



**Verified Carbon
Standard**

1ST VERIFICATION REPORT FOR ÜÇPINAR WIND POWER PROJECT, TURKEY



Document Prepared by Earthood Services Private Limited

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Summary:

Earthood Services Private limited (hereafter referred to as ESPL) has been contracted by Derbent Enerji Üretim Pazarlama İthalat ve İhracat A.Ş. to conduct the verification of the project – “Üçpınar Wind Power Project”, (VCS ID 1907) with regards to the relevant requirements of VCS programme guidelines and standard (VCS standard version 4.3/13/ & VCS program guide version 4.2/14/). Relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting has been applied for verification.

The monitoring period covered under this verification are from 18/06/2019 to 31/05/2022.

The verification includes confirming the implementation of the monitoring plan of the registered VCS PD (VCS ID 1907) and the application of the monitored methodology as per ACM0002 version 19 (Grid-connected electricity generation from renewable sources).

The project activity involves electricity generation by the Wind power project of 112.2 MWm / 99 MWe which involves installation and operation of 3.4 MWm / 3 MWe wind turbines in the Çanakkale Province, Lapseki District, Üçpınar Village and supplying the generated electricity to grid Çanakkale Havza-1 TM. The project being a renewable energy generation activity results in reduction of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change.

A risk-based approach has been followed to perform this verification. In the course of verification 04 Corrective Action request (CARs), 00 Forward Action request (FARs) and 00 Clarification request (CLs) were raised and successfully closed.

The review of the project description/01/, monitoring report/03/ and additional documents related to baseline and monitoring methodology; the subsequent background investigation, telephonic interviews and stakeholders have provided ESPL with sufficient evidence to validate the fulfillment of the stated criteria.

ESPL confirms that the project is implemented in accordance with the registered VCS PD/01/ and MR/03/. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the project’s GHG emissions, and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the emission reductions from the project activity, ‘Üçpınar Wind Power Project’ in

Çanakkale Province, Lapseki District, Üçpınar Village managed by Derbent Enerji Üretim Pazarlama İthalat ve İhracat A.Ş during the period 18/06/2019 to 31/05/2022 amounts to 573,248 tons of CO₂e with displacing 1,009,952 MWh of electricity from fossil fuel dominating electricity grid with electricity generated using wind energy system.

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1 INTRODUCTION

1.1 Objective

Earthood Services Private Limited (ESPL) has been contracted by Derbent Enerji Üretim Pazarlama İthalat ve İhracat A.Ş., to undertake the verification of the renewable energy project titled “Üçpınar Wind Power Project” (VCS ID-1907) against the requirement of VCS standard version 4.3/13/. The verifiers have reviewed the GHG data collected to date for the monitoring period from 18/06/2019 to 31/05/2022 covered in this verification.

The objective of this verification is a thorough and independent assessment of registered project activities against the applicable VCS requirement by the VVB. The verification process shall determine whether the proposed project activity complies with the requirement of latest VCS guidelines, applicability conditions of the selected methodology, relevant host country regulations and guidance issued by the VCS Board.

1.2 Scope and Criteria

The scope of this verification is to assess the claims and assumptions made in the VCS monitoring report against the VCS criteria, including but not limited to, VCS standard, applied methodology and other relevant rules and requirements established for VCS project activities.

The verification is not meant to provide any consulting towards the project participants. However, stated requested for clarification and/or correction actions requested may have provided inputs for improvement of the project design.

1.3 Level of Assurance

☒ Reasonable level of assurance

☐ Limited level of assurance

The level of assurance of the verification report falls under reasonable assurance engagement as selected by the client. Reasonable assurance is a high level of assurance regarding material misstatement, but not an absolute one.

Reasonable assurance includes the understanding that there is a remote likelihood that material misstatements will not be prevented or detected on a timely basis. To achieve reasonable assurance, the auditor needs to obtain sufficient appropriate audit evidence to reduce audit risk to an acceptably low level. This means that there is some uncertainty arising from the use of sampling, since it is possible that a material misstatement will be missed.

The evidence used to achieve a reasonable level of assurance is specified in section 2.3 and 2.4 of this report.

1.4 Summary Description of the Project

The project activity is a Wind power project of 99 MW developed by Isider Enerji Üretim Pazarlama İthalat ve İhracat A.Ş.. in Çanakkale Province, Lapseki District, Üçpınar Village. The Project activity consist of the 33 WTGs of 3.4MWm / 3 MWe totalling the total capacity to 112.2MWm / 99 MWe.

The aim of the project is to generate cleaner electricity using wind power project and displacing the amount of electricity generated using the coal-based power plant. The electricity generated is supplied to the state utility.

Remote Site Visit was conducted on 19/07/2022 and it was checked that the current monitoring period from 18/06/2019 to 31/05/2022 involves the supply of 1,009,952 MWh of electricity to the grid and the total emission reductions of 573,248 tCO₂e.

The start date of the project is 18/06/2019 which is also the commissioning date of the first wind turbine installed under the project activity. This is the first crediting period of the project from 18/06/2019 to 17/06/2029, the same was verified using the registered PD/01/, validation report /02/ and the remote site visit/15/.

The project is based on the methodology ACM0002, version 19, 'Large-scale Consolidated baseline methodology for Grid- connected electricity generation from renewable sources'/08/. The project activity is undergoing first verification and description of the verification was also verified in the Registered PD and Validation report /02/.

