Verification and certification report form for Gold Standard project activities

(Version 04.0)

BASIC INFORMATION	
Title and Gold Standard reference number of the project activity	MUTLU 5 WPP GS1242
Scale of the project activity	☒ Large-scale ☐ Small-scale
Version number of the verification and certification report	04.0
Completion date of the verification and certification report	13/10/2023
Monitoring period number and duration of this monitoring period	MP01, 01/02/2021 – 31/01/2023
Version number of the monitoring report to which this report applies	06, dated 25/09/2023
Crediting period of the project activity corresponding to this monitoring period	1st crediting period: 01/02/2021 – 31/01/2026
Project participants	Mutluer Enerji Üretim Yatırım İnşaat Madencilik Sanayi ve Ticaret A.Ş. (Project Owner) GTE Karbon Sürdürülebilir Enerji Eğitim Danışmanlık ve Ticaret A.Ş. (Project Developer)
Host Party	Turkiye
Applied methodologies and standardized baselines	ACM0002: Grid-connected electricity generation from renewable sources (Version 20.0)
Mandatory sectoral scopes	01, TA (1.2)
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	220,322 tCO_2e
Actual GHG emission reductions or net anthropogenic GHG removals for this monitoring period	203,011 tCO_2e
SDG Impacts:	1. SDG 13: CO_2 emission reduction (203,011 tCO_2) 2. SDG 8: Creating employment opportunities and required training (7 employments) 3. SDG 7: Production of clean energy (312,902.54 MWh) 4. SDG 7: Avoided natural gas: 64,540,000 m^3
Name and UNFCCC reference number of the VVB	Carbon Check (India) Private Limited

Name, position and signature of the approver of the verification and certification report	 Vikash Kumar Singh, Compliance Officer

SECTION A. Executive summary

Carbon Check India private Limited has been contracted by the project representative GTE Karbon Sürdürülebilir Enerji Eğitim Danışmanlık ve Ticaret A.Ş. to conduct the 1st verification for the monitoring period from 01/02/2021 to 31/01/2023 and design change of the project activity (herein referred to as PA) MUTLU 5 WPP. The PA, MUTLU 5 WPP was developed by Mutluer Enerji Üretim Yatırım İnşaat Madencilik Sanayi ve Ticaret A.Ş. to generate clean energy by harnessing the wind and solar power and delivering the generated electricity to the Turkish national grid, thereby reducing the dependency on fossil fuel powered power plants.

The PA initially consisted of 13 wind turbines in selcuk district of Konya Province, Turkey with an installed capacity of 46.8MWm/44Mwe which was later increased to 109 Mwm/81.2 Mwe through the addition of 8 Wind turbines and 25 MWm of solar power plant. The wind turbine generators are considered as the main source and solar panels are the auxiliary power units. The electricity generation capacity of main source and auxiliary sources are 84MWm/81.2 Mwe and 25 Mwm respectively. The extension of the capacity leads to an estimated electricity generation of 324.8 GWh and an emission reduction of 610,503 tCO_2e for the whole crediting period and an annual average of 122,101 tCO_2e is expected to achieve. The PA during the monitoring period achieved an emission reduction of 203,011 tCO_2e.

SECTION B. Validation and Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader/ Technical expert	IR	Choudhary	Aparna	CCIPL	X	X	X	X
2.	Trainee Assessor	IR	K V	Kiran	CCIPL	X	X	X	X
3.	Local Expert	IR	Erduran	Muhammet Ali	CCIPL		X	X	
4.	Team Member	IR	Raychoudhary	Rishi Kishore	CCIPL	X	X	X	X

B.2. Technical reviewer and approver of the Validation and verification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	Chakraborty	Shivaji	CCIPL
2.	Approver	IR	Singh	Vikash Kumar	CCIPL

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human Error:	Medium	All the input data in the ER	The risk was mitigated by training

	Recording and reporting of the information in the ER spreadsheet.		spreadsheet including the sales database, determination of parameters for efficiency testing including data calculation. This includes all the parameters to be monitored ex-post as per the.	the personnel involved in the data capture, and calculation and by following the monitoring responsibilities. The training records were reviewed. The verification team, based on the above, confirms that the risk is appropriately mitigated.
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Medium	The data is recorded in spreadsheets based on the raw data collected during the field visits. The access to the spreadsheets for calculation of ERs, monitoring and sales database, and Stove efficiency testing records is controlled.	The identified risk was mitigated by managing access to the records. It was confirmed by the PP that the raw data is collected by the field personnel and then transmitted and stored electronically to the PP's office. The organogram of the organization for the data collection and record-keeping was reviewed and found satisfactory. The data quality control is maintained by the PP.
3.	Accuracy of the measuring equipment	Low	Check the calibration records for the measurement equipment used for the efficiency test.	The risk due to the accuracy of the measuring equipment was ensured by planning to check the calibration certificates of the measuring equipment used for stove efficiency.
4.	Competence of personnel involved in conducting standardized tests.	Low	Interview of the personnel involved and check the training records/accreditation certificates (applicable in case of institutions) involved in conducting such tests.	The risk was mitigated by reviewing the training records of the personnel involved in conducting such tests and by following the monitoring responsibilities. For institutions involved in conducting such tests, their accreditation certificates were checked to establish their competence for conducting such tests. The training records and certificates were reviewed which were also confirmed during the verification.

Based on the above information, a risk analysis is carried out in the following activities:

1. Monitoring system including the data input procedure (including relevant personnel and applicable template forms used).
2. ER sheet (application of data)
3. Data flow
4. Data control procedures

The risks identified can be mitigated through cross check with all sets of documents. The verification team performed the following checks to mitigate the effects of the above-identified sources of error:

Accuracy of the measuring equipment: The risk due to inaccuracy in measurements was mitigated by reviewing the calibration certificates of all the project equipment.

Based on the assessment carried out, CCIPL confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions, or misstatements

C.2. Consideration of materiality in conducting the verification

The Project is a large-scale GS4GG project activity achieving total emission reductions of less than 300,000 tonnes of carbon dioxide equivalent per year; as such, a 2 per cent materiality threshold is applied. Accordingly, the materiality threshold is 2,030 tons of CO_{2e}. The materiality thresholds have been calculated in accordance with § 326 (c) of CDM VVS for project activities, version 03.0 **/08/**.

In line with Guidelines for Application of materiality in verifications, a reasonable level of assurance is defined for the verification of the project by complete verification of all the monitoring records (measurement records, invoices and the calibration certificates) was done by the verification team and compared with the values indicated in the emission reduction spreadsheet.

Some mistakes were identified and subsequently, findings were raised. These findings are detailed in this report, and they were successfully closed. Therefore, related identified mistakes as listed in the findings in appendix 4 of this report have been determined to be immaterial. Thus, it is confirmed that there are no material errors, omissions or misstatements and a reasonable level of assurance is established.

SECTION D. Means of validation and verification

D.1. Desk/document review

The validation of the design change and verification was performed primarily based on the review of the Project description document/03/ Monitoring report **/01`/** and the supporting documentation. This process included a review of data and information presented to verify their completeness and a review of the monitoring plan and monitoring methodology. Documents reviewed or referenced during the validation and verification are listed in Appendix 3 below.

D.2. On-site inspection

The onsite visit was performed by the validation and verification team of CCIPL on 26/01/2023 and the following activities were performed.

1. An assessment of the implementation and operation of the project activity as per the registered PDD.**/05/**
2. The assessment of the proposed design change as pe the GS principles and requirements version 1.2 and Design change requirements version 1.0
3. A review of information provided in the design change PDD/03/ with respect to the actual implementation of the PA
4. A review of information flows for generating, aggregating and reporting the monitoring parameters.
5. Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD. **/05/**
6. A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources.
7. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology and corresponding tool(s), where applicable.
8. A review of calculations and assumptions made in determining the GHG data and emission reductions.
9. An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.
10. Verification of the monitoring of sustainable development indicators.

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			

1. 2 3	Vural	Devrim	Mutluer energy	26/01/2023	Discussion on project design (implementation and operation) and monitoring data. Discussion on the contents of the Monitoring Report Discussion on SD monitoring and Grievance Mechanism – Handling of Grievances and training.	Aparna Choudhary, Rishi Kishore Raychaudhary, Muhammer Ali Erduran
4	Yiliyar	Abdullah	Mutluer energy	26/01/2023	Operation & Maintenance of plant	Aparna Choudhary, Rishi Kishore Raychaudhary, Muhammer Ali Erduran
8	Sanli	Moa	GTE	26/01/2023	PD, MR & ER documentation Verification of monitoring parameters Verification of SDG parameters Review of data flow	Aparna Choudhary, Rishi Kishore Raychaudhary, Muhammer Ali Erduran

Through the above-mentioned activities the verification team confirmed the following Gold Standard project aspects in relation to the project activity:

- The implementation and operation of the project activity is as described in the monitoring plan in the registered PDD**/02/**
- The operational and data collection procedures are implemented as per the monitoring plan in the PDD**/02/**
- The information flow for generating, grouping and reporting of the monitored parameters

Procedures to avoid double counting are in place.

