a BESS. Thus, the methodology is applicable.	GCC VERIFIER, through desk review and on-site visit assessment confirms that the project activity does not involves integration of BESS, thus this criteria is not applicable.

	7.	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/m^2; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m^2; 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/m^2, 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/m^2; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part	The project activity results in (c) new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m2. Thus, the methodology is applicable.	PO in the PSF has demonstrated that the power density of the project activity arising due to the creation of new single or multiple reservoir is more than 4 W/m2. Therefore, the applicability condition has been met.	

			of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m^2 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.		
		8.	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 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	The project is a rehabilitation project, and does involve capacity addition, thus the methodology is applicable.	Project Verifier team based on review of the PSF and interview with the Project owner conforms that the project activity does not involve integrated hydro power plant/05/, thus, this condition shall not apply.	

	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		
6	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 does not involve switching from fossil fuels to renewable sources at the site of the project and is not a biomass fired power plant , thus the methodology is applicable.	Through desk review and on-site visit assessment, GCC VERIFIER confirm s that the project activity does not involve switching from fossil fuels to renewable energy sources and is not a biomass fired power plant. Thus the applicability condition has been met.
7	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	The most plausible 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, thus the methodology is applicable.	The project verification team based on the review of the section B.4 of the PSF, confirms that the PO identified the plausible baseline scenario as "continuation of the current situation, that is to

	project activity and undertaking business as usual maintenance".		use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance"". Thus, the applicability condition has been met.

Applicability of Tool 1; Tool for the demonstration and assessment of additionality version 7.0

Applicability criteria	Justification in the PSF	GCC Verifier assessment
The use of the methodological tool "Tool for the demonstration and assessment of additionality" is not mandatory for project participants when proposing new methodologies. Project may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.	The project does not propose a new methodology.	Project owner does not propose a new methodology,
Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.	The tool is mentioned in methodology ACM0002	The tool is mentioned in methodology ACM0002 version 21.0

Applicability condition of tool 2: Combined tool to identify the baseline scenario and demonstrate additionality.

Applicability criteria	Justification in the PSF	GCC Verifier assessment
The tool is applicable to all types of proposed project activities. However, in some cases, methodologies referring to this tool may require adjustments or additional explanations as per the guidance in the respective methodologies. This could include, inter alia, a listing of relevant alternative scenarios	As per ACM0002 v21.0 "The condition in TOOL02 that all potential alternative scenarios to the proposed project activity must be available options to project participants; does not apply to this	As per para 25 of applied methodology ACM0002 version 21.0, the identification of baseline scenario has to be demonstrated through the use of tool 02. PO has used tool 02 for the identification of

	that should be considered in Step 1, any relevant types of barriers other than those presented in this tool and guidance on how common practice should be established.	methodology, as this methodology only refers to some steps of this tool.". The steps used in ACM0002 from tool2 are those used for the project activity. Thus the project activity is compliant with applicability criteria.	baseline scenario. The applicability condition has been met

Applicability conditions of tool 7:"Tool to calculate the emission factor for an electricity system"

Applicability criteria of the tool 7, Version 7.0	Justification in the PSF	GCC Verifier assessment
The tool lists the following applicability criteria: (a) 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 (e.g. demand-side energy efficiency projects).	OM, BM and CM are calculated using simplified combined margin emission factor approach for isolated grid system' §6.6.3.2.1. Case 1: "Isolated grid system with only liquid fuel power plant", as Monrovia 'city-level' electricity system supplying electricity to household users, industries and commercial areas is not connected to any other electrical network (e.g. national/regional or interconnected power system) and only spans about 30km in extent. The project activity provides electricity to the grid. Thus applicable	The emission factor of the grid system has been calculated using the Tool 07 version 7.0. Detailed assessment of the emission factor calculation is provided in section D.3.4 of this report. GCC VERIFIER confirms that the applicability condition has been 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, the conditions specified in "Appendix 2: Procedures related to off-grid power generation" should be met.	The emission factor for this project activity includes grid power plants only. Simplified combined margin emission factor approach for isolated grid system' §6.6.3.2.1.	It has been observed that the emission factor of only the grid connected power plant is calculated. The applicability condition has bee 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.	Case 1: "Isolated grid system with only liquid fuel power plant" of the latest version of the "TOOL07: Tool to calculate the emission factor for an electricity system" (t CO2/MWh) Option 2 is applied.	
	(c) 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 not located in an annex 1 country.	The project activity is situated in Liberia, which is not an annex 1 country.
	(d) Under this tool, the value applied to the CO2 emission factor of biofuels is zero.	No biofuels are used.	The project activity is the rehabilitation of the hydro power plant, and no biofuels are used.

Applicability conditions of Tool 23: Additionality of first-of-its-kind project activities

Applicability criteria of the tool TOOL 23	Justification in the PSF	GCC Verifier assessment
This methodological tool is applicable to project activities that wish to use the "first-of-its kind" approach to demonstrate additionality and that use versions of baseline and monitoring methodologies, or the "Tool for the demonstration and assessment of additionality" or the "Combined tool to identify the baseline scenario and demonstrate additionality", which allow using the "first-of-its-kind" approach for demonstrating additionality.	*The project activity uses the "Tool for the demonstration and assessment of additionality", thus the methodological tool 23 is applicable.*	As per the requirement provided in the Tool 01, it was found that the project is a 'first-of its kind". Therefore the use of this tool is applicable.

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

Means of Project Verification	Not applicable	Desk
Findings	No findings	
Conclusion	Not applicable	

D.3.3 Project boundary, sources and GHGs

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR07 was raised and closed successfully
Conclusion	According to the approved baseline and monitoring methodology "ACM0002: Grid connected electricity generation from renewable sources. Version 21.0/B02/, the project boundary is "the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the GCC project power plant is connected to". The physical boundary of the project activity identified by the project owner has been cross-verified by site visit observation /17/ and document reviews.

D.3.4 Baseline scenario

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR08 and CAR11 was raised and closed successfully
Conclusion	As per ACM0002 v21.0 methodology, the baseline scenario for retrofit or rehabilitation or replacement of an existing power plant shall be identified as per the following step wise procedure: Step 1: Identification of alternatives to the project activity consistent with current laws and regulations. Sub-step 1a:identification of alternative scenarios to the proposed GCC project activity: The project activity is to distribute clean and renewable energy to households in different parts of the country. The alternatives to the project activity identified by PO in the PSF/01-b/ are (a) P1: The proposed project activity undertaken without being registered as a GCC project activity; (b) P2: The continuation of the current situation, that is to use all power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance. The additional power generated under the project would be generated in existing and new grid-connected power plants in the electricity system. (C) P3: Other plausible and credible alternative scenarios to the project activity scenario, including the common practices in the relevant sector, which deliver the same output considering examples of scenarios identified in the underlying methodology where relevant: The common practice in Liberia is the use of fossil fuels for energy generation. Indeed, apart from Mount Coffee hydro power plant, the country uses mainly heavy fuel oil (HFO) and high speed Diesel (HSD) generator plants. Without this large-scale project, Liberia's will not be able to meet the goal of 300 MW and serve 1 million customers, connecting 70% of the population in Monrovia and providing access to 35% of the rest of Liberia by 2030.[5] In other words, the country would have to increase the use of fossil fuels in order to meet these. Thus, the other plausible credible alternative scenario would be the increase of fossil fuel consumption.

[5] https://www.usaid.gov/powerafrica/liberia

	The identified alternatives are in line with the methodology. It has been observed that the common practice is the production of electricity through fossil fuels/28/29/. Therefore, the alternatives P1, P2, and P3 identified can be considered to be appropriate. Sub-step 1b: Consistency with mandatory laws and regulations: GCC verifier, based on the review of the PSF/01-b/ and independent research confirms that there are no policies in host country to regulate fossil fuel usage. Step 2: Barrier Analysis PO has identified technological barriers which hinders the operation of the project activity in the host country. The project activity is the first of its kind in the country and is the only renewable energy producing facility, and along with the unavailability of skilled or properly trained labour causes the technological barrier. The alternative P1(The proposed project activity undertaken without being registered as a GCC project activity) can be eliminated as it is prevented by the technological barrier. The other two alternatives (P2, and P3) does not have any technological barrier and therefore can be considered as plausible alternatives. Since there are multiple alternatives after excluding the proposed project activity undertaken without being registered as a CDM project activity from the list and which can only be provided by the PO, therefore the remaining alternative has been considered as the baseline scenario. PO has calculated the grid emission factor as the baseline scenario and the calculation of emission factor provided in the PSF/01-b/ is in accordance with the tool 07 version 07.0. The assessment of step wise calculation of grid emission factor is as follows. Step 1: Identify the relevant electricity systems: The small electricity grid operated by Liberia electricity corporation is considered as the electricity system. Apart from the project activity, other power plants connected with the electricity system are 10 MW-World Bank HFO Plant, 18 MW- Government of Liberia HFO Plant, 10 MW – Japanese Int'l Cooperation Agency HFO Plant, and 9 MW – Bushrod HSD. Step 2: Choose whether to include off-grid power plants in the project electricity system (optional); PO has chose to include only grid connected pow plants Step 3: Select a method to determine the operating margin (OM); Due to the unavailability of the information regarding total fuel consumption, PO has opted to calculate the combined margin using para 6.6.3.2.1 of tool 07 version 07.0 and therefore the value of OM and BM has been set to default. (please refer to CAR11 for further details) Step 4: Calculate the operating margin emission factor according to the selected method; As per § 6.6.3 of Tool 07, Case 1, Option 2: Use 0.79 tCO_2/MWh as OM emission factor. Step 5: Calculate the build margin (BM) emission factor; As per § 6.6.3 of Tool 07, Case 1, Option 2: 0.58 tCO_2/MWh as BM emission factor Step 6: Calculate the combined margin (CM) emission factor: As per § 6.6.3 of Tool 07, Case 1, Option 2, estimate weighted average CM following procedure provided under section 6.6.1:

	$EFgrid,CM,y = EFgrid,OM,y \times wOM + EFgrid,BM,y \times wBM$ Where: $EFgrid,BM,y$ = Build margin CO2 emission factor in year y (t CO2/MWh) $EFgrid,OM,y$ = Operating margin CO2 emission factor in year y (t CO2/MWh) wOM = Weighting of operating margin emissions factor (per cent) wBM = Weighting of build margin emissions factor (per cent) With the following default values being used for wOM and wBM: (b) All other projects: wOM = 0.5 and wBM = 0.5 for the first crediting period. $EFgrid,CM,y$ = 0.79 * 0.5 + 0.58 * 0.5 = 0.685 tCO_2/MWh. Thus, the applicable emission factor for the project activity is 0.685 tCO_2/MWh

D.3.5 Demonstration of additionality

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR 09 was raised and closed successfully.
Conclusion	In accordance with ACM0002 version 21.0, the additionality of the project activity is demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality", here version 07.0. As mentioned in para 5.3.2 of applied methodology ACM0002 version 21.0, the additionality of the project activity has been demonstrated through the use of Tool 01. PO has followed the methodology procedure for the demonstration of additionality as given in section 4 of CDM tool 01: Tool for the demonstration and assessment of additionality Version 07.0.0. The proposed project activity is first of its kind in the applicable geographical region, therefore step 0 of Tool 01 has been applied and in cognizance with section 5.1 of CDM Tool 23: Additionality of first of its kind project activities version 3.0, PO has demonstrated that the project activity is firs of its kind as per the step below. Step 0: Demonstration whether the proposed project activity is the first-of its-kind Based on the latest version of the tool 23 "tool for the additionality of first-of-its-kind project activities" –Version 03.0, the project activity is the first of its kind in the applicable geographical area as it meets the different criteria. (a) The project is the first in the applicable geographical area that applies a technology that is different from technologies that are implemented by any other: In fact, the project is a switch in technology, being the first large scale Hydro Power Plant in Liberia, as it was declared by Liberia Electricity Corporation (LEC): "Since the Mount Coffee HPP will be the largest generating facility in Liberia for years to come, it will be heavily depended upon to have high reliability and to provide frequency and load control for LEC's system " b) The project implements one or more of the measures: "Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies (example: energy efficiency improvements, power generation based on renewable energy)" (c) The project participants selected a crediting period for the project activity that is "a maximum of10 years with no option of renewal": Based on the review of the supporting documents published by Liberian government

	(Liberia's First Biennial Update Report to UNFCCC)/28/ and World bank (Liberia Electricity Sector Strengthening and Access Project (LESSAP) (P173416))/29/ and other articles published by LEC itself/30-a/ and other authors/30-b/30-c/ has been reviewed to confirm that Mount Coffee Hydro power project is the first large scale hydropower project in the country. Other supporting documents provided by PO such as LEC generation data/25/ has been reviewed to confirm that Mount Coffee Hydro Power Project is the only large-scale hydro power project in the country used for electricity generation. GCC VERIFIER through the assessment of the supporting documents provided by PO/28/29/31/ and through thorough independent web search considering credible sources/30/ confirms that the project activity Mount coffee Hydro Power Project is the firs of its kind in the country. Thus, as a first-of-its-kind, the project is deemed additional.