Based on the assessment of the documents, the assessment team is able to confirm that the project activity is fully functional and implemented as described in the registered VCS PD/01/ and MR/03/.

2 VERIFICATION PROCESS

The registered VCS project is undergoing first verification, the approach adopted to ensure the quality of emissions reductions is described in the following sections.

2.1 Method and Criteria

The verification approach consists of two phases.

In the first phase, ESPL completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leaking if relevant.
- Protocols used to estimate or measure GHG emissions from these sources.
- Collection and handling of data.
- Controls on the collection and handling of data.
- Means of verifying reported data.

- Compilation of the verification Report.

At the end of this phase, ESPL produced a Verification Checklist which, based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification. No sampling plan has been adopted by the verification team as all the data related to the wind power plant was appropriately presented in the MR and ER sheet and was verified by the assessment team.

In the second phase, ESPL verified the implementation of the monitoring plan and the data presented in VCS MR/03/ for the period in question. This involves telephonic interviews of project proponent representative's and a desk review of the Monitoring Report. This verification report describes the findings of this assessment.

2.2 Document Review

The verification is performed primarily as a document review of the registered VCS PD/01/ & MR/03/. The review is performed by assessment team using dedicated protocols. The assessment team cross checks the information provided in the documents and information from source other than those used, if available, and also conducts independent background investigations. Earthood conducts a desk review as under:

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emissions reduction.

The documents reviewed during the verification are listed under Appendix 1 of this report

2.3 Interviews

In accordance with section 4.1.2 of the VCS standard, v4.3/13/, the VVB is required to reach a reasonable level of assurance. If the reasonable assurance can be achieved, then it is not mandatory for the VVB to conduct the on-site visit by VVB for verification. However, the representatives of the PP were interviewed remotely on 19/07/2022 i.e., personnel responsible for monitoring of the project activity, data collection and management, and QA/QC procedure. The details of the people interviewed are mentioned in the table below:

Name	Organization	Topic covered	Verification Team member
Kemal Emre	Plant Manager	Reliability & accuracy of reading considered for emission reduction calculations, calibration procedure Monitoring and measuring system. Collection of measurements Observations of established practices for verification of monitoring parameters Ongoing Local stake holders' consultation process	Deepika Mahala, Vishnu Panicker, Fikriye Seda Atabek
Hazal Ozturk	Project Consultants	Project Implementation, start date as per the VCS requirements. Electricity generation records (monthly energy statements, Invoices) Emission reduction calculation	Deepika Mahala, Vishnu Panicker, Fikriye Seda Atabek
Auncuoglu	Energy and Carbon sales	Emission reduction calculation	Deepika Mahala, Vishnu Panicker, Fikriye Seda Atabek
Metin Demirtas	Village head	Awareness of Grievance mechanism Opinion about implemented project	Deepika Mahala, Vishnu Panicker, Fikriye Seda Atabek

2.4 Site Inspections

As discussed in the above section, physical site inspection is not done for the current verification. However, to achieve a reasonable level of assurance, the assessment team has followed the alternative means to substantiate the verification criteria as described in the below table:

Assessment Criteria	Means of verification/source documents	Assessment opinion
Description of project activity	VCS registered PD and Validation report /01/02/	The information's with reference to project capacity, technology, plant equipment's and commissioning dates as

	Virtual interviews with site personnel and PPs representatives on 19/07/2022	provided in section 1 of MR are found consistent with the documents.
Compliance of the project implementation with the registered project design documents	Monthly share certificates issued by EPIAS and crossed verified with TEIAS meter record/06/07/ Geographical co-ordinates of project activity verified through google map Virtual interviews with the site personnel and PPs representatives on 19/07/2022/15/	Monthly share certificates issued by TEIAS and indicate the following information: Identification of substation to which the project is connected, serial numbers of energy meters used for measurement, Capacity of project and name of project participant. Location of project is verified through GPS Map and found consistent with registered VCS PD/01/. All the information's regarding the project implementation as discuss above are further verified through VCS PD/01/ and found consistent.
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	Virtual interviews with site personnel and PPs representatives on 19/07/2022 /15/ Monthly Share certificates issued by EPIAS and TEIAS/06/07/	The organizational structure, responsibilities and competencies of the personnel confirms through interviews. Frequency of monitoring of parameters listed under approved monitoring plan is verified through TEIAS Certificates The method used for measuring recording, storing, aggregating and reporting the data on monitored parameters are verified through PPA and virtual conservations with site personnel. Procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the MR/03/ is confirmed and found satisfactory.
Compliance with the calibration frequency requirements for measuring instruments	Calibration certificates of meters installed /05/ Türkiye Elektrik İletim A.Ş (TEIAS)	Calibration frequency and energy meter specifications (Sr. No, make accuracy class) is verified through calibration certificates/05/ are found to be consistent.

		Responsibility of calibration and maintenance of energy meters is solely under control of TEIAS.
Assessment of data and calculation of emission reductions or net removals	Monthly Share certificates issued by TEIAS/06/	Monthly values of monitoring parameters used in ER calculation are verified through share certificates and cross verified with the respective invoices. Methods, formulae and emission factor for calculating baseline emissions have been followed are in accordance with the applied methodology. /08/

It is noteworthy that no sampling plan for verification is applied as 100% data is verified for the current monitoring period. Most of the reference document referred by the assessment team (above table) are either issued /endorsed by the TEIAS and EPIAS, hence is deemed authentic.