D.4. Sampling approach

Not applicable

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

Areas of Design change validation findings	No. of CL	No. of CAR	No. of FAR
Description of the design change and compliance with GS4GG requirements	CL01, CL02, CL03, CL04, CL05	CAR01, CAR02	--
Assessment of additionality, applicability of methodology and applicable requirement document	CL07, CL12	CAR03	--
Monitoring plan	CL09,	--	--
Scale of the project activity		--	--
Stakeholder consultation	CL10,	--	--
Sustainable development criteria and safeguarding assessment	CL06, CL08, CL11,	--	--
Compliance with applicable legislation		--	--
Areas of verification findings	**No. of CL**	**No. of CAR**	**No. of FAR**
Compliance of the monitoring report with the monitoring report form	CL13,	CAR04	--
Compliance of the project implementation and operation with the registered PDD	CL14, CL15,	CAR05, CAR11	--
Post-registration changes	--	--	--
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	--	--	--
Compliance of monitoring activities with the registered monitoring plan	--	--	--
Compliance with the calibration frequency requirements for measuring instruments	CL17,	CAR07	--
Assessment of data and calculation of emission reductions or net removals	CL16, CL18, Cl19,	CAR06, CAR10, CAR12	--
Assessment of reported sustainable development co-benefits		CL08, CAR09	--
Grievances	CL20	--	--
Others (please specify)		--	--
Total	**20**	**12**	--

SECTION E. Design Change Validation findings

E.1. Description of the design change and compliance with GS4GG requirements

Means of validation	Document Review, Interview
Findings	CL01, CL02, CL03, CL04, CL05, CAR01, and CAR02 has been raised and closed successfully
Conclusion	The project activity Mutlu 5 WPP developed by Mutluer Enerji Üretim Yatırım İnşaat Madencilik Sanayi ve Ticaret A.Ş. was initially developed as a Wind power plant with 13 wind turbines in a configuration of 2 X (3.6 MWm/3.3 Mwe) + 11 X (3.6MWm/3.4 Mwe) with a capacity of 46.8 MWm/44 Mwe. The generation license/07/ was signed on 24/02/2011 and the initial and final commissioning of the 13 WTGS are dated on 14/08/2020 */09/* and 16/10/2020 */12/* respectively. Estimated electricity generation of the 13 WTGs was 154 GWh as described in the registered PDD/05/ and generation license/07/. Based on the regulation from Energy Market Regulatory Authority(EMRA) of turkey/14/, Project participant has performed a capacity addition on the existing project activity. As per the EMRA regulation/14/, auxiliary power unit can be installed provided that electrical installed capacity (MWe) of the main energy source is not exceeded. Therefore Mutlu 5 WPP installed additional new wind turbine generators and solar panels as auxiliary units. As per the latest amended generation license provided/08/, the PA consists of 21 units of wind turbines and solar panels in total, where 2 X (3.6 MWm/3.3 Mwe) + 11 X (3.6 MWm/3.4Mwe) + 6 X (6.2 MWm/6.2Mwe) units wind turbine generators and 1X 18.5 MWm +1 X 6.5 MWm units of solar plants has been established to provide a capacity of 109

	MWm/81.2 Mwe and an electricity generation of 324.8 GWh as documented in the revised PDD/03/. VVB based on the on-site inspection and review of the revised PDD/03/, and other supporting documents (provided in appendix 3 of this document), the proposed project activity complies with all the GS4GG requirements. Since the proposed design change is the increase in the capacity specified in the registered PDD, the project claims the emission reduction of only up to an amount calculated based on the increased capacity by 20 percent of the capacity specified in the originally registered PDD, thereby complying with the para 3.1.5 (a) of GS5GG Design change requirements version 1.0 (Detailed calculation based on design change requirement is provided in section E.6 of this document). Project participant through a deviation approval/15/ from Sustencert is also submitting the design change request through issuance track during this verification.

E.2. Assessment of additionality, applicability of methodology and applicable requirement document

Means of validation	Document Review, Interview
Findings	CL07, CL12, CAR03 has been raised and closed successfully.
Conclusion	PP has demonstrated the additionality as per the para 5.3.2 of applied methodology ACM002 version 20.0/B01/. The additionality has been demonstrated as per the step 1, 2 and 4 of the CDM Tool 01/B10/, which include Identification of alternative to the project activity consistent with current laws and regulations, investment analysis, and common practice analysis respectively in the registered PDD/05/. The proposed design change affects the additionality of the certified project activity through the addition of the capacity and subsequent addition in the investments and returns. The main input parameters described in the PDD and IRR sheet/17/ are given below.

Parameters		Unit	Data value	Source
Installed capacity		Mwe	81.2	PDD/03/,generation license/08/
Grid connected output		GWh	324.8	PDD/03/,generation license/08/
Capital Investment	Total Investment Cost for Initial Capacity	$	58,735	IRR sheet/17/
	Capacity Extension Investment Cost (Wind)	$	46,687	IRR sheet/17/
	Capacity Extension Investment Cost (Solar)	$	14,225	IRR sheet/17/ contractor offer/08/
	Contingency	$	6,091	IRR sheet/17/
	Total	$	125,739.000	PDD/03/, IRR sheet/17/
O&M cost	Insurance	$	410,000	IRR sheet/17/
	maintenance	$	1,324,000	IRR sheet/17/
	Operation	$	2,611,000	IRR sheet/17/
	Transmission Fee	$	1,619,000	IRR sheet/17/ Energy market regulatory authority board decision number 995/18/

	Total	$	5,965,000	PDD/03/, IRR sheet/17/
Feed in Tariiff/Market price after 10th years		$ Cents/kWh	7.3/4.61	PDD/03/, IRR sheet/17/

The input parameters namely Capacity extension investment cost (wind), insurance, maintenance, operation, and transmission free are determined based on the unit cost of initial investment used in the registered PDD and IRR sheet which is already validated. The cost for capacity extension investment cost (solar) is determined from the contractor offer/27/, which is also provided to VVB. The correctness in the usage of the input parameters in the investment analysis has been cross checked with the IRR sheet/17/. VVB confirms that the additionality has been demonstrated in the revised PDD/03/ based on all original input data and where the investment analysis was used, the modification of key parameters in the original spreadsheet calculation affected by the proposed changes to the project activity has been done in accordance with the para 4.1.1 (a) of GS4GG Design change requirements version 1.0/B/. The original IRR spreadsheet/16/ and the revised IRR spreadsheet/17/ has been verified by VVB based on the provided evidence/18/ on the additional cost incurred during the proposed design change. The internal rate of return of the PA is calculated as 7.6% /17/based on the parameters given without considering the carbon revenue which is below the applied benchmark IRR of 15% as identified in the registered PDD/05/. Based on the review of the IRR calculation sheet/17/ and PDD/03/, it has been confirmed that the IRR calculated does not cross the ± 15% variations in the parameters as demonstrated through the sensitive analysis.

The common practice analysis has also been revised in the revised PDD/03/ considering the increased capacity in he proposed design change.
The revised common practice which is demonstrated as per the CDM tool 24 version 3.0/B12/ is as follows,

Step 1: calculate applicable output range as +/-50% of the design output or capacity of the proposed project activity.
The total capacity of the proposed project is 81.20 MWe, after the new design change and extension. Therefore, the applicable output range is from 40.60 MWe to 121.80 MWe.

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

Applicable geographical area has been selected as the whole host country (Turkey) as per paragraph 1 of Guidelines on Common Practice version 03.1. Projects which apply the same measure as the proposed project have been determined as all renewable energy projects are selected as the same energy source type of projects. All of the selected plants deliver the same service which is the electricity generation. Applicable output range has been determined and all of the power plants are taken from the latest available year (2022). General Directorate of Energy Affairs and EMRA Electricity Production Licence Database

	have been used as a main resource. Therefore, all of the compared renewable energy power plants have been operational before the implementation of the project activity. A list of 100 operational renewable energy power plants has been identified in the section B.5 of PDD/03/, which has been verified against the common practice analysis sheet/19/. Step 3: within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number Nall. N_{all} = 21, as identified in the PDD/03/ and common practice analysis sheet/19/. Step 4: within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number Ndiff N_{diff} = 20, as identified in the PDD/03/ and common practice analysis sheet/19/. Step 5: calculate factor F=1-Ndiff/Nall representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity. F=1-Ndiff/Nall=1-(20/21) = 0.05 (< 0.20) Nall – Ndiff = 21 – 20 = 1 According to “Tool for Common practice”, Version 03.1, if the factor F is greater than 0.2 and Nall-Ndiff is greater than 3, then the proposed project is a “common practice”. For the proposed project, F=1 and Nall-Ndiff=3, therefore, the proposed project is not a common practice within the applicable geographical area. Hence, the proposed project is additional. VVB based on the review of the common practice analysis sheet/19 confirms that the all the steps of CDM tool 24 version 3.0 for demonstration of common practice has been followed accordingly and calculation provided is found to be appropriate. The project activity is a greenfield power plant and the baseline identified in the registered PDD/05/ remains valid and therefore the original methodology is still applicable.

E.3. Monitoring plan

Means of validation	Document Review, Interview
Findings	CL09 has been raised and closed successfully
Conclusion	**Compliance with the monitoring plan with applied methodology,** Based on the review of the revised PDD/03/ in comparison with the registered PDD/05/, VVB confirms that no change in monitoring plan has been made with respect to the proposed design change, which is in comply wit the para 4.6.1 of GS$GG design change requirements version 1.0/B03/ **Level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan,** VVB based on review of the revised PDD /01/, confirms that the Design Change does not have any impact on the level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan.

E.4. Scale of the project activity

Means of validation	Document Review, Interview
Findings	
Conclusion	The project activity uses the CDM methodology ACM002 version 2.0 as per the registered PDD/05/. The initial capacity of 44 Mwe has been increased to 81.2 Mwe though the proposed design change. The project exceeds 15 MW limit for small scale project according to UNFCC regulations, and therefore the project activity has been identified as large scale in the registered PDD/05/ and the scale remains unchanged as the revised capacity still exceeds 15 MW limit.

E.5. Stakeholder consultation

Means of validation	Document Review, Interview
Findings	CL10 has been raised and closed successfully.
Conclusion	The proposed design change includes the capacity addition of existing power plant which includes the addition of WTGs and solar plants. A physical ocal stakeholder consultation has been performed by PP on 28/03/2023 at in Çaltı Village, Selçuklu, Konya Province, which has been verified by VVB through the review of the LSC evidence/20/ provided to VVB, thereby complying with para 4.4.1 – 4.4.2 of GS4GG design change requirement version 1.0/B03/

E.6. Sustainable development criteria and safeguarding assessment

Means of validation	Document Review, Interview
Findings	CL06, CL08, and CL11 has been raised and closed successfully.
Conclusion	The revised ex ante calculations are as follows **SDG 13** $ER_y = BE_y – PE_y – LE_y$ Where: ER_y = Emission reductions in year y (tCO_2) BE_y = Baseline emissions in year y (tCO_2) PE_y = Project Emissions in year y (tCO_2) LE_y = Leakage emissions in year y (tCO_2) Baseline emissions Baseline emission is calculated according to the formula: $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implmenetation of the CDM project activity in year y (MWh/yr) (data is gathered from energy yield assessment report of the project which is 324,800 MWh) $EF_{grid,CM,y}$ = Emission factor calculated according to selected methodology (Republic of Türkiye Ministry of Energy and Natural Resources released them on 20/09/2022)22. Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of TOOL07: Tool to calculate the emission factor for an electricity system (tCO_2/MWh) (Nationally accepted emission factor has been used. The Ministry of Environment and Urbanization has released the emission factor as 0.6488 kg CO_2/kWh, which was calculated by 2020 data of the grid), As per the para 3.1.5 (a) of GS Design change requirements version 1.0, only 20% increase from the capacity specified in the original PDD is allowed for claiming emission reduction for changes to project design due to increase in capacity. As part of the extension of capacity, the initial capacity of 44 Mwe has been revised to 81.2 MWe Therefore, only 20% increase in the initial capacity of 44 Mwe is allowed to be claimed for emission reduction i.e.44 * 120% = 52.8 Mwe. As per the revised generation license//, annual expected electricity generation is

324,800 MWh, which equals to 4,000 MWh per Mwe capacity in a year (324,000MWh/81.2Mwe).