D.3.6 Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR10, CAR11, CAR12, CAR14 was raised and closed successfully.
Conclusion	Baseline Emission According to ACM0002 version 21.0, emission reductions related to project activities is estimated as follows: ERy=BEy - PEy Where: ERy = Emission reductions in project year y (t CO_2/yr) BEy = Baseline Emissions in project year y (t CO_2/yr) PEy = Project emissions in project year y (t CO_2/yr) $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ Where: BE_y = Baseline emissions in year y (t CO_2/yr) $EG_{PJ,Y}$= Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh/yr) $EF_{grid,CM,y}$ = Combined margin CO_2 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 CO_2/MWh) $EG_{PJ,y\ for}$ retrofit and rehabilitation or replacement of an existing renewable energy power plant is calculated through following equation $EG_{PJ,y}=EG_{facility,y}-(EG_{historical}+\sigma_{historical});until\ DATE_{BaselineRetrofit}$ Where: $EGPJ,y$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EGfacility,y$ = Quantity of net electricity generation supplied by the project plants/units to the grid in year y (MWh/yr)

	$EGhistorical$ = Annual average historical net electricity generation delivered to the grid by the existing renewable energy power plants/units that was operated at the project site prior to the implementation of the project activity (MWh/yr) $\sigma historical$ = Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy power plants/units that was operated at the project site prior to the implementation of the project activity (MWh/yr) $DATEBaselineRetrofit$ = Point in time when the existing equipment would need to be replaced in the absence of the project activity (date). This only applies to retrofit As per the para 50 of methodology, In case of rehabilitation where the power plant/unit did not operate for last five calendar years before the rehabilitation starts, EGhistorical is equal to zero. Therefore $EG_{PJ,Y} = EG_{facility,y}$ Project Emissions (PEy) $PEy = PEFF,y + PEGP,y + PEHP,y + PEBESS,y$ Where: PEy = Project emissions in year y (t CO_2e/yr) $PEFF,y$ = Project emissions from fossil fuel consumption in year y (t CO_2/yr) $PEGP,y$ = Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO_2e/yr) $PEHP,y$ = Project emissions from water reservoirs of hydro power plants in year y (t CO_2e/yr) $PEBESS,y$ Project emissions from charging of a BESS using electricity from the grid or from fossil fuel electricity generators (t CO_2e/yr). For the project activity, only PEHPy is considered section 5.4.3 Emissions from water reservoirs of hydro power plants (PEHP,y) is applied. The power density (PD) of the project activity is calculated as follows: Where: PD = Power density of the project activity (W/m2) CapPJ = Installed capacity of the hydro power plant after the implementation of the project activity (W) CapBL = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero APJ = Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m2) ABL = Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m2). For new reservoirs, this value is zero. Installed capacity is 88,000,000 W and reservoir area when the reservoir is full is 13,800,000 m2 . Therefore, the resulting power density is: 88000000 W/ 13800000 m2 = 6W/m2. As the power density is greater than 4 W/m2 and less than 10 W/m2, then project emissions are calculated using equation (9) as follow:

(b) If the power density of the project activity using equation (7) or in case of integrated hydro power project using equation (8) is greater than 4 W/m2 and less than or equal to 10 W/m2:

$$PE_{HP,y} = \frac{EF_{Res} \times TEG_y}{1000}$$

Where:
$PEHP,y$ = Project emissions from water reservoirs (t CO_2e/yr)
$EFRes$ = Default emission factor for emissions from reservoirs of hydro power plants (kg CO_2e/MWh)
$TEGy$ = Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh)

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
12/12/2016 - 31/12/2017	82,829	10,883	0	71,946
2018	123,638	16,244	0	107,393
2019	125,837	16,533	0	109,304
2020	148,965	19,572	0	129,393
2021	152,852	20,083	0	132,769
2022	137,000	18,000	0	119,000
2023	137,000	18,000	0	119,000
2024	137,000	18,000	0	119,000
2025	137,000	18,000	0	119,000
01/01/2026- 11/12/2026	129,493	17,0144	0	112,479
Total	1,311,613	172,328	0	1,139,285
Total number of crediting years	10			
Annual average over the crediting period	131,161	17,233	0	113,928

The emission reduction calculation provided in PSF/01-b/ has been cross checked with he ER sheet/02-b/ provided and is found to be consistent.

GCC VERIFIER confirms that all the equations and assumptions used in the ex ante emission reduction calculation has been applied in accordance with he applied methodology/B02/.

D.3.7 Monitoring plan

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR13 and CAR15 was raised and closed successfully.
Conclusion	The approved baseline and monitoring methodology ACM0002 version 21.0/B02/ has been applied. The monitoring plan is in accordance with the monitoring

methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions. CCIPL project verification team has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant to the project activity have been found in the plan.

CCIPL confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed GCC project activity can be reported ex post and verified.

Parameters available at the time of project verification (ex-ante) (Mention under section B.6.2 of the PSF) are:

Parameter	Value	Unit	Assessment
EFgrid,y: CO_2 emissions factor of the grid electricity in year y	0.685	tCO_2e/kWh	The emission factor calculation provided in PSF/01-b/ is found to be consistent with the ER sheet/02-b/ and is quantified in accordance with applied methodology/B02/ and Tool 07 version 07.0
EFgrid,OM,y: Operating margin CO_2 emission factor for the project electricity system in year y	0.79	tCO_2e/kWh	The emission factor calculation provided in PSF/01-b/ is found to be consistent with the ER sheet/02-b/ and is quantified in accordance with applied methodology/B02/ and Tool 07 version 07.0
EFgrid,BM,y: Build margin CO2 emission factor for the project electricity system in year y	0.58	tCO_2e/kWh	The emission factor calculation provided in PSF/01-b/ is found to be consistent with the ER sheet/02-b/ and is quantified in accordance with applied methodology/B02/ and Tool 07 version 07.0

CapBL: Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero	88,000,000	W	The installed capacity has been cross checked with the commissioning certificate/19/ and other relevant documents/05/21/23/ to verify the value of the parameter and is found to be consistent
ABL: Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m2). For new reservoirs, this value is zero.	0	m^2	The value has been considered to be 0 as default. Based on the review of the documents/05/27/ and on-site visit assessment, it is confirmed that there was no reservoir prior to the operation of the project activity.

Parameters that will be monitored (ex-post) (Mention under section B.7.1 of the PSF are:

Parameter	Value	Unit	Assessment
$EG_{PJ,Y}$ (Quantity of Net Electricity supplied by the project plant/unit to the grid in year y)	200,000	MWh	The estimated net electricity generated is given, however, the value for the parameter will be verified through review of on-site meter reading records. Project verifier during the on-site visit assessment has confirmed the presence of the electricity meters with serial number given blow in the site which is used as the source of electricity generation data. . SN°#1: 5075851 SN°#2: 5075852 SN°#3: 5075853 SN°#4: 5914435 Based on the review of the Electricity distribution code/24/ published by

				Liberia Electricity Regulatory commission, the calibration frequency is found to be in every 10 years and the last calibration was performed on 24/07/2017 which has been confirmed based on the review of calibration certificates/06/ Since Mount coffee Hydro power plant is operated by Liberia Electricity Corporation, LEC itself is the buyer and seller and therefore monthly electricity generation records is considered as the source of this parameter.
	TEGy: Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y	200,000	MWh/year	The estimated net electricity generated is given, however, the value for the parameter will be verified through review of on-site meter reading records.
	CapPJ: Installed capacity of the hydro power plant after the implementation of the project activity	88,000,000	W	ESMP report provided by PO/04/ has been reviewed and the consistency of the value with its source has been confirmed.
	APJ: Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full	13,800,000	m^2	The area of the reservoir used for the calculation of project emission will be monitored and provided during emission reduction verification. PO has provided the reservoir profiling document/32/ and the value provided in ESMP report/04/ is found to be consistent with the value provided In the PSF/01-b/
	For Parameters to be monitored for E+/S+ assessments and SDG labels (positive impacts)			
	CO2 emissions	NA	GHG emission reduction (Tonnes of CO2e / Yr.)	Emission reduction achieved due to the implementation of project activity that would have been otherwise be emitted by fossil fuel-based power plants. Electricity generation of the

				project activity will be continuously measured The CO_2 emission reduction is calculated by multiplying the emission factor of the Grid with the net electricity supplied by the project activity to the grid.
	Replacing fossil fuels with renewable sources of energy	NA	MWh delivered to the grid	Emission reduction achieved due to the implementation of project activity which is a renewable energy source that would have been otherwise be emitted by fossil fuel-based power plants. Electricity generation of the project activity will be continuously measured
	Long-term jobs (> 10 year) created/ lost	NA	Number of permanent jobs created	GCC verifier Through interviews and desk review of employment records/09/ confirm that long term employment has been provided during the operational phase of the project activity. Therefore +1 scoring is given to the social impact. Number of recruited staff during operation will be monitored on annual basis.
	New short-term jobs (< 1 year) created/ lost	NA	Number of temporary jobs created during operation	GCC verifier Through interviews and desk review of employment records/09/ confirm that short term employment has been provided during the operation phase of the project activity. Therefore +1 scoring is given to the social impact. Number of recruited staff during operation will be monitored on annual basis.
	Sources of income generation increased / reduced (SJ03)	NA	Number jobs opportunities created during construction and operation phase.	GCC verifier Through interviews and desk review of employment records/09/ confirm that through short term and long term employment opportunity has been provided during the construction and operation phase of the project activity. Therefore +1 scoring is given to the social impact. Number of recruited staff during operation will be monitored on annual basis.
	Specialized training / education to local personnel (SE01)	NA	Number of trained workers in HSE field	GCC verifier through interviews and desk review of training records/11/ confirms that several trainings such are provided to the workers at the project site. Therefore +1 scoring is given to the social impact. The Number of recruited staff trained during the operational phase will be monitored on annual basis. Therefore +1 scoring is given to social safeguard

	Data and parameters to be monitored for E+/S+ assessments (negative impacts)

Water Discharges (EA10)	NA	Quantity of environmental flow (m3/s) released.	The minimum flow maintained will be recorded and provided for verification.
Solid waste Pollution from Hazardous wastes(EL02)	NA	Hazardous waste management	The hazardous waste will be separated and disposed off properly which can be verified through the HSE reports.
Reducing work accidents during operation phase	NA	Number of accidents occurred	The number of accidents occurred will be monitored.
Managing of solid waste created during operation phase	NA	waste management	The solid waste created during the operational phase will be monitored and provided for verification
Soil erosion	NA	Revegetation level	The soil erosion occurs due to fluctuating water level during operation will be recorded and provided for verification
Protecting/ enhancing species diversity (ENR03)	NA	Presence of species and number of fishermen	Fisheries management practices will be monitored and provided for verification
Disease prevention	NA	Monitoring records	The disease and health protection activities such as rehabilitation of clinics, provision of equipment, mosquito nets and sprays distribution records will be monitored and provided for verification.

The monitoring plan content has been checked in the project activity and compared against the requirements of the monitoring methodology /B02/. It has been confirmed by the verification team that the monitoring plan, procedures, roles and responsibilities provided in the PSF is deemed to be feasible.

D.4. Start date, crediting period and duration

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR16 was raised and closed successfully.
Conclusion	The start date of the project is 12/12/2016, which is the start date of commercial operation of the project /19/. Crediting period has been chosen as fixed 10 years from 12/12/2016 to 11/12/2026. A fixed crediting period of length of 10 years has been selected by project proponent. Therefore, the duration of the crediting period is from 12/12/2016 to 11/12/2026. Technical lifetime for the project activity is 25 years /23/. The project verification team concludes that the duration of the proposed project activity is in conformance with the requirements of §39 and §40 of GCC Project Standard, version 03.01 /B01-A/.

D.5. Environmental impacts

Means of Project Verification	Desk Review and on-site inspection
Findings	No findings
Conclusion	The Government of Liberia received funds in 2011 from the European Investment Bank to facilitate the preparation of the Environmental and Social Impact Assessment (ESIA), the Environmental and Social Management Plan (ESMP) and the Resettlement Action Plan (RAP) for the Project, ahead of the confirmation of financing. Positive Impacts The Mount Coffee Hydropower Project generates a number of economic and developmental benefits at both the macro-economic level and the local level. The key macro-economic benefits that are expected include: • Generation of jobs • Possible improvement of commercial activities. • Provision of light and improvement of operation of some social infrastructure by connecting to electricity, e.g. schools, clinics, etc. • Possibility of starting other economic activities than faming. • Improvement of security in the area due to lighting. • Eventual improvement of domestic water with possibility of people now getting piped water. Adverse Impacts Adverse impacts on the bio-physical and social environment will be experienced during the construction and operation phase of the project implementation. Environmental Management Plan The study has developed an Environmental Management Plan (EMP) outlining the areas of consideration though most if not all have been covered in the management measures outlined after discussion of the impacts. Overall, the project is environmentally feasible and sound with few potential negative impacts, which can be minimized or completely mitigated through incorporation of corrective, rehabilitation, restoration and instituting of appropriate mitigation measures. These have been integrated into the project decision making level so as to ensure that the project designs take into consideration all the highlighted aspects of this study. The information presented in this environmental project report where approved will form basis for the final design stage of the project. The project will benefit the local people by engaging them in construction, operation and maintenance activities during the project. The verification team also confirm that the project owner has taken all the necessary legal approvals from the government and other parties to implement the project activity.