Based on the above assessment it can be concluded that the assessment team has verified sufficient appropriate audit evidence, to reduce audit risk to an acceptably low level as requisite to achieve reasonable level of assurance for the current verification.

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and onsite assessment. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and nonconformities, which may be of following types:

CAR (Corrective Action Request) is raised if one of the following occurs:

- Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient.
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants.
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions.
- Change to the key sustainable development indicators.
- Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable requirements have been met. All CARs and CLs raised by the Earthhood during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

The total of 04 CARs and 00 CLs were raised in the current verification. No FAR was raised. All the findings that are raised and communicated to project participant during the verification are included under Appendix 3. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

The project activity is undergoing first verification in the first crediting period. No FARs are raised during the current monitoring period. Details for which can be checked from Appendix 3 of this verification report.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification since the validation/verification body has not undertaken validation activities as part of the verification

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The Project is registered under VCS only (VCS ID- 1907). The PP has submitted the declaration /18/ which states that the net GHG emission reductions generated by the project activity will not be used for compliance with any other emissions trading program or to meet binding limits on GHG emissions for the same monitoring period.

3.2 Methodology Deviations

There is no deviation in the methodology during the current monitoring period.

3.3 Project Description Deviations

There is no change in the number of turbines or installed capacity of the project. All turbines were producing electricity according to 3.0 MWe under normal conditions in the power plant. In line with the statement from TEİAŞ, each turbine is permitted to generate electricity in such a way that it can reach its maximum capacity (3.4 MWm). So, the only change in the project is that each turbine is now permitted to produce electricity according to their maximum capacity (3.4 MWm), while they normally generate electricity according to 3.0 MWe. The statement from TEİAŞ was send on 12/05/2022 and was confirmed from the evidence /17/ send by the PP. The production of maximum capacity is said to be implemented by 30/09/2022 and hence not affecting the present monitoring period. CAR#03 was raised and resolved.

3.4 Grouped Project

This is not applicable, as this is not a grouped project

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity involves installation of WTGs to generate electricity from wind energy. The installed capacity of the project is 99 MW (33 x 3 MW). The commissioning, capacity, project implementation and grid connectivity, make and technical specifications of the WTGs verified during the validation of the project/01/.

There are a total of 33 WTGs installed and connected to the substations and then is fed to the grid Çanakkale Havza-1 TM. The project activity is located at Çanakkale Province, Lapseki District, Üçpınar Village.

This proposed wind power project will reduce the GHG emissions generated by the current generation energy mix in Turkish National Grid, which is dominated by fossil fuel-based grid connected power plants. The Power generated through the proposed project activity will be supplied to the grid under a connection agreement, as verified using the registered PD/01/.

This is the first verification of the project from 18/06/2019 to 31/05/2022 (both days including) under the first crediting period of the project from 18/06/2019 to 17/06/2029, the project has delivered 1,009,952 MWh of electricity to the national grid which has resulted in the reduction of 573,248 tCO₂e as verified from the documents/04/, /03/. The assessment team did a remote site visit and interviews in order to verify the status of project implementation of the monitoring plan. It has also been verified as per the guidelines in ACM0002, version 19, 'Grid connected electricity generation from renewable sources' that the calculations for the GHG emission reductions are done in accordance with the aforesaid methodology/08/.

The technical specification of the project activity equipment's has been checked through the photographs/15/ of all the equipment's installed at site and are found to be consistent with the details mentioned under MR. The current status of the project activity is verified through generation data for project investors and WTGS and hence it is confirmed that the project is fully functioning.

The assessment team has reviewed the monthly share certificates/05/ and confirmed that, the WTGs are connected to the common metering system at substation near sites.

Hence, in order to calculate the net electricity exported to the grid by the WTGs of the project activity, the state electricity utility uses an apportioning procedure that has been correctly described in section 4.3 of the MR/03/ and in the PD/01/. This was also verified by interviewing the staff at the site during the remote audit.

It was confirmed through the interviews of representatives of the O&M provider during the remote audit, that the procedure to derive the electricity exported to the grid by each project owner is completely under jurisdiction of the TEIAS.

The required monitoring system have been installed and are operational. The meters comply with appropriate quality standards applicable for the technology. The accuracy class of the meters installed for the project activity was verified against the registered VCS PD/01/ and VCS MR/03/.

The monitoring plan of the registered VCS PD/01/ & MR/03/ includes the monitoring parameter “Net electricity supplied to the grid by the project activity (EGy)”.

Monitoring Procedure:

The project WTGs are connected to a bulk/common metering point installed at Sub-station (154kV- Çanakkale Havza-1 TM) where metering is done for all the WEGs of project activity.

TEIAS is the national electricity transmission company, which makes available the official data of all power plants in Turkey. TEIAS data is used on monthly basis and accordingly monthly share certificate is being prepared as verified using the monitoring period/05/.

Apportioning procedures used in the calculations of net electricity supplied to the grid is correctly described in the MR/03/. This was also verified during remote audit with site personal deployed at respective sites/15/.

Values of the parameter “Net electricity supplied to the grid by project” i.e., EGy is directly sourced from the monthly Share certificates issued by TEIAS/06/ that indicates the share of electricity for project activity received at the sub-station. The measurement results are cross checked with records of share certificates, and it is in line with applied methodology. Thus, this parameter is considered in emission reduction calculations.

Value of net electricity supplied to the grid is directly sourced from the share certificates issued by the TEIAS. These values are the main source to calculate the baseline emission by this project activity and same is in line with the information provided in registered monitoring plan /01/.