Since emission reduction equivalent to 52.8 Mwe capacity is only claimable,
52.8 Mwe x 400 MWh = 211,200 MWh/year is the maximum electricity generation which can be claimed for emission reduction.

BE_y = 211,200 MWh/year x 0.6488 tCO2e/MWh = 137,027 tCO2e/year (claimable after design change)

Project emission
Since the project is classified as a renewable energy project, parameter PEFF,y is neglected.
Therefore;
$PE_y = 0$

Leakage
The energy generating equipment is not transferred from or to another activity. Therefore leakage is also considered as "0".
LEy = 0

Total Emission Reduction
As a result, Total Emission Reduction is:
$ER_y = BE_y$
The average annual CO2 reduction is 122,101 tCO_2 as determined in the table below

Year	Baseline estimate (tCO2)	Project estimate (tCO2)	Net Benefit (tCO2)
2021 (01/02/2021 – 31/12/2021)	91,429	0	91,429
2022	119,194	0	119,194
2023	114.189	0	114.189
2024	137,027	0	137,027
2025	137.027	0	137.027
2026 (01/01/2026 – 31/01/2026)	11,638	0	11,638
Total	610,503	0	610,503
Annual average	122,101		122,101

SDG 7

SDG 7
The average annual clean energy generation is expected to be 324.8 GWh. It also helps avoiding 72,230,533 m3 natural gas (NG) per annum,

Ex-ante natural gas avoidance is calculated as follows:

Natural gas savings = (Electricity generated by Mutlu 5WPP)/(Electricity generated by thermal power plants X (Natural gas consumption in 2019)

= (324.8 GWh)/(57,288.2 GWh) X 12,740.016 * $10^2 m^3$
= 72,230.533 m^3

Savings in USD = Natural gas savings X cost of Natiral gas / USD/TRY exchange rate

= 72,230.533 m^3 X 1.290607368 TRY/m^3 / 5.6826 USD/TRY
= 16,404.684 USD savings.

SDG 8

	No revisions applicable. VVB based on the review of the PDD/03/ and ER sheet /02/, confirms that the ex ante calculation provided is appropriate and therefore is deemed to be acceptable in accordance with the para 4.5.1 of GS4GG design change requirements version 1.0/B03/.

E.7. Compliance with applicable legislation

Means of validation	Document Review, Interview
Findings	--
Conclusion	VVB based on review of the revised PDD /01/, confirms that the Design Change does not have any impact on the legislation. The project was and will continue to be in compliance with Turkish legislation as identified in the registered PDD/05/.

SECTION F. Verification findings

F.1. Compliance of the monitoring report with the monitoring report form

Means of verification	Document Review, Interview
Findings	CL13, and CAR04 has been raised and closed successfully.
Conclusion	PP has used the GS4GG template Monitoring Report, version 1.1./B08/ The verification team confirms that the latest available version of the monitoring report template has been used by the PP and the MR is in compliance with the monitoring report form and related template guide Monitoring Report, version 1.1./B08/

F.2. Remaining forward action requests from validation and/or previous verifications

FAR ID	01	**Section No.**	NA	**Date:** NA
Description of FAR				
Based on the explanation given by the validation VVB, the Generation license sets and limits the generation capacity of the plant: The verifying VVB shall confirm that this limit is not passed at any time during the crediting period and shall report the same in the verification report.				
Project participant response				**Date:** 30/11/2022
The project includes a design change therefore, the auxiliary generation units provide more electricity generation. Detailed explanation has been provided in Section A.1 of this MR.				
Documentation provided by project participant				
VVB assessment				**Date:** 11/09/2023
The revised generation license/08/ has been provided by PP to account for the increase in the capacity of the project activity. During the current monitoring period (01/02/2021 to 31/01/2023), the expected electricity generation was 317,583.56 MWh/02/ according to the generation license/08/, however the achieved electricity generation for this monitoring period is 312,902.54 MWh/02/, therefore, the generation capacity has not exceeded the generation limit set in the generation license/08/ for this monitoring period. FAR has been closed				

F.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	Desk Review and on site assessment
Findings	CL14, CL15, CAR05, and CAR11 has been raised and closed successfully.
Conclusion	CCIPL by means of on-site interview and document provided by the PP confirms that all physical features (technology, project equipment, and monitoring equipment) of the respective project activity are in place and that the coordinating/managing entity has operated the project activity as per the registered PDD. The project owner installed 13 wind turbines in a configuration of 2 x (3.6 MWm/3.3 MWe) + 11 x (3.6 MWm/3.4 MWe) in Selçuk District of Konya Province with the purpose of contributing to the national economy the meeting the increased electricity demand. Total installed capacity is 46.8 MWm/44 MWe as per the generation license. Expected annual electricity generation is 154 GWh as per

	generation license. However, the generation licence mentioned has been amended due to design change in the project, Mutlu-5 WPP has been allowed to install new wind turbine generators and solar panels as auxiliary power units and a new generation license has been issued as 109 MWm/81.2 MWe. After extension and auxiliary generation unit, electricity generation capacity from main source (wind) has been 84MWm/81.2MW and generation capacity from solar has been 25 MWm while total annual electricity generation has been estimated as 324.8 GWh. The solar component has started operation on 26/08/2022. The wind power component is expected to start operation in 2024. The project activity will generate greenhouse gas (GHG) emission reductions by avoiding CO2 emissions from electricity generation by fossil fuel power plants connected to Turkish National Power Grid. The average annual generated energy was expected to be 154 GWh as per generation license, corresponding 99,915 tCO2 emission reduction, annually. However, due to the design change the expected generation became 324.8 GWh which corresponds to 122,101 tCO2 annually after 20% cap as per Design Change Requirements v1.1 para 3.5.1, when the power plant fully commissions. The verification team confirms the actual operation of the Project Activity implementation and operation in compliance with the registered PDD/05/ and design change PDD/03/ in order to confirm the compliance of GS4GG requirements/B02/.

F.4. Post-registration changes

F.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents[1]

No deviation has been implemented. Thus, this section is not applicable.

F.4.2. Corrections

The emission factor which was base for hydropower plants has been revised to the latest available data for 2020 as 0.6488 tCO2/MWh/21/

F.4.3. Changes to the start date of the crediting period

Date of the crediting period is postponed less than one year from 01/11/2020-30/09/2022 to 01/02/2021-31/01/2026, as per Table 1 of Design Change Requirements v1.1.

F.4.4. Inclusion of a monitoring plan

Not Applicable

F.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Not Applicable

F.4.6. Changes to the project design

The generation licence has been amended due to design change in the project. In 25/02/2022 and 06/06/2022, Energy Market Regulatory Authority (EMRA) has allowed Mutlu 5 WPP extension of capacity and addition of auxiliary generation units for better utilization of renewable energy potential in Turkey. As per the new regulation, auxiliary power units can be installed provided that electrical installed capacity (MWe) of the main energy source is not exceeded. Thus, Mutlu-5 WPP has been allowed to install new wind turbine generators and solar panels as auxiliary power units and a new

[1] Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

generation license has been issued as 109 MWm/81.2 MWe. After extension and auxiliary generation unit, electricity generation capacity from main source (wind) has been 84MWm/81.2MW and generation capacity from solar has been 25 MWm while total annual electricity generation has been estimated as 324.8 GWh. The solar component has started operation on 26/08/2022. The wind power component is expected to start operation in 2024. VVB has been provided with the relevant information and documents about the design change. Due to the design change the expected generation became 324.8 GWh which corresponds to 137,027 tCO2 annually (applying the 20% cap as per design change requirement), when the power plant fully commissions, according to the latest generation licence

F.4.7. Changes specific to afforestation and reforestation project activities

. NA

F.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	Desk Review and on site assessment
Findings	N/A
Conclusion	During this monitoring period, the validated and registered monitoring plan was found to be in accordance with the applied methodology/04/. All monitoring parameters, monitoring procedures follow the methodology requirements and registered monitoring plan.

F.6. Compliance of monitoring activities with the registered monitoring plan

F.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	Desk review, onsite inspection
Findings	CL08, and CL09 has been raised and closed successfully.
Conclusion	The following ex-ante parameters are considered in the calculation of the emission reductions:

	Data/Parameter	Unit	Value Applied	Assessment
1.	$EF_{grid,OM,y}$	tCO_2/ MWh	0.6488	Combined margin CO2 emission factor for grid connected power generation in year y

CCIPL is able to confirm that the Data and parameters fixed ex ante have been implemented in full compliance with the registered monitoring plan.

F.6.2. Data and parameters monitored

Means of verification	Desk review, onsite inspection
Findings	
Conclusion	

Data/Parameter	Unit	Value Applied		Assessment
$EG_{facility,y}$	MWh/year	Year	Net electricity generation(MWh)	The audit team has checked the monthly generation reports/22/ plants of concerned the monitoring period These monthly generation records have been cross checked with the
		2021	133,827.16	
		2022	166,845.27	
		2023	12,230.11	
		Total	312,902.54	
		Annual	156,451.27	

				invoices raised by PP to the grid authority/23/. Moreover, PP maintains reports of power generation from the SCADA system and the data is continuously monitored in the plant. Thus, after reviewing the submitted supporting documents/22/23/ and on site visit assessement. The VVB confirms that quantity of electricity generated and supplied by the project power plant to the grid in year y the PP has no discrepancies.
	Access to Investment (SDG 7: Affordable and Clean Energy)	--	Approximately consumption of 64,540,000 m3 of natural gas has been avoided corresponding to 7,237,446 USD for the whole monitoring period.	VVB based on the review of the ER/02/ provided confirms that the value provided is deemed to be appropriate.
	Quantitative employment and income generation (SDG 8: Decent Work and Economic Growth)	--	7 job opportunities have been created in this monitoring period.	The VVB team has assesses the employment records provided/24/ and confirm that the PA leads to the employment generation for 8 people. .
	Quality of Employment (SDG 8: Decent Work and Economic Growth)	--	All employees have received Orientation and Job Training when they started working in the plant. On 17-18/10/2021 the respective employees were given Occupational Health and Safety Training:	The VVB team has assesses the employment training records provided/25/ and confirm that the occupational health and safety training has been provided.
	Air quality (SDG 13.: Climate action)	tCO_2	203,011 tonnes of CO2e reduced in this monitoring parameter.	The VVB team has assessed the electricity generated by Mutlu 5 WPP and calculated the

				emission reduction as provided in the MR/01/ and is deemed to be appropriate.