D.6. Local stakeholder consultation

Means of Project Verification	Desk Review and on-site inspection
Findings	No findings
Conclusion	It has been indicated in the PSF /1-b/ that the local stakeholder consultation has been done for the project activity from 23/02/2012 to 28/10/2012 at the project site. That is before the commissioning of the project activity. The meeting announcement was done by putting public notice at project site/nearby village. The same covers meeting location, date, time, and contact information. A summary of

	comments has been provided by project owner in the PSF/1-b/ and it is found that no adverse comment was received for the project activity. This has also been verified by CCIPL project verification team during site visit /17/. Further, the interviews confirmed that there was no adverse comment about the project and this project will lead to employment generation and better environmental conditions. The mechanism of grievance redressal has been provided in the PSF and ongoing communication mechanism is confirmed to be in place. CCIPL considers the local stakeholder consultation carried out adequately and can confirm that the process is inline with the requirements of GCC.

D.7. Approval and Authorization- Host Country Clearance

Means of Project Verification	Desk Review and on-site inspection
Findings	FAR01 has been raised
Conclusion	The verification team confirms that no HC approval is required by the CORSIA labelled project activity till 31/12/2020, and the HCA will be required during the first or subsequent verification

D.8. Project Owner- Identification and communication

Means of Project Verification	Desk Review and on-site inspection
Findings	CL03 was raised and closed successfully.
Conclusion	

Organization name	Aera Group
Country	France
Address	28 cours Albert 1er 75008 Paris
Telephone	+33 6 42 96 09 78
Fax	-
E-mail	a.lepage@aera-group.fr
Website	www.aera-group.fr/
Contact person (primary contact)	Aurélie Lepage

Project Owner name (as per LON/LOA)	**Liberia Electricity Corporation**
Country	Liberia
Address	P.O Box 10 – 165 Waterside 1000 Monrovia, 10
Telephone	+231-777999990),
Fax	-
E-mail	mcaptan@lecliberia.com
Website	**https://lecliberia.com/**
Contact person	Monie Captan

Project Owner name (as per LON/LOA)	**Hydro Operation International SA**
Country	Switzerland
Address	4 Place St-François 1003 Lausanne
Telephone	+41 79 369 2709
Fax	-
E-mail	ubrunner@hydroperation.ch

	Website https://www.hydroperation.ch/ **Contact person** Urs Brunner This is in compliance with the Para 10 (i) of the Project Standard Version 3.1. The information and contact details of the representation of the project owner and project owners themselves has been appropriately incorporated in Appendix 1 of the PSF which was checked and verified by the verification team from Authorization letter signed by the project owners. All information was consistent between these documents. The project verification team thus confirmed the legal ownership of the wind project activity. The project verification team has checked the LOA /16/ submitted by the client and confirms that Aera group is the authorized external representative of proposed project activity developed Liberia electricity corporation, Hydro operations international and aera group.

D.9. Global stakeholder consultation

Means of Project Verification	Desk Review and on-site inspection
Findings	No findings
Conclusion	The process for global stakeholder consultation was conducted in accordance with the requirements of section 3.2.4 of the Verification Standard (version 03.1) /B01-B/. The PSF was published for global stakeholder consultation from 06/02/2023 to 20/02/2023.During the above period no Global stakeholders' comments were received.

D.10. Environmental Safeguards (E+)

Means of Project Verification	Desk Review and on-site inspection
Findings	CL06, CAR17 was raised and closed successfully.
Conclusion	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 to the environment due to the project implementation were identified and the following environmental impacts were considered for the project activity. (a) Environment – Air; CO2 emissions The project is expected to reduce the CO2 emission throughout the crediting period. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team. (b) Environment – Water discharge (EA10) A minimum of 8 m^3/s of flow rate should be maintained. The flow records will be recorded. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team. (c) Environment – Land; Solid waste pollution from hazardous waste (EL02) Waste generated in the project site will be separated and hazardous waste will be disposed off as per Liberia waste management standards regulations. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the

	monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team. (d) Environment – Land; Soil erosion The project activity may cause increased rate or erosion due to fluctuating water level during operation. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team (e) Environment – Land; waste management: The solid wate created during the operation phase of the project activity will be tracked by LEC and managed appropriately. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team. (f) Environment – Natural Resources; Protecting/enhancing species diversity The fish caught by the fisherman will be monitored for providing a monitoring procedure. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team (g) Environment – Natural Resources; Replacing fossil fuels with renewable source of energy in absence of the project activity, the equivalent amount of electricity would be generated from the operation of grid-connected power plants, which is GHG intensive. The project activity generates and supplies renewable Wind sourced based electricity to the grid, where it replaces fossil fuel source-based electricity, thus the project activity is unlikely to cause any harm and is assessed as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team. Additional assessment is provided in appendix 5 of this document The verification team confirm that the project activity will not cause any net harm to the environment and net score for project activity comes out to be +7

D.11. Social Safeguards (S+)

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR17 was raised and closed successfully.
Conclusion	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 to the Society due to the project implementation were identified and the following have been indicated as positive impacts. The verification team based on the review of the PSF and the supporting document confirms that the social impacts mentioned in the section E.2 of the PSF is applicable to the Project activity and the monitoring procedures of the parameters are provided. (a) Social -Jobs; Long term jobs (> 1 year) created/lost The project activity leads to employment generation in long term over a period of 10 years during the operation. Employment records can be verified during the emission reduction verification. The same could be verified with the human resource records of the project owner during emission reduction verification. Therefore, DO NO Harm

	Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team (b) Social -Jobs; Short term jobs (> 1 year) created/lost The project activity leads to employment generation in short term during operation. Employment records can be verified during the emission reduction verification. The same could be verified with the human resource records of the project owner during emission reduction verification. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team (c) Social -Jobs; Sources of income generation increased / reduced The project activity leads to creating local employment generation in the project region. It creates the additional sources of income for the people employed for the project activity. Employment records, services contacts/job contracts can be verified during the emission reduction verification. The same could be verified with the human resource records, purchase department records of the project owner during emission reduction verification. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team (d) Social-Health and Safety: Disease prevention PO intent to prevent communicable disease before and during the construction phase and operational phase in the local population and workforce. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team. (e) Social-Health and Safety: Reducing/Increasing incidents During construction and operational phase, the training on health and safety requirements including the trainings related to working at heights will be imparted.. The safety and accident prevention training records can be verified during emission reduction verification. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team (f) Social—Education; Specialised training/education to local personnel: The project owner provides job related training for the special positions, which will be monitored on a continues basis. Therefore, DO NO Harm Risk assessment is evaluated as harmless. However, based on the monitoring approach adopted by the project owner, the scoring is +1. This is accepted by the project verification team. Additional assessment is provided in appendix 6 of this document. Verification team will be able to confirms that Project activity will not cause any net harm to the society and net score for project activity comes out to be +6.

D.12. Sustainable development Goals (SDG+)

Means of Project Verification	Desk Review and on-site inspection
Findings	No findings
Conclusion	The Project owner has chosen to apply for the United Nations Sustainable Development Goals (S+). The assessment of the impact of the project activity on the

	SDG's has been carried out in section F of the PSF. The project is expected to contribute 3 SDGs which are SDG 7,8 and 13. The verification team confirms that the SDG chose by the project owner is in compliance with the GCC Project sustainability standard V.3.1 and is applicable to the Project activity and the monitoring procedure of each SDG is given in section F and B.7.1 of the PSF. UN- level SDGs **(a) Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all** The project activity that commissioned on 31/12/2016 continues to provide clean energy to the global energy mix, annually generating around 200 GWh of renewable energy using Wind energy thereby complying with the SDG target 7.2. **(b) Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all** The project activity is found to be generating employment during construction and operational phase, thereby complying to the SDG target 8.6 and 8.8. **(c) Goal 13. Take urgent action to combat climate change and its impacts.** The project activity reduces greenhouse gas annually by 113,928 tCO_2e meeting the SDG target 13.2 and 13.3. Additional assessment is provided in appendix 7 of this document.

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

Means of Project Verification	Desk Review and on-site inspection
Findings	FAR 01 has been raised
Conclusion	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 12/12/2016 to 11/12/2026. The host country attestation is yet to be obtained for authorization on double counting. The project activity is neither registered nor seeking registration in any carbon offsetting program; hence the approved carbon credits (ACCs) from this project activity shall not be double counted.

D.14. CORSIA Eligibility (C+)

Means of Project Verification	Desk Review and on-site inspection
Findings	CAR03 was raised and closed successfully.
Conclusion	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.

Section E. Internal quality control

The Final Verification report has undergone a technical review and quality review before being submitted to the project owner. A technical reviewer is qualified in accordance with CCIPL's qualification scheme for GCC verification performed the technical review.

Section F. Project Verification opinion

CCIPL was contracted by Liberia electricity corporation for project verification of the project activity “Mount Coffee hydropower project”. The project verification was performed based on rules and requirements defined by GCC for the project activity.

The project activity is a hydropower plant, which results in reductions of CO_2e emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario and the emission reductions attributable to the project are, hence, additional to any that would occur in the absence of the project activity. The project correctly applies the approved baseline and monitoring ACM0002 version 21.0 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 113,928 tCO_2e/year over the 10 years crediting period starting from 12/12/2016 to 11/12/2026.

CCIPL has informed the project owners of the project verification outcome through the draft project verification report and final project verification report. The final project verification report contains the information with regard to fulfilment of the requirements for project verification, as appropriate.

CCIPL applied the following verification process and methodology using a competent verification team;

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

Carbon Check (India) Private Limited (CCIPL) has verified and hereby certifies that the GCC project activity “Mount Coffee hydropower project”

(a). has correctly described the Project Activity in the Project Submission Form (version 7.0, dated 01/02/2024) including the applicability of the approved methodology ACM0002 version 21.0 and meets the methodology applicability conditions, is additional 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 reduction estimates correctly and conservatively.

(b). is likely to generate GHG emission reductions amounting to the estimated 113,928 tCO_2e annually 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;

(c.) 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

(d). is likely to contribute to the achievement of United Nations Sustainability Development Goals (SDGs), comply with the Project Sustainability Standard, and contribute to achieving a total of 3 SDGs, which is likely to achieve the Diamond SDG certification label (SDG+)

e. 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 Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology for SSC Projects
BE	Baseline Emission
BM	Build Margin
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Limited
CDM	Clean Development Mechanism
CH_4	Methane
CL	Clarification Request
CLSG	Côte d'Ivoire, Liberia, Sierra Leone and Guinea
CM	Combined Margin
CO_2	Carbon dioxide
CP	Crediting Period
DR	Desk Review
EIA	Environmental Impact Assessment
ERVR	Emission Reduction Verification Report
ERVT	Emission Reduction Verification Team
ESMP	Environment and Social Management Pln
FAR	Forward Action Request
GCC	Global Carbon Council
GHG	Green House Gas
GW	Giga Watt
GWh	Giga Watt hour
HOI	Hydro Operation International
IPCC	Intergovernmental Panel on Climate Change
kW	Kilo Watt
KWh	Kilo Watt hour
LEC	Liberia Electricity Corporation
LOA	Letter of Authorization
LSC	Local Stakeholder Consultation Process
MCHPP	Mount Coffee Hydro Power Project
MoV	Means of Verification
MP	Monitoring Plan
MW	Mega Watt
MWh	Mega Watt hour
OM	Operating Margin
PSF	Project Submission Form
PE	Project Emission
PLF	Plant Load Factor
PMR	Project Monitoring Report
PO	Project Owner
PSF	Project Submission Form
RAP	Resettlement Action Plan
RFR	Request for Registration
SDG	Sustainable Development Goal
tCO_2e	Tonnes of Carbon dioxide equivalent
TPH	Tonnes Per Hour

UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VS	Verification Standard

Appendix 2. Competence of team members and technical reviewers

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Aparna Choudhary

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☐ Technical Reviewer	☐ Health Expert	☐ Gender Expert	☐ Plastic Waste Expert
☐ CCB Expert	☐ Legal Expert	☐ Financial Expert	☐ Environmental, Health and Safety financial matters
☒ SDG+	☒ Social no-harm(S+)	☒ Environment no-harm(E+)	
☒ Local Expert for India			

in the following Technical Areas:

☒ TA 1.1	☒ TA 1.2	☐ TA 2.1	☒ TA 3.1	☐ TA 4.1
☐ TA 4. n	☐ TA 5.1	☐ TA 5.2	☐ TA 7.1	☐ TA 8.1
☐ TA 9.1	☐ TA 9.2	☐ TA 10.1	☒ TA 13.1	☒ TA 13.2
☐ TA 14.1	☐ TA 15.1	☐ TA 16.1		

Issue Date

5th December 2023

Expiry Date

31st December 2024

Priya Suman

Ms. Priya Suman
Compliance Officer

Sanjay Agarwalla

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022[1]	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

[1] Please refer to previous version of FM 7.9 for the revision history

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Kiran KV

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☐ Technical Reviewer	☐ Health Expert	☐ Gender Expert	☐ Plastic Waste Expert
☐ CCB Expert	☐ Legal Expert	☐ Financial Expert	☐ Environmental, Health and Safety financial matters
☒ SDG+	☒ Social no-harm(S+)	☒ Environment no-harm(E+)	
☒ Local Expert for India			

in the following Technical Areas:

☐ TA 1.1	☒ TA 1.2	☐ TA 2.1	☒ TA 3.1	☐ TA 4.1
☐ TA 4. n	☐ TA 5.1	☐ TA 5.2	☐ TA 7.1	☐ TA 8.1
☐ TA 9.1	☐ TA 9.2	☐ TA 10.1	☒ TA 13.1	☒ TA 13.2
☒ TA 14.1	☒ TA 15.1	☐ TA 16.1		

Issue Date

5th December 2023

Expiry Date

31st December 2024

Ms. Priya Suman
Compliance Officer

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022	Initial Adoption
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

[1] Please refer to previous version of FM 7.9 for the revision history

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Toe-Dahn, Mcrina Zakaplay

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☐ Validator	☐ Verifier	☐ Team Leader	☐ Technical Expert
☐ Technical Reviewer	☐ Health Expert	☐ Gender Expert	☐ Plastic Waste Expert
☐ SDG+	☐ Social no-harm(S+)	☐ Environment no-harm(E+)	☐ CCB Expert
☐ Financial Expert	☒ Local Expert for Liberia		

in the following Technical Areas:

☐ TA 1.1	☐ TA 1.2	☐ TA 2.1	☐ TA 3.1	☐ TA 4.1
☐ TA 4. n	☐ TA 5.1	☐ TA 5.2	☐ TA 7.1	☐ TA 8.1
☐ TA 9.1	☐ TA 9.2	☐ TA 10.1	☐ TA 13.1	☐ TA 13.2
☐ TA 14.1	☐ TA 15.1			

Issue Date
03rd May 2023

Expiry Date
02nd May 2024

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☐ Technical Reviewer	☐ Health Expert	☐ Gender Expert	☐ Plastic Waste Expert
☐ CCB Expert	☐ Legal Expert	☐ Financial Expert	☐ Environmental, Health and Safety financial matters
☐ SDG+	☐ Social no-harm(S+)	☐ Environment no-harm(E+)	
☒ Local Expert for India			

in the following Technical Areas:

☐ TA 1.1	☒ TA 1.2	☐ TA 2.1	☒ TA 3.1	☐ TA 4.1
☐ TA 4. n	☐ TA 5.1	☐ TA 5.2	☐ TA 7.1	☐ TA 8.1
☐ TA 9.1	☐ TA 9.2	☐ TA 10.1	☒ TA 13.1	☐ TA 13.2
☐ TA 14.1	☐ TA 15.1	☐ TA 16.1		

Issue Date

5th December 2023

Expiry Date

31st December 2024

Mr. Sanjay Kumar Agarwalla
Technical Director

Revision History of the document:

Revision date	Summary of changes
2022[1]	Annual revision
Jan 2023	Annual revision
Dec 2023	Change in the template due to revision in TA and function

CCIPL_FM 7.9 Certificate of Competency_V4.0_112023

[1] Please refer to previous version of FM 7.9 for the revision history

Appendix 3. Document reviewed or referenced

No.	Author	Title	References to the document	Provider
/1/	PO	PSF a. Initial Version b. Final Version	a. Version 01 dated 16/06/2022 b. Version 07 dated 01/02/2024	PO
/2/	PO	Emission reduction spreadsheet a. Corresponding to /01-a/ b. Corresponding to /01-b/		PO
/3/	LEC	Environmental permit	Dated 25/01/2016	PO
/4/	Government printing office, Ministry of foreign affairs, Monrovia, Liberia.	Act for LEC creation	Dated 24/07/1973	PO
/5/	LEC	RAP & ESMP report a. ESMP report b. RAP report c. RAP and ESMP completion report	a. 08/02/2013 b. 04/06/2013 c. 30/12/2018	PO
/6/	EMH metering GmbH &Co.KG	Calibration certificates	Dated 24/07/2017	PO
/7/	LEC	Financial consideration	17/02/2017	
/8/	LEC	Grid emission factor evidence	NA	
/9/	LEC	HSE systems a. HSE dashboard b. HSE statistics 2019 c. HSE statistics 2020 d. HSE statistics 2021	NA	
/10/	Registered Licensed Surveyor, Ministry of Lands, Mines and Energy, Republic of Liberia	Land deed	09/01/2020	
/11/	Tetra tech	Line diagram	13/09/2017	
/12/	Hydro operation International	Organization chart	30/04/2018	
/13/	Republic of Liberia	Proof of plant rehabilitation	15/12/2016	
/14/	Norplan, Fichtner	Project layout and location a. Project location b. Site layout	a. 13/05/2015 b. 15/05/2015	
/15/	PO	Staff training	NA	
/16/	PO	Letter of Authorization	NA	
/17/	GCC VERIFIER	On site visit document		
/18/	GCC VERIFIER	Project verification contract between GCC verifier and PO	09/08/2022	
/19/	NORPLAN	Commissioning certificates a. Unit 1 b. Unit 2 c. Unit 3 d. Unit 4	a. 22/12/2016 b. 08/02/2017 c.24/03/2017 d.06/06/2017	
/20/	HOI	Energy readings	NA	
/21/	Liberia Electricity	Generation license	19/01/2021	

	Regulatory Commission			
/22/	Email	Manufacturer declaration	02/11/2022	
/23/	Voith	Technical datasheet	NA	
/24/	Liberia Electricity Regulatory Commission	Electricity distribution code	NA	
/25/	LEC	LEC electricity generation data	NA	
/26/	LEC	LEC permit to work system		
/27/	PO	Project site photos and videos	NA	
/28/	Environmental Protection Agency, Republic of Liberia	Liberia's First Biennial Update Report to UNFCCC	October 2020 Liberia's First Biennial https://unfccc.int/sites/default/files/resource/BUR1.pdf	
/29/	The World Bank	World bank report: Liberia Electricity Sector Strengthening and Access Project	19/02/2021 https://documents1.worldbank.org/curated/en/127771615860080105/pdf/Liberia-Electricity-Sector-Strengthening-and-Access-Project.pdf	
/30/	Multiple Authors	LEC press releases a. LEC b. SI News Blog c. renewables Liberia	a. https://lecliberia.com/news-releases/press-release/ b. https://www.sinewsblog.com/president-weah-takes-bold-step-to-boost-liberias-energy-sector/ c. http://www.renewables-liberia.info/index.php/projects-new/project-plants/115-mt-coffee-hydropower-plant	
/31/	African Energy Live data	African Energy atlas 2020/2021	April 2020 www.africa-energy.com/database	
/32/	LEC	Mount coffee tarriff consideration	17/02/2017	
/33/	NORPLAN	Reservoir profile through Lidar measurement	July 2015	
/B01/	GCC	A. GCC Project Standard, version 3.1 B. GCC Verification Standard, version 3.1 C. GCC Program Manual, version 3.1 D. Environment-and-Social-Safeguards-Standard, version 3.0 E. Project-Sustainability-Standard, version 3.1	--	
/B02/	UNFCCC	ACM0002	Version 21.0	Others

/B03/	GCC	PSF template	Version 4.0	Others
/B04/	UNFCCC	Tool 07: Tool to calculate the emission factor for an electricity system	Version 07	Others
/B05/	UNFCCC	Tool 23: Additionality of first-of-its-kind project activities	Version 03.0	Others
/B06/	UNFCCC	Tool 01: Tool for the demonstration and assessment of additionality	Version 07.0	Others
/B07/	UNFCC	Tool 02: Combined tool to identify the baseline scenario and demonstrate additionality	Version 07.0	others

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

Table 1. CLs from this Project Verification

CL ID	01	**Section no.**	A.3	**Date:** 31/07/2023
Description of CL				
In section A.3 of the PSF, PO has mentioned about 3 transformers, while during the site visit, 4 transformers has been observed. PO is requested to clarify.				
Project Owner's response				**Date:** 16/08/2023
Corrected in the SPF				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023
It has been observed that PO has revised the PSF accordingly. CL 01 is closed				

CL ID	02	**Section no.**	A.3	**Date:** 31/07/2023
Description of CL				
In section A.3, PO has provided the technical specification of turbines and generators. The serial number of generator 4 is given as 00212 in PSF which is found to be inconsistent with the actual nameplate. PO is requested to clarify the inconsistency				
Project Owner's response				**Date:** 16/08/2023
The serial number has been changed for U4 as per nameplate				
Documentation provided by Project Owner				
PSF *Nameplate U4*				
GCC Project Verifier assessment				**Date:** 27/09/2023
It has been observed that PO has revised the PSF accordingly. The revised serial number of the generator is found to be consistent with the actual nameplate. CL 02 is closed				

CL ID	03	**Section no.**	Cover page, A.4	**Date:** 31/07/2023
Description of CL				
In the PSF, the name of the project owner is given as Liberia Electricity Corporation", while in the LOA, the name "Liberia Electricity Company" is given. PO is requested to clarify the discrepancy int he PO name observed. *Referring to the GCC PSF template guideline in section A.4, "Using the table provided, list the Project Owner(s) involved in the Project Activity in line with the LOA/LON, and provide contact information for each Project Owner in Appendix 01, the end of the PSF.".* *3 owners have been identified from the LOA submitted to GCC VERIFIER, which are Liberia electricity company, Aera group, and Hydro operation international SA. PO is requested to add the details of all the project owners in section A.4 of PSF. Also, the project owner details in the cover page of the PSF should also be made consistent.*				
Project Owner's response				**Date:** 16/08/2023
Section A.4 of PSF has been corrected, the 3 owners are now mentioned				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023

In the GCC registry page (https://projects.globalcarboncouncil.com/project/1346), one of the project owner and the focal point is “Liberia Electricity Corporation”, In PSF, the name of project owner is given as Liberia electricity company. while in LOA body of letter, the name is given as “Liberia electricity company” and in appendix 1 of LOA, it is given as “Liberia electricity corporation. As per LOA, the focal point is Aera group. Based on the review of “AN ACT TO AMEND THE PUBLIC AUTHORITIES LAW TO CREATE TI.IE LIBERIA ELECTRICITY CORPORATION”, and generation license, it has been observed that “Liberia electricity corporation” has been identified as the legal owner of the project activity. PO is requested to maintain consistency in the name of project owner and focal point in GSC registry, PSF, and LOA. The revised documents are requested to be provided. Thus, finding is open.
Project Owner’s response **Date:** 02/11/2023
LoA / PSF corrected with Liberia Electricity Corporation, not Company!
GCC Project Verifier assessment **Date :** 28/11/2023
It has been observed that the term Liberia Electricity company has been revised to Liberia Electricity Corporation through PSF and LoA. CL 03 is closed.

CL ID	04	**Section no.**	B.2	**Date:** 31/07/2023
Description of CL				
It has been observed that PO has not included the tool 02 in the section B.2 of the PSF. Tool 2 has been used to demonstrate the baseline of the project activity. *Also PO is requested to clarify the relevance of adding tool 27 in section B.2 as the tool has not been used for investment analysis.*				
Project Owner’s response				**Date**:16/08/2023
Tool02 has been added in section B.1 and B.2 and tool 27 was deleted as it is not used				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023
It has been observed that PO has included the applicability condition of the Tool 02 in section B.2 of PSF and the justification provided for applicability condition is deemed to be acceptable to GCC project verifier. The Tool27 applicability condition has been removed from section B.2 of PSF. CL 04 is closed.				

CL ID	05	**Section no.**	B.6.4	**Date:** 31/07/2023
Description of CL				
In section B.6.4, PO has provided different baseline value for each year in the crediting period. PO is requested to clarify the use of different values				
Project Owner’s response				**Date:** 16/08/2023
From 2017 to 2021, electricity generation values are based on the monthly plant capacity factor (%) monitored in real time by PO, which varies based on the water flow of each month. From 2022, values are based on expected project energy yield assessment made during project construction (208GWh/year) as real data are not available yet.				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023
PO is requested to provide the evidence (generation log, invoices, etc.. for the monitored electricity for the year 2017 to 2021. Thus, finding is open.				
Project Owner’s response				**Date**: 02/11/2023

See “energy counter readings” files (PDF) and “Mt. Coffee HPP Discharge and Generation 20220220” file (already provided, if you would like to see the capacity load factor)

GCC Project Verifier assessment | **Date:** 28/11/2023

Based on the review of files “energy counter readings” and “Mt. Coffee HPP Discharge and Generation 20220220”. GCC VERIFIER has observed the following.

The electricity generation value for the following months are found to be inconsistent between both the document.

Month, year	Values in energy counter readings (MWh)	Value in Mt. Coffee HPP Discharge and Generation 20220220 (MWh)
Sep 2017	11060.15	11,433.66
Oct 2017	12847.82	12,454.90
Sep 2018	15929.78	15,965.60
Oct 2018	18350.10	18,410.60
Nov 2018	18289.55	18,339.47
Feb 2019	8564.75	8,748.70
Mar 2019	5919.23	5,918.80
Apr 2019	14321.33	14,321.50
May 2019	17673.00	17,626.40

1. PP is requested to clarify discrepancy between the two documents.
2. PP is requested to provide the energy counter readings for the year 2020 and 2021 as well.
3. Also, the values provided in the ER sheet “ER Ex-Ante Calc - Mt.Cofee”, tab “Readings 2017-2018-2019 -2020” is not matching with the values provided in the file “Mt. Coffee HPP Discharge and Generation 20220220” tab “LEC Plants Generation Summary” or the file “energy counter readings",. PP is requested to clarify the discrepancy.