The net electricity supplied to the grid by project activity is being measured continuously by energy meters located at the substation and recorded at least monthly basis. This is in line with methodology and is accepted.

The VCS MR/03/ has been reviewed to check that the procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the MR. The monitoring plan completely describes all measures to be implemented for monitoring all parameters required. The monitoring plan described the positioning of the equipment. Calibration frequency for the energy meters is 10 years which in line with Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems which is considered as national standard mentions that “Periodic tests of meters of electricity, water, coal gas, natural gas and current and voltage transformers are done every 10 years.” Hence, calibration frequency once in 10 years considered for the project activity is found to be appropriate.

The project activity contributes to the sustainable development during the current monitoring period in the following manner:

SDG indicator	Contribution due to project activity
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SDG 13.2.2	573,248 tCO ₂ e reduced due to electricity generation from Wind power plant as calculated based on EPIAS records/07/.
SDG 7.2	1,009,952 MWh of renewable energy generated due to project activity as verified from EPIAS records/07/.
SDG 8.5	Employment generation for 12 persons and training were provided as verified from employment and training records/19,22/.
SDG 6.3	Prevention of discharge of domestic and industrial wastewater and ensuring safe treatment and transfer as verified from wastewater transfer invoices/23/.

Assessment team concludes the following:

- There are no material discrepancies between project implementation and the project description provided in the registered PD/01/.
- The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling, and analysing the monitored data and parameters) is appropriate.
- There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/08/.
- The GHG emission reductions or removals generated by the project have not included in an emissions trading program or any other mechanism that includes GHG allowance trading/18/.
- The project has not received or sought any other form of environmental credit or has become eligible to do so since validation /18/.
- The project is registered under VCS only.
- The project activity is complying with indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects as discussed under section 1.11 of MR. The latest requirement of VCS standard 4.3 for mandatory demonstration of 4 SDG goals is not yet applicable to the project activity.

In the view of the information as verified above the assessment team is able to conclude that the project has been implemented as described in the project description.

CAR#01 and CAR#02 was raised and resolved.

4.2 Safeguards

4.2.1 No Net Harm

There is no negative impact to any socio-economic conditions of the region due to the project activity. This project activity does not involve any negative environmental or socio-economic impacts, as the project activity involves generation of power using wind energy which is a clean source of energy. Hence no mitigation measures are required/24/

The PP has promised to incorporate the potentially negative impacts concerns raised during the local stakeholders as the monitoring parameters during the first verification. The details are as follows

Parameter	MOV according to PDD	VVB assessment
Dust, Noise	Interview with locals	VVB has conducted interview with the local stakeholders and no negative comments were observed/15/
Status of Roads	Interview with locals	During consultation with local stakeholders, it was found that no damage is done to road during the construction phase.
Water Quality and Quantity	Records of transfer of wastewater by sewage truck	Wastewater records shared by the PP have been verified by the VVB and it is confirmed that no harm to ground water or discharge of wastewater is done due to project activity/23/
Biodiversity.	Photos or videos of the site	No carcasses have been observed near the site as confirmed during the interview with local stakeholders and through the site photographs /15/.

Thus, the VVB can confirm that no net harms have occurred due to the project activity and the monitoring has taken place as per the registered PDD/01/.

4.2.2 Local Stakeholder Consultation

The project activity is undergoing first verification in its first crediting period and the local stakeholder consultation was appropriately conduct prior to validation as a way to inform the design of the project and maximize participation from stakeholders.

The project proponent has also established a mechanism for continuous stakeholder interaction and kept a grievance register/16/ at the project site for the comments at any time during the project crediting period. Stakeholder engagement procedure was conducted at the Üçpınar Village with the village head and the local stakeholders on 31/07/2018. The details of the same are provided under section 2.2 of the MR and verified during interviews of remote audit.

CAR#01 was raised and resolved.

4.3 AFOLU-Specific Safeguards

Since the project is a non-AFOLU project, hence not applicable

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The calculations for the emission reductions are found to be correct. The details of the reported and the verified values of all the parameter are listed in section 4.5 of this report.

The formulae & method used to calculate the baseline emissions, project emissions and leakage are appropriate and in line with the approved methodology ACM0002 version 19/08/.

The PP has calculated the grid emission factor as per the combined margin approach described in the 'Tool to calculate the emission factor for an electricity system', version 07/21/.

The grid emission factor has been calculated as the weighted average of OM & BM; and has been fixed ex-ante for the entire crediting period. This has been mentioned in the registered PD/01/. The weights for OM and BM are 0.75 and 0.25 respectively.

The OM and BM have been calculated to be 0.6601 tCO₂/MWh and 0.2900 tCO₂/MWh respectively. Applying the weights, the grid emission factor has been calculated to be 0.5676 tCO₂/MWh.

The assessment team able to confirm that the GHG emission reductions and removals have been quantified correctly in accordance with the project description and applied methodology.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

All the data recorded are in compliance with the registered VCS PD/01/ and Monitoring Report/03/. The assessment team has checked the monthly share certificates for electricity generated and supplied by project activity/05/ for the current monitoring period to verify the values of monitoring parameters reported in ER calculation sheet and found to be consistent. Since certificates are prepared and issued based on the monthly meter readings by PP and state agency and also used for commercial invoice purpose, they are found to be reliable and authentic.

