Validation report form for renewal of GS4GG Project Activities

(Gold Standard for the Global Goals)

BASIC INFORMATION	
Title and GS reference number of the project activity (PA)	Aralik HEPP GS 663
Time of First Submission Date	10/03/2010
Date of Design Certification	05/03/2012
Version number of the validation report for RCP	2.0
Completion date of the validation report for RCP	16/07/2024
Version number and date of PDD to which this report applies	5.0 Dated: 16/07/2024
Project Developer	Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş. (Private Entity)
Project Representative	Life İklim ve Enerji LTD. ŞTİ. (Private Entity)
Host Party	Turkey
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Scale of the project activity	Small scale
Applied methodologies and standardized baselines	AMS-I.D. “Grid connected renewable electricity generation” version 18.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Mandatory sectoral scopes	1: Energy Industries (renewable)
Conditional sectoral scopes, if applicable	Not applicable
Estimated amount of annual average GHG emission reductions	22,254 tCO2e
SDG Outcomes	SDG 07. Affordable and Clean Energy SDG 08. Decent Work and Economic Growth SDG 13. Climate Action

Name and UNFCCC reference number of the VVB	Earthood Services Private Limited E-0066
Name, position and signature of the approver of the validation report	 Managing Director Dr. Kaviraj Singh

SECTION A. Executive summary

The project activity “Aralik HEPP” is a run-of-river type project which involves generation of electricity through hydroelectric power plant. This is a small-scale project activity generating energy from the running waters of the Aralık Creek and includes a weir, upstream and downstream cofferdams, spillway, conveyance tunnel and powerhouse with turbines and generators. The project is located on the Aralik Creek of Coruh River, within the boundaries of Borcka District of Artvin Province of Turkey. The project site can be accessed via a 10-kilometer-long paved road in Borçka or a 45-kilometer-driveway from Artvin. The installed capacity of the project is 12.41 MW with an annual output of 45,150 MWh. The project employs two Pelton type turbines each having capacity of 6.205 MWe and design flow rate of 5.0 m^3/s. The electricity generated from the hydropower plant is supplied to Turkey national grid. In the absence of the proposed project activity, the power is generated by the thermal plants which is a carbon intensive one.

Total estimated annual average emission reductions for this crediting period are 22,254tCO2e.
The PA has been registered under GS4GG (GSID 663) and the Project Developer of the PA is Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş and Project Representative is Life İklim ve Enerji LTD. ŞTİ.

Scope of Validation

The scope of the services provided by Earthood Services Private Limited for the project is to perform validation of the renewal of GS4GG project activity. The scope of validation is to assess the claims and assumptions made in the revised project design document (PDD) /5/ against the GS4GG principles and requirements /1/ criteria and GS4GG VVB requirements /2/, including but not limited to, CDM PA PS/3/, CDM PA VVS/4/, applied methodology /6/ and other relevant rules and requirements established for GS4GG PA.

Validation Process

The validation process is undertaken by validation team that involves the following:

- The desk review of documents and evidence submitted by the project participant in context of the reference GS4GG rules and guidelines.
- undertaking site visit, interview or interactions with the representative of the project participant,
- Reporting audit findings with respect to clarification and non-conformities and the closure of the findings as appropriate.
- Preparing a draft validation report for renewal of GS4GG programme of activities period complying with the GS4GG principles and requirements.

An independent Technical Review team reviews the validation report prepared by the validation team. The final validation report that is accepted by Technical Reviewer is then approved on behalf of Earthood Services Private Limited and processed further as per GS4GG procedures.

Conclusion

The review of the PDD and supporting documentation and subsequent follow-up actions (interviews and interactions with PD) has provided ESPL with sufficient evidence to determine the fulfilment of stated criteria. ESPL is of the opinion that the PA “Aralik HEPP” as described in the final revised PDD version 5.0 /5/ meets all relevant requirements of GS4GG, meets host country criteria and has correctly applied the methodology AMS-I.D. “Grid connected renewable electricity generation” version 18.0 /6/. Therefore, the project is being recommended to GS4GG for request for its renewal of GS4GG project activities period.

SECTION B. Validation team, technical reviewer, and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection*	Interview(s)	Validation findings
1.	Team Leader (Old)	IR	Garg	Shreya	Central Office	Y	Y	Y	Y

2.	Team Leader (New)	IR	Amlani	Jinesh	Central Office	Y	N	N	Y
3.	Methodological Expert (Old)	IR	Garg	Shreya	Central Office	Y	Y	Y	Y
4.	Technical Expert (TA 1.2)(Old)	IR	Garg	Shreya	Central Office	Y	Y	Y	Y
5.	Technical Expert (TA 1.2) (Old)								
6.	Validator (Old)	IR	Garg	Shreya	Central Office	Y	Y	Y	Y
7.	Validator (Trainee Team leader) (New)	IR	Chinthala	Nikhitha	Central Office	Y	N	N	Y
8.	Local Expert	EI	Atabek	Fikriye Seta	Central Office	Y	N	N	N
9.	Trainee	IR	Jain	Arohi	Central Office	Y	N	N	Y

B.2. Technical reviewer and approver of the validation report for RCP

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer and TA expert to TR (Old)	IR	Mahala	Deepika	Central Office
2.	Technical reviewer and TA expert to TR (New)	IR	varshney	Divij	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Means of validation

C.1. Desk/document review

The validation for the renewal of project activity is performed primarily as a document review of the project design document version 5.0 dated 16/07/2024 /05/. The cross check between information provided in the PDD and information from source other than those used, if available, the validation team's sectoral or local expertise and, if necessary, independent background investigations. The complete list of documents/evidence assessed by validation team in included under Appendix 3.

C.2. On-site inspection

On site assessment is being conducted for the current re-validation by the validation team on 23/07/2022 to discuss the re-validation of the project activity, on-going financial needs, monitoring parameters and other aspects of the project. The physical audit included the interview with the PD representative and physical inspection of the project sites. Under the scope of on-site visit/28/, photographic evidence of project activity implementation on given location, inspection of installed equipment, and plant monitoring records maintained on-site were shared with the validation team as part of the assessment.

Date of on-site inspection: 23/07/2022				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	An investigation of whether all relevant equipment is installed and works as anticipated.	Artvin's Borcka district in northeastern Turkey	23/07/2022	Shreya Garg
2.	The operating staff was interviewed and observed to check the risks of inappropriate operation and data collection procedures.			
3.	Information processes for generating, aggregating, and reporting the selected monitored parameters were reviewed.			
4.	Required calibration of all measuring			

	equipment.			
5.	The monitoring processes, routines, and documentations to check their proper application			
6.	Checking the monitoring data and monitoring/usage survey data.			
7.	Checking for possibility of double counting and/or leakage			

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Gö2E	Hüseyin	Plant Manager of Aralik HEPP	23/07/2022	Discussion on project activity and its baseline scenario, on-going financial need, project implementation, monitoring parameters, local stakeholder meeting details, SDGs parameters, etc	Shreya Garg
2.	Baysal	Mert	Energy Trader			
3.	Özcan	İnci Hazal	Life İklim ve Enerji Ltd. Şti.			
4.	Ôzbay	Îzzet	Kum. Operator			
6	Kara	Hüseyin	Turbine Operator			
Local Stakeholders						
7.	GúL	Metin	Köy Muhtarı	23/07/2022	General aspects of the project, changes since validation, monitoring and measurement, training and practice of the operational personnel	Shreya Garg
8.	Engin	Jinan	A2a			

C.4. Sampling approach

The project activity is a hydropower plant project and did not require sampling plan. Hence, no sampling approach was applied.

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

Area of validation findings	No. of CL	No. of CAR	No. of FAR
General description of Project Activity	-	-	-
Compliance with PDD form	-	-	-
Description of project activity	CL 02	-	-

Technologies and/or measures	CL 03	CAR 02	-
Funding sources of project	CL 04	-	-
Eligibility criteria under Gold Standard	-	CAR 01	-
Eligibility criteria under applied methodology	-	CAR 03	-
Project boundary, sources and GHGs	-	CAR 04	-
Validation of baseline scenario	CL 05	-	-
Demonstration of Additionality	-	-	-
Ongoing financial need	-	CAR 05	-
Sustainable Development Goals targeted by the project activity	-	CAR 06 CAR 09	-
Estimation of emission reductions	CL 07		-
Monitoring plan	CL 01	CAR 07	FAR 02
Start date, crediting period and duration	CL 06	CAR 08	FAR 01
Safeguarding principle and SDG outcome assessment	-	-	-
Safeguarding principles assessment	-	-	-
Gender sensitive assessment	-	-	-
Local Stakeholder Consultation	-	-	-
Local stakeholder consultation conducted during validation	-	-	-
Grievance mechanism for continuous input	-	-	-
Internal quality control	-	-	-
Validation opinion			-
Total	07	09	02

SECTION D. Validation findings

D.1. General description of Project activity

D.1.1. Compliance with PDD form

Means of validation	The PDD form template used for the project activity "Aralik HEPP" is GS4GG Key Project Information & Project Design Document v.1.2/7/, which is a valid version available at the time of validation. All the sections of the aforesaid form were filled as per the Key Project Information & Project Design Document v.1.2 template guidelines /8/ and all the relevant details were provided in the form.
Findings	No findings were raised.
Conclusion	The PDD version 5.0 /5/ has been found to be completed using the valid version of the PDD form template. The information that is transferred in the current version of the PDD /5/ is materially the same as that in the registered accepted PDD/9/ and in line with the GS4GG principles & requirements version 1.2/1/.

D.1.2. Description of project activity

Means of validation	The purpose of the project activity is to generate and deliver clean energy to the Turkey national grid through Aralik hydroelectricity power plant. It is a run of a river type hydro project. Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş. is a Project Developer (PD), and Life İklim ve Enerji LTD. ŞTİ. is a Project Representative. The project activity is implemented within the boundaries of Borcka district of Artvin province, Turkey. Location: Latitude (DMS) / Longitude (DMS) Weir: 41°23′53″ N / 41°44′06″ E Powerhouse: 41°23′36″ N / 41°41′49″ E The description of the technology-related aspects of the project has been explained in detail in revised feasibility report of the project /10/. The assessment of the technology applied in the project is reported in the following section D.1.3 of the validation report. The scale of the project is small scale. The total installed capacity of the project activity is 12.41 MWe which falls under small scale category as per para 3.3.2 renewable energy activity requirements document /19/. The project implementation

	documents were reviewed and found correct and valid. Documents pertaining to the project implementation were thoroughly reviewed and found correct and valid. The project developer received license to operate the project activity on 16/05/2006 /11/. Other project documents such as EIA exemption letter, forest permission approval letter, contractor agreement, EM equipment purchase agreement, revised feasibility report, and provisional acceptance document // were reviewed and all the information provided in the revised PDD were checked. The electricity generated by the hydropower plant is sold to turkey electricity Grid - TEIAS. The project is expected to reduce the GHG emissions caused by the existing fossil fuel-based power plants by 22,245 tCO_2e per year during renewable 7-year crediting period /5/.
Findings	CL 02 was raised and resolved.
Conclusion	The information provide in the revised PDD were compared with the registered PDD and project documents including provisional acceptance document, revised feasibility report were reviewed. The validation team confirms that the project description provided in the registered accepted PDD /9/ and revised PDD /5/ is materially the same.