Thus, the finding is open

Project Owner’s response | **Date**: 05/12/2023

1. The official reports are values from “energy counter readings”, which are directly taken from the meter (SCADA). Regarding values from “Mt. Coffee HPP Discharge and Generation 20220220” these are data compiled from daily reports (that is to say energy counter readings compiled from SCADA data).
2. Values of 2020 & 2021 are available in “*LR03-Item3.06_MCOMT_HPP_OperMonthReport_12.2020*“ & “*LR03-Item3.07_MCOMT_HPP_OperMonthReport_12.2021*” page 21 (Energy Counter Readings)
3. The values provided in the ER sheet tab “Readings 2017-2018-2019 -2020” are matching with data provided in energy counter readings.

GCC Project Verifier assessment | **Date**: 22/12/2023

1. electricity generation values used for ex ante calculation provided by PO is found to be matching with the energy counter readings. Thus the finding is closed
2. Energy counter readings of year 2020 and 2021 has been provided and found to be consistent with the ex ante calculation. Thus the finding is closed.
3. The values provided in the ER sheet is found to be consistent with the energy counter reading which is considered as the source. Thus the finding is closed.

CL 05 is closed

CL ID	06	**Section no.**	E.1	**Date:** 31/07/2023

Description of CL

PO in section E.2 of PSF, “Performance indicator for monitoring of impact” for the waste management point in the section E.1, that says “all waste produced conditions in and around construction site Monitoring frequency: Continuously”. The typo error is requested to be corrected

Project Owner’s response | **Date:** 16/08/2023

The typo error is corrected, the word "conditions" was deleted
Documentation provided by Project Owner
Revised PSF
GCC Project Verifier assessment **Date:** 27/09/2023
It has been observed that the typo error has been corrected. CL 06 is closed.

CL ID	07	**Section no.**		**Date:** 31/07/2023
Description of CL				
PO is requested to provide the following to GCC VERIFIER *1. a declaration on double counting* *2. Commissioning certificates* *3. Evidence for dates mentioned in time schedule of project implementation in section A.3. Technical/measures, table 2*				
Project Owner's response				**Date:** 16/08/2023
See the following files: 1. *Mount coffee self-declaration* 2. *Agreement starts trial run U1* 3. *RAP and ESMP Completion Report (for fund reception; project design, ESIA approval), LR03-Item 26_MCHPP Environmental Permits/ Generation license (picture)*				
Documentation provided by Project Owner				
GCC Project Verifier assessment				**Date:** 27/09/2023
The total installed capacity is 88MW as per PSF and other supporting documents. The evidence for commissioning provided by PO "Agreement starts trial run Ui" only mentions the commissioning of one unit on 12 December 2016, which is inconsistent with the date mentioned in section C.1 of PSF (31/12/2016). PO is requested to provide an evidence for the commissioning of all the units Thus finding is open.				
Project Owner's response				**Date:**02/11/2023
All commissioning dates are now provided in the PSF, and supportive documents (trial units 1,2,3 and 4) are now provided				
GCC Project Verifier assessment				**Date:** 28/11/2023
PO has provided the commissioning certificate of all the units. The dates of commissioning of all the dates have been mentioned in section C.1 of PSF accordingly. CL 07 is closed.				

Table 2. CARs from this Project Verification

CAR ID	01	**Section no.**	PSF	**Date:** 31/07/2023
Description of CAR				
PP is requested to update or mention the version number of the following methodology, standards or tools throughout the PSF. 1. *ACM0002: Grid connected electricity generation from renewable sources.* 2. *Project sustainability standard* 3. *Instruction in Project Submission Form (PSF)-template* *Standard on avoidance of double counting*				
Project Owner's response				**Date:** 16/08/2023
Except point 2. Project sustainability standard all versions mentioned for other standards and methodology are the latest one available on GCC or CDM website.				
Documentation provided by Project Owner				

PSF
GCC Project Verifier assessment **Date:** 27/09/2023
It has been observed that PO has used the latest version of the above mentioned documents. CAR01 is closed

CAR ID	02	**Section no.**	A.1	**Date:** 31/07/2023
Description of CAR				
As per the GCC PSF template guideline, PO is requested to add the project boundary applicable to the project activity in the section A.1 of the PSF. PO is also requested to add the start date of the project activity in the section (commissioning date), if the commissioning has been done in different periods, the date of each commissioning of each unit is to be provided. The evidence to substantiate the same is also requested to be provided to GCC VERIFIER				
Project Owner's response				**Date:** 16/08/2023
The project boundary as well as project layout have been added in section A.1.. Commissioning date is already mentioned is section C.1 C.1."Start date of the Project Activity"				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023
A general description of the project boundary is requested to be added in the section A.1 of PSF. Thus, finding is open.				
Project Owner's response				**Date:** 02/11/2023
The general description of the project boundary is added				
GCC Project Verifier assessment				**Date:** 28/11/2023
PO is requested to revise the term CDM to GCC wherever applicable in the PSF. Thus, finding is open.				
Project Owner's response				**Date**: 05/12/2023
Corrected				
GCC Project Verifier assessment				**Date**: 22/12/2023
It has been observed that PO has corrected the term CDM to GCC wherever applicable in PSF. CAR 02 is closed				

CAR ID	03	**Section no.**	A.6	**Date:** 31/07/2023
Description of CAR				
It has been observed that section A.6 of the PSF is not filled, PO is requested to complete the section as per the GCC PSF template guideline, including the justification for meeting all the requirements mentioned in the template.				
Project Owner's response				**Date:** 16/08/2023
Information in section A.6 have been added				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023
It has been observed that PO has completed section A.6 of PSF as per the GCC PSF template guideline. CAR 03 is closed.				

CAR ID	04	**Section no.**	B.1	**Date:** 31/07/2023
Description of CAR				

In the section B.1 of PSF, PO has provided the statement that "The project uses also the methodological tool for "demonstration and assessment of additionality", here version 07.0. Tool for the "additionality of first-of-its-kind project activities" – Version 03.0 and ACM0002 "Grid connected electricity generation from renewable sources" version 20.0 for the calculation of project emissions.". *The statement provided is found to be incomplete, as the methodology reference has already been provided in the paragraph above, and also the methodology is used for calculation of baseline, leakage and project emission, not project emission alone. The other tools rereferred in the PSF is also missing in this section. PO is requested to revise the section considering the above points.*
Project Owner's response **Date:** 16/08/2023
ACM0002 was deleted from the said paragraph and other tools used in the PSF were added.
Documentation provided by Project Owner
PSF
GCC Project Verifier assessment **Date:** 27/09/2023
It has been observed that PO has revised the section accordingly. CAR 04 is closed.

CAR ID	05	**Section no.**	B.2	**Date:** 31/07/2023
Description of CAR				
In the section B.2 of PSF, *1.PO has provided the justification for the applicability condition 2 of the applied methodology as "As it is a run-of-river, the hydropower plant doesn't have a reservoir. Thus, the methodology is applicable.".* *PO is requested to provide evidence to substantiate this statement and to prove that the construction of the power plant does not create a reservoir that did not exist before. (photographs/satellite images with time stamps is preferable)* *2. Justification provided for the applicability condition4 of methodology not acceptable. PO is requested to point out which among the given option is applicable* *3. Justification provided for the applicability condition 5 is not acceptable. PO to clarify if its integrated hydro power project or not and if the condition is applicable or not* *4. In the section B.2, PO has provided the justification for the applicability condition 1 of tool 7. However, the provide justification does not address the applicability conditions prescribed. PO is requested to revise the same.*				
Project Owner's response				**Date:** 16/08/2023
1. *Actually the plant does have a reservoir even if it is a run-of-river hydropower plant (see "2.3 Project Area and Project Discribtion" from RAP and ESMP Completion Report highlighting data used for power density calculation). Answers to condition of applicability have been revised.* 2. Condition 4 is to chose among the following options: Install a Greenfield power plant/ Involve a capacity addition to (an) existing plant(s)/ Involve a retrofit of (an) existing operating plant(s)/unit(s)/ Involve a rehabilitation of (an) existing plant(s)/unit(s) or/ Involve a replacement of (an) existing plant(s)/unit(s). And as highlighted in the PSF, option (d) Involve a rehabilitation of (an) existing plant(s)/unit(s) is chosen/applicable. 3. It is highlighted in the PSF that the project does not involve the integration of a BESS. 4. Tool 27 was deleted as it is not used				
Documentation provided by Project Owner				
Revised PSF				

GCC Project Verifier assessment	**Date:** 27/09/2023
1. PO has provided the appropriate justification in PSF which is deemed to be acceptable to GCC VERIFIER. 2. PO has provided the appropriate justification in PSF which is deemed to be acceptable to GCC VERIFIER 3. PO has provided the appropriate justification in PSF which is deemed to be acceptable to GCC VERIFIER 4. PO has mentioned that "*OM, BM and CM are not calculated but estimated using simplified combined margin emission factor approach for isolated grid system' §6.6.3.2.1. Case 1: "Isolated grid system with only liquid fuel power plant*". PO is requested to clarify how this approach is applicable in line with the project scenario. Thus, the finding is open	
Project Owner's response	**Date**: 05/12/2023
As explained in Point B 6.1*Explanation of methodological choices*, "Monrovia 'city-level' electricity system supplying electricity to household users, industries and commercial areas is not connected to any other electrical network (e.g. national/regional or interconnected power system) and only spans about 30km in extent." Thus, the electricity system is considered as a being an "isolated grid" system. Therefore, §6.6.3.2.1. Case 1: "Isolated grid system with only liquid fuel power plant". Is being used to estimate the OM, BM & CM.	
GCC Project Verifier assessment	**Date**: 22/12/2023
From the explanation provided above, it has been observed that the grid connect the project power plant is an isolated grid and does not connect to any national or international power systems. CAR 05 is closed	

CAR ID	06	**Section no.**	B.2	**Date:** 31/07/2023
Description of CAR				
It has been observed that Po has used methodology ACM0002: version 20.0 in the project activity, while the latest methodology available is version 21.0. PO is requested to revise the PSF as per the latest available methodology.				
Project Owner's response				**Date:** 16/08/2023
Please see latest PSF available, it is using methodology ACM0002 v21..0				
Documentation provided by Project Owner				
PSF V4.0				
GCC Project Verifier assessment				**Date:** 27/09/2023
It has been observed that PO has used the latest methodology available (ACM0002 version 21.0) in the revised PSF. CAR 06 is closed.				

CAR ID	07	**Section no.**	B.3	**Date:** 31/07/2023
Description of CAR				
In section B.3 of PSF, PO is requested to Define the project boundary of the Project Activity, including the physical delineation of the Project Activity, and which sources and GHGs are included in the project boundary, in accordance with the applied methodology (para 22 of methodology) and, where applicable, the applied standardized baseline. *Also, in the section, PO has provide the line diagram,PO is also requested to add the location of energy meters in the diagram.*				
Project Owner's response				**Date:** 16/08/2023
1. *The picture of the project boundary have been added and sources of GHGs are already mentioned in Table 8 Project emission sources.* 2. *The location of energy meters have been aded*				
Documentation provided by Project Owner				
PSF				

GCC Project Verifier assessment	**Date:** 27/09/2023
The description of project boundary is found to be missing in this section. PO is requested to refer to para 22 of the applied methodology and provide the description appropriately. Thus, finding is open.	
Project Owner's response	**Date:** 02/11/2023
Information added	
GCC Project Verifier assessment	**Date:** 28/11/2023
It has been observed that the description of project boundary in line with the applied methodology has been provided in section B.3 of PSF. CAR 07 is closed.	