The monitoring of the project activity is found to be in accordance with the monitoring methodology described in ACM0002, Version 19/08/. The monitoring mechanism is effective and reliable. During the remote audit, personnel involved at various levels of the operation of the project activity have been interviewed to confirm that the plant personnel are conscious of the importance of the monitoring activities.

The meters comply with appropriate quality standards applicable for the used technology. The accuracy class of the meters installed for the project activity was verified through the registered VCS PD/01/, MR /03/, and calibration certificates/05/ are found to be consistent.

The following parameter has been verified for current monitoring period:

Parameter: Net quantity of electricity generated and delivered to the grid by power unit m in year y, $EG_{m,y}$ (MWh):

Means of verification	Criteria/ Requirements	Assessment/observation
	Measuring/Reading/Recording frequency	The parameter is calculated and recorded on monthly basis, however, the input values used to calculate the value of EG_y are continuously monitored, hourly measured and monthly recorded.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring and reporting frequency is in line with the monitoring plan as outlined in the registered PD/01/ and monitoring methodology/08/.
	Monitoring equipment	Electronic tri-vector meter of accuracy class 0.2s are used. (Calibration details of meter is provided separately in this section, under the heading "Calibration of meters")
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the values is 0.2s, which is as per registered PD/01/.

	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. Accuracy is valid for the entire measuring range.
	Calibration frequency /interval:	The meters are calibrated every 10 years in line Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems' (Regulation) of Ministry
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, pending until the findings are closed or as per the manufacturer's specifications?	Yes, calibration interval of meters is 10 years, which is in line with the monitoring plan/01/
	Is the calibration of measuring equipment carried out by an accredited person or institution?	The meter testing and checking procedures are solely within the purview of TEIAS.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid for entire monitoring period.
	How were the values in the monitoring report verified?	The values in the monitoring report were verified from the monthly invoices from EPIAS/07/ Value Monitored: 1,009,952 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EGy were further cross-checked with TEIAS protocols /06/.
	Does the data management ensure correct transfer of data	Yes, the data ensure correct transfer of data

	and reporting of emission reductions and are necessary QA/QC processes in place?	and reporting of emission reductions management. QA/QC processes are in place.	
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	NA	
Findings	CAR#04 was raised and resolved.		
Conclusion	The parameter has been monitored appropriately in accordance with the registered monitoring plan/01/ and applied methodology/08/. The monitored data was recorded consistently as per the approved frequency in monitoring plan. Since 100% data has been monitored and verified, the verification team can ascertain that the values used for calculation of emission reduction are free from material errors.		

Parameters fixed ex ante:

Means of verification		
	Data/Parameter	VVB assessment
	EGy: Net electricity generated by power plant/unit m, k, or n (or in the project electricity system in case of EGy) in year y or hour h	PP has applied the value of net electricity generated using official data published by TEIAS/06/ for all the power plants in turkey the value are correctly reflected under table 13, 14 and 15 of the PD/01/ , the value are fixed ex-ante and are found to be consistent in the MR/03/.
	HVi,y : Heating Values of fuels consumed for electricity generation in the years of 2015, 2016 and 2017	The official data by the national authority TEIAS/25/ is used by the PP and is found to be consistent with PD/01/

	FC _{i,y} : Amount of fuel type i consumed in the project electricity system in year y	The official data by the national authority TEIAS/25/ is used by the PP and is found to be consistent with the PD/01/
	NCV _{i,y} :Net Calorific Value of fuel types in the years of 2015, 2016 and 2017	There is no official source in turkey for the Net Calorific Value of fuel types, therefore is value is calculated ex-ante using HVI _{i,y} to FC _{i,y} , and the value in the MR is consistent with the table 7 and 8 of the ER ex-ante sheet /01/.
	Sample Group for BM emission factor	Energy Investments, Ministry of Energy and Natural Sources/26/ is the source of data fixed anted for determining the sample group, the source is correctly reflected in the MR/03/.
	EFCO _{2 i,y} :CO ₂ emission factor of fossil fuel type i in year y	PP has applied the IPCC default value of 0.5676 tCO ₂ is fixed ex-ante, the value mentioned in the MR/03/ and ER/04/ is found to be consistent with the PD/01/.
	η _{m,y} : Average energy conversion efficiency of power unit m in year y	PP has applied the default value using tool 09 v.2.0. The value is fixed ex-ante and the is found to be consistently mentioned in the MR/03/.
Findings	No findings were raised.	
Conclusion	The ex-ante parameters mentioned in the MR/03/ are cross-checked with the registered VCS PD/01/ and are found to be consistent.	

Calibration of meters:

The energy meters installed at respective sub-stations are of accuracy class 0.2s as verified through the calibration certificates/05/. The installation of the meters was checked through Calibration certificates and photographs and found to be satisfactory. Details of the meters are provided below table:

Name	Brand & Model	Serial Number	Make & Accuracy	Date of First Index Protocol	Date of Test Report of Meters	Remark
Main Meter	ITRON & SL761W071	84051115	Secure 0.2s	25/04/2019	12/07/2021	No Delay. Next calibration due on 25/04/2029
Main Meter	ITRON & SL761W071	84051116		25/04/2019	12/07/2021	

Back-up Meter	ITRON & SL761W071	84051117		25/04/2019	12/07/2021	
Back-up Meter	ITRON & SL761W071	84051118		25/04/2019	12/07/2021	

According to Paragraph b) of the Article 9 of the 'Regulation of Metering and Testing of Metering Systems' (Regulation) of Ministry, periodic calibration of the meters will be done every 10 years according to the regulation This is in line with the guidelines outlined in para 365 of VVS, version 3.0 and thus accepted by the assessment team.