D.1.3. Technologies and/or measures

Means of validation

The technical description of the project activity has been validated by assessing the revised feasibility report and provisional acceptance document /16/.
Installed equipment at the project site and project monitoring system were checked during physical site visit. The photographic evidence of installed equipment and electricity meters were shared by the PD. The technical description is assessed in detail below:

Technical Description	Specification	Means of validation
Plant Characteristics		
Type	Channel type	Checked from revised feasibility report and provisional acceptance document /10//16/
Channel Length	2873 m	Checked from production license and revised feasibility report /10//11/
Design Discharge	5.00 m^3/ sec	Checked from production license and revised feasibility report /10//11/
Total Installed Capacity	12.41 MW	Checked from production license and revised feasibility report /10//11/
Powerhouse Characteristics		
Net Head	292.23 m	
Turbine type	Horizontal PELTON TYPE	Checked from revised feasibility report and provisional acceptance document /10//16/
Turbine Power	2 each x 6.205 MWe	Checked from revised feasibility report and provisional acceptance document /10//16/
Generator Capacity	2 each x 6.21 MWA	Checked from revised feasibility report and provisional acceptance document /10//16/
Turbine manufacturer		Checked from revised feasibility report and

			provisional acceptance document /10//16/
	Hydrology	Regular regime with high seasonal precipitation in the form of rain	Checked from revised feasibility report and provisional acceptance document /10//16//32/
	Annual Energy Generation		
	Total Energy	45.15 GWh	Checked from production license and revised feasibility report /10//11/
	Switchyard	34.5 kV switchgear equipment, 6.3/34.5 kV power transformer and 5.0 km long 34.5 kV capacity overhead transmission line for connection to the national grid	Checked from production license and revised feasibility report /10//11/
	Commencement of operation	34/04/2010	Checked from production license and revised feasibility report /10//11/
	Licence Duration	49 years	Checked from production license and revised feasibility report /10//11/
	Grid connection	STATION via 34.5kV line.	Checked from production license and revised feasibility report /10//11/
Findings	CL 03 and CAR 02 were raised and resolved.		
Conclusion	The VVB has accepted and validated the technology/measure applied in the project. The technology involved in the project is described in the revised PDD /5/ with sufficient details and clarity. The accuracy of the project description was determined based on the interview with the PD as part of validation audit, review of supporting documents (as mentioned in Appendix 3), and project site photographs.		

D.1.4. Funding sources of project

Means of validation	The project is funded by Project Owner (Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş.) and no ODA or public finding have been received by the PD for the implementation of the project activity.
Findings	CL 04 was raised and resolved.
Conclusion	No. ODA Declaration document dated 12/08/2022 /18/ has been reviewed and it was found that project did not receive any public funding or ODA funding.

D.2. Eligibility criteria under Gold Standard

Means of validation	The eligibility under gold standard has been discussed as per the section 3.1.1 of GS4GG Principles & Requirements v1.2 below. The project is a hydro power plant project and is already implemented project under GS. The scope of this report is renewal of crediting period for the project activity 'Aralik HEPP'. The project is an eligible project type as per the GS4GG Renewable Activity requirements version 1.4 /19/. The project activity is a hydro power plant and falls under GS eligible project types. The project is in compliance with the para 4.1.3 of GS principle and requirements document /1/and has applied methodology AMS-I.D. version 18.0. The project location is Turkey and is already registered under GS previous version 2.1. Information of location of the project has been given in section A.1.2 section of the PDD and has been checked from geo-coordinates /5/. The project Aralik HEPP

	is a run-of-river type project implemented within the boundaries of Borcka District of Artvin Province, Turkey. The scale of the project is small scale, and the installed capacity of the project is 12.41 MWe. The project has identified project area, boundary and scale in accordance with the para 3.3.2 of renewable energy activity requirements /19/. The project is in compliance with applicable Turkey's legal, environmental, ecological and social regulations. The justification provided is accepted by the validation team. Project type has been identified in the revised PDD /5/ and eligibility criteria are in line with the GS4GG Principles & Requirements /1/. It has been verified from the GHG Declaration/43/ submitted by the PD that the project is in its renewal of crediting period by Gold Standards and shall not claim credits from any other registry after its registration under GS4GG. VVB also performed secondary independent research (internet) like cross-checking done on registry website of VERRA, GS, UNFCCC, and other domestic renewable energy schemes and confirms that the project is not claiming/ receiving any credits from any other registry. Legal rights of the carbon credits are owned by the PD. Carbon transfer agreement has been signed between PD and project representative to demonstrate the legal ownership of products generated by the project. The project activity is also in compliance with the renewable energy activity requirements para 2.1.2 /19/. The project involves generating electricity from non-fossil fuel and renewable energy sources i.e., hydro power plant and delivering it to Turkish national grid.
Findings	CAR 01 was raised and resolved.
Conclusion	The VVB has accepted and validated that the project activity meets the eligibility conditions of in accordance with GS4GG principles and requirements version 1.2/1/ and Renewable Activity requirements version 1.4 /19/ as follows: • The scope of this report is renewal of crediting period for the project activity 'Aralik HEPP" which is already registered in GS (project GS ID: 663) • The project activity falls under the eligible project type as per the Renewable Activity requirements version 1.4 • The project is generating electricity from renewable source i.e., hydro and supplying it to the national grid. • The project activity replaces fossil fuel-based power generation and thus contributing to the sustainable development goals of the host country.

D.3. Eligibility criteria under applied methodology

Means of validation

The project is a renewable energy project, and the project activity employs the latest version of the approved methodology AMS-I.D. Grid connected renewable electricity generation, Version 18.0 which is an active methodology of UNFCCC and valid from 28/11/2014. AMS-I.D. methodology refers to the methodology ACM0002 for the estimation of project emission. As per para 39 of ACM0002, v20.0 project emissions from water reservoirs of hydro power plant have to be considered following the procedure described in the most recent version of "ACM0002: Grid-connected electricity generation from renewable sources. Thus, the project activity also employs ACM0002: Grid-connected electricity generation from renewable sources, version 20.0. The following tools are applicable to this project:

- Tool to calculate emission factor for an electricity system
- Tool to determine remaining lifetime of the equipment
- Tool for demonstration and assessment of additionality, version 7.0

The validation of the applied methodology criteria is given below:

Ref.	Eligibility criteria	Justification from PD	Means of validation
1.	This methodology is applicable to grid-connected renewable energy power generation project activities that: • Install a Greenfield plant; • Involve a capacity addition in (an) existing plant(s); • Involve a retrofit of (an) existing plant(s); • Involve a rehabilitation of (an) existing plant(s)/unit(s); or • Involve a replacement of (an) existing plant(s).	Applicable. The project activity involves installation of a greenfield project.	The scope of this validation assessment is renewal of crediting period, and the project is registered under GS and already implemented. The project activity is a grid connected renewable energy project based on Hydro power. This is confirmed by submitted evidence /16/ and on-site audit. Hence, this criterion is applicable for this project activity
2.	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: • The project activity is implemented in an existing reservoir with no change in the volume of reservoir. • The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2 • The project activity results in new reservoirs and the	Not applicable. The project does not cause any new reservoir information.	Not applicable.

		power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4W/$m^{2.}$		
	3.	If the new unit has both renewable and non-renewable components (e.g., a wind / diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co- fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.	Not applicable. The project is a hydro power plant without non-renewable components (e.g., a wind/ diesel unit).	This criterion is not applicable.
	4.	Combined heat and power (co- generation) systems are not eligible under this category.	Not applicable. The project does not involve the capacity addition of renewable energy generation units at an existing renewable power generation facility.	
	5.	In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	Not applicable. The project does not involve the capacity addition of renewable energy generation units at an existing renewable power generation facility.	There is no capacity addition of renewable energy generation in the project. Hence, this criterion is not applicable.
	6.	In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated	The project is not retrofit, rehabilitation, replacement, or capacity addition project.	This is a newly installed greenfield hydropower project in Turkey and no pre-existing renewable unit. So, this criterion is not applicable.

		or replacement power plant/unit shall not exceed the limit of 15 MW.	Therefore, this item is not applicable.	
	7.	In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid, then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	Not applicable. The project is a hydro power project.	Criterion is not applicable.
	8.	In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	The project activity is a hydro power generation plant. Hence the condition does not apply.	Criterion is not applicable.
Findings	CAR 03 was raised ad resolved.			
Conclusion	The project activity was found in accordance with the applied methodology AMS-I.D Grid connected renewable electricity generation, Version 18.0 /6/. The validation team confirms that: • The selected methodology /6/ for the GS project activity is applicable. • Each applicability condition listed in the applied methodology AMS-I.D version 18.0 has been addressed in the revised PDD /5/. • The methodology was found to be in accordance with the applicable requirements in the CDM project standard for project activities /3/ and GS requirements /1/.			

D.4. Project boundary, sources and GHGs

Means of validation	The project boundary basically defines the physical and geographical boundary of the project facility, and it is well illustrated in the PDD section B.3 /5/. The project boundary includes hard-fill weir and powerhouse plant connected physically to the electricity system that is supplying electricity to the Turkish National Electricity Grid. The source and GHG for the baseline emissions is CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. Project emissions have been considered in the calculation of total emission reductions calculations. The sources and GHGs considered are in line with the applied methodology /6//20/.
Findings	CAR 04 was raised and resolved.

Conclusion	The project boundary is completely depicted in the PDD /5/ and is validated by the validation team. Also, according to the validation team the sources and gases that are accounted are found to be appropriate according to the project activity. As per the onsite visit assessment: • The project boundary is found to be in-line with the registered PDD /9/ and correctly reported in revised PDD /5/ • The sources, gases that are accounted are justified in context of the project activity.