CAR ID	08	**Section no.**	B.4	**Date:** 31/07/2023
Description of CAR				
In section B.4 of PSF, under the step 1, the statement provided for each sub step is found to be incomplete in comparison with the para 25 of the methodology. PO is requested to maintain consistency in the statements. *PO is also requested to refer to tool 02 for establishing the baseline as per the requirement mentioned in para 25, 26and 27 (a) of methodology.* *The appropriateness of alternative "The project activity undertaken without registered as a CDM project activity: is to be rechecked in view of the requirement mentioned in the para 23 of tool 2 "* *First-of-its-kind, the alternative scenario S1 shall always be excluded in this step.".* *Moreover, the step 2, and step 3, as well as the outcome of each step and sub step is to be provided in the section.* *Also, the use of term "CDM" is requested to be replaced with "GCC" where applicable in PSF*				
Project Owner's response				**Date:** 16/08/2023
1. *para 25 of methodology ACM0002 V21.0 is dedicated to Baseline scenario for capacity addition to an existing renewable energy power plant or integration of a BESS to an existing solar photovoltaic or wind power plant/unit. As the project is a rehabilitation of an existing power plant, para 26 should be applied, which state that "If the project activity is retrofit or rehabilitation or replacement of an existing plant as described under paragraph 4(c) or paragraph 4(d) or paragraph 4(e), the following stepwise procedure to identify the baseline scenario shall be applied" : Step 1: Identify realistic and credible alternative baseline scenarios for power generation, then Step 2: Barrier analysis, then Step 3: Investment analysis (only if applicable). Thus step 1 and Step 2 are applied.* 2. *As per methodology ACM0002 V21.0 "The condition in TOOL02 that all potential alternative scenarios to the proposed project activity must be available options to project participants; does not apply to this methodology, as this methodology only refers to some steps of this tool" thus steps/guidelines mentioned in ACM0002 are followed.* 3. *As per methodology ACM0002 v21.0, only few STEP 3 Investment analysis is not mandatory. An investment analysis was not used for this project as it is using tool 23* "tool for the additionality of first-of-its-kind project activities". 4. *As mentioned above, when using methodology ACM0002 not all the steps from tool 2 are mandatory.*				
Documentation provided by Project Owner				
PSF				

GCC Project Verifier assessment	**Date:** 27/09/2023
Para 27 of the methodology states that, step 1 of tool 02 should be used for defining the alternate scenarios, and the options to be chose for the alternative scenario are provided in para 27 (a), (b), and (c) of methodology. PO is also required to state in PSF, how the para 27 of Tool 02 has been considered for identifying the alternate scenario. The outcome of sub step 1 a (List of plausible alternative scenarios to the project activity) is also requested to be added in PSF. Referring to para 16 of tool 02, Under sub step 1 (b), PO has stated that "There are no policies in host country to regulate fossil fuel usage.". However, PO is requested to mention any legal and regulatory related to the project activity even if these laws and regulations have objectives other than GHG reductions. Also, PO has mentioned "outcome of sub-step 1(c)" under sub step 1b. PO is requested to rectify. PO is requested to consider all the alternate scenarios identified under sub-step 1a in the outcome of sub-step Ib as well. Under step 2: Barrier analysis, PO is requested to add the step 2a and 2b of tool 02 with their outcomes including the requirements provided in para 20 to 22 of tool 02. The outcome of step 2 as given in page 12 of tool 02 is also requested to be provided appropriately. PO is also requested to add step 3: Investment analysis, with the justification for its applicability/non-applicability. The baseline scenario identified after completing all the steps is requested to be described in the PSF. Thus, finding is open.	
Project Owner's response	**Date:** 02/11/2023
The baseline scenario, as well as revised step 1,2 & 3 are now described in the PSF.	
GCC Project Verifier assessment	**Date:** 28/11/2023
It has been observed that PO has not provided the alternative scenario as mentioned in the para 27 (a), (b), and (c) of methodology. The heading Outcome of step 1(a)/1(b), step 2(a)/(b) is also requested to be added above each of them. The alternative scenario P2 and P3 mentioned in para 27 of applied methodology is not included as the alternative scenario in the PSF. PO is requested to align he alternative scenarios in line with para 7 of methodology. In the outcome of step 2, PO has mentioned that the "*As there is only one alternative scenario that is not prevented by any barrier, and it is not the proposed project activity undertaken without being registered as a GCC project activity*" As per the point number 2 provided in the box given in page number 12 of tool 02 version 7.0, the alternative scenario which is not the "the proposed project activity undertaken without being registered as a CDM project", should be considered as the baseline scenario. But PO has not mentioned this alternative under the outcome of step 2. PO is requested to do so. Thus, finding is open.	
Project Owner's response	**Date:** 05/12/2023
Alternative scenarios are now provided as per methodology. The outcome of steps 1(a), 1(b), Step 2(a)/(b) are added. The sentence is mentioned**.**	
GCC Project Verifier assessment	**Date:** 05/12/2023
It has been observed that the alternative scenarios has been provided as per the methodology\ The heading of outcomes of step 1 and 2 has been added The alternative scenarios has been aligned with methodology The proper alternative has been mentioned under outcome of step 2. CAR 08 is closed	

CAR ID	09	Section no.	B.5	Date: 31/07/2023
Description of CAR				
In the section B.5 of PSF, PO has provided the demonstration of additionality. the following corrective actions are required to be made in the section. *1. para 16 of the tool 01 specifies the measures applicable. PO is requested to provide the information on among the list provided in para 13(b) of tool 1, which measures is applicable to the project activity.* *2. the statement provided for criteria a is found to be incomplete with respect to the statement provided in the para 12(a) of tool 23. PO is requested to maintain the consistency in statements.* *3. PO is requested to justify the criteria C by mentioning the actual crediting period of the project.* *4.PO is requested to substantiate the applicable conditions (first in the geographical area) with proper evidences and provide to GCC VERIFIER*				
Project Owner's response				**Date:** 16/08/2023
1. *The measure applicable is now mentioned* 2. *The statement provided is now complete and correspond to para 12(a) of tool 23* 3. *Crediting period have been added* 4. *See the sheet "LEC Plants Generation Summary" from "MT.Coffee HPP Discharge and generation" file which highlight production from all Liberia electricity corporation (LEC) plants. As it is observed, the country only uses energy coming from 3 sources:* High Speed Diesel (HSD), Heavy Fuel Oil (HFO) and hydro energy from Mount Coffee. *The following study from the world bank also mention Liberia's energy generation sources (page 9) which are thermal energy and Mount Coffee generation: https://documents1.worldbank.org/curated/en/127771615860080105/pdf/Liberia-Electricity-Sector-Strengthening-and-Access-Project.pdf.*				
Documentation provided by Project Owner				
PSF *Mt.Coffee HPP Discharge and generation* *https://documents1.worldbank.org/curated/en/127771615860080105/pdf/Liberia-Electricity-Sector-Strengthening-and-Access-Project.pdf.*				
GCC Project Verifier assessment				**Date:** 27/09/2023
It has been observed that PO has provided the justification for all the above-mentioned comments and the demonstration of first-of-its kind has been added in the PSF including all the steps as per tool 23. However, PO is requested to provide the file "LEC Plants Generation Summary" as it is found to be missing among the supporting documents provided. Thus, finding is open.				
Project Owner's response				**Date:** 02/11/2023
"LEC PLANTS Generation Summary" is not a file but an excel sheet in the already provided file named "*MT.Coffee HPP Discharge and generation".*				
GCC Project Verifier assessment				**Date:** 28/11/2023
GCC VERIFIER has observed that the LEC plant generation summary provided in he file "MT.Coffee HPP Discharge and generation" and concludes that LEC is the only renewable energy power project in the geographical region (country) CAR 09 is closed.				

CAR ID	10	Section no.	B.6.1	Date: 31/07/2023
Description of CAR				
It has been observed that, in section B.6.1 of PSF, PO has provided the description of parameter EFgrid,cm,y . However, the description is not consistent with the description provided in the methodology. ("combined margin" missing). PO is requested to maintain consistency.				

Project Owner's response	**Date:** 16/08/2023
Corrected	
Documentation provided by Project Owner	
PSF	
GCC Project Verifier assessment	**Date:** 27/09/2023
PSF has been revised accordingly. CAR 10 is closed.	

CAR ID	11	**Section no.**	B.6.1	**Date:** 31/07/2023
Description of CAR				
In section B.6.1, PO is requested to provide the complete calculation of emission factor in the PSF. All the steps included in the calculation mentioned in the tool 07 is requested to be provided in the calculation. *Any evidences to substantiate the values that will be provided in the emission factor calculation is also requested to be provided to GCC VERIFIER.*				
Project Owner's response				**Date:** 16/08/2023
1. *The complete calculation is now detailed* 2. *See "Mt.Coffee HPP Discharge and generation" highlighting all energy generation sources. And as mentioned in CAR ID 09 it is observed that the country only uses energy coming from 2 other sources (apart from Mount Coffee):* High Speed Diesel (HSD) and Heavy Fuel Oil (HFO) from 4 stations: JICA, GOL, Bushrod, WB. Also see the study made by the World Bank confirming that Liberia is an Isolated Grid (*https://documents1.worldbank.org/curated/en/127771615860080105/pdf/Liberia-Electricity-Sector-Strengthening-and-Access-Project.pdf.)*				
Documentation provided by Project Owner				
PSF *Mt.Coffee HPP Discharge and generation* *https://documents1.worldbank.org/curated/en/127771615860080105/pdf/Liberia-Electricity-Sector-Strengthening-and-Access-Project.pdf*				
GCC Project Verifier assessment				**Date:** 27/09/2023
PO is requested to identify and describe the connected electricity system as per the step 1 of tool 07. PO is requested to clarify if the connected electricity system is confined within the geographical boundary of Liberia or if it includes the neighboring countries or if it is connected with any other power pool. As it has been observed that the electricity system of Liberia is linked to CLSG electricity network (Côte d'Ivoire, Liberia, Sierra Leone and Guinea) and West African power pool. The agreement between LEC and CLSG is requested to be provided to GCC VERIFIER. Response is to be added in PSF as well. PP is requested to provide the import and export electricity data of the grid connected power plants. PO is requested to clarify the rationale for choosing isolated grid system as per para 10 (f) of tool 07. The description is requested to be added in PSF as well. PO is also requested to add the step 2 to 6 of tool 07 in the PSF and justify its applicability. It has been observed that PO has chosen Simplified combined margin emission factor approach for isolated grid system for the calculation of grid emission factor. PO is requested to clarify how this choice comply with figure 5 and para 84, 93 of the tool 07. As per the figure 5, tool 07 is not applicable if data to determine OM is not available. As per para 84, Simplified CM can only be used if data to determine BM is not available. And as per para 93 of tool 07, the option can only be used if the total fuel consumption and/or the commissioning dates of the plants in isolated grids are not available. PO is requested to provide a clarification on the above comments. Thus, finding is open.				
Project Owner's response				**Date:** 02/11/2023

As added in PSF section B.6.1 Step 1, This Monrovia 'city-level' electricity system supplying electricity to household users, industries and commercial areas is not connected to any other electrical network (e.g. national/regional or interconnected power system) and only spans about 30km in extent.
It is further located in a Least Developed Country, and at least 65% of the power installed capacity is based on fossil fuel sources since apart from the Mount Coffee project in object, prior existing power capacity is exclusively fossil-based with:
- heavy fuel oil (10 MW-World Bank HFO Plant, 18 MW- Government of Liberia HFO Plant, 10 MW – Japanese Int'l Cooperation Agency HFO Plant)
- diesel fuel (9 MW – Bushrod HSD

Therefore, it qualifies as an Isolated grid system as per para 10(f) of tool 07

Steps 2 to 6 have been described in the PSF.

This grid emission factor (EFgrid,CM,y) is determined ex-ante shall be updated at the renewal of the crediting period of the project activity, or at emission verification stage once major changes occur to the project's electricity system (e.g. planned completion of the CLSG interconnection to West African Power Pool)

GCC Project Verifier assessment	**Date:** 28/11/2023

1. In page number 29 of PSF (clean version), PO has mentioned the following "*As per GG clarification No.03 V01*". PO is requested to correct the abbrevation "GG".

2. Under step 2, PO is requested to mention, among the 3 options given in para 17 of tool 07, which option is applicable for the project, with its justification.

3. Under step 3, PO has mentioned the following.

> "*Total fuel consumption and/or the commissioning dates of the plants in isolated grids are not available, thus simplified combined margin emission factor approach for isolated grid system is applied as per §6.6.3 of Tool 07: Case 1: "Isolated grid system with only liquid fuel power plant" of the latest version of the "TOOL07: Tool to calculate the emission factor for an electricity system", Option 2 is selected*."
>
> PO is requested to provide evidence to prove the applicability of approach, a signed attestation from LEC stating that,

a. Monrovia 'city-level' electricity system in which mount coffee power plant is connected to supplying electricity to household users, industries and commercial areas is not connected to any other electrical network (e.g. national/regional or interconnected power system) and only spans about 30km in extent

b. The total fuel consumption and/or the commissioning dates of the plants in isolated grids are not available

Thus, finding is open.

Project Owner's response	**Date:** 05/12/2023

1. Corrected
2. As per the Electricity Grid Code of Liberia, the responsible entity for scheduling and dispatching electricity is the LERC-licensed Transmission System Operator (TSO), i.e. LEC itself. The project's electricity system delineation is thus identified based on Option 2.
3. **a)** please double-check the numerous available literature evidence about the very restricted existing 'Monrovia electricity grid' around the capital city, including its extent thanks to the map's metric scale: i. AFRICAN ENERGY ATLAS 2020/2021 Liberia electricity systems, ii.European Union project background & map to extend Monrovia electricity grid (https://www.eeas.europa.eu/node/49303_en), and/or iii. GENI rehabilitation map of electricity supply in Monrovia (http://www.geni.org/globalenergy/library/national_energy_grid/liberia/liberiannationalelectricitygrid.shtml)
3. **b)** as it can be observed in LEC annual reports (https://lerc.gov.lr/page_info.php?&7d5f44532cbfc489b8db9e12e44eb820=NDg4) no such information as fuel consumptions is available - nor retrievable, due to former sensitivity matters related with i. lawsuits for unpaid fuel (https://www.mcc.gov/resources/doc/evalbrief-090623-lbr-mt-coffee) and ii. fraud and corruption which used to be big stumble blocks for the energy sector (https://www.rvo.nl/sites/default/files/2018/07/Sector-Scan-Liberia-Energy.pdf).

Besides, note that as per LIBERIA-RURAL-ENERGY-STRATEGY-AND-MASTER-PLAN (GESTO, 2018), "despite some progress on the electrification of Monrovia - the country capital - Liberia has still one of the lowest grid electrification rates in the world with less than 3% of the population connected to grid power – meaning less than 10% in Monrovia and less than 0.5% in the rest of the country."