In view of the above discussion the assessment team able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations:

The emission reduction as per the applied methodology equals the baseline emissions (project emissions and leakage emissions for such project activities is considered zero). The formula provided for the calculation of baseline emissions is

$$BE_y = (EG_y - EG_{\text{baseline}}) \times EF_{\text{grid,CM,y}}$$

Where:

BE_y = Baseline emissions in year y (tCO₂/yr).

EG_y = Electricity supplied by the project activity to the grid (MWh).

EG_{baseline} = Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero.

$EF_{\text{grid,CM,y}}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system".

The project activity is the installation of a new grid-connected renewable power plant so,

$$EG_{\text{baseline}} = 0$$

$$\begin{aligned} BE_y &= EG_y \times EF_{\text{grid,CM,y}} \\ &= 1,009,952 \text{ MWh} \times 0.5676 \\ &= 573,248 \text{ tCO}_2/\text{yr} \end{aligned}$$

The emission reduction has been calculated based on formula:

$$ER_y = BE_y - PE_y - LE_y$$

Project emission, $PE_y = 0$

Project leakage, $LE_y = 0$

Thus, $ER_y = BE_y$

The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed. The assumptions, emission factors and default values that were applied in the calculations are justified. The actual emission reduction achieved during the current monitoring period are 7.71% lower than the estimated amount of emission reduction as determined in the registered VCS PD/01/ which is due to the unexpected wind trend in Üçpınar WPP during the monitoring period. The generation from WTGs depends on wind availability and pattern and this is acceptable.

All the data were made available and have monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.

CAR#04 was raised regarding transparent description of calibration frequency, and it was successfully resolved.

4.6 Non-Permanence Risk Analysis

Not applicable for the project activity

5 VERIFICATION CONCLUSION

Earthood Services Private Limited (ESPL) contracted by Derbent Enerji Üretim Pazarlama İthalat ve İhracat A.Ş., to perform the independent verification of the emission reductions for the VCS project activity 'Üçpınar Wind Power Project' (VCS ID- 1907) for the monitoring period 18/06/2019 to 31/05/2022 as reported in monitoring report version 02 dated 09/09/2022. The Derbent Enerji Üretim Pazarlama İthalat ve İhracat A.Ş is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emission reduction from the project activity.

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity. ESPL commenced the verification on the basis of the baseline and monitoring methodology ACM0002 Version 19, the monitoring plan contained in the registered VCS PD/01/ & MR/03/.

ESPL verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 18/06/2019 to 31/05/2022 are fairly stated in the Monitoring Report/03/. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002, version 19 /08/ and VCS standard version 4.3/13/.

Verification period: From 18/06/2019 to 31/05/2022

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
18/06/2019 to 31/12/2019	99,152	0	0	99,152
01/01/2020 to 31/12/2020	195,330	0	0	195,330
01/01/2021 to 31/12/2021	200,624	0	0	200,624
01/01/2022 to 31/05/2022	78,142	0	0	78,142
Total	573,248	0	0	573,248

Approved by



Kaviraj Singh
Managing Director
Earthood Services Private Limited

Date: 30/01/2023
Place: Gurgaon, Haryana

APPENDIX 1: DOCUMENT REFERENCES

S. No	Title of Document	Version	Date
1.	Registered VCS PD	08	08/12/2021
2.	Validation report	04	17/12/2021
3.	VCS Monitoring Report	03	25/01/2023
4.	ER Spreadsheet (corresponding to the final monitoring report)	01	09/09/2022
5.	Certificates of Calibration for both meters belonging to the project activity	-	
6.	TEIAS Invoice issued/ TEIAS Protocol	-	
7.	EPIAS Screenshots of monthly production	-	
8.	Approved methodology ACM0002, version 19 "Grid- connected electricity generation from renewable sources"	19	-
9.	Connection Agreement		
10.	Commissioning certificate for all the WTGs of the project activity	-	-
11.	VCS webpage for the project, VCS ID .1907	-	
12.	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the same period	-	-
13.	VCS Standard	Version 4.3	Last checked on 22/06/2022
14.	VCS Program Guide	Version 4.2	Last checked on 22/06/2022
15.	Remote Site Visit and interviews conducted by assessment team	-	19/07/2022
16.	Copy of grievance register maintained at project site office for ongoing local stakeholder feedback	-	-
17.	TEIAS statement_mechanical power permission_12-05-2022	-	12-05-2022
18.	Kocalar WPP_Commitment Letter (Declaration that GHG Emission red.)	-	-

S. No	Title of Document	Version	Date
19	Training certificates	-	-
20	Provisional Acceptance	-	-
21	Tool to calculate the emission factor for an electricity system	07	-
22	Employment records	-	-
23	Wastewater transfer invoices	-	-
24	EIA Not required	ID: 1331693	25/05/2021
25	Heating Values Of Fuels Consumed In Thermal Power Plants In Turkey By The Electric Utilities, TEİAŞ. See: https://webapi.teias.gov.tr/file/780b9f4b-7e97-4e64-a264-20669a820b79?download	-	-
26	Energy Investments, Ministry of Energy and Natural Sources: https://enerji.gov.tr/eigm-raporlari	-	-