D.5. Validation of baseline scenario

Means of validation	The project activity 'Aralik HEPP' is an already registered project under GS. The current scope of assessment is the renewal of crediting period for the project activity. The total installed capacity of the project is 12.41 MW and project falls under small-scale project activity. The project employs small-scale approved CDM methodology AMS-I.D. v.18.0. According to the applied methodology AMS-I.D. version 18.0 /6/ para 19 the baseline scenario for greenfield power plant is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid. The project replaces energy generation from thermal power plants to energy generation from renewable source of energy i.e., hydro power plant. The electricity generated will be supplied to the Turkish national grid. As described in the revised PDD /5/, thermal power plants are the most used type in electrical energy production in Turkey and produces carbon emission. The implementation of project activity is expected to reduce the carbon emission by 22,254 tCO_2/ year. Turkish production capacity projection report, "Energy demand projection, Turkey 2021-2030"/25/ was reviewed to check the predicted increased demand of electricity. The number of thermal power plants would increase to meet the electricity demand in the absence of project activity. The graph in the PDD section B.4 predicted that the electricity demand would increase in the years 2020-2030. The assessment team ascertains that the PDD /5/ has established baseline scenario in line with the applied methodology /6/ and it is confirmed that PD has correctly identified baseline scenario.
Findings	CL 05 was raised and resolved.
Conclusion	The validation team based on the description provided above with regards to the assessment of the requirements confirms that: (a) All the assumptions and data used by the PD are listed in the PDD /5/ and or its annexures, including their references and sources; (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD/5/. (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable; (d) The approved baseline methodology has been correctly applied to identify the most plausible baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity. (e) Relevant national and/or sectoral policies and circumstances are considered in the project The validation team confirms that it has taken other steps and other sources of information used to cross-check the information contained in the PDD /5/, wherever applicable, as listed above. The baseline re-assessment has been done inline with the applied methodology AMS-I.D v.18.0 /6/.

D.6. Demonstration of additionality

Means of validation	According to GS4GG Principles and Requirements version 1.2 /1/ para 5.1.14

	Design Certification Renewal follows the same process as Validation and Design Review (Design Certification) though the scope of assessment is limited to: (a) Changes in the Project as related to the General Eligibility Criteria (b) Incorporation of any relevant updates to the Gold Standard Requirements (c) Re-definition of Baseline Scenario and any impact of change on the Eligibility Principles, Criteria and Requirements (d) Any Gold Standard activity, product and methodology-specific Requirements (e) Demonstration of Ongoing Financial Need, where relevant – see Ongoing Financial Need Therefore, additionality assessment is not performed for this project activity as the scope of the assessment is renewal of crediting period.
Findings	No findings were raised.
Conclusion	According to the GS4GG principles and requirements /1/, additionality of the project is not required to reassess at the time of renewal of the crediting period.

D.7. Ongoing Financial Need

Means of validation

The project has demonstrated as per para 4.1.52 of Gold Standard for the Global Goals, Principles and Requirements – Version 1.2 /1/, Ongoing financial need shall be demonstrated at design certification renewal.
The validation team checked demonstration provided by PP in section B.5.2 of PDD and confirms that the carbon credits revenue are also required in 2nd crediting period to sustain the project activity. At the time of consideration of this project in year 2008, the rates of the carbon credits were $7-8/ tCO2e which was validated by the VVB from 'State of the Voluntary Carbon Markets 2008'/47/ report. It was further verified from 'State of the Voluntary Carbon Markets 2010'/48/ report that during completion of Pre- Feasibility Assessment for gold standard i.e., 10/03/2010, the price of GS VERs was around $11.1/ tCO2e. In 2012, the carbon market crashed due to which the price of VERs went down to €0.5/tCO2e (equivalent to 0.54 USD) which was validated by VVB through article named "Collapse of the Clean Development Mechanism scheme under the Kyoto Protocol and its spillover: Consequences of 'carbon panic'" dated 16/03/2022 by Kazunari Kainou (Fellow and Executive Board Member, UNFCCC Clean Development Mechanism RIETI)/49/. Furthermore, carbon credits were priced at approximately €0.5/tCO2e in 2012 which was verified from the State and Trends of Carbon Pricing Dashboard/50/. However, this carbon pricing is just an average estimate across different regions and markets. Yet the project issued credits until 2013. After that, due to which PD has not undertaken any issuance since the project would be a financial burden to bear the expenses of the consultancy, Standard fees and VVB costs.. PD has also shared the IRR sheet which was already validated during the time of design certification in which the PD has now also considered 1 €/tCO2e pricing without any issuance or retirement costs resulting in 11% IRR /51/which is lower than the benchmark (15%). Therefore, VVB concludes that the project is financially unviable without carbon revenue.

The chronology of the events is as follows:

Milestone	Date
License Issuance	16/05/2006
Board Decision for Consideration of Carbon Revenue	20/10/2006
Feasibility Study Report	November 2006
EIA Approval Letter	08/12/2006
Equipment Purchase Agreement (Investment Decision)	27/07/2007
Start of Construction	21/03/2008

	Loan Agreement	10/04/2008
	Preliminary Stakeholder consultation Meeting	14/03/2009
	Completion of PFA by GS	10/03/2010
	Commissioning Date	30/04/2010
	SFR Meeting	06/05/2010
	Continued Operation Start Date	30/04/2010
	Start of First CP	01/05/2010
	End of First CP	30/04/2017
	Start of First MP (within First CP)	01/05/2010
	End of First MP (within First CP)	30/09/2013
	Start of Second CP	01/05/2017
	Delayed Start of Second CP	03/11/2022
	End of Second CP	30/04/2024

Therefore, the ongoing financial need derived from GS certification is necessary to reduce unattractiveness of the project and enhance the project's operation in the 2nd crediting period/44/. This GS finance helps to maintain project activity contributing to the development of local communities in terms of income and employment creation, worker quality increase and emission reduction. Thus, the validation team is of the opinion that the ongoing financial need is necessary for operation and maintenance of the project throughout the crediting period. This has been confirmed from GS project homepage /27/. The carbon revenue generating from the project activity enabling PD to deliver clean and renewables source of energy, achieve its sustainable development goals and project objectives.

Findings	CAR 05 was raised and resolved.
Conclusion	Ongoing financial need has been demonstrated in the revised PDD /5/. The validation team has confirmed from the GS project homepage and found correct.

D.8. Sustainable Development Goals targeted by the project activity

Means of validation

The SDG outcome assessment is as follows –

SDG Parameters to be monitored	SDG Target	SDG Impact	Assessment/Observations
SDG 7: Affordable and Clean Energy	7.2. By 2030, increase substantially the share of renewable energy in the global energy mix	MWh of renewable energy generated 7.2.1 Renewable energy share in the total final energy consumption	The project activity involves production of electricity though hydropower plant and transmission it to the Turkish national grid. This reduces consumption of fossil fuel-based power generation and thereby helps in increasing utilisation of renewable energy. The expected electricity generation from this project activity is 45,150 MWh. The validation team confirms that SDG outcome has been addressed by the project activity in accordance with the applicable SDGs targets.
SDG 8 Decent	8.8. Protect labour rights and	Number of people	The project activity plan to provide employment to 15

	Work and Economic Growth	promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	employed 8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status	workers. SDG impact tool /38/ have been reviewed to confirm the number of workers hired in the project. The validation team confirms that SDG outcome has been addressed by the project activity in accordance with the applicable SDGs targets.
	SDG: 13 Climate action	13.2. Integrate climate change measures into national policies, strategies and planning	Emission Reductions 13.2.2 Total greenhouse gas emissions per year	The project activity involves production of electricity though hydropower plant and transmission it to the Turkish national grid. The parameter used to monitor the indicator the amount of GHG emission reduction annually and the value of the parameter is 22,254 tCO_2/yr. The validation team confirms that SDG outcome has been addressed by the project activity is in accordance with the applicable SDGs targets.
Findings	CAR 06 and CAR 09 were raised and resolved.			
Conclusion	The validation team confirms that the SDG outcomes is undertaken by the project activity has been addressed inline with the applicable SDGs targets.			

D.9. Estimation of emission reductions

Means of validation	The applied methodology AMS-I.D: Version 18.0 /6/ defines the methodological steps to determine the project emissions, baseline emissions, leakages and anthropogenic emissions by the proposed project activity. The project also employs ACM0002 version 20.0 /20/ and tool to calculate the emission factor for an electricity system, version 7.0 /27/. According to applied methodology AMS-I.D. v18.0 /6/ para 22, baseline emissions include only CO_2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. **Baseline emission:** The baseline emissions are to be calculated as follows: $BEy = EGPJ,y \times EFgrid,CM,y$ Where: BEy = Baseline emissions in year y (t CO2) $EGPJ,y$ = 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)

	$EFgrid,CM,y$ = Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of Tool 7 (t CO2/MWh) As per para 26, for greenfield power plants, $EGPJ,y = EGPJ,facility,y$ Where: $EGPJ,facility,y$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh) **Project emissions:** According to AMS-I.D, project emissions from hydropower plant water reservoirs must be considered in relation to "ACM0002: Grid-connected electricity generation from renewable sources." Nonetheless, the project does not result in the formation of a new reservoir. The weir is located on the same level as the riverbed. Excess water will overflow the weir, limiting the area to the existing riverbed. $PE_y = 0$ **Leakage emissions:** The project employs ACM0002 version 20.0 /20/ which is the latest version available at UNFCCC methodology webpage. No leakage emissions are applicable in this kind of project. LEy=0 **Emission reductions:** Emission reductions has been calculated following below equation from AMS-I.D. v18.0 /6/: $ER_y = BE_y - PE_y - LE_y$ Where ER_y= Emission reductions in year y (tCO_2/yr) BE_y= Baseline emissions in year y (tCO_2/yr) PE_y= Project emissions in year y (tCO_2/yr) LE_y= Leakage emissions in year y (tCO_2/yr) The emission reduction as calculated is 22,254 tCO_2 per year. The details of emission reduction calculation are discussed in the revised PDD /5/ and cross-checked from ER calculation sheet /21/. The validation team found calculation of all the particulars correct.
Findings	CL 07 was raised and resolved.
Conclusion	The validation team has cross checked the parameters and values related to the emission reduction and confirmed that justification of the mentioned values is correct.