F.6.3. Implementation of sampling plan

Means of verification	Not applicable, as the concerned project activity is a greenfield project activity.
Findings	NA
Conclusion	NA

F.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	Desk Review, On site assessment
Findings	CL17, and CAR07 has been raised and closed successfully.
Conclusion	

	Main meter	Back-up meter
Serial number	8923674	8923675
Brand	EMH	EMH
Type	LZQJ-XC	LZQJ-XC
Class	0.2S	0.2S
First index date	29/06/2020	29/06/2020
Status	Calibrated	Calibrated

The calibration frequency is observed to be 10 years as per the regulation. VVB based on the site visit and desk review confirms that the electricity meters are calibrated throughout the monitoring period.

F.8. Assessment of data and calculation of emission reductions or net removals

F.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	Desk review and on site assessment
Findings	CL16, CL18, CL19, CAR06, CAR10, CAR!2 has been raised and closed successfully.
Conclusion	Baseline emissions are estimated as follows:

$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$

BE_y = Baseline emissions in year y (tCO_2/yr)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,Y=}$ Combined margin CO2 emission factor for grid-connected power generation in year y calculated using the latest version of "TOOL07: Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

Therefore, the baseline emissions for the monitoring period are as follows:

	Net Electricity Generation (MWh)	Net Emission Reduction (tCO2)
2021 (01/02/2021 – 31/12/2021)	133,827.16	86,827
2022	166,845.27	108,249
2023 (01/01/2023 – 31/01/2023)	12,230.11	7,935
Total for this MP	312,902.54	203,011
Annual for this MP	156,451.27	101,505.58

	CCIPL confirms that baseline emissions have been appropriately calculated and are consistent with on-site assessment, the applied methodology and registered PDD.**/02/**

F.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	Desk review and on site visit
Findings	NA
Conclusion	CCIPL confirms that no project emissions are accounted in the estimation of emission reduction as per the applied methodology.

F.8.3. Calculation of leakage GHG emissions

Means of verification	Desk review, on site visit
Findings	NA
Conclusion	CCIPL confirms that no leakage emissions are accounted in the estimation of emission reduction as per the applied methodology.

F.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	Desk review, site visit.
Findings	--
Conclusion	Emission Reductions: The emission reductions in this monitoring period are: $ER_y = BE_y - PE_y$ Where, ER_y is the total emission reductions of the project activity during the year y in tCO_2e. BE_y is the baseline emissions for the project activity during the year y in tCO_2e; PEy is the emissions for the project activity during the year y in tCO_2e; As explained in section F.8.1 above, the resulted Baseline emissions (BEy) for the monitoring period is 203,011 tCO_2. Similarly, as explained in section E.8.2 and section E.8.3 project emission is already accounted while calculating baseline emissions and leakage emisisons are accounted as 0 with baseline emissions and net ER to be 203,011 tCO_2e. The calculation of net benefits of each SDG impact as are follows:

Item	Baseline estimate	Project estimate	Net benefit
SDG 7 (Production of clean energy)	0 MWh	312,902.54 MWh	312,902.54 MWh
SDG 7 (Natural gas avoided)	0 m^3	Avoided 64,540,000 m^3	Avoided 64,540,000 m^3
SDG 8 (Creating employment opportunities)	0	7	7
SDG 13 (CO2 emission reduction)	203,011 tCO_2	0	203,011 tCO_2

	The data presented in the monitoring report /01/ and emission reduction worksheet /02/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Sufficient evidence were presented and verified by CCIPL for the reported emission reductions as listed above.

F.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	.
Findings	N/A
Conclusion	The emission reductions from the project for the monitoring period as reported in the monitoring report/01/ is equivalent to 203,011 tCO_2e as against estimated 220,322 tCO_2e.

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 7:	62,422 m3 natural gas avoided	64,540,000 m3 natural gas avoided
SDG 7	339,583.56 MWh clean energy	312,902.54 MWh clean energy
SDG 8:	At least 7 employments	7 employments
SDG 13:	220,322 tCO2	203,011 tCO2

The emission reduction calculations provided in the spreadsheet /02/ have been verified to be correct and in line with the registered PDD **/03/**.

F.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	Desk review and interviews
Findings	N/A
Conclusion	The project was expected to generate 339,583.56 MWh in this monitoring period as per PDD. However, the project generated 312,902.54 MWh of clean energy in this monitoring period which is related with SDG 7. The generation was 8.5% lower than estimated in the PDD. 339,583.56. The project was expected to reduce 220,322 tCO2 in this monitoring period. However, the project reduced 203,011 tCO2 in this monitoring period which is related with SDG 13. The emission reduction was 8.5% lower than estimated.

SECTION G. Safeguarding reporting assessment

Data/parameter	Description	Source of data	Values applied	Measurement method and procedures & measuring frequency	Verifier assessment
Principle 9.4 Release of Pollutants - Air Quality	Taking necessary actions to prevent dust emission during construction.	Pictures from the site and interviews with locals	No air pollution due to dust has been observed. Sprinklers were used as well.	At regular intervals, irrigation has been done on the ways to prevent dust emission during construction. Monitored once at first verification	Based on the interview and evidence/34/ provided to VVB, it has been verified that the irrigation was done at regular interval to prevent dust emissions during construction
Principle 9.4 Release of Pollutants - Water Quality and Quantity	Appropriate disposal of wastewater as required by the Law on Water Pollution Control	Assessing collection and disposal methods during site visits and checking disposal records	Wastewater was collected and disposed properly in this monitoring period. The picture of collection area and the wastewater transfer records were submitted to the VVB.	Wastewater is collected in a septic tank and then transported to a treatment plant where it is treated to meet standards in accordance with guidelines and national regulations. Monitored annually	Based on the interview and evidences provided/35/, it has been verified that wastewater was collected and disposed properly in this monitoring period.
Principle 9.4 Release of Pollutants - Soil Condition	Handling of excavated soil	Photos from the site or interviews	Excavated soil was handled according to Turkish Regulations1	During construction, soil has been stored in the excavated soil storage area in order to be reused for filling of turbine	Based on the interviews and evidences provided/36/, it has been verified that handling of excavated soil has been done

				foundation and landscaping purposes. Monitored once at first verification	according to Turkish regulations
Principle 9.5 Hazardous and Non-hazardous Waste - **Noise Pollution**	Level of noise	Site visit observations and interviews	″ Regulation on Evaluation and Management of Environmental Noise ″ is below the limit values of 65 dBA, 60 dBA and 55 dBA, which are the day, evening and night time zone limit values given in Annex-VII Table-4.	Site visit observations and interviews were done with the stakeholders. No grivances were received about noise in this monitoring period. Monitored annually	Based on interviews and evidence provided/37/, it has been verified that no grievance about the noise level were received during this monitoring period.
Principle 9.5 Hazardous and Non-hazardous Waste – Waste Oil	Proper management of waste oil	Assessing disposal methods during site visits and checking waste oil disposal records	The waste oil has been handled in accordance with the National regulation17. The pictures of storage area and hazardous waste transfer records have been shared	Project owner committed to proper collection of waste oil from equipment in line with regulation # 26952 on control of waste oils. Monitored annually	Based on interviews and review of evidence/38/ provided, it has been verified that the waste oils has been handled as per national regulations.

			with the VVB.		
Principle 9.11 Endangered Species - Biodiversity	Ensuring that the project creates no disturbance to the regional habitat	Assessments during site visits and observation (ornithology) reports	As a result of the monitoring carried out in the field, it is understood that the site is in compliance with the EU Birds and Habitats Directives in each evaluated title. Also, the plant area does not show a significant risk during the autumn migration periods.	There is an expert report regarding flora, fauna, etc. of the project site, prepared in 2018. The report suggests that the project implementation should be monitored at least 2 years in terms of bird species. To do this, 6 ornithology reports have been prepared so far (2019 spring / 2019 fall / 2020 spring and 2020 fall / 2021 spring and fall / 2022 spring). Ornithology reports will be provided 2 years after implementation. Then,monitoring plan and frequency will be modified according to the ruling of General Directorate of Nature Conservation and National Parks.	The ornithology reports/30/ has been reviewed by VVB and confirms that the project activity does not poses any threat to the local flora and fauna.

SECTION H. Internal quality control

The final validation and verification report passed a technical review before being submitted to the client for submission to Sustain Cert. A technical reviewer qualified in accordance with CCIPL's qualification scheme for GS validation and verification performed the technical review.

SECTION I. Validation and Verification opinion

Carbon Check (India) Private Ltd. (CCIPL) has performed the 1st periodic verification and validation of the design change of the GS Project Activity "Mutlu 5 WPP" in Turkey having GS reference number GS 1242. The validation and verification team assigned by the VVB concludes that the project activity as described in the registered PDD (version 07; dated 01/09/2023) **/**03**/** and the monitoring report (version 07 dated 01**/**09**/**2023) **/01/**, meets all relevant GS4GG requirements for project activity and UNFCCC requirements and the proposed change in the project design is accurate reflection of the actual information. The validation of the design change verification has been conducted in-line with the GS4GG requirements and requirements of VVS for CDM project activities (version 03.0) **/**B14**/**.