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
ABT	Availability Based Tariff
BEF	Baseline Emission Factor
BM	Build Margin
CAR	Corrective Action Request
CL	Clarification Request
CMS	Central Monitoring System
CMP	Conference of Parties Serving as Meeting of Parties
CO ₂	Carbon dioxide
DISCOM	Distribution Company
EB	Executive Board
EPC	Engineering, Procurement and Construction
FAR	Forward Action Request
GHG	Green House Gas
ISO	International Standards Organization
IPCC	Intergovernmental Panel on Climate Change
JMR	Joint Meter Reading
kW	Kilowatt
kWh	Kilowatt hour
MFR	Multi-Function Relay
MR	Monitoring Report
MW	Megawatt
MWh	Megawatt-hour
O&M	Operation and Maintenance
PD	Project Description
PLF	Plant Load Factor
PP	Project Proponent
PPA	Power Purchase Agreement
QA/QC	Quality Assurance and Quality Control

TOD	Time of the Day
TEIAS	Türkiye Elektrik İletim A.Ş
UNFCCC	United Nations Framework Convention on Climate Change
WEC	Wind Energy Convertor
WEG	Wind Energy Generator
WTG	Wind Turbine Generator
VCS	Voluntary Carbon Standard
VCSA	Voluntary Carbon Standard Association
VCS PD	VCS Project Description
VCUs	Voluntary Carbon Units

APPENDIX 3: FINDINGS

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	Section no.	Date : DD/MM/YYYY
Description of FAR		
No Applicable open FAR		
Project participant response		Date : DD/MM/YYYY
NA		
Documentation provided by project participant		
DOE assessment		Date: DD/MM/YYYY
NA		

Table 2. CL from this verification

CL ID	01	Section no.	Date : DD/MM/YYYY
Description of CL			
X			
Project participant response			Date : DD/MM/YYYY
X			
Documentation provided by project participant			
X			
DOE assessment			Date: DD/MM/YYYY
X			

Table 3. CAR from this verification

CAR ID	01	Section no.	4.1, 4.2.2	Date : 22/07/2022
Description of CAR				

Following observations are made in MR:

1. PP is requested to check the version of the template of the monitoring report. In the VCS website, the version of Monitoring report is version 4.1. Please update and revise the MR.
2. PP is requested to check the Project title in the MR and keep it consistent with the project title in PD.
3. In section 1.1 'Summary Description of the Implementation Status of the Project', PP is requested to address: why the Actual ERs is more than that of Estimated ERs? The estimated ER is 532,204 tCO₂e whereas the actual ERs is 578,368 tCO₂e.
4. In section 1.11, please check the title of the section. Also it has been observed that in the Table 2, the SDG indicators 8 & 13 is inconsistent. Please check the SDG indicators with https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202022%20refinement_Eng.pdf.
5. Please shall add the information regarding the ongoing communication with local stakeholders under section 2.2 of the MR, in line with the guidelines provided under the clause 3.17.4 and 3.17.5 of the VCS standard v 04.3.

Project participant response

Date : 09/09/2022

1. Version of the template of the monitoring report has been now revised. This document is consistent with latest MR template (version 4.1) now.
2. Project title in the MR has been now revised and it consistent with the project title in PD now.
3. Necessary explanation has been now given in section 1.1 of the PD.
4. Title (in section 1.11) has been now revised. Also, The SDG indicator numbers have been now revised.
5. Necessary information regarding ongoing communication with stakeholders has been given in section 2.2 of the MR.

Documentation provided by project participant

DOE assessment

Date:26/09/2022

1. The monitoring report has been updated to latest version. Hence the comment is addressed and closed.
2. The project title has been revised and made consistent by the PP.
3. The justification for the increase in the Actual ERs is found satisfying as there is increase of 7.71% from the estimated ERs which is due to the unexpected wind trend and this was confirmed from the evidences given from PP.
4. The inconsistencies have been addressed for the section 1.11. Hence the comment has been addressed.
5. The information regarding the ongoing communication has been given by the PP in the section and hence the comment has been addressed satisfactorily.

Since all the comments have been addressed. The CAR#01 has been closed.

CAR ID	02	Section no.	4.1	Date : 22/07/2022
Description of CAR				
Following observations are made in MR:				

1. PP is requested to mention the technical specifications of the turbine. 2. It has been observed in Table 3, Section 3 of MR report “End of the first monitoring period”. The End date of the monitoring period mentioned in the table is inconsistent with the signed addendum. PP is requested to address the inconsistencies. 3. In section 4.2’ Data and Parameters monitored’, The Data / Parameter is “EG facility, y,”, whereas in the Registered PDD the Parameter is mentioned as “EG m, y”. Also the unit and description of the parameter is not same as that is mentioned in the registered PD. PP is requested to address the inconsistency. 4. Under section 5.4 ‘Net GHG Emission Reduction and Removals’, PP is requested to add additional table inline with the MR template 4.1.	
Project participant response	Date : 09/09/2022
1. Technical specifications of the turbine have been given in section 1.1 of the MR. 2. End date of the monitoring period has been now revised. 3. Data / Parameter, unit and description of the parameter are now in line with the registered PD. 4. Table has been provided with only yearly records now. So, the table in section 5.4 has been revised in line with the latest MR.	
Documentation provided by project participant	
DOE assessment	Date:26/09/2022
1. The comment has been addressed satisfactorily in the MR as technical specifications of the turbine. 2. The inconsistency has been addressed; hence the comment is closed. 3. The inconsistencies about the Data/parameter have been addressed, hence the comment has been closed. 4. PP has revised and addressed the comment satisfactorily. Since all the comments have been addressed. The CAR#02 has been closed.	