GCC Project Verifier assessment	**Date:** 22/12/2023

1. The editorial mistake has been corrected.
2. The applicable options has been correctly mentioned under step 2.
3. As per the justification and references provided above, it can be observed that the connected grid to the project activity can be considered to be an isolated grid with no available information on fuel consumption.

CAR 11 is closed

CAR ID	12	**Section no.**	B.6.1	**Date:** 31/07/2023

Description of CAR

In section B.6.1, under the calculation of EGPJ,y, PO is requested to add the equation, the description of its parameter as given in para 46 of methodology.

PO is requested to add the equation for project emission as given in the para 31 of methodology with its calculation. The project emission in PSF is provided as zero which is found to be inconsistent with he ER sheet. The calculation of project emission provided in the ER sheet is also not found to be consistent with he calculation provided in the ER sheet. PO is requested to provide the clarification on the project emission calculation.

Also, PO is requested to provide the calculation of emissions from water reservoir of hydro power plants as given in para 37 of methodology

Project Owner's response	**Date:** 16/08/2023

The equation of project emissions has been added

Please see latest version of PSF explaining calculation of project emissions

Documentation provided by Project Owner

PSF

GCC Project Verifier assessment	**Date:** 27/09/2023
PO in the PSF has stated that "*However, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version (v21.0) of "ACM0002: Grid-connected electricity generation from renewable sources":* *(a) Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption)* *(b) Emissions from water reservoirs of hydro power plants.*" PO is requested to correct the option a as emission due to operation of geothermal power plant is not among the project mission categories mentioned in the PSF. Also, PO is requested to provide evidence to substantiate the area of reservoir. Thus, finding is open.	
Project Owner's response	**Date:** 02/11/2023
Option a is corrected. Evidence to substantiate the area of reservoir is available in table Table 2-1: *Main parameters of Mount Coffee HPP* from the already provided "*RAP and ESMP Completion Report*" (page 18)	
GCC Project Verifier assessment	**Date:** 28/11/2023
It has been observed that PO has provided the necessary revision which is in line with the methodology, and therefore is deemed to be acceptable to GCC VERIFIER. CAR 12 is closed	

CAR ID	13	**Section no.**	B.6.2	**Date:** 31/07/2023
Description of CAR				
In the section B.6.2, it has been observed that the parameter "The total installed capacity of the hydro power plant" has been added. PO is requested to clarify the relevance of this parameter in calculation the ER, or any other environmental or social safeguards and SDG contributions. *Also, the parameter "EFgrid,y" has been provided in the section. It is not clear which emission factor is this. the parameter table for combined margin, operating margin, and build margin emission factor to be provided separately.*				
Project Owner's response				**Date:** 16/08/2023
As per methodology ACM0002 V21.0, it corresponds to the parameter "CapPJ" which should be monitored once at the beginning of each crediting period, in order to calculate baseline emissions. *Parameters for each emission factor (combined margin, operating margin & build margin) are now provided*				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023
Referring to section 5.10 and 6.1 of methodology ACM0002 version 21.0, the parameter Cap_{BL} (*Installed capacity of the hydro power plant before the implementation of the project activity. For new hydro power plants, this value is zero*) and A_{BL} (*Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m2). For new reservoirs, this value is zero*) is to be included in section B.6.2 of PSF and the parameters while TEG_y (*Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y*), Cap_{PJ} (*Installed capacity of the hydro power plant after the implementation of the project activity*), A_{PJ} (*Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full*) is to be included in section B.7.1 of PSF. Thus, finding is open.				
Project Owner's response				**Date:** 02/11/2023
Parameters $Cap_{BL,}$ $A_{BL\ and}$ TEG_y were added but the parameter Cap_{PJ} and A_{PJ} were already provided in the PSF.				
GCC Project Verifier assessment				**Date:** 28/11/2023

It has been observed that PO has added the parameter CAP_{BL}, A_{BL}, and TEG_y in appropriate sections of PSF However, PO is requested to remove CAP_{PJ} from section B.6.2 of PSF as it is a monitored parameter. Thus, finding is open.
Project Owner's response **Date**: 05/12/2023
Removed
GCC Project Verifier assessment **Date**: 22/12/2023
It has been observed that CAPPJ has been removed from B.6.2 of PSF. CAR 13 is closed

CAR ID	14	**Section no.**	B.6.3 and B.6.4	**Date:** 31/07/2023
Description of CAR				
PO is requested to update the data in the section B.6.3 and B.6.4 as the data is not in line with the provided ER sheet				
Project Owner's response				**Date:** 16/08/2023
Please see latest version of PSF provided				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				**Date:** 27/09/2023
In section B.6.3, PO has mentioned that the project emission is 17,724.42 tCO_2e and it is sourced from section 3.2 of PSF, while the value is not found to be present in the section 3.2 of PSF. PO is requested to provide the calculation in the appropriate section. The value of baseline emission (134,903 tCO_2) and project emission (17724.42 tCO_2) provided in the table in section B.6.3 of PSF is not consistent with the values provided in the cell B19 and C19 of the ER sheet. PO is requested to correct the same. Based on the review of the baseline electricity production values provided in section B.6.4 of PSF and in the ER sheet. It has been observed that the electricity production is not constant from 2017 to 2021. PO is requested to clarify how the value for EG_{PJy} has been calculated. Necessary evidence to be provided. The PLF report is also requested to provided. If the electricity generation is based on the commissioning of different unit in different time period, it has to be mentioned in the PSF section A.1, and C.1. Thus, the finding is open.				
Project Owner's response				**Date:** 02/11/2023
Indeed units have different commissioning dates, which have an impact on electricity production. But anyway, real electricity production cannot be the same each year as it depends on natural factors (precipitation volumes which change from year to year) which cannot be controlled but only estimated.				
GCC Project Verifier assessment				**Date:** 28/11/2023
The value of baseline emission provided in PSF is 134,903 tCO_2e, while the value provided in ER sheet is 133,871. PO is requested to maintain consistency of values between ER sheet and PSF. Since the commissioning of different unit took place in different times, PO is requested to add the capacity of each unit as per their commissioning date in the section A.1 of PSF. Thus, the finding is open.				
Project Owner's response				**Date**: 05/12/2023
1. Values of baseline emission are corrected 2. The capacity is already provided in table named "Specifications for Generators"				
GCC Project Verifier assessment				**Date**: 22/12/2023

It has been observed that the value of baseline emission in PSF has been made consistent with ER sheet. The details of the commission of different units are present in the table provided in section A.1 of PSF. CAR 14 is closed.

CAR ID	15	**Section no.**	B.7.1	**Date:** 31/07/2023
Description of CAR				
In the section B.7.1, under parameter table EGPJ,y, PO has mentioned that "No calibration is required. Based on meters' manufacturer, digital meters remain within accuracy class limit over their complete lifetime". PO is requested to provide an evidence to GCC VERIFIER to substantiate the same. *Also, PO has provided he details of 4 energy meters. PO is requested to provide which are main meters and back up meters, which will be used for billing.*				
Project Owner's response				**Date:** 16/08/2023
Please see the transferred e-mail sent by meters manufacturer stating that meters do not need an annual calibration. *The 4 meters are the main ones corresponding to U1, U2, U3, U4. Backup meters are meters internal to the control-command/SCADA system*				
Documentation provided by Project Owner				
Emh declaration (e-mail) *PSF*				
GCC Project Verifier assessment				**Date:** 27/09/2023
The identification of main and backup meters is to be done in the PSF. PO is requested to clarify if there is any regulation for the calibration frequency. If not, PO is requested to provide a declaration from LEC regarding the frequency of meter calibration. PO is also requested to provide the initial meter calibration evidence. Thus, finding is open.				
Project Owner's response				**Date:** 02/11/2023
The 4 meters are the main ones corresponding to U1, U2, U3, U4. Backups are internal meters in the control-command/SCADA system. See Liberia electricity code page 97 stating that the calibration frequency of meters with <1 MVA is 10 years. And as per product's technical sheet, the power of LEC's meters are <1 MVA (https://emh-metering.com/wp-content/uploads/2020/11/LZQJXC-DAB-E-3.36_web.pdf). Thus, an annual recalibration is not required. See "meters test certificate" files for calibration certificates.				
GCC Project Verifier assessment				**Date:** 28/11/2023
It has been observed that as per the Liberia electricity code provided by PP, the calibration frequency of meters with power <1 MVA is 10 years. But in section B.7.1, Data/parameter table 7, Calibration frequency column has been provided with information "No-recalibration needed". PO is requested to add the calibration frequency (which is 10 years) as per the regulations in the PSF. Thus, the finding is open.				
Project Owner's response				**Date**: 05/12/2023
Corrected				
GCC Project Verifier assessment				**Date**: 22/12/2023
The frequency of calibration which is provided as 10 years as per Liberia electricity code is provided in PSF. CAR 15 is closed				

CAR ID	16	**Section no.**	C.1	**Date:** 31/07/2023
Description of CAR				

PO is requested to update the format of date in section C.1 in line with the PSF template version 4
Project Owner's response **Date:** 16/08/2023
The format is updated
Documentation provided by Project Owner
PSF
GCC Project Verifier assessment **Date:** 27/09/2023
In section C.1, PO is requested to describe how the start date has been determined in accordance with the start date definition provided in the Project Standard and provide evidence to support this date. Also, in section C.3.2, Specify the duration of crediting period in years and months format. Thus, finding is open.
Project Owner's response **Date:** 02/11/2023
The project starts on December 12, 2016 as per the "Agreement Start Trial Run U1" file (already provided).
GCC Project Verifier assessment **Date:** 28/11/2023
PO has provided the start date as the date of commissioning of the first unit, the evidence has been provided to GCC VERIFIER. The duration of the crediting period has been provided in section C.3.2 of PSF. CAR 16 is closed.

CAR ID	17	**Section no.**	E.2	**Date:** 31/07/2023
Description of CAR				
PO is requested to revise the table provided in section E.1 and E.2 of PSF. the monitoring parameter should be properly defined which can be verified during emission reduction verification. The evidences for all the E+ and S+ parameters and their monitoring procedures is requested to be provided to GCC VERIFIER. PO is requested to refer to latest version of GCC environmental and social safeguard standard for filling of section E.1 and E.2				
Project Owner's response				**Date:** 16/08/2023
See latest version of PSF highlighting parameters to be monitored				
Documentation provided by Project Owner				
GCC Project Verifier assessment				**Date:** 27/09/2023
PO is requested to clarify how the soil erosion (EL09) and Protecting/ enhancing species diversity(ENR03) is considered as harmless in the risk assessment. It has been observed that PO has stated "Not applicable" under the column for legal/ voluntary corporate requirement / regulatory/ voluntary corporate threshold Limits" for all E+ parameters. PO is therefore requested to provide a self declaration from LEC that no such regulations exists for the proposed E+ parameters. PO has not provide any threshold noise level for the parameter "Noise pollution" in section B.7.1 of PSF. PO is requested to clarify on what basis the noise level will be measured and compared with to identify the incompliance. PO is requested to add the monitoring procedure of E+ parameter Protecting/enhancing species diversity (ENR03) in section B.7.1 of PSF. PO is requested to refer to appendix 01 of GCC environmental and social safeguard standard version 3.0 and include the E+ and S+ parameters in the PSF which are mentioned in the appendix 01. Thus, finding is open.				
Project Owner's response				**Date:** 02/11/2023

Impact has been changed from Harmless to Harmful for soil erosion and protecting/ enhancing species. Legal requirements have been added for E+ parameters. Initially they were not added as they were not all mentioned in the ESMP report. Threshold level has been added. The monitoring procedure of E+ Protecting/enhancing species diversity (ENR03) in section B.7.1 of PSF has been added. Water discharge have been included in the E+ parameters. For the rest (Threat to Fish, Hazardous waste gen.) were already included. And for Land use change, it does not have to be included as "Land use: the submerged area due to the reservoir will be relatively small, therefore the impact on forest and on pasture is considered as small; in any case, there is not much valuable forest, and certainly no primary forest, left in the project area" (as per ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN 2013-02-08, page 14). And regarding Key Social Aspects (S+), none of them are related to renewable energy projects. Thus, the S+ parameters mentioned in the PSF are related specifically to Mount Coffee project.
GCC Project Verifier assessment **Date:** 28/11/2023
In section E.1, only 7 parameters are given a score of +1, But at the end of the table. The score given is +8. PO is requested to correct the inconsistency. Thus, the finding is open.
Project Owner's response **Date**: 05/12/2023
Corrected
GCC Project Verifier assessment **Date**: 22/12/2023
It has been observed that the scoring has been provided appropriately in PSF. CAR 17 is closed.

Table 3. FARs from this Project Verification

FAR ID	01	**Section no.**	A.6	**Date:** 05/02/2023
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 Owner's response				**Date:** DD/MM/YYYY
Documentation provided by Project Owner				
GCC Project Verifier assessment				**Date:** DD/MM/YYYY

Appendix 5. Matrix for identifying Environmental Impacts, Establishing Safeguards and Performing Do-No-harm Risk Assessments in the PSF and GCC Verifiers 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 [6] ***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 Project Activity is unlikely to*	*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 harm (may be un-safe) and shall be indicated as* ***Harmful***	*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 corporate requirements*	*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.* .