Validation and Verification methodology and process:

The validation and verification team confirms the contractual relationship signed on 04/10/2022 between the VVB, Carbon Check (India) Private Ltd. and Project Participants – Mutluer Enerji Üretim Yatırım İnşaat Madencilik Sanayi ve Ticaret A.Ş..**/**26**/** The team assigned to the validation and verification meets the CCIPL's internal procedures including the UNFCCC requirements for the team composition and competence. The validation and verification team has conducted thorough review as per GS4GG, UNFCCC and CCIPL's procedures and requirements. The validation of the design change and verification has been performed as per the requirements described in the GS4GG requirements /05/ and constitutes the review and completion of the following steps:

- Reviewing the registered PDD **/05/**;
- Review of the revised PDD (version 09.0 dated 25/09/2023) /03/
- Receipt of the MR (version 01 dated 30/11/2022) /01-a/;
- Desk review of the MR /01/ and other relevant documents;
- Review of the applied monitoring methodology (ACM0002, version 20) /B01/;
- Review of any CMP and EB decisions, clarifications and guidance;
- On-site assessment (26/01/2023);
- Resolution of CARs and CLs raised during verification;
- Issuance of validation and Verification Report

The project activity was correctly implemented according to the selected monitoring methodology and revised PDD **/03/**. Through document review and on-site visit assessment, the verification team confirms that the project activity has resulted in 203,011 tCO_2e emission reductions during this second monitoring period CCIPL therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private. Limited.
CDM	Clean Development Mechanism
CH4	Methane
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon dioxide equivalent
DNA	Designated National Authority
VVB	Designated Operational Entity
EB	Executive Board
ER	Emission Reductions
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GS4GG	Gold Standard for Global Goals
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MP	Monitoring Plan
PDD	Project Design Document
PE	Project Emissions
PP(s)	Project Participant
SD	Sustainability Development
SMP	Sustainability Monitoring Plan
SS(s)	Sectoral Scopes
UNFCCC	United Nations Framework Convention on Climate Change
VER	Voluntary Emission Reductions
VVB	Validation and Verification Body
VVS	Validation and verification standard

Appendix 2. Competence of team members and technical reviewers

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Ms. Aparna Choudhary

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date
03rd May 2023

Expiry Date
04th May 2024

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Kiran K V

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Rishi Raychoudhury

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Muhammet Ali ERDURAN

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

03rd May 2023

Expiry Date

02nd May 2024

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Shivaji Chakraborty

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/01/	PP	MR a. Initial version b. Version 2 c. Version 3 d. Version 4 e. Version 5 f. Final version	Initial version: 01 dated 30/11/2022 Version 02 dated 18/05/2023 Version 03, dated 17/08/2023 Version 04 dated 01/09/2023 Version 05 dated 19/09/2023 Final version 06.0 dated 25/09/2023	PP
/02/	PP	ER sheet corresponding to /01-f/	GS1242_ER_Calculations_Mutlu-5-WPP_19.09.2023	PP
/03/	PP	Revised PD a. Initial version b. Final version	Initial version: 03, dated 28/11/2022 Final version: 09.0 dated 25/09/2023	PP
/04/	PP	Ex ante ER sheet corresponding to /03-b/		PP
/05/	PP	Registered PDD	Version 03 dated 12/10/2021	PP
/06/	PP	Design change memo	Dated 22/05/2023	PP
/07/	EPDK	Old generation license	Dated 24/02/2011	PP
/08/	EPDK	Amended generation license	Dated 24/02/2011	PP
/09/	Energy and Natural Resources Ministry	Commissioning certificate of WTG (T1, T2, T3)	Dated 14/10/2020	PP
/10/	Energy and Natural Resources Ministry	Commissioning certificate of WTG (T5, T6, T7)	Dated 10/09/2020	PP
/11/	Energy and Natural Resources Ministry	Commissioning certificate of WTG (T11, T12)	Dated 02/10/2020	PP
/12/	Energy and Natural Resources Ministry	Commissioning certificate of WTG (T4, T8, T9, T10, T13)	Dated 16/10/2020	PP
/13/	Energy and Natural Resources Ministry	Commissioning certificate of solar panels	Dated 26/08/2022	PP
/14/		Regulation of energy market regulatory of Turkey	--	PP
/15/	PP	Deviation request	--	PP
/16/	PP	Original IRR	--	PP
/17/	PP	Revised IRR	--	PP
/18/	PP	IRR evidences	--	PP
/19/	PP	Common practice analysis sheet	--	PP
/20/	PP	LSC evidences	--	PP
/21/	Energy and Natural Resources Ministry	Turkish emission factor datasheet	Dated 20/09/2022	PP
/22/	TEIAS	TEIAS Electricity generation records	--	PP
/23/	EPIAS	EPIAS Electricity generation records	--	PP
/24/	PP	Employment generation records	--	PP

/25/	PP	Employment training records	--	PP
/26/	VVB	Contract between PP and VVB	--	VVB
/27/	PP	contractor offer for solar plants	--	PP
/28/	TEIAS	TEIAS regulation on electricity meters	Dated 20/01/2022	PP
/29/	PP	Technical specification details	--	PP
/30/	PP	Ornithology reports	--	PP
/31/	PP	Onsite electricity reading	--	PP
/32/	TEIAS	First index protocol	29/06/2020	PP
/33/	PP	Location of PA	--	PP
/34/	PP	Evidence to demonstrate prevention of dust emissions during construction	--	PP
/35/	PP	Evidence to demonstrate proper disposal of wastewater	--	PP
/36/	PP	Evidence to demonstrate proper handling of excavated soils	--	PP
/37/	PP	Noise level history of location of project activity	--	PP
/38/	PP	Evidence for the demonstration of proper management of waste oil	--	PP
Other documents				
/B01/	CDM	CDM methodology ACM002 version 20.0	--	CDM
/B02/	GS4GG	GS Principles and requirements version 1.2	--	GS4GG
/B03/	GS4GG	GS Deign change requirements version 1.0	--	GS4GG
/B04/	GS4GG	GS Renewable energy activity requirements version 1.4	--	GS4GG
/B05/	GS4GG	GS stakeholder consultation requirements version 1.2	--	GS4GG
/B06/	GS4GG	GS Safeguarding principles & requirements	--	GS4GG
/B07/	GS4GG	GS Gender Equality requirements & Guidelines	--	GS4GG
/B08/	GS4GG	GS monitoring report template version 1.1	--	GS4GG
/B09/	GS4GG	GS Project Design Document template version 1.2	--	GS4GG
/B10/	CDM	CDM Tool 01: Tool for demonstration and assessment of additionality	--	CDM
/B11/	CDM	CDM Tool 07: Tool to calculate the emission factor for an electricity system	--	CDM
/B12/	CDM	CDM Tool 24: Common practice	--	CDM
/B13/	CDM	CDM Tool 27: Investment Analysis	--	CDM
/B14/	CDM	CDM validation and verification standard for project activities version 3.0.	--	CDM

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

CCIPL 1513 Design change validation findings

Table 1: Clarification request

CL ID	01	Section no.	N/A	Date: 26/03/2023
Description of CL				
Referring to para 3.1.5(a) of GS Design change requirements *"Changes to the project design: The changes to project design may include following, but not limited to:* *Increase in the capacity specified in the registered PDD with following conditions:* *i. If the project activity is large-scale; the project may claim emission reductions and/or other certified impacts:* *1) up to an amount calculated based on the increased capacity by 20 per cent of the capacity specified in the originally registered PDDs or* *2) full amount calculated based on the increased capacity if the project participants can demonstrate that the reason for the increase is not within the control of the project".* *The registered project "Mutlu 5 WPP" is a large scale project having a total capacity of 46.8 MWm has per the PDD v.3 dated 12/10/2021. Through the proposed design change, the total expected capacity has been raised to 109MWm.* *PP is requested to clarify how the compliance with the para 3.1.5 of GS Design change requirement has been met.*				
Project participant response				**Date: 31/05/2023**
The approved deviation request from GS has been sent to VVB.				
Documentation provided by project participant				
T-V5.0-Deviation-Request-Form_MUTLU5 (1) (1)				
VVB assessment				**Date: 12/08/2023**
As per the design change approval from the GS, the design change is acceptable under the following condition, *If the project activity is large-scale; the project may claim emission reductions and/or other certified impacts up to an amount calculated based on the increased capacity by 20 per cent of the capacity specified in the originally design certified PDDs.* • *The project developer, therefore, must not claim emission reductions based on more than 20% of the increase capacity specified in the design certified PDD.* • *When submitting the design change request, the project developer should make clear the aim of the Solar PV technology measure in the design of the project, in that the regulation does not allow change in MWe capacity for hybrid plants using auxiliary sources and its function in providing stability to the grid and better utilize the grid capacity allocated to the grid.* PP is requested to clarify how the condition has been met and it is request to be added in the PDD. Thus, the finding is open.				
Project participant response				**Date: 17/08/2023**
The approved deviation request from GS has been sent to VVB. • 20% cap has been applied in the ER sheet and the PDD. The situation has been explained in footnotes. The explanation has been added on page 4.				

VVB Assessment	Date: 31/08/2023

- The capacity as per the original PDD is 44 MWe. PP in section B.6.1 of the design change PDD has provided that the estimated emission reduction is only 20% more than that of the capacity mentioned in the original PDD which is 44 MWe x 120% = 52.8 MWe. The ER equivalent to 52.8 MWe has been provided in the PDD which is to be claimable. It has been observed that ER sheet has also been revised accordingly.
- PP has provided the explanation in page number 4 of PD that "The aim of the Solar PV technology measure in the design of the project is providing stability to the grid and better utilize the grid capacity allocated to the grid. For power hybrid power plants using auxiliary sources, MWe capacity will not exceed the allocated MWe capacity to the project". Mutlu 5WPP has installed additional wind turbine(main source) with a generation capacity of 109 MWm/81.2 Mwe, and solar panels has been installed as auxiliary generation unit with a capacity of 25MWm, without change in total allocated Mwe.

Thus, finding is closed

CL ID	02	Section no.	N/A	Date: 26/03/2023
Description of CL				
As per the para 2.1.4 of GS Design change requirement "If there is any actual or proposed change to the implementation, operation or monitoring of a certified project activity, the project developer/CME shall submit the following information/documents as part of the request for approval of permanent changes:". *as per the above requirement,* *Design Change Memo, summarising the design changes and outlining the impact(s) of these changes on the relevant aspects of the project, including the reasons for the changes and any additional information relating to the changes.* *PP is requested to submit the same to VVB.*				
Project participant response				**Date: 31/05/2023**
Design Change Memo is submitted to VVB.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
The Design change memo has been submitted to VVB. Thus, finding is closed.				

CL ID	03	Section no.	A.1 of PDD	Date: 26/03/2023
Description of CL				
PP is requested to provide a reference to the revision in the regulation by Energy Market Regulatory Authority as footnote in page number 4 of revised PDD, and also requested to provide the documented version to VVB.				
Project participant response				**Date: 31/05/2023**
Footnote has been included.				
Documentation provided by project participant				
Amendment in the regulation pdf file				
VVB assessment				**Date: 17/08/2023**
It has been observed that the footnote reference has been added in the PDD. The finding is closed				

CL ID	04	Section no.	A.1 of PDD	Date: 26/03/2023
Description of CL				
*In the para 4 of the section A.1 of PDD (page number 4, it has been mentioned that after the extension and auxiliary generation unit, electricity generation capacity from main source has been 84MWm/**81.2 MW**. PP is requested to clarify the use of 81.2 MW in the statement.*				
Project participant response				**Date: 31/05/2023**

The value is 81.2 MWe, which is the electrical capacity of the power plant after extension.
Documentation provided by project participant
VVB assessment **Date: 12/08/2023**
The clarification has been provided by PP, which is found to be appropriate as per the commissioning certificate and generation license. It has been corrected in the PDD as well. Thus, the finding is closed.