CAR ID	03	Section no.	3.3	Date : 22/07/2022
Description of CAR				
During the RSV conducted on 19/07/2022, It was observed that the 3 MW Turbines have been changed or upgraded to produce 3.4MW. PP is required to give a detailed description on production upgradation and report it in the MR as deviation. PP is also requested to describe if these changes will be impacting the project methodology, additionality or the appropriateness of the baseline scenario. PP is requested to provide all the documents related to this increase in the production.				
Project participant response				Date : 09/09/2022

There was no change in the number of turbines or installed capacity of the project. Üçpınar WPP still has 33 units (3.4 MWm / 3.0 MWe) with a total installed capacity of 112.2 MWm / 99 MWe, as in the approved registered PD under VERRA registry. When the official generation license of the project is examined, it is seen that the project still has 33 units (3.4 MWm / 3.0 MWe) with a total installed capacity of 112.2 MWm / 99 MWe. So, number of turbines, installed capacity of project or characteristics of the turbines have not changed.

Each turbine was producing electricity according to 3.0 MWe under normal conditions. In line with the statement from TEİAŞ, each turbine is permitted to generate electricity in such a way that it can reach its mechanical power/maximum capacity (3.4 MWm). So, the only change in the project is that each turbine is now permitted to produce electricity according to their maximum capacity (3.4 MWm), while they normally generate electricity according to 3.0 MWe. The statement sends by TEİAŞ to PO say that "this increase will be done in case of any need and this PO will be notified one day before the increase actualized" and this decision would be implemented until 30/09/2022. So, since this situation will continue for only 4 months, there is no need for a major change such as methodological deviation. This is a temporary decision taken by the government due to Turkey's energy deficit. This is a temporary change, not a permanent change. Therefore, this change will not be impacting the project methodology, additionality, or the appropriateness of the baseline scenario. Also, this situation (increase of electricity generation) can be easily observed during the next verification period.

In addition, the aforementioned statement was sent to the project owner from TEİAŞ on 12/05/2022 and it was stated that it would be put into effect as of June 2022 and that this decision would be implemented until 30/09/2022. Since the end date of the monitoring period is 31/05/2022, respective alteration will not affect this monitoring period of Üçpınar WPP.

This explanation has been added in section 3.2.2 of the MR.

Documentation provided by project participant

DOE assessment

Date:26/09/2022

The explanation is found satisfactory since there is no increase in the installed capacity or number of turbines. The turbines will be permitted to generate on its maximum capacity i.e., 3.4MWm from 30/09/2022. This is clear from the statement of TEİAŞ which is given as evidence. Since the monitoring period ended by 31/05/2022, there is no change in amount of production from the change in production capacity, and this was checked with the ER sheet.

Since the explanation and the statement given is found feasible. CAR#03 is closed.

CAR ID	04	Section no.	4.5	Date	22/07/2022
Description of CAR					
Following observations are made in MR and ER sheet:					
1. Crediting period starts from 18 June 2019; hence the whole months' electricity generation can't be considered. It was observed from the evidence provided (Screenshot of EPIAS record-June2019), the amount electricity supplied and consumed by Group 1 & 2 is for the whole month whereas the monitoring period is from 18 June 2019. The values couldn't be confirmed whether the values are of whole June or from 18 June 2019. Please Provide proper evidence check values both in ER sheet and MR.					

2. The values of 'Electricity Supplied to the Grid' in cell C32 of 'ER of Ucpinar WPP' tab is interchanged with the value in cell D32. Please check and correct the inconsistency both in the ER sheet and MR.	
Project participant response	Date : 09/09/2022
1. EPIAŞ data has been checked and June 2019 data has been recalculated for 18 days and MR and ER excel document has been now updated. It is now compatible with TEI AŞ data used for cross-check data. 2. The values of 'Electricity Supplied to the Grid' in cell C32 of 'ER of Ucpinar WPP' tab has been now interchanged with the value in cell D32. So, inconsistency has been now revised in this way. ER sheet and MR are compatible with each other now.	
Documentation provided by project participant	
DOE assessment	Date:26/09/2022
Both the comments have been addressed and the verification team has checked.	
Since the addressing is satisfactory, CAR#04 is closed	

APPENDIX 4: COMPETENCY STATEMENTS

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

Competence Statement	
Name	Vishnu S Panicker
Education	M.Sc (Sustainable Development and Environment Management) B.Sc (Forestry)
Experience	-
Field	Forestry and environment
Approved Roles	
Team Leader	NO
Validator	NO
Verifier	NO

Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	YES		
Reviewed by	Deepika Mahala (Quality Manager)	Date	08/09/2021
Approved by	Ashok Kumar Gautam (Technical Manager)	Date	17/09/2021

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

Competence Statement	
Name	Shifali Guleria
Education	M.Sc. (Environmental Studies and Resource Management), TERI University
Experience	3+ year
Field	Climate Change

Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	YES (AMS-I.A., AMS-II.G., AMS-II.E., AMS-III.A.V., AMS-I.D, ACM0002)		
Local expert	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (1.2, 3.1)		
Reviewed by	Deepika Mahala	Date	16/02/2022
Approved by	Ashok Gautam	Date	18/02/2022