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

					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.*							
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)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	NO_x emissions (EA02)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	CO_2 emissions (EA03)	The project reduces CO2 emissions since it reduces the amount of fossil fuel used. In case of "no project", stated amount of electricity would be generated from fossil fuels and cause air pollution	None	Not applicable	Harmless	Not applicable	Not applicable	Not applicable	GHG emission reduction (Tonnes of CO2e / Yr.) , the parameter will be monitored on monthly basis	+1	The electricity generation will be monitored by using electricity meters. Therefore, emission reduction will be calculated accordingly.	The project activity, the generation of electricity through renewable sources is expected to reduce GHG emission from fossil fuel power plants. The monitoring procedure for this parameter is provided in the section B.7.1 of PSF and therefore the risk identified as harmless and score is given as +1 which is deemed to be acceptable to GCC verifier.

	CO emissions (EA04)	Not applicable	Note applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	Suspended particulate matter (SPM) emissions (EA05)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	Fly ash generation (EA06)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	Odor (EA08)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	Noise Pollution (EA09)		.									
	Others (Water Discharges EA10)	Managing the change of discharge pattern	None	Not applicable	-	Harmful	Not applicable	Not applicable	A minimum of 8 m^3/s should be released from the spillway structure as the required residual flow	+1	The environmental flow is monitored by the operation team.	Through the implementation of the project activity, the normal flow of the river would be effected, there're the risk is provided as Harmful, however as suggested in the ESMP report/04/, a minimum flow of 8m3/s will be maintained in the spillway. The monitoring procedure of this parameter is provided in the section B.7.1 of PSF. Thus the scoring of +1 provided is

												deemed to be acceptable to GCC verifier.
Environment - *Land*	*Solid waste Pollution from Plastics (EL-01)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	-	Not applicable	Not applicable
	Solid waste Pollution from Hazardous wastes(EL 02)	Managing the disposal of Hazardous waste.	LIBERIA WASTE MANAGEMENT & STANDARDS REGULATIONS, 2009[7]	Not applicable	-	Harmful	Not applicable.	Not applicable.	separate waste according to categories and dispose of properly provide specific collection points for hazardous waste	+1	Operational team is in charge of the proper disposal of the hazardous waste.	The project activity act as the source of hazardous waste compared to baseline and therefore the risk is provided as harmful. However the mitigation plan is provided which is as per the existing regulation. The monitoring procedure is provided in section B.7.1 of PSF, therefore the scoring of +1 is deemed to be acceptable to GCC verifier.
	Solid waste Pollution from Bio-medical wastes (EL03)	Not applicable	Not applicable	Not applicable	--	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	Solid waste Pollution from E-wastes (EL04)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable

[7] LIBERIA WASTE MANAGEMENT & STANDARDS REGULATIONS, 2009

	Solid waste Pollution from Batteries (EL05)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	Solid waste Pollution from end of life products/ equipment (EL06)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	land use change (change from cropland /forest land to project land) (EL08)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	Soil erosion (EL09)	Increased rates of erosion due to fluctuating water level during operation	None	Not applicable		Harmful	Plant vegetation within the project catchment and other soil and water conservation measures	Project owner to monitor reservoir bank stability and stabilize problematic area as necessary	Erosion on steep slopes and on the reservoir banks Source: ESMP report	+1	Erosion is monitored through qualitative parameter (Visual inspection) on a continuous basis	The project activity includes a reservoir which was absent in the baseline scenario, and therefore fluctuating water level leads to soil erosion and the risk is provided as Harmful. However, mitigation plan is provided as suggested in the ESMP report/04/. The monitoring

												procedure is provided in section B.7.1 of PSF, therefore the scoring of +1 is deemed to be acceptable to GCC verifier.
	Waste Management	Managing of Solid waste created during operation phase	Waste management policy	Not applicable	-	Harmful	Not applicable	Not applicable	all waste produced in and around the site Monitoring frequency: Continuously	+1	All waste created during operation phase is tracked by Liberia Electricity Corporation (LEC)	The project activity act as the source of solid waste compared to baseline and therefore the risk is provided as harmful. However, the mitigation plan is provided which is as per the existing regulation. The monitoring procedure is provided in section B.7.1 of PSF, therefore the scoring of +1 is deemed to be acceptable to GCC verifier.
Environment - *Water*	*Reliability/ accessibility of water supply (EW01)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	Water Consumption from ground and other sources (EW02)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	Generation of wastewater (EW03)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable
	Wastewater discharge	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	-	Not applicable

	without/with insufficient treatment (EW04)											
	Pollution of Surface, Ground and/or Bodies of water (EW05)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable		Not applicable		
	Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Others (EW07)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Add more rows if required	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Environment – *Natural Resources*	*Conserving mineral resources (ENR01)*	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Protecting/ enhancing plant life (ENR02)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Protecting/ enhancing species diversity (ENR03)	Fish and Fisheries	National Fisheries and Aquaculture Authority Law	Not applicable		Harmful	Not applicable	Not applicable	Fish and fish caught by fishermen Frequency of monitoring: Twice a year Source: ESMP report	+1	This monitoring program would provide the required data base for deciding, at a later stage which measures would be required and adequate for reaching a good fisheries management,	The fish and fisheries of the river would be affected by the implementation of project activity, therefore the risk is provided as Harmful. The project activity act as the source of hazardous waste

											i.e. for optimising the use of the resource.	compared to baseline and therefore the risk is provided as harmful. However the mitigation plan is provided which is as per the existing regulation. The monitoring procedure is provided in section B.7.1 of PSF, therefore the scoring of +1 is deemed to be acceptable to GCC verifier.
	Protecting/ enhancing forests (ENR04)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Protecting/ enhancing other depletable natural resources (ENR05)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Conservin g energy (ENR06)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	Replacing fossil fuels with renewable sources of energy (ENR07)	The project replaces fossil fuels with renewable sources of energy since it is a hydro power plant	RURAL ENERGY STRATEGY AND MASTER PLAN FOR LIBERIA UNTIL 2030. For the promotion of renewable sources of energies.	Not applicable	Harmless	-	Not applicable	Not applicable	MWh delivered thanks to the hydropower plant	+1	Amount of electricity delivered to the Liberian's grid.	The project activity, the generation of electricity through renewable sources is expected to reduce GHG emission from fossil fuel power plants. The monitoring procedure for this parameter is provided in the section B.7.1 of PSF and therefore the risk identified as harmless and

												score is given as +1 which is deemed to be acceptable to GCC verifier.
	Replacing ODS with non-ODS refrigerants (ENR08)											
	Others (ENR09)											
	Add more rows if required											
Net Score:			**+7**									
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] or [is likely to cause] net harm to the environment...									

Appendix 6. Matrix for identifying Social 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[8] 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 indicated as* ***Harmless****), project having positive impact*	*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 indicated as* ***Harmful***	*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 impacts to levels that are unlikely to cause any harm.*

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

					*on society wrt. To the BAU / baseline scenario must also mark their aspect as **"harmless"***						*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 creates long term job opportunities during operation.	All employment are done according to the national employment regulations	Not applicable	Harmless	-	Not applicable	No. of permanent job opportunities created ,to be monitored on annual basis	+1	The project creates long term jobs related to the operational phase of the power plant such as operation and control work or data monitoring. Thus the score is +1	GCC verifier during on-site visit and desk interviews has observed that the long-term job opportunities has been provided by the project activity during the operational phase. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
	New short-term jobs (< 1 year) created/ lost (SJ02)	The project creates short term jobs during operation	All employment are done according to the national employment regulations	Not applicable	Harmless	-	Not applicable	No. of temporary job opportunities created during operation phase, to be monitored on annual basis	+1	-	GCC verifier during on-site visit and desk interviews has observed that the short-term job opportunities has been provided by the project activity during the operational phase. The

											monitoring procedure of this parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
	Sources of income generation increased / reduced (SJ03)	The project increases income by creating job opportunities.	All payments and right comply with labor laws, as stated in the International Labour Organization, which Liberia is part since 28.06.1919	Not applicable	Harmless	-	Not applicable	No. of jobs opportunities created during the construction and operation phases. Monitored continuously.	+1	The project complies with country's labor laws, which are based on the International Labour Organization (ILO convention) thus the project has a scoring of +1	GCC verifier during on-site visit and desk interviews has observed that the job opportunities has been provided by the project activity during the operational phase. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier
	Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04) *(human rights)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	

Social - *Health & Safety*	*Disease prevention (SHS01)*	Prevent Communicable Diseases before and during construction phase and operation phase.	Legal requirements are detailed in health law Title 33.	-	-	Harmful	Not applicable	Transmission of diseases and Health protection for the local population and for the work force will be monitored on a monthly basis during construction and operation phase.	+1	The project comply with legal Public health law Title 33 of Liberia by taking precautions preventing communicable disease.	PO has provided the procedure for the monitoring of disease prevention procedures in section B.7.1 of PSF. The sore +1 provided is deemed to be acceptable to GCC verifier.
	Occupational health hazards (SHS02)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Reducing / increasing accidents /Incidents/fatality (SHS03)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Reducing / increasing crime (SHS04)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Reducing / increasing food wastage (SHS05)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Reducing / increasing indoor air pollution (SHS06)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Efficiency of health services (SHS07)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	

	Sanitation and waste management (SHS08)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Other health and safety issues (SHS09)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Reducing work accidents during operation phase (SH10)	There may be occupational accidents at the site	All trainings and precautions are completed according to HSE Law	Not applicable	-	Harmful	Not applicable	Health and Statistics have to be kept on site and reported to LEC on a monthly basis. Statistics on non-compliance with PPE carried out. Any major accident has to be reported suddenly away to LEC.	+1	LEC ensures risk prevention by developing specific rules to be applied before entering the plant. Everything concerning health, safety and the environment (HSE) is monitored and listed annually in the HSE statistics reports. Thus the score is +1	GCC verifier during on-site visit and desk review/09/ has observed that HSE mechanisms has been provided by the project activity during the operational phase. The monitoring procedure of this parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
Social - *Education*	*specialized training / education to local personnel (SE01)*	The project owner provides job related training for the special positions	None	Not applicable	Harmless	-	Not applicable	The aspect has a positive impact as it allows job creation which will be monitored on a continuous basis. Thus, the score of this parameter is +1.	+1	The project develop an HSE training matrix when needed for workers in different sections (sub	GCC verifier during on-site visit and desk review/15/ has observed that regular training programs/ 15/ has been provided by the project activity during the operational phase. The monitoring

										stations operator, Electricity engineer, mechanic etc.) thus the score is +1	procedure of this parameter is provided in section B.7.1 of PSF. Thus the +1 scoring provided by PO is deemed to be acceptable to GCC verifier.
	Educational services improved or not (SE02)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Project-related knowledge dissemination effective or not (SE03)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Other educational issues (SE03)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Add more rows if required (SE04)										
Social - *Welfare*	*Improving/ deteriorating working conditions (SW01)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Community and rural welfare (indigenous people and	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	

	communities) *(SW02)*										
	Poverty alleviation (more people above poverty level) (SW03)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Improving / deteriorating wealth distribution/ generation of income and assets (SW04)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Increased or / deteriorating municipal revenues (SW05)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Women's empowerment (SW06) *(human rights)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Reduced / increased traffic congestion (SW07)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Exploitation of Child labour	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	

	(human rights) *(SW08)*										
	Minimum wage protection *(human rights) (SW09)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Abuse at work place.(with specific reference to women and people with special disabilities / challenges) *(human rights) (SW10)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Other social welfare issues (SW11)	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Avoidance of human trafficking and forced labour *(human rights)* *(SW12)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	

	Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs *(human rights)* *(CW13)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Provisions of resettlement and human settlement displacement *(human rights)* *(CW14)*	Not applicable	Not applicable	Not applicable	-	-	Not applicable	Not applicable	Not applicable	Not applicable	
	Add more rows if required										
Net Score:					+6						
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] or [is likely to cause] net harm to society.						

Appendix 7. Monitoring Report Matrix describing the performance of the project activity toward achieving project-level SDG targets and indicators and ER Verifier's Conclusion.

UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs				GCC Project Verifier's Conclusion (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 ofr 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	By 2030, increase substantially the share of renewable energy in the global energy mix. Renewab le energy share in the total final energy consumption	Yes	Produce clean and renewable energy	Produce up to 200 GWh per year	-	Amount of energy produced	Monitor the quantity of energy produced per year	The project activity produces an estimated 200GWh of renewable energy per year, thus meeting the SDG 7 requirement s.	Yes
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Promote policies to support Job creation and growing enterprise	None	Create job opportunities	Increase jobs opportunities during construction and operation phases	-	Amount of job created by type	Monitor the number of jobs created during construction and operation phases	GCC verifier during the onsite interview confirms that short and long term employment has been provided during the	yes

								construction and operational phase of the project activity. The GCC verifier confirms that SDG 8 is likely to be achievable	
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	Integrate climate change measure s into national policies, strategies and planning. Total greenhouse gas emission	Yes	Reduce GHG emissions	Reduce up to 113,928 tCO_2 per year	-	Amount of GHG reduced	Monitor the amount of GHG reduced per year.	The project activity, which is generation of electricity through hydro power plant which is a clean and renewable source is expected to generate	Yes

								200 GWh of energy per year which reduces an estimated 113,928 tCO_2e per year that would have generated from a fossil fuel power plants.	
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	**3**	**3**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	**Silver**	**3**

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 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[9];
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

[9]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

www.globalcarboncouncil.com