CL ID	**05**	**Section no.**	**A.1 of PDD**	**Date: 26/03/2023**
Description of CL				
In the Tabl1 of section A.1 of the PSF, the license amendment has been provided with two different dates. PP is requested to add in the same section the amendments made in each period.				
Project participant response				**Date: 31/05/2023**
All amendments after registration are provided in Table 1 of the PDD.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
It has been observed that the amendments and their respective dates are added in the table 1 of PDD. PP is requested to provide the license amendment 3 document to VVB as it has not been provided yet. Thus, the finding is open.				
Project participant response				**Date: 17/08/2023**
Generation licence, amendments marked version				
VVB Assessment				**Date: 31/08/2023**
It has been observed that PP has provided the revised generation licenses with all the amendments and the same has been reviewed by VVB and has found that the information provided in the PDD is consistent with the generation licenses. *Thus, finding is closed.*				

CL ID	**06**	**Section no.**	**B.5 of PDD**	**Date: 26/03/2023**
Description of CL				
PP is requested to revisit the expected emission reduction provided in the section B.5. *The emission reduction provided in the section is 92,427 tCO2, while in the ER sheet, the total expected ER for the crediting period is provided as 924,266 tCO2 and expected annual ER is provided as 184,853 tCO2.*				
Project participant response				**Date: 31/05/2023**
92,427 tCO2 is revised with the correct number which is 210,730 tCO2. *Since solar panels started operation on 26/08/2022, before this date, the EG and ER are different. The generation licence was amended, estimated EG has become 324,800 MWh. The extension has not fully commissioned, therefore, the extension is applied to EG & ER calculations starting of 26/08/2022.* *Therefore, calculations are as follows:* *Before 26/08/2022* *EG: 154,000 MWh* *ER: 99,915 tCO2e* *After* *EG: 324,800 MWh* *ER: 210,730 tCO2e* *Please see ER sheet, tab "Expected Electricity Generation". This value is an assumed value, since the extension has not fully commissioned.*				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**

Based on the review of the Ex ante ER sheet "ER Calculation Sheet_Mutlu 5 Validation_extension", tab "expected electricity generation", cell C4, PP has provided the value of 324,800 MWh as the expected electricity generation value for the year 2022, while the capacity addition of the solar component is only applicable from 26/08/2022 and until then, the electricity generation from 13 unit of wind turbines with an expected generation of 154,000 MWh is only applicable. PP is requested to clarify the use of the value 324,800 MWh for the year 2022 in ex ante ER calculation.

Moreover, the table 1 provided in the section A.1 of he PD, it has been mentioned that the commissioning of the additional wind turbines is expected in 2024. PP is requested to clarify the use of 324,800 MWh for the year 2023 as well.
Thus, the finding is open

Project participant response | **Date: 17/08/2023**

92,427 tCO2 is revised with the correct number which is 210,730 tCO2.
Since solar panels started operation on 26/08/2022, before this date, the EG and ER are different. The generation licence was amended, estimated EG has become 324,800 MWh. The additional wind turbines has not fully commissioned, commissioning of the additional wind turbines has been started in 2024 and solar component has been started on 26/08/2022 in the "Expected EG (extension)" tab in the ER Sheet.
Therefore, calculations are as follows:

Active Portion	Estimated 12-month generation
13 turbines	154,000
13 turbines	154,000
13 turbines + solar panels (26/08/2022)	161,715
13 turbines + solar panels	176,000
13 turbines + solar panels (+ new wind turbines)	324,800
13 turbines + solar panels (+ new wind turbines)	324,800

ER would be 210,730 tCO2e. However, there is a 20% cap, therefore, maximum claimed can be 119,898 tCO2e in a year. "ER Calculations" tab has been revised accordingly.

VVB Assessment | **Date: 31/08/2023**

It has been observed that PP has provided the estimated emission reduction calculation appropriately as per the commissioning of different components included in the project activity.
However, it has been observed that PP has revised the crediting period from 01/11/2020 to 01/02/2021 in section B.6.4 of PDD, which is inconsistent with the crediting period mentioned in section C.2.1 of PDD. PP is requested to provide a clarification on the discrepancy. PP is also requested to provide the justification for the revision in crediting period.
Also the calculation provided in the page 31 of PDD track change version "BEy =324,800 MWh × 0.6488 tCO2e/MWh = 119,898 tCO2e", is found to be incorrect and therefore is requested to be revised.
Thus, finding is open

Project participant response | **Date: 01/09/2023**

- C.2.1 is revised with the explanation of change in the crediting period. This information has also been provided in the first verification monitoring report.
- On page 31 of the PDD, the 20% cap is explained and the wrong calculation is revised.

VVB Assessment | **Date: 01/09/2023**

The crediting period has been appropriately documented by PP in the revised PDD.
The error in the calculation in page number 31 of PDD has also been rectified.
Thus, the finding is closed.

CL ID	07	Section no.	B.5.2 of PDD	Date: 26/03/2023
Description of CL				
In the step 4, Common practice analysis of the section B.5.2, it has been mentioned that "According to latest statistics published by General Directorate of Energy Affairs, there are 30 wind power projects developed or had additional capacity in 2018". PP is requested to clarify the applicability of the data in the current PDD				
Project participant response				**Date: 31/05/2023**
Common practice is revised as well as the statement.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
In the section B.5.2 of PDD, Under the justification provided for step2 of common practice analysis, PP is requested to justify how the plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant has been identified. *In the common practice sheet provided to VVB, PP has considered the hydropower and geothermal as the products/services with comparable quality, properties as that of the proposed project activity. However, the proposed project activity uses solar and wind energy. PP is requested to clarify the appropriateness of choosing hydropower and geothermal for the common practice analysis.* *PP is requested to provide the demonstration of each step included common practise in the PD.* *Thus, the finding is open.*				
Project participant response				**Date: 17/08/2023**
Common practice is revised as well as the statement. The common practice analysis is done as per the tool's requirements and previously received GS review comments. Step-1: Determining the capacity range Step-2: Identifying similar projects, which means "renewable energy" projects. Not just wind or solar power plants. Step-3: Identifying not registered or applied for registration projects. Step-4: The projects which apply different technologies, which is any projects different than wind or solar. Therefore the common practice analysis is in line with the tool and GS review comments. All steps are explained in the PDD.				
VVB Assessment				**Date: 31/08/2023**
The common practice analysis demonstrated by PP is deemed to be acceptable to VVB. Thus, finding is closed				

CL ID	08	Section no.	B.6.1 of PDD	Date: 26/03/2023
Description of CL				
In the section B.6.1 of the PDD, the calculation of total emission reduction is found to be under the heading "leakage". PP is requested to mention the ER calculation is a separate heading. *Also the average annual CO2 reduction provided in the section is 184,853 tCO2, while the value for the baseline emission in the year y is given as 210,730 tCO2e in the same section. Since ERy = BEy, PP is requested to clarify the inconsistency.*				
Project participant response				**Date: 31/05/2023**
ER calculation is provided in a separate heading. Since the estimated generation values change in the first 2 years of the crediting period, the average values change. Average ER in a year (after extension): 210,730 *tCO2* Average ER over the crediting period of 7 years: *184,853 tCO2*				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**

It has been observed that the total emission reduction has been provided under a separate heading. The clarification provided by PP is deemed to be acceptable. Thus, the finding is closed.

CL ID	09	Section no.	B.7.3 of PDD	Date: 26/03/2023
Description of CL				
PP is requested to clarify whether there is any revision in the monitoring plan as per the revision in the capacity of the project activity. *Any such revisions is requested to be added in section B.7.3 of the PDD*				
Project participant response				**Date: 31/05/2023**
No revision in the monitoring plan is done, since they are still applicable after the extension.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
PP is requested to clarify which electricity meters used in the monitoring of the additional Solar and wind units. If separate meters are used, it need to be reported in PDD The finding is open.				
Project participant response				**Date: 17/08/2023**
No revision in the monitoring plan is done, since they are still applicable after the extension. Same meters will be used to monitor generation from the wind component and solar component.				
VVB Assessment				**Date: 31/08/2023**
Based on the review of the calibration certificates, TEIAS and EPIAS records, the justification provided by PP is deemed to be acceptable. Thus, finding is closed				

CL ID	10	Section no.	E of PDD	Date: 26/03/2023
Description of CL				
Referring to the section 4.4.2 of GS Design change requirement document *"Whenever design changes include the extension of the Project boundaries to new sites or the selection of different sites from those that had been envisioned at the time of previous Stakeholder Consultations, relevant stakeholders from these locations shall be invited for comments as per Stakeholder Consultation and Engagement requirements. For example, design changes in wind power projects increasing their capacities to new locations or modifying the microsite plan of wind turbines involving different locations compared to the one envisioned at the time of Design Certification may call for a physical meeting to include the feedback of stakeholders who were not included in the earlier stakeholder meetings.".* *PP is requested to clarify how the project activity has complied with above mentioned requirement.*				
Project participant response				**Date: 31/05/2023**
The solar component is close to the wind turbines. Stakeholders were invited to the stakeholder feedback process. The physical meeting took place in Çaltı Village, Selçuklu, Konya Province on 28/03/2023, 14:30. Therefore, the project complies with the above mentioned requirement by the VVB.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
PP is requested to provide the evidence of the stakeholder consultation process took place on 28/03/2023 to VVB. Finding is open				
Project participant response				**Date: 17/08/2023**
The solar component is close to the wind turbines. Stakeholders were invited to the stakeholder feedback process. The physical meeting took place in Çaltı Village, Selçuklu, Konya Province on 28/03/2023, 14:30. The evidences are shared with the VVB such as photographs and attendance list. Therefore, the project complies with the above mentioned requirement by the VVB.				

VVB Assessment	Date:31/08/2023
It has been observed that all the LSC evidence requested are provided to the VVB. Thus, finding is closed.	

CL ID	11	Section no.	B.5.2 of PDD	Date: 26/03/2023

Description of CL

As per the para 3 of annex 11, EB 48 decision, The plant load factor shall be defined ex-ante in the CDM-PDD according to one of the following three options:
(a) The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval;
(b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)

Referring to the above-mentioned points. PP is requested to provide a clarification on the source of the plant load factor.

Project participant response — **Date: 31/05/2023v**

The annual electricity estimation is done by EMRA (EPDK) (document[2]). Installed capacity (MWe) values are taken from generation licence of the project.