D.10. Monitoring plan

Means of validation	The assessment of the ex-ante parameters can be found below. The selected parameters have been found in compliance with the requirements of the applied methodology AMS- I.D version 18.0 /6/ **Parameter fixed ex-ante:**

Relevant SDG Indicator	Parameter	Value in PDD	Assessment
SDG 13	$EF_{grid,CM,y}$	0.4929	The value has been

		tCO_2/MWh	sourced from Turkey National Network Emission Factor data sheet /23/. The source of the value was found valid and correct and the value has been correctly applied in the ER calculation sheet /21/.

Data and parameters to be monitored:

S.No..	Relevant SDG Indicator	Parameter and Unit	Monitoring Frequency	Assessment
1	SDG 7	$EG_{PJ,y}$ MWh	Continuously monitored, measured on hourly basis and at least recorded once a month	PD will monitor this parameter through electricity meters which owned, monitored and sealed by TEIAS. TEIAS will maintain and calibrate the electricity meters in every 10 years. The meter readings will be cross-checked from TEIAS-EPIAS website.
2	SDG 8	Quantity of Employment	Each monitoring period	PD will monitor this parameter each monitoring period and maintain the employment records ensuring implementation of SDG 8. 15 employees shall be hired in the project.
3	SDG 8	Quality of Employment	Each monitoring period	PD will monitor this parameter each monitoring period and maintain the training records ensuring implementation of SDG 8.
4	Water Quality and Quantity	Flow rate of water released	Continuous measurement	PD will monitor this parameter continuously through an expert assessment on adequacy of flow released
5	SDG 13	ER_y	Each monitoring period	The value applied is 22,254 tCO2e. Emission reductions by the project activity in year y (tCO2/yr) is measured and calculated as per the applied methodology /6/. ER calculation sheet has been reviewed and all the calculation were found correct /21/.
6	Aquatic Life	Effectiveness of the fish passage	Each monitoring year in the respective monitoring period	PD will monitor the effectiveness of the fish passage with photos of the passage to be provided at each monitoring year of the respective monitoring

	<table><tr><td></td><td></td><td></td><td></td><td>period.</td></tr></table> The assessment team confirmed that the monitoring parameters are sufficient to calculate the emission reductions in accordance with the methodology/6/. The parameters will be calculated or measured as mentioned above. The project will monitor electricity generation by the hydro power plant that will be supplied to the national grid. Two electricity meter – main and backup are installed to record the net generated electricity by the plant. Recording, collection and storing of data will be managed by CME. The monitoring plan has been described in the section B.7.3 of the PDD and has been verified by checking at the time of physical site visit.
Findings	CL 01 and CAR 07 were raised and resolved.
Conclusion	The validation team confirms the parameters which are part of monitoring plan is in-line with the PDD and the monitoring arrangements described in the monitoring plan are feasible within the project design. The PD will be able to implement the monitoring plan.

D.11. Start date, crediting period and duration

Means of validation	The start date of project activity under the Gold Standard is 27/07/2007, which is the date of purchase agreement for the equipment/14/ and the duration of the project activity is 45 years after construction with renewal after every 7 years. As per transition requirement, version 2.0, para 3.1.4 Transition projects renewing their crediting period under GS4GG shall maintain their existing crediting cycle and maximum crediting periods upon transition to GS4GG. A 7-year renewable project shall maintain the balance of its existing crediting period upon renewal. Its future renewals shall take place as per a 7-year cycle instead of 5 as envisaged under GS4GG, up to the maximum 21 years. PD has identified start date of the second crediting period as 01/05/2017.
Findings	CL 06 and CAR 08 were raised and resolved.
Conclusion	The start date of the project activity is 27/07/2007 which is the date of purchase of agreement for the equipment/14/. The validation team is of an opinion that date of purchase of agreement for the equipment can be considered as the first concrete step towards carbon consideration which binds the PP legally. The duration of the second crediting period is 7 years and start date of the crediting period will be 01/01/2022, which were found to be in accordance with the GS principles and requirements /1/.

D.12. Safeguarding principles and SDG outcome assessment

D.12.1. Safeguarding principles assessment

Means of validation	PD has outlined the assessment of safeguarding principles for the project activity as per the GS4GG safeguarding principles and requirements version 1.2/29/ to identify the potential risk and adverse outcome of project activity, to adopt a mitigation strategy, to avoid or where avoidance is not possible, minimise identified risks, with the intention to achieve the stated requirement. Assessment of safeguarding principles have been done and tabulated in the Appendix 5.
Findings	No findings were raised.
Conclusion	The validation team confirms that the SDG assessment is undertaken by the project activity. Mitigation measures required for identified risks have been taken into consideration and added to the monitoring plan of the project activity.

D.12.2. Gender sensitive assessment

Means of validation	Gender sensitive assessment has been done in compliance with GS4GG gender sensitive requirements and reported in Section D.2 of the PDD /5/.

Questions	Answered by PD	Means of Validation
Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	As per Gold Standard Gender Policy, para 4.2 (i) "Foundational gender-sensitive requirement – This strengthens Gold Standard's 'do no harm' approach and addresses safeguards to prevent or mitigate adverse impacts on women or men and girls and boys. Such action is mandatory for all projects seeking Gold Standard certification and includes compliance with the gender 'do no harm' safeguards, gender gap analysis and gender sensitive stakeholder consultations." The project being a renewable energy project is not gender sensitive project. The project does not adversely impact women or men.	The project provides equal opportunity to men and women and does not discriminate among men and women for employment.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Turkey is party to Convention on Discrimination since 1972 to prevent any form of discrimination.	The project activity is in compliance with ILO 100 and 111 and Article 5/8425 of Labour Law
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	An Expert is not required. The project is a renewable energy project, and it does not discriminate among genders.	The project is a run-of-river type hydroelectric power plant project and does not require expert opinion for the gender safeguarding principles & requirements. The validation team confirms that project activity addressed requirement outlined in the para 2.2.1 of the GS4GG Gender equality requirements & guidelines /30/.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	An Expert is not required. The project is a renewable energy project, and it does not discriminate among genders.	The project activity does not require an expert to assist with gender issues at the stakeholder

				consultation. The validation team confirms that project activity addressed requirement outlined in the para 2.3.1 of the GS4GG Gender equality requirements & guidelines /30/.
Findings	No findings were raised.			
Conclusion	The validation team confirms that the gender sensitive requirements has been properly addressed in the PDD /5/.			

D.13. Local stakeholder consultation

D.13.1. Local stakeholder consultation conducted during validation

Means of validation	Two stakeholder consultation meeting has been conducted by the project developer Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş.. On March 14, 2009, a preliminary meeting was conducted in Borçka Town, Artvin Province. The project's Stakeholder Feedback Round (SFR) meeting was conducted on May 6, 2010, at the Aralk Hepp Powerhouse. The invitation of the meeting was given through registered mails, newspaper ads and through village heads. A notice inviting locals was published in "Artvin'in Sesi," a daily newspaper distributed throughout Artvin and its areas, including Borcka district. The newspaper advertisement used to hold a public invitation has been crosschecked from local stakeholder consultation report of the project /31/. Attendance sheet and photographs of the LSC were also checked to confirm the activity. During the meeting, a detailed intro/visit of the project were given to attendees and comments of the stakeholder were addressed. The evaluation forms included in LSC report /31/ filled by the stakeholders were reviewed and it was found that no negative comments were raised by the local stakeholder. There was no stakeholder consultation meeting was conducted before the second crediting period yet 1- The project has engaged in thorough stakeholder consultation during the renewal of the crediting period. By informing and involving the local community and utilizing various communication channels, such as announcements at the local leader's office, online, and through the local mosque, the project owner has demonstrated their commitment to transparency and adherence to the GS guidelines. PD has published an announcement on their website on 08/04/2022/46/ to encourage the further comments from local and global stakeholders. Along with that, a logbook was also left at the village head's office and declaration from the village head was obtained that no negative feedback has been received regarding the project since the start of its GS processes. VVB has checked the declaration provided by village head/47/ on 04/07/2022 and confirms that there were no comments. VVB has also interviewed few of the local stakeholders during the onsite visit/39/ and confirms that there were no grievances receive before the second crediting period start date. And no legal dispute exists about the project's implementation.
Findings	No findings were raised.
Conclusion	Stakeholder consultation report has been reviewed and the validation team confirm that • local stakeholder consultation meeting has been conducted by PD, and • grievance mechanism has been included to address grievances related to the project and contact details has been provided in local stakeholder consultation report /31/

D.13.2 Grievance mechanism for continuous input

<table>
<tr><td>Means of validation</td><td>PP has provision of continuous grievance mechanism. PP has decided to collect the complaints through the means listed below: /5/

<table><tr><td>Method</td><td>Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.</td></tr><tr><td>Continuous Input / Grievance Expression Process Book (mandatory)</td><td>The Gold Standard's specified grievance procedure is fully operational. The relevant forms are always available at the village head's office and the neighbourhood coffee shop.</td></tr><tr><td>GS contact (mandatory)</td><td>help@goldstandard.org</td></tr></table></td></tr>
<tr><td>Findings</td><td>No findings were raised.</td></tr>
<tr><td>Conclusion</td><td>The validation team confirm that grievance mechanism for continuous input has been included to address grievances related to the project.</td></tr>
</table>

SECTION E. Internal quality control

The draft validation report for renewal of crediting period prepared by the validation team was reviewed by an independent technical review team to confirm if the internal procedures established and implemented by ESPL were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable GS rules/requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team were independent of the validation team.
The technical review process may accept or reject the validation opinion or raise additional findings in which case these must be resolved before requesting for registration. The technical review process is recorded in the internal documents of ESPL and the additional findings get included in the report.
The final report approved by the technical reviewer is authorized by Managing Director and issued to the PD and/or submitted for request for registration, as appropriate on behalf of ESPL.

SECTION F. Validation opinion

The validation of “Aralik HEPP” for renewable of its crediting period was performed based on rules and requirements defined by GS4GG Principles and Requirements and UNFCCC for the CDM program of activities. The purpose of this project activity is to generate electricity from hydro power plant and supply it to Turkish national grid. 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 proposed GS PA. The project correctly applies the approved baseline and monitoring methodology AMS I.D Grid connected renewable electricity generation, version 18.0 /6/ and is assessed against latest valid GS4GG Principles and Requirements, CDM PS, VVS and PS and/or other applicable GS Decisions/Tools/Guidance/Forms.

The proposed GS project activity is likely to achieve the anticipated emission reductions stated in the PDD provided the underlying assumptions do not change.

