Validation report form for renewal of crediting period for GS project activities

VALIDATION REPORT FOR RENEWAL OF CREDITING PERIOD (RCP)	
Title of the project activity	Cataltepe 16 MW Wind Farm Project, Turkey
GS Reference number of the project activity	GS 574
Number and duration of the next crediting period	3rd crediting period 7 years
Version number of the validation report for RCP	4.0Aa
Completion date of the validation report for RCP	03/06/2025
Version number of PDD to which this report applies	04 of 03/06/2025
Project participant(s)	Alize Enerji Elektrik Üretim A.Ş.
Host Party	Türkiye
Sectoral scope(s), selected methodology(ies)	Sectoral scope 1: Energy Industries (Renewable-/non-renewable sources) ACM0002, Consolidated baseline methodology for grid-connected electricity from renewable sources - Version 22.0
Estimated annual average GHG emission reductions or net anthropogenic GHG removals in the next crediting period	26,154 tCO_2
Name of VVB	RINA Services S.p.A. (RINA)
Name, position and signature of the approver of the validation report for RCP	Laura Severino Laura Severino (Authorized officer signing for VVB) Decarb & Chain of Custody Product Management

SECTION A. Executive summary

Purpose and general description of the project

The project activity is a wind power plant consisting of 8 turbines with 2.0 MWm/MWe capacities making the total installed capacity of 16.0 MWm/MWe thus qualifies under large scale projects. The generated electricity is fed to the national grid. The estimated net electricity production is 41,000 MWh/year and the annual emission reductions are estimated to be 26,154 tCO2 /1/. Estimated annual average electricity generation is calculated by the average of previous crediting period actual values /2/.

The proposed project activity comprises of renewable energy generation from wind utilization to generate and deliver electricity to the national grid without thermal energy production. The project type is wind power plant which is an eligible project type as it is in accordance with Eligible Project Types & Scope under Renewable Energy Activity Requirements version 1.4. The project is located in Türkiye. Türkiye is upper middle income economy where the penetration level of the proposed Renewable Energy Technology type is less than %5 of the total grid installed capacity, at the time of the first submission to Gold Standard (eligibility clause will come into effect from 24 Jan 2020). The project activity aims to reduce the greenhouse gas emissions in Türkiye by replacing fossil fuel power generation and contributing to the development of the waste energy sector in Türkiye, as well as aims to support the local economy by creating local employment and providing equipment locally.

The GHG benefit of the project activity was only accounted under Gold Standard. There are not any other RECs such as VERRA, GCC, ICR, CerCarbono or Social Carbon were being issued for the project activity. Furthermore, as a host country in Türkiye such any programme like a government-regulated system or programme for the constraint and monetisation of GHG emissions (such as emissions trading scheme, cap and trade or carbon tax mechanisms) has not been implemented.

Location

The project is located in Havran district of Balıkesir province in Türkiye.

Scope of Validation

The validation scope is to review the updated PDD against the GS principles and requirements. The validation of the renewal of crediting period is also to be seen in conjunction with the validation report at the time of requesting registration of the project (re-carbon – re-validation report N° 878, version 0.6 issued on 30/06/2023) /7/. Validation of the renewal of crediting period is a requirement and it is seen as necessary to assure about:

(a) the impact of new relevant national and/or sectoral policies and circumstances on the baseline;
(b) the correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

Validation process

Validation is conducted using RINA procedures in line with the GS requirements and principles and applying standard auditing techniques. The validation assessment involved a document review of relevant documentation, the interview and/or online audit, and the reporting. Validation is not meant to provide any consultancy of the project participants. However, stated requests, clarifications and/or corrective actions may have provided input for improvement of the project design.

Conclusion

RINA commissioned by Alize Enerji Elektrik Üretim A.Ş. has performed the validation of the renewal of crediting period of the project activity “Cataltepe 16 MW Wind Farm Project, Turkey”, about the relevant GS requirements and principles for project activities.

In conclusion, it is RINA’s opinion that the project activity “Cataltepe 16 MW Wind Farm Project, Turkey “ as described in the PDD version 04 of 03/06/2025 /1/ and previous versions, meets all relevant GS requirements and principles, and correctly applied the baseline and monitoring methodology ACM0002, Grid-connected electricity generation from renewable sources - version 22.0 of 31/05/2024.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader, Validator, Technical Expert TA 1.2	IR	ERDOĞAN	Mehmet	RINA Türkiye	✓	✓	✓	✓

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	Rachev	Konstantin	RINA Bulgaria
2	Approver	IR	SEVERINO	Laura	RINA HO

SECTION C. Means of validation

C.1. Desk review

The latest PDD version 04 of 03/06/2025 and/or previous versions /1/, in particular the applicability of the methodology, the baseline determination, the emission reductions calculation, the sustainability indicators, were assessed as part of the validation. All documents reviewed or referenced during the validation are listed in Appendix 3.

C.2. On-site inspection

Duration of On Site Audit: 23/08/2024				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	-Implementation and operation of the proposed project activity. - Baseline and Additionality (Financial Ongoing) - Emission reductions calculations - Interviewed key personnel of the plant to confirm the operational and data collection procedures, QA QC procedures - GS4GG Sustainable Indicators - Local stakeholder consultation - Grievance & Input mechanism	Havran district of Balıkesir province in Türkiye	23/08/2024	Mehmet ERDOĞAN

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	B. E.	Çağla	Consultant	23/08/2024	Implementation status of the project Monitoring equipment and operation Generated Electricity Monitoring of Gold Standard for Global Goal Parameters	Mehmet ERDOĞAN
2	E.	Ömer	Manager			
3	Ş.	Engin	Plant Technician			
4	A.	Rıdvan	Plant Technician			
5	B.	Muhterem	Consultant			
6	C.	Fahri	Consultant			
7	C.	Tuncay	Consultant			
8	Ş.	Ömer	Consultant			
9	K.	Ahmet	Deputy Mukhtar	23/08/2024	Local Employment Receiving General Opinion of