Kaynak	Saat	Kapasite Faktörü (%)
Rüzgar	4000	45
Güneş	2000	22,8
Biyokütle	7500	85
Jeotermal	8000	92

Capacity = 81.2 MWe
Estimated EG = 81.2 MWe * 4000 = 324,800 MWh
PLF is provided as 45% for wind power plants.

Documentation provided by project participant

VVB assessment — **Date: 12/08/2023**

The PLF value used in the calculation is found to be consistent with the document evidence provided.
Thus, finding is closed.

CL ID	12	Section no.	B.5.1 of PDD	Date: 12/08/2023

Description of CL

PP is requested to provide the evidence for all the input parameter used in the IRR calculations.

Project participant response — **Date: 17/08/2023**

Evidence of the input for the solar panels is provided.

Documentation provided by project participant

Offer from the contractor for solar power plant

VVB assessment — **Date: 31/08/2023**

The evidence for only Capacity Extension Investment Cost (Solar) has been provided to VVB. PP is requested to provide the earlier version of IRR sheet which was prepared during the design certification to VVB.
Thus, finding is open.

Project participant response — **Date: 01/09/2023**

Earlier version of the IRR sheet prepared during the design certification is provided.

VVB assessment — **Date: 01/09/2023**

It has been observed that the IRR sheet prepared during the design certification renewal has been provided to VVB.
Thus, the finding is closed.

Table 2: Corrective actions required.

CAR ID	01	Section no.	A.1 of PDD	Date: 26/03/2023
Description of CL				
PP is requested to mention the date from which the capacity addition is applicable for the project activity in the section A.1 of the PDD				
Project participant response				**Date: 31/05/2023**
The date is mentioned in Table A.1.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
All the relevant dates has been provided in table 1 of PD. Finding is closed.				

CAR ID	02	Section no.	A.4 of PDD	Date: 26/03/2023
Description of CL				
It has been observed that the scale of the project is provided as 44 MWe in the section A.4 of the PDD. However, the revised sale is found to be 81.2 MWe as per the PDD and commissioning certificate. PP is requested to correct the same.				
Project participant response				**Date: 31/05/2023**
The value has been revised according to the generation licence and commissioning certificate.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
The value has been found to be corrected in section A.4 of PDD. Finding is closed.				

CAR ID	03	Section no.	B.5 of PDD	Date: 26/03/2023
Description of CL				
In step 1 of common practice analysis, the total capacity of the proposed project is given as 44 Mwe, however the revised capacity as per the PDD and commissioning certificate is found to be 81.2 MWe. PP is requested to correct the same and revise the common practice analysis. The evidence for the common practice is also requested to be provided to the VVB				
Project participant response				**Date: 31/05/2023**
Common practice is revised. Evidence document is provided.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
The correction has been made in the PD, and the common practice analysis has been provided to VVB. The finding is closed.				

Verification Findings

Table 3: Clarifications Required

CL ID	13	Section no.	KPI of MR	Date:26/03/2023
Description of CL				
It has been observed that two different version number of POA DD has been provided in the key project information page of the MR. PP is requested to clarify and version number and date of the latest PDD available which is applicable to the current MR				
Project participant response				**Date: 31/05/2023**
Version and date clarified in v02 of MR:				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
It has been observed that the version number of the PDD provided in MR is version 03, dated 12/10/2021. PP is requested to clarify why the design change PDD which is being validated through issuance track along with the current verification is not considered as the PDD applicable to this monitoring report since the monitoring period overlaps with the commissioning of solar components which is included in the design change. *Thus, the finding is open.*				
Project participant response				**Date: 17/08/2023**
Version and date clarified in the MR. Design change PDD is considered as the applicable PDD for the verification.				
VVB Assessment				**Date: 31/08/2023**
It has been observed that in the KPI table of the MR, the version number of the applicable PDD is given as 5, dated 22/05/2022, while the version number of the latest design change PD provided to VVB is version 06 dated 17/08/2023. PP is requested to revise the MR with the appropriate version number of design change PDD. Further revisions in the version number of PDD that would happen during the verification process should also be reflected in the MR. Thus, the finding is open.				
Project participant response				**Date: 01/09/2023**
The correct date and version of the design change PDD has been provided in KPI section.				
VVB Assessment				**Date: 01/09/2023**
It has been observed that the latest available version number of the PD has been added in the KPI table of the MP. Thus, the finding is closed				

CL ID	14	Section no.	A.1 of MR	Date: 26/03/2023
Description of CL				
The monitoring period of the current monitoring report is provided as 01/11/2020 to 30/09/2022. While the design change is applicable for the project activity from 26/08/2022, which is also the commissioning of the solar plant . In the section A.1 and B.2.5 of the MR, it has been observed that the information regarding the design change has been described, therefore PP is requested to clarify if the design change is applicable to the current monitoring period. If not, please clarify the relevance of adding the design change information in the current monitoring period.				
Project participant response				**Date: 31/05/2023**
AS per the "issuance track" option of GS, design change can be submitted&requested together with monitoring and verification report. We have preferred to use this option. Hence, it is applicable to the current monitoring period. Please refer to the approved deviation request from GS. The deviation request indicates design change can be submitted with verification.				
Documentation provided by project participant				
T-V5.0-Deviation-Request-Form_MUTLU5 (1) (1)				

VVB assessment	Date: 12/08/2023
Based on the review of the deviation request form submitted by PP, which is approved by GS, it has been confirmed that the design change of this project activity and verification can be submitted through issuance track. Therefore, the overlapping of date of design change with the monitoring period is deemed to be acceptable to VVB, Thus, the finding is closed.	

CL ID	15	Section no.	B.2.3 of MR	Date: 26/03/2023
Description of CL				
It has been observed that in the section B.2.3 of the MR, the response provided by PP is "Depends on site visit". PP is requested to provide a clarification on the provided statement.				
Project participant response				**Date: 31/05/2023**
Statement updated. There is no change in CP start date.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
The statement provided by the PP in the section B.2.3 of MR is appropriate. Thus, the finding is closed.				

CL ID	16	Section no.	D.1 of MR	Date: 26/03/2023
Description of CL				
It has been observed that the PP has provided emission factor value of 0.6488 tCO2 in the section D.1 and in the ER calculation, however the revision in the emission factor is not mentioned in the section B.2 of the MR. while is the PDD v.3 and section E.2 of the MR, the value has been provided as 0.555 tCO2/MWh. PP is requested to clarify the same. PP is also requested to provide the applicable design change memo to the VVB.				
Project participant response				**Date: 31/05/2023**
CM has been used for hydro projects by mistake. Therefore, in revised PDD, it has been corrected. Difference is due to the wrong use of weights of the OM and BM. It has been revised in new PDD.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
Based on the review of the Turkey National Network Emission Factor Data Sheet for 2020 published in 20/09/2022, the combined margin emission factor for Solar and wind is found to be 0.6488 tCO2/MWh and 0.555 tCO2e/MWh for other renewables, which has been used in the project activity, therefore the emission factor is found to be used appropriately. Thus, the finding is closed.				

CL ID	17	Section no.	D.2 of MR	Date: 26/03/2023
Description of CL				
It has been observed that the PP has provided the VVB a meter change and first index determination protocol dated 28/09/2022. The meters details provided in the document are 8923674 (main meter) and 9740225 (backup). PP is requested to clarify why the meter change took place. PP is requested to provide the first index and calibration of electricity meters dated 29/06/2020 as this document has not been provided to VVB yet.				
Project participant response				**Date: 31/05/2023**
Main meter was replaced on 31/08/2022 for a short time, since the button on the main meter required to be repaired. After it was repaired, the main meter was placed again on 24/09/2022. *The first index document dated 29/06/2020 is provided to the VVB.*				
Documentation provided by project participant				

VVB assessment	Date: 12/08/2023
PP has mentioned that the main meter was replaced on 31/08/2022. Based on the review of the on-site electricity records/09/ and TEIAS monthly electricity reading/06/ provided by PP, it has been observed that the meters 8923674 and 8923675 has been used for the electricity reading from November 2020 to July 2022, while the reading of August 2022 is recorded by meter with serial number 9740225 and 8923675 and the reading of September 2022 is recorded by meters with serial number 8923674, 9740225, and 8923675 respectively. The first index document for the meter 8923674 dated 28/09/2022 provided proves that the error of the meter is within the acceptable limit. PP has provided the first index document dated 29/06/2020. Thus, the finding is closed.	

CL ID	18	Section no.	ER sheet of MR	Date: 26/03/2023
Description of CL				
In the ER sheet for the calculation of SDG 13 provided to the VVB, the following inconsistency has been observed which need to be clarified. *For the calculation of actual net electricity generation, the emission factor of 0.6488 tCO2/MWh has been used, while for the calculation of estimated net electricity generation as per PDD, the emission factor of 0.555 tCO2/MWh has been used.* *Moreover, the use of emission factor 0.6488 tCO2/MWh for the whole monitoring period (01/11/2020 to 30/09/2022)is requested to be clarified since the addition of solar plant has taken place in 26/08/2022. PP is also requested to clarify the actual start date for electricity generation from the solar plants.* *PP is requested to clarify how the calculation of electricity generation in the current MP has been done in compliance with the PDD.*				
Project participant response				**Date: 31/05/2023**
In PDD v03, CM for hydro has been used. In revised version, we have updated CM and used the EF for wind/solar projects.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
PP has opted to perform the design change along with the verification through the issuance track and the ER sheet “ER Calculation Sheet_Mutlu 5 Validation_extension” provided by PP for the calculation of estimated emission reduction which is applicable to the design change PDD use 0.6488 tCO2e/MWh as the emission factor for the calculation of estimated emission reduction. Also, the emission reduction calculation spreadsheet “GS1242_ER_Calculations_Mutlu-5-WPP_18.05.2023” provided by the PP for monitoring period uses 0.6488 tCO2e/MWh for the calculation of actual emission reduction achieved and 0.555 tCO2e/MWh for the calculation of emission reduction expected to be achieved in the monitoring period. In view of the inapplicability of the emission factor of 0.555 tCO2e.MWh for solar and wind project, PP is requested to clarify the use of the same in the calculation. Thus, the finding is open.				
Project participant response				**Date: 17/08/2023**
In PDD v03, CM for hydro has been used. In revised version, we have updated CM and used the EF for wind/solar projects. *The EF and ER has been revised. On the “ER” tab column I starting from row 29 has been revised as well.*				
VVB Assessment				**Date: 31/08/2023**

It has been observed that PP has used the appropriate emission factor (0.6488 tCO2e/MWh) throughout the MR and ER calculation.

However, since the value has been revised from the certified PDD. PP is requested to add the same in section B.2 of MR.

Thus, finding is open.