ESPL has informed the project participants of the validation outcome through the draft validation report and final validation report. In case of negative validation outcome, the final validation report is only submitted to PD. The final validation report contains the information regarding fulfilment of the requirements for validation, as appropriate.

ESPL applied the following validation process and methodology using a competent validation team.

- the desk review of documents and evidence submitted by the project participant in context of the reference GS principles and requirements,
- conducting interview, or interactions with the representative of the project participant,
- reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and

- preparing a draft validation opinion based on the auditing findings and conclusions
- technical review of the draft validation opinion along with other documents as appropriate by an independent competent technical review team
- finalization of the validation opinion (this report)

The review of the PDD, supporting documentation and subsequent follow-up actions have provided ESPL with sufficient evidence to determine the fulfilment of stated criteria.
ESPL believes the project activity “Aralik HEPP” as described in the revised PDD /5/ does meet the stated criteria of GS, meets host country criteria and has correctly applied the methodology AMS I.D Grid connected renewable electricity generation, version 18.0 /6/. Therefore, the project is being recommended to GS4GG for request for renewal of crediting period.

Appendix 1. Abbreviations

Abbreviations	Full texts
General	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CH4	Methane
CL	Clarification Request
CO2	Carbon di oxide
CP	Crediting Period
DNA	Designated National Authority
DR	Desk Review
DOE	Designated Operational Entity
EB	Executive Board
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LoA	Letter of Approval/Authorization
LSC	Local Stakeholder Consultation Process
MoC	Modalities of Communication
MoV	Means of Validation
MP	Monitoring Plan
ODA	Official Development Assistance
OM	Operating Margin
PA	Project Activity
PCP	Project Cycle Procedure
PD	Project Developer
PDD	Project Design Document
PE	Project Emission
PoA DD	Programme of Activities Design Document
PP	Project Participant
PS	Project Standard
RCP	Renewal of Crediting Period
RFR	Request for Registration
tCO2e	tonnes of Carbon di Oxide equivalent
TPH	Tonnes Per Hour
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VVS	Validation and Verification Standard
VVB	Validation and Verification Body
Project Specific	
ODA	Official Development Assistance
HEPP	Hydroelectric Power Plant
LSC	Local Stakeholder Consultation
SDG	Sustainable Development Goals
TEAIS	Turkish Electricity Transmission Corporation

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., AMS.III.BL, ACM0002, ACM0012		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2, TA 3.1)		
Reviewed by	Shifali Guleria	**Date**	26/04/2022
Approved by	Deepika Mahala	**Date**	26/04/2022

Competence Statement			
Name	Jinesh Amlani		
Education	M.Sc. Energy Systems B.Sc. Physics		
Experience	8+ years		
Field	Climate Change & Environment		
Approved Roles			
Team Leader	YES (VM Only)		
Validator	YES (VM Only)		
Verifier	YES (VM Only)		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert (X.X)	YES (TA.1.2, TA 3.1)		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	16/05/2024
Approved by	Deepika Mahala (Technical Manager)	**Date**	16/05/2024

Competence Statement	
Name	Nikhitha Chinthala
Education	M.Tech (Renewable Energy)

	B.Tech (Electrical and Electronics Engineering)		
Experience	8 months		
Field	Renewable Energy		
Approved Roles			
Team Leader	NO		
Validator	YES		
Verifier	YES		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	29/02/2024
Approved by	Deepika Mahala (Technical Manager)	**Date**	29/02/2024

Competence Statement (ISO14065)			
Name	Sukanya Phukan		
Education	M.Sc (Environmental Science and Technology) B.Sc (Zoology)		
Experience	1+ year		
Field	Environment Science		
Approved Roles			
Team Leader	YES (VM only)		
Validator	YES (VM only)		
Verifier	YES (VM only)		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	YES (VM TA 1.2, 3.1)		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	23/06/2023
Approved by	Deepika Mahala (Technical Manager)	**Date**	23/06/2023

Competence Statement	
Name	Arohi Jain
Education	M. Sc. Environmental Sciences B.Sc. Biology
Experience	2 years
Field	Environmental Sciences
Approved Roles	
Team Leader	NO
Validator	NO
Verifier	NO
Methodology Expert	NO
Local expert	NO
Financial Expert	NO
Technical Reviewer	NO
TA Expert (X.X)	NO

Trainee	YES		
Reviewed by	Shifali Guleria, Quality Manager	**Date**	10/05/2022
Approved by	Deepika Mahala, Technical Manager	**Date**	10/05/2022

Competence Statement			
Name	Fikriye Seda Atabek		
Education	M.Sc. Energy Science and Technology B.Sc. Chemical Engineer		
Experience	11 years		
Field	Energy Science and Technology		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	YES (Turkey)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Reviewed by	Deepika Mahala, Quality Manager	**Date**	22/12/2021
Approved by	Ashok Gautam, Technical Manager	**Date**	22/12/2021

Competence Statement			
Name	Deepika Mahala		
Country	India		
Education	M. Sc. (Environment Management), GGSIP University B.Sc. Hons. (Chemistry), Sri Venkateshwar College, DU		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	ACM0002, AMS.I.D., AMS.I.A, AMS.III.AV, AMS.II.G, AMS-II.C		
Local expert	YES (India, Bangladesh)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2 & TA 3.1)		
Reviewed by	Shifali Guleria (QM)	**Date**	28/04/2022
Approved by	Kaviraj Singh (MD)	**Date**	28/04/2022

Competence Statement (ISO 14065)

Name	Divij Varshney		
Education	M. Tech. Renewable energy systems B.Tech. Electrical Engineering		
Experience	3.5 years		
Field	Climate Change & Environment / Industry		
Approved Roles			
Team Leader	Yes (VM)		
Validator	Yes (VM)		
Verifier	Yes (VM)		
Local expert	Yes (India)		
Financial Expert	NO		
Technical Reviewer	Yes		
TA Expert (X.X)	Yes (1.2 &3.1)		
Reviewed by	Shifali Guleria, Quality Manager	**Date**	04/04/2024
Approved by	Deepika Mahala, Technical Manager	**Date**	04/04/2024

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	GS	GS Principles & Requirements	Version 1.2	Others
2.	GS	GS Validation & Verification Body Requirements	Version 2.0	Others
3.	UNFCCC	Standard: CDM PS for PA	Version 3.0	Others
4	UNFCCC	Standard: CDM VVS for PA	Version 3.0	Others
5	PD	Revised PDD	Version 05 dated 16/07/2024	PD
6	UNFCCC	AMS-I.D. Grid connected renewable electricity generation	Version 18.0	Others
7	GS	GS4GG Key Project Information & Project Design Document Template	Version 1.2	Others
8	GS	GS4GG Key Project Information & Project Design Document template guidelines	Version 1.2	Others
9	PD	Registered accepted PDD GS Passport	Version 10 dated 05/03/2012 Version 08 dated 07/07/2011	Others
10	PD	Energy Yield Assessment		PD
11	T.R. Energy Market Regulatory Authority	Generation license	16/05/2006	PD
12	T.R. Energy Market Regulatory Authority	EIA Exemption letter	25/11/2009	PD
13	T.R. Ministry of Environment & Forestry	Regulation on Inspection of Measurement and Measuring Instruments	-	PD
14	T.R. Ministry of Environment & Forestry	Law on Electricity Generation from Renewables (ratified 18.05.2005) Law on Electricity Markets (ratified 14.03.2013)	Dated 18/05/2005 Dated 14/03/2013	Others
15	IEA Electricity Information	IEA-Electric generation by source 1990-2020 https://www.iea.org/data-and-statistics/data-product/electricity-information	-	Others
16	T.R. Ministry of Energy and Natural Resources	Provisional Acceptance Document (Commissioning date)	04/03/2010	PD
17	PD	ARALIKHPP-SLD	-	PD
18	PD	Aralık ODA Declaration_Signed	12/08/2022	PD
19	GS	Renewable Energy Activity Requirements	Version 1.4	Others
20	UNFCCC	ACM0002 Grid-connected electricity generation from renewable sources	Version 20.0	Others
21	PD	ER_Aralık HEPP_1	-	Others
22	Gold Standards	GS_663_3_Week_Review__Final _Round	-	Others
23	T.R. Ministry of Energy and Natural Resources	Energy Ministry - Emission Factors Factsheet	September 2020	Others
24	PD	Meter Replacement 2021	Dated 18/10/2021	PD

25	TEIAS	https://www.epdk.gov.tr/Detay/DownloadDocument?id=ln7Z9RT85yM=	-	Others
26	GS	GS project homepage GSID: 663 https://registry.goldstandard.org/projects/details/1139	-	Others
27	UNFCCC	Tool to calculate the emission factor for an electricity system	Version 7.0	Others
28	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf	-	Others
29	GS	Safeguarding principles and requirements	Version 1.2	Others
30	GS	Gender equality requirements & guidelines	Version 1.1	Others
31	PD	Local Stakeholder Consultation report	-	PD
32	AKIM ELECTRONIC LTD STI. HYDROMETRIC SERVICE	Minimum Flow: 2020-AGİ 2021-AGİ	 Dated 08/01/2020 Dated 21/01/2021	Others
33	ILO	International Legal obligation article 10 http://www.istanbul.gov.tr/?pid=9218	Last accessed on 31/01/2022	Others
34	International Labour Organisation	ILO Conventions http://www.ilo.org/ankara/conventions-ratified-by-turkey/lang--tr/index.htm	Last accessed on 31/01/2022	Others
35	PD	Meters Back-up Meter First Index Protocol Main Meter Meter Replacement	-	PD
36	PD	Onsite visit evidence	-	PD
37	PD	Map&Project Site	-	PD
38	PD	Aralik HEPP_SDG Impact Tool	-	PD
39	T.R. Ministry of Energy and Natural Resources	Communiqué of Meters in Electricity Sector	-	Others
40	PD	2020-Trainings 2021-Trainings Employee Records (1) Employee Records (2)	Dated 23/01/2020 Dated 05/02/2021 Dated 01/07/2022 Dated 01/07/2022	PD
41	PD	Grievance Mechanism: Aralık HES Website Aralik logbook Aralık Village Head Declaration for Logbook Aralık Village Head Declaration Website Link	-	PD
42	PD	Waste Disposal: Hazardous Wastes documents Wastewater Documents	Dated 2020	PD
43	PD	Aralik GHG Declaration	Dated 12/08/2022	PD
44	PD	Reşadiye Hamzalı 12_2022 Mutabakat- current debts on the project activity	-	PD
45.	PD	https://life-		PD

		climate.com/projeler/aralik-hidroelektrik-enerji-santrali-1		
46.	PD	Village head declaration on local stakeholder complaints	04/07/2022	PD
47.		"State of the Voluntary Carbon Markets 2008'	-	PD
48.		State of the Voluntary Carbon Markets 2010'	-	PD
49.		Collapse of the Clean Development Mechanism scheme under the Kyoto Protocol and its spillover: Consequences of 'carbon panic'" dated 16/03/2022 by Kazunari Kainou (Fellow and Executive Board Member, UNFCCC Clean Development Mechanism RIETI)	-	PD
50.		State and Trends of Carbon Pricing Dashboard	-	Others
51.	PD	IRR sheet	-	PD

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

Table 2. CAR from this validation

CAR ID	01	**Section no.**	A.1.1	**Date :** 01/08/2022
Description of CAR				
Section A.1.1 of GS PDD v1.0 contains insufficient information and is not in accordance with the rules mentioned in GS PDD template guide v1.2. The information corresponding to points iii, iv, v, vi and vii is yet to provided.				
Project developer response				**Date :** 12/08/2022
The section has been updated in line with the GS PDD Template Guide's latest version.				
Documentation provided by project developer				
Revised PDD				
DOE assessment				**Date:** 04/10/2022
PD has revised Section A.1.1 which contains the eligibility of the project under GS and has included all the points in accordance with the rules mentioned in GS PDD template guide v1.2. Hence, CAR 01 is closed.				

CAR ID	02	**Section no.**	A.3	**Date :** 01/08/2022
Description of CAR				
• Under section A.3, PD is requested to mention the manufacturer details of turbine and generator used in the project activity along with transformer specifications. • The PD is requested to include a single-line diagram of the power plant including the metering point of the HEPP for billing.				
Project developer response				**Date :** 12/08/2022
Details for the transformer, generator and turbine have been provided in detail. The single line diagram has been included under section A.3.				
Documentation provided by project developer				
Revised PDD				
DOE assessment				**Date:** 24/08/2022

• The PD has mentioned the manufacturer details of turbine and generator along with the transformer specifications used in the project activity. • The single-line diagram of the power plant provided in Section A.3 of the PDD does not have clear visibility. Hence, CAR 02 is open.
Project developer response **Date :** 20/09/2022
The single line diagram was scaled down to fit the document. It is now provided in full size and also in PDF format among the supporting documents sent to the DOE.
Documentation provided by project developer
Revised PDD, Single Line Diagram PDF
DOE assessment **Date:** 04/10/2022
PD has now revised the single line diagram of the power plant in the PDD and also provided the same in PDF format as a supporting document which has been verified and accepted by the DOE. Hence, CAR 02 is closed.

CAR ID	03	**Section no.**	B.1	**Date :** 01/08/2022
Description of CAR				
• Under Section B.1, PD is requested to review and update the Tools applicable by the PA as per Methodology guidelines AMS-I.D, v.18 and same shall be updated under section B.2 as per the latest applicable template guidelines. • In section B.1 of the PDD, under “Reference of approved methodology(ies)”, the web link provided for the methodology leads to a page not found. PD is requested to provide working reference. • PD is requested to include the working link for the updated tools in the footnotes under section B.1 in accordance with the applicable methodology.				
Project developer response				**Date :** 12/08/2022
• Tools have been updated in line with AMS-I.D. v.18. • The link has been updated. • Working links have been provided for the tools referred in the PDD.				
Documentation provided by project developer				
Revised PDD.				
DOE assessment				**Date:** 24/08/2022
• The Tools applicable in the PA as per the Methodology guidelines AMS-I.D, v.18 have not been updated properly by the PD under Section B.1 and Section B.2. • The weblink provided in section B.1 of the PDD, under “Reference of approved methodology(ies)” by PD is found to be OK. • The links provided are found to be OK. Hence, CAR 03 is open.				
Project developer response				**Date :** 20/09/2022
The applicability of tools has been revised.				
DOE assessment				**Date:** 04/10/2022
PD has updated the Tools in section B.1 in the revised PDD with all the tools that are applicable to the project activity in accordance with the Methodology guidelines AMS-I.D, v.18. Hence, CAR 03 is closed.				

CAR ID	04	**Section no.**	B.3	**Date :** 01/08/2022
Description of CAR				
PD is requested to provide reference for Table 4 ‘*Emission sources included in or excluded from project boundary*’.				
Project developer response				**Date :** 12/08/2022
The table has been sourced from ACM0002 v20				
Documentation provided by project developer				
Revised PDD				
DOE assessment				**Date:** 23/08/2022
The reference provided for Table 4 ‘*Emission sources included in or excluded from project boundary*’ is found to be OK. Hence, CAR 04 is closed.				

CAR ID	05	Section no.	B.5.2	Date : 01/08/2022
Description of CAR				
Section B.5 of the PDD (Demonstration of Additionality) shall be revised as per GS4GG Requirements. Ongoing Financial need shall be demonstrated at Design Certification Renewal. The project shall provide a qualitative narrative, supported by an overview of project finances, that demonstrates how the finance derived Gold Standard Certification is material to the ongoing sustainability of the Project.				
Project developer response				**Date :** 12/08/2022
The OFN narrative has been provided in detail.				
Documentation provided by project developer				
Revised PDD				
DOE assessment				**Date:** 24/08/2022
PD has demonstrated the ongoing financial needs of the PA under section B.5 in the revised PDD. VVB has assessed the same and found to be in line with the Demonstration of Additionality as per GS4GG Requirements. Hence, CAR 05 is closed.				

CAR ID	06	Section no.	B.6.2, B.6.3	Date : 01/08/2022
Description of CAR				
• The link provided for the source of ex ante parameter $EF_{grid,CM,y}$ for SDG 13 cannot be accessed from India. Kindly provide another link to facilitate verification of the same. • The reference provided for emission factor calculation in footnote number 21 is not appropriate. Kindly provide working reference link. • The link provided for ACM0002 in footnote number 23 under section B.6.3 leads to a page not found. PD is requested to provide working reference link in the footnote.				
Project developer response				**Date :** 12/08/2022
• The PDF version of the document has been provided. • Reference has been corrected as requested. • The link has been updated.				
Documentation provided by project developer				
Revised PDD, Emission Factors Factsheet PDF version				
DOE assessment				**Date:** 24/08/2022
• The value of parameter $EF_{grid,CM,y}$ for SDG 13 (i.e. combined margin emission factor) is not in line with the Turkey National Electrical Network Emission Factor document provided by the PD. • The reference for emission factor calculation in footnote number 21 provided by the PD is found to be OK. • The link provided for ACM0002 in footnote number 23 under section B.6.3 is found to be OK. Hence, CAR 06 is open.				
Project developer response				**Date :** 20/09/2022
The CM factor calculations have been reiterated in the ER sheet and the PSF's Section B.6.2 and B.6.3.				
Documentation provided by project developer				
Revised PDD				
DOE assessment				**Date:** 04/10/2022
PD has now updated the value of parameter $EF_{grid,CM,y}$ in accordance with the Turkey National Electrical Network Emission Factor Document i.e., 0.5706 which is applicable for first monitoring period only. Furthermore, updated PDD states that, "*Nevertheless, the CM value the ministry provided is only valid for the first crediting period. According to Tool 7's specifications, renewable energy projects – except for wind and solar ones – should calculate the CM factor for the second and third crediting period by taking w_{OM} as 0.25 and w_{BM} as 0.75. Thus, the CM factor for the second crediting period should be calculated as 0.4929, by using the ministry's BM and OM values and the respective weights per the methodology*." Hence, CAR 06 is closed.				

CAR ID	07	Section no.	B.7.1, B.7.3	Date : 01/08/2022
Description of CAR				

The calibration details such as calibration date, calibration frequency, and calibration due date are missing. Furthermore, calibration certificates are not submitted.
Project developer response **Date :** 12/08/2022
The calibration date is the same as the replacement date. It is mentioned under Table 6. Other details regarding the calibration are provided. Calibration certificates (first index protocols) have been sent to the DOE.
Documentation provided by project developer
Revised PDD, Calibration Documents
DOE assessment **Date:** 24/08/2022
As mentioned in PDD, section B.7.3, "*According to the relevant regulation, the calibration frequency is 10 years. In every ten years, the meters need to be replaced and calibrated. The replacement and calibration are done by TEİAŞ only and do not depend on the project owner*." The Main Meter has been replaced on 18.10.2021 and the relevant documents have been provided which are found to be OK. But, the Back-up Meter which was last installed on 01.05.2010 has not been replaced yet. Kindly justify. Hence, CAR 07 is open.
Project developer response **Date :** 20/09/2022
Just like the main meter, the back-up meter is also installed by TEİAŞ and sealed by them. Calibration and installation of these meters are only done by TEİAŞ and not the project owner. The responsibility lies with TEİAŞ, and it replaces the back-up meter if need be. Since the project owner does not have a chance or authority on the meters, the replacement of back-up meters are at the discretion of the state.
Documentation provided by project developer
DOE assessment **Date:** 04/10/2022
PD has stated that TEİAŞ is solely responsible for installation, calibration and replacement of meters which has been accepted by the VVB. However, to ensure the verification of replacement and calibration of back-up meter (s) VVB has transferred this finding to FAR 02. Hence, CAR 07 is closed and transferred to FAR 02.

CAR ID	08	**Section no.**	C.2	**Date :** 01/08/2022
Description of CAR				
In accordance with GS Principles and Requirements v1.2, para 5.1.46, "*Delay in the completion of re-validation beyond the last date of current certification cycle shall result in a reduction of any issuance of Certified Products and/or Impact Statements available during following certification cycle (for example, a delay of 1 year beyond the first cycle shall mean that no Certified Impact Statements shall be issued for the period of delay)*". However, the project PDD v1.0 states that "*the start date of the second crediting period is 01/05/2017*" which also includes the period for which the revalidation for RCP was not conducted. Nevertheless, the carbon credits can only be claimed from the date of revalidation.				
Project developer response **Date :** 12/08/2022				
The VER credits prices were quite low until a couple of years ago, in which should have held its verification and renewal of crediting period processes. Unfortunately, considering the cost of consultancy, VVB and GS fees for a verification process, it was additional financial burden for project owner without meaningful revenue, to verify and issue the associated VERs. This was why the project owner of Reşadiye-II HEPP Project did not initiate a validation process back then. The project owner also understands that the delay in the renewal of the crediting period will prevent any claim on prior emission reductions and will undertake future verification and renewal processes without any more delay. The start of the second crediting period is provided in the relevant footnote of the PDD.				
Documentation provided by project developer				
N/A				
DOE assessment **Date:** 24/08/2022				
The project first crediting period was 01/05/2010 to 30/04/2017 and the start date of the second crediting period is 01/05/2017 to 30/04/2024. However, during the verification of the project activity, the credits would be claimed from date of the project documents submitted to SustainCert, per GS4GG rules. Hence, CAR 08 is closed and has been converted to FAR 01.				

CAR ID	09	Section no.	-	Date : 24/08/2022
Description of CAR				
In accordance with SDG Impact Tool v2.0, *"The SDG Impact Tool application is mandatory for all new projects submitted for Preliminary Review1 after 14.03.2022 and projects (including new PoAs and their VPAs) submitted for design certification review and renewal after 14.03.2022."* PD is requested to provide the SDG Impact Tool to VVB.				
Project developer response				**Date :** 20/09/2022
The SDG Impact Tool has been prepared and sent to the VVB.				
Documentation provided by project developer				
DOE assessment				**Date:** 04/10/2022
PD has submitted the 'Aralik HEPP_SDG Impact Tool' document as per the mandatory requirements for the new projects submitted for preliminary review, design certification review and renewal after 14/03/2022. VVB has assessed the SDG impact tool and found to be appropriate. Hence CAR 09 is closed.				

Table 3. CL from this validation

CL ID	01	Section no.	-	Date : 01/08/2022
Description of CL				
Project Developer is requested to provide the following documents: 1. GS Final Review Feedback Form 2. Calibration Records 3. Declaration from the project proponent that the project has not or shall not claim carbon credits any other scheme after Registration of the project under GS4GG.				
Project developer response				**Date :** 12/08/2022
1. GS Final Review Feedback Form, Calibration Records and the declaration from the PD have been provided to the DOE.				
Documentation provided by project developer				
GS Final Review Feedback Form, Calibration Records, PD Declaration				
DOE assessment				**Date:** 24/08/2022
PD has submitted the following documents: 1. GS final review feedback form 2. Calibration Records 3. Declaration from the project proponent that the project has not or shall not claim carbon credits any other scheme after Registration of the project under GS4GG. Hence, CL 01 is closed.				

CL ID	02	Section no.	A.1.2	Date : 01/08/2022
Description of CL				

The following inconsistency in the name of Project Developer was observed:

Source	Project Developer Observed
Project Design Document Form dated 05/03/2012 v.10.0	• KAR-EN Karadeniz Elektrik ve Üretim Ticaret A.Ş. • Global Tan Energy Ltd.
GS Impact Registry	GTE Karbon Sustainable Enerji Egitim Danismanlik Ve Ticaret A.S.
Project Design Document Form dated 05/07/2022 v.1.0	Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş.
Monitoring Report v.5.0 and Verification Report v.1.0	• Artvin Çoruh Elektrik Üretim San. ve Tic. A.Ş (Project Owner) • Global Tan Energy Ltd. (Project developer)

The Project Developer is requested to clarify the above-mentioned inconsistency.

Project developer response	Date : 12/08/2022

Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş. has acquired the plant from KAR-EN Karadeniz Elektrik ve Üretim Ticaret A.Ş., who is the former project owner. Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş.'s former company name is Artvin Çoruh Elektrik Üretim San. ve Tic. A.Ş. The initial transfer and changes in names can be validated through the generation license, which includes all types of revisions made regarding the power plant or the project owners. The former consultant for the project had the project documents in their own account. With the change in the consultant firm, the project owner decided to open their own account and transfer their projects to the newly registered account. The projects, including Aralık HEPP, have been transferred to Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş.' new account. However, due to a system error the GS Registry still shows the former consultant firm GTE Karbon as the project developer, while the projects are listed below the newly created account. Both Sustain-Cert and GS Registry have been contacted for the issue and they are expected to solve the problem soon.
Documentation provided by project developer
N/A
DOE assessment **Date:** 24/08/2022
PD has submitted the E-mail thread with Sustain-Cert and GS Registry for the transfer of project developer (Aralik HEPP) to Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş. But due to a system error the GS Registry still shows the former consultant firm GTE Karbon Sustainable Enerji Egitim Danismanlik Ve Ticaret A.S. as the project developer. PD has continuously followed up with Sustain-Cert and GS Registry for the error mitigation. DOE has assessed the e-mail thread of PD with Sustain-Cert and GS Registry and found to be appropriate. Hence, CL 02 is closed.

CL ID	03	**Section no.**	A.3	**Date :** 01/08/2022
Description of CL				
Request to provide details about the breakdowns, technical performance, or other emergency situations that might arise within the crediting period. Please clarify.				
Project developer response				**Date :** 12/08/2022
Every year, the project owner provides trainings to the plant's employees as to what should be done in an emergency situation. During the physical site visit, the plant chief has showed the emergency plan documents and said that all employees are informed and trained for their role in such a situation. All employees are well trained to handle such incidents.				
Documentation provided by project developer				
N/A				
DOE assessment				**Date:** 24/08/2022
During the physical site visit, the plant chief has showed the emergency plan documents and demonstrated that all employees are informed and trained for their role in emergency. Hence, CL 03 is closed.				

CL ID	04	**Section no.**	A.5	**Date :** 24/08/2022
Description of CL				
Section A.5 states *"The project activity does not have any public funding or Official Development Assistance (ODA) funding. The project is financed by the project owner. It is owned by Reşadiye Hamzalı Elektrik Üretim San. Ve Tic. A.Ş. Hence, the GS VERs generated by the proposed project activity will be owned by the project owner".* PD is requested to provide a copy of ODA declaration to substantiate the GS VERs generated by the proposed project activity will be owned by the project owner.				
Project developer response				**Date :** 20/09/2022
Signed ODA declaration has been provided.				
Documentation provided by project developer				
ODA Declaration				
VVB assessment				**Date:** 04/10/2022
PD has submitted the supporting document 'Aralık ODA Declaration_Signed' which states and confirms that 'the project activity does not have any public funding or Official Development Assistance (ODA) funding'. Hence, CL 04 is closed.				

CL ID	05	Section no.	B.4	Date : 01/08/2022
Description of CL				
Section B.4., Step 1.1 states that "*No other laws that impact the project activity have come into force. The project activity is still in line with public law and regulations*." PD is requested to clarify which regulations are being referred?				
Project developer response				**Date :** 12/08/2022
The section has been rephrased to remove any confusion. The laws and regulations that have been mentioned refer to those concerning electricity generation from renewable sources. The latest versions of the relevant laws, and when they were ratified, can be seen through the link provided in the footnote. The PDF versions of the laws are also provided to the DOE.				
Documentation provided by project developer				
Revised PDD, Laws' PDFs				
DOE assessment				**Date:** 24/08/2022
The PD has mentioned in the updated section B.4 of the PDD that since the project activity includes using hydro power to produce and sell electricity, or simply generating electricity from renewable sources, it complies with all relevant mandatory national and/or sectoral policies in effect at the time of the project activity requesting crediting period renewal. The same has been verified from "Law on Electricity Generation from Renewables (ratified 18.05.2005)" and "Law on Electricity Markets (ratified 14.03.2013)" provided by PD. Hence, CL 05 is closed.				

CL ID	06	Section no.	C.1.2	Date : 01/08/2022
Description of CL				
The methodological Tool 10 v.1.0, '*Tool* t*o determine the remaining lifetime of equipment'*, the PD may use one of the following options to determine the remaining lifetime of the equipment: (a) Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning; (b) Obtain an expert evaluation; or (c) Use default values. The PDD dated 05/03/2012 v.10.0, submitted by PD states that '*The expected operational lifetime of the project is about 45 years (after construction phase)*'. While it is listed as '*18 years*' in the PDD submitted for renewal of crediting period. PD is requested to clarify how the anticipated operational lifetime of project activity is established?				
Project developer response				**Date :** 12/08/2022
The expected operational lifetime was determined in line with the CDM Tool, nevertheless the initial PDD has been revisited. The remaining lifetime was updated accordingly.				
Documentation provided by project developer				
Revised PDD				
DOE assessment				**Date:** 24/08/2022
The operational lifetime of the project activity is 45 years as per the revised PDD section C.1.2. PD has provided the supporting document generation license and clarified that the total operation lifetime of the project is 45 years after construction. As the project was commissioned in 2010, it can be concluded that 12 years of the initially set 45-year timespan has passed. Thus, the project is expected to have at least 33 years of technical life. Hence, CL 06 is closed.				

CL ID	07	Section no.	NA	Date : 01/08/2022
Description of CL				
With reference to Aralik HEPP Provisional Acceptance document, VVB observed a diesel generator of 100KVA is mentioned in the description of Page no.01. PD is requested to clarify on the purpose of usage of Diesel generator in the HEPP and the amount of fuel consumed by diesel generator per year.				
Project developer response				**Date :** 12/08/2022
The diesel generator is located at the plant to be used in case of power shortages or any type of emergency situations. Plant employees monitor the generator, and its fuel level every week and record the details of their control in the document placed on the wall next to the generator.				
Documentation provided by project developer				
N/A				
DOE assessment				**Date:** 24/08/2022

PD confirms that, a diesel generator of 100 KVA is located at the plant and used in case of power shortages or any type of emergency situations. Plant employees monitor the generator, and its fuel level every week and record the details of their control in the document placed on the wall next to the generator.

However, the validation team also reviewed registered PDD and found that the information given in the revised PDD is not consistent with the registered PDD version 10.0, dated 05.03.2012.

It is reported in the section B.7.1 of the registered PDD, under 'Data and parameters monitored', "Quantity of fuel type i combusted in Diesel power generator during the year" has been monitored and considered in the ER calculation of project activity.

Hence, CL 07 is closed.

Table 4. FAR from this validation

FAR ID	01	**Section No.**	-	**Date :** 24/08/2022
Description of FAR				
According to GS4GG regulations, at the time of the first verification assessment, PD must provide the start date of the crediting period as the date of the project documents submitted to SustainCert. The amended PDD v1.0 and ER sheet specify that the second crediting period will begin on 01/05/2017. Credits, however, can only be used as of the revalidation date. Credits earned during the delayed period could not be claimed since the site visit (either physical or remote) could not have been undertaken for the project activity's prior crediting period. At the time of the initial verification of the second crediting period, DOE must have access to supporting papers and mail clarifying records from GS.				
Project developer response				**Date :** DD/MM/YYYY
Documentation provided by project developer				
DOE assessment				**Date:** DD/MM/YYYY

FAR ID	02	**Section No.**	B.7.1, B.7.3	**Date :** 04/10/2022
Description of FAR				
DOE to check the replacement and calibration of the back-up meter(s) at the time of first verification of second crediting period as the back-up meter which was last installed on 01.05.2010 has not been replaced yet.				
Project developer response				**Date :** DD/MM/YYYY
Documentation provided by project developer				
DOE assessment				**Date:** DD/MM/YYYY

Appendix 5. Safeguarding Principles Assessment

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)	Means of validation
Principle 1. Human Rights				
1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights 2. The Project shall not discriminate with regards to participation and	No	The project does not involve any conflict with livelihood of local people and respect all human rights. Turkey, the host country, prohibits discrimination on the basis of a person's race, sex, religion, place of birth, or social status. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation, or any other basis. **1&2-**Turkey ratified the Universal Declaration of Human Rights [1] and the European Convention on Human Rights [2] in 1949 and	N/A	Not applicable

[1] https://www.un.org/en/about-us/universal-declaration-of-human-rights
[2] https://www.echr.coe.int/documents/convention_eng.pdf

inclusion		1954, respectively. Respecting human rights and prohibiting any type of discrimination are also binding by the Turkish Constitution.[3]		
Principle 2. Gender Equality				
1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the country's national gender strategy or	No	Turkey has ratified ILO conventions, which provides gender equality. It also shows parallelism with national strategies prepared for women employment by creating opportunities for all. The project owner respects Article 5/8425 of Labour Law [4] , which states no discrimination based on gender, race, religion, sexual orientation or any other basis is allowed. 1. The project's aim is to generate clean electricity from hydro power and to replace fossil fuel power. The project abides the rules	N/A	Not applicable

[3] https://global.tbmm.gov.tr/docs/constitution_en.pdf
[4] https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/64083/77276/%20F75317864/TUR64083%20English.pdf

equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)		of equality accordingly and does not involve and is not complicit in any form of discrimination. 2. Qualified local residents, both men and women, are recruited to work for the project. During stakeholders' consultation process, comments were collected from the local people, including both men and women. Employees' salaries are not determined based on their genders or gender identities, but rather the position they are working in. (engineer, janitor etc.) 3. The project follows and respects the rules of equality. 4. An Expert is not required.		

Principle 3. Community Health, Safety and Working Conditions				
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	No	The project produces electricity from renewable sources and by nature of its technology, it does not have exposure to increased health risks and shall not adversely affect the health of the workers and the community. All the safety and hygiene measures are being ensured in order maintain a safe and healthy environment for the workers at site. The employees receive trainings and learn how to act in case of emergencies. Thus, necessary health and safety measures are being taken by both the project owner and the employees, who receive the trainings provided. The project is also in compliance with all national laws and regulations.	N/A	Not applicable
Principle 4.1 Sites of Cultural and Historical Heritage				
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional	No	The project site does not include sites, structures, or objects with historical, cultural, artistic, traditional, or	N/A	Not applicable

or religious values or intangible forms of culture?		religious values or intangible forms of culture.[5]		
Principle 4.2 Forced Eviction and Displacement				
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The project does not require voluntary or involuntary relocation of people. (temporary or permanent, full, or partial)	N/A	Not applicable
Principle 4.3 Land Tenure and Other Rights				
a. Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership? b. For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership?	No	No resettlement or relocation required for the project's construction or operation. All land acquisition was carried out in compliance with the Expropriation Law[6].	N/A	Not applicable
Principle 4.4 - Indigenous people				
Are indigenous peoples	No	No indigenous peoples are	N/A	Not applicable

[5] Environmental Impact Assessment (EIA) Report, Section IV.2.9, p. 59
[6] https://www.mevzuat.gov.tr/mevzuatmetin/1.5.2942.pdf

present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?		present in or within the area of influence of the proposed project activity or the project site.		
Principle 5. Corruption				
1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	The project does not condone or support corruption. Turkey has ratified various international conventions on bribery and corruption.[7] It is also prohibited in relevant Turkish laws and regulations.[8]	N/A	Not applicable
Principle 6.1 Labour Rights				
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards	No	1. The Project complies with national labour and occupational health and safety laws, obligations under international law, and the principles and standards embodied in ILO's fundamental conventions. Labour rights and health and safety proceedings are	N/A	Not applicable

[7] https://masak.hmb.gov.tr/uluslararasi-mucadele
[8] https://masak.hmb.gov.tr/ulusal-mucadele

embodied in the ILO fundamental conventions 2. Workers shall be able to establish and join labour organisations 3. Working agreements with all individual workers shall be documented and implemented and include: a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of		also protected in the national Labour Law and Occupational Health and Safety Law[9]. The project fully respects the employees' rights in accordance with all labour related laws endorsed within Turkey, including the law on social and health insurance[10]. 2. The rights to unionize and bargain collectively are highly protected by Labor Law. The project fully respects the employees' rights in accordance with all labour related laws endorsed within Turkey. Law compliance is subject to government's inspection and ruling. 3. Working agreements between the company and individual workers		

[9] https://www.lawsturkey.com/law/occupational-health-and-safety-law
[10] https://www.lawsturkey.com/law/social-insurance-and-universal-health-insurance-law-5510

overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion)		are documented and implemented, including working hours, duties and tasks, remuneration, modalities on health insurance, modalities on termination of contract, provision for annual leave, etc. The employment model applied is locally and culturally appropriate. 4. Child labour, as defined by the ILO Minimum Age Convention is not allowed and prohibited in relevant laws and regulations in Turkey and international conventions Turkey is a signatory to.[11] The project owner ensures the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency		

[11] https://www.ilo.org/ipec/lang--en/index.htm

5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures		preparedness and response measures. All equipment in the project is operated properly according to the work procedures and safety regulation rules.		
Principle 6.2 Negative Economic Consequences				
1. Does the project cause negative economic consequences during and after project implementation?	No	The project does not cause any negative consequences after implementation. If anything, the project activity has positive socioeconomic impacts as it creates job opportunities for the local people, that did not exist before the project's implementation.	N/A	Not applicable
Principle 7.1 Emissions				
Will the Project increase greenhouse gas emissions over the	No	As a renewable energy power plant, the project contributes to "Emissions Reductions or	N/A	Not applicable

Baseline Scenario?		Removals and/or Adaptation to Climate Change" by reducing CO_2 emissions caused by fossil fuel-fired power plants that are displaced due to the project activity, in line with GS4GG principles with the mitigation of an expected amount of 22,254 tonnes of CO_2e.		
Principle 7.2 Energy Supply				
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	The project's does not use energy from a local grid or power supply or fuel resource that provides for other local users. It is connected to the national grid and supply 45 GWh additional energy to the grid. The plant's consumption will be read from monthly records taken from the meters.	N/A	Not applicable
Principle 8.1 Impact on Natural Water Patterns/Flows				
Will the Project affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow	No	The project owner guarantees to comply with the "minimum water rule." Since the project activity is a run-off-river type HEPP, it does not cause any pollution or change in water	Flow will be monitored continuously by project owner. For cross check, data will be compared by DSI flow records. Minimum flow will be	PD will monitor this parameter continuously through an expert assessment on adequacy of flow released.

variability, flooding potential, lack of aquatic connectivity or water scarcity?		quality in terms of chemical, biological oxygen demand or any other pollutants.	released to protect aquatic life. There will be an expert assessment on adequacy of flow released.	
Principle 8.2 Erosion and/or Water Body Instability				
a. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? b. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?		The project is not expected to induce or increase risk of erosion or earthquake compared the baseline scenario. The project's impact on erosion is limited since it mainly involves a tunnel as conveyance line. In order to prevent erosion in penstock route, plantation was be implemented by the Directorate of Forestry after construction works were completed.	N/A	Not applicable
Principle 9.1 Landscape Modification and Soil				
Does the Project involve the use of land and soil for production of crops or other products?	No	The project site does not involve the use of land and soil for production of crops or other products.	N/A	Not applicable
Principle 9.2 Vulnerability to Natural Disaster				
Will the Project be susceptible to or lead to		The project is not expected to induce or increase risk of	N/A	Not applicable

increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?		erosion or earthquake compared the baseline scenario.		
Principle 9.3 Genetic Resources				
Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?		The project activity generates electricity from hydropower and does not include any planting, agriculture, or similar schemes. The project activity does not threaten human health or the environment. It is constructed and is operating in an environmental-friendly way. All the release (i.e., waste water, solid waste,) and hazard waste (i.e. waste oil) will be handled according to the relevant national legislation. The project is not negatively impacted by the use of genetically modified organisms or GMOs.	N/A	Not applicable
Principle 9.4 Release of pollutants				
Could the Project		The project activity does not	N/A	Not applicable

potentially result in the release of pollutants to the environment?		lead to release of any pollutants.		
Principle 9.5 Hazardous and Non-hazardous Waste				
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?		The project does not involve the manufacture, trade, release, and/or use of hazardous and non-hazardous chemicals and/or materials.	N/A	Not applicable
Principle 9.6 Pesticides & Fertilisers				
Will the Project involve the application of pesticides and/or fertilisers?		The project does not involve the application of pesticides and/or fertilisers.	N/A	Not applicable
Principle 9.7 Harvesting of Forests				
Will the Project involve the harvesting of forests?		The project does not involve the harvesting of forests.	N/A	Not applicable
Principle 9.8 Food				
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?		The project does not modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives.	N/A	Not applicable
Principle 9.9 Animal husbandry				
Will the Project involve		The project does not involve	N/A	Not applicable

animal husbandry?		animal husbandry.		
Principle 9.10 High Conservation Value Areas and Critical Habitats				
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?		The project does not physically affect or alter largely intact or HCV ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified.	N/A	Not applicable
Principle 9.11 Endangered Species				
a. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? b. Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	No	The project site does not include any protected area or endemic plant species. All species in the project site are deemed as “common” and do not carry any risk of extinction or endangerment.	Fish passage’s effectiveness will be assessed at each monitoring period, with photos of the passage to be provided at each monitoring year	PD will monitor the effectiveness of the fish passage with photos of the passage to be provided at each monitoring year of the respective monitoring period.