Project participant response	**Date: 01/09/2023**
The correction has been explained in Section B.2.2.	
VVB Assessment	**Date: 01/09/2023**
It has been observed that the correction in the emission factor from the registered PDD has been added in the section B.2 of MR. Thus, the finding is closed.	

CL ID	19	**Section no.**	E.5 of MR	**Date: 26/03/2023**
Description of CL				
It has been observed that the value estimated in ex ante calculation of approved PDD for this monitoring period for SDG 13 is given as 191,344 tCO2 while in the ER sheet provided, the value is given as 163,681 tCO2. PP is requested to clarify the inconsistency observed				
Project participant response				**Date: 31/05/2023**
In the approved PDD, the ER value for the monitoring period can not be 191,344 tCO2. This value could not be located in registered PDD. *Estimated EG was 154,000 MWh in the registered PDD. However, annual generation in this monitoring period had been less than estimated/expected.*				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
PP is requested to check the section E.5 of the MR. In the table provided, under the column "*Values estimated in ex ante calculation of approved PDD for this monitoring period*", for the SDG 13, the value provided is 191,344 tCO_2, while in the ER sheet "GS1242_ER_Calculations_Mutlu-5-WPP_18.05.2023", Tab "ER", cell "I34", the value for ex ante estimation of emission reduction for this monitoring period is given as "163,681 tCO2e. The same value is given in the section E.1 of MR as well. PP is request to clarify this inconsistency. Also, the monitoring period is considered as 01/11/2020 to 30/09/2022, while the commissioning of the solar component was on 26/08/2022. In the ER sheet" GS1242_ER_Calculations_Mutlu-5-WPP_18.05.2023", tab "ER", cell I30, the expected annual emission reduction value provided is 85,470 tCO2 which is applicable only for the 13 WTG which was commissioned earlier. PP is requested to clarify how the value of 85,470 tCO2 is applicable for the period from 26/08/22 to 30/09/2022. PP is also requested to maintain the consistency of values between MR and ER sheet. Thus, the finding is open.				
Project participant response				**Date: 17/08/2023**
Since the reference PDD for the verification is the design change PDD, values have been updated according to design change ER estimation sheet.				
VVB Assessment				**Date:31/08/2023**
*It has been observed that PP has calculated the ex ante emission reduction appropriately as per the different commissioning dates of the solar and wind power plants included in the project activity. Until 26/08/2022, the expected electricity generation is calculated as 154000 MWh, for the period from 26/08/2022 to 31/08/2022, the expected electricity generation is calculated as [154000+22000(capacity of solar power plant as per generation license)*128/365]. The estimated emission reduction for year 2023 is 176000 MWh.* *Thus, the finding is closed*				

CL ID	20	Section no.	G of MR	Date: 26/03/2023
Description of CL				
It has been mentioned in the section G of the MR that a logbook kept for recording the grievances. PP is requested to provide the evidence of the logbook to the VVB				
Project participant response				**Date: 31/05/2023**
There are two boxes where everyone can put their written inputs into. These boxes are checked regularly by the project staff. If stakeholders wish to contact directly with the project staff, the telephone number is written on the grievance boxes. These boxes are present in Meydanköy Village Head's office and Çaltı Village Head's office. The photographic evidences are provided to the VVB.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
Documents received, Finding is closed				

Table 4: Corrective Actions Request

CAR ID	04	Section no.	KPI of MR	Date: 26/03/2023
Description of CAR				
PP is requested to provide the date of last annual report in the key project page of MR as it has been observed that the annual report dated 26/12/2022 is available in SusterCert				
Project participant response				**Date: 31/05/2023**
Information added.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
PP has added the information in the KPI table of MR *Thus, the finding is closed.*				

CAR ID	05	Section no.	B.1 of MR	Date: 26/03/2023
Description of CAR				
. The section B.1 of the MR is found to be incomplete. PP is requested to add the following as per the Monitoring report template guide in the section. *"Provide information on the implementation and actual operation of the project including relevant dates (e.g. construction, commissioning, start of operation). If the project activity consists of more than one site, describe the status of implementation and start date of operation for each site. If the project activity is implemented in phases, indicate the progress of the project activity achieved in each phase".*				
Project participant response				**Date: 31/05/2023**
Information added to B.1 about project description and dates. Detailed milsetones are available in table 3 of MR:				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
No information about the additional number of units, added capacity and expected generation details is provided in the section. It is requested to be added. *Thus, the finding is open.*				
Project participant response				**Date: 17/08/2023**

Information added to B.1 about project description and dates and the technical information on the project implementation.
VVB Assessment **Date:31/08/2023**
It has been observed that required changes has been made in section B.1 of MR and is found to be consistent with PDD and other supporting documents. Thus, the finding is closed.

CAR ID	06	**Section no.**	D.2 of MR	**Date: 26/03/2023**
Description of CAR				
It has been observed that the value provided for the parameter "Air Quality" in section D.2 which is 85,470 tonnes of CO2e is the estimated annual emission reduction as per the PDD v 3. PP is requested to provide the actual emission reduction achieved during the monitoring period.				
Project participant response				**Date: 31/05/2023**
Correct value achieved in the monitoring period is provided in the table "Air Quality".				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
The value provided (193,156 tCO2) is found to be appropriate and consistent with the ER sheet, Thus, the finding is closed.				

CAR ID	07	**Section no.**	D.2 of MR	**Date: 26/03/2023**
Description of CAR				
PP is requested to provide the details of the electricity meters with their dates of calibration in the "measurement method and procedure" column in the data and parameter table for "EFfacility,y"				
Project participant response				**Date: 31/05/2023**
Required information is provided in the parameter table.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
The information about the electricity meters has been added in the section D.2 of MR, which is found to be consistent with the PDD, calibration certificated and TEIAS records. Thus, the finding is closed				

CAR ID	08	**Section no.**	D.2 of MR	**Date: 26/03/2023**
Description of CAR				
The description provided for the parameter "Quality of employment" in section D.2 of the MR is inconsistent with that of registered PDD. v.3. PP is requested to correct the inconsistency				
Project participant response				**Date: 31/05/2023**
Description seems same (HSE Trainings) in both MR and PDD.				
Documentation provided by project participant				
VVB assessment				**Date: 12/08/2023**
The description provided is found to be consistent. Thus, the finding is closed.				

CAR ID	09	**Section no.**	E.2 of MR	**Date: 26/03/2023**
Description of CAR				

It has been observed that PP has mentioned that 3,337,6000 m3 of natural gas has been avoided during the monitoring period for the calculation of project value in section E.2 of MR. However the detailed calculation as mentioned in the section B.6.1 of the PDD is missing and therefore is requested to be added in this section E.2 of MR

Project participant response	**Date: 31/05/2023**

Avoided natural gas calculation is added to the Section E.2. of MR.

Documentation provided by project participant

VVB assessment	**Date: 12/08/2023**

In the section E.2, PP has provided the value of 63,918 m^3 , while in section D.2, the value provided is found to be 63,918,000 m^3 . PP is requested to correct the inconsistency.
The equation provided in the section B.6.1 of PDD version 3 is also requested to be added in the MR.
The input values (NG consumption and electricity generated by thermal power plants) in the equation in the PDD is inconsistent with the values provided in the MR. PP is requested to clarify the discrepancy.

The value provided for this parameter in section E.4 and E.5 of MR is also requested to be revised.

Thus, the finding is open.

Project participant response	**Date: 17/08/2023**

Avoided natural gas calculation is added to the Section E.2. of MR. Inconsistent values have been revised.

VVB Assessment	**Date: 31/08/2023**

It has been observed that the PP has provided the equations and calculations for the NG savings achieved in this monitoring period in section B.6.1 of MR, however, the value of NG consumption in 2021 is given as 15,228,703,000M^3 in MR, which is found to be inconsistent with the ER sheet. PP is requested to correct the same.

Thus, the finding is open.

Project participant response	**Date: 01/09/2023**

15,228,703,000 m^3 in MR is revised and made consistent with the ER sheet.

VVB Assessment	**Date: 01/09/2023**

It has been observed that the value for NG consumption in 2021 provided in section B.6.1 of MR has been consistent with the ER sheet.

Thus, the finding is closed

CAR ID	10	**Section no.**	E.2 of MR	**Date: 26/03/2023**

Description of CAR

PP has provided an incomplete representation for the parameter EFgrid,CM,y in the section E.2 under the calculation of project value for SDDG 13. The same is requested to be corrected.

Moreover, the value provided for the parameter is not consistent within the MR. Two different values has been provided in section E.2 itself. PP is requested to correct the inconsistency.

Project participant response	**Date: 31/05/2023**

The inconsistency is corrected. $EF_{grid,CM,y}$= 0.6488 tCO_2/MWh

Documentation provided by project participant

VVB assessment	**Date: 12/08/2023**

It has been observed that the inconsistency has been corrected.

Thus, the finding is closed

CAR ID	11	Section no.	A.4, B.2.3 of MR	Date: 31/08/2023
Description of CAR				
The following inconsistencies are observed in MR, PP is requested to correct the same. 1. The crediting period in section A.4 of MR is given as 01/02/2021 to 31/01/2023 which is actually the monitoring period. It is to be corrected to crediting period 2. The crediting period provided in section B.2.3 are 01/11/2020-30/09/2022 and 1/02/2021-31/01/2023 which is actually the monitoring period. PP is requested to correct it to the crediting period.				
Project participant response				**Date: 01/09/2023**
1. *A.4. of MR has been revised.* 2. *B.2.3 of MR is has been revised.*				
Documentation provided by project participant				
VVB assessment				**Date: 01/09/2023**
It has been observed that the required changes has been made by PP in the MR. Thus, the finding is closed.				

CAR ID	12	Section no.	ER sheet of MR	Date: 31/08/2023
Description of CAR				
1. The calculation provided in I28 of tab “ER” does not include electricity generation values from 2023(cell I27). 2. Cell G35 and I35 of tab “ER” does not contain the electricity generation values from 2023(cell G34 and I34). 3. In cell G32, G33, and G34, of tab “ER” PP is requested to add the calculation in which the value has been derived from. 4. Based on the above revision in calculation, MR is also requested to be revised especially section E.5				
Project participant response				**Date: 01/09/2023**
1. *Cell I28 has been revised.* 2. *Cell G32 and I35 are revised.* 3. *The calculations are added as per design change ER Estimation Sheet.* 4. *MR has been revised, section E.5 as well.*				
Documentation provided by project participant				
VVB assessment				**Date: 01/09/2023**
It has been observed that the required changes has been made in the ER sheet and section E.5 of MR. Thus, the finding is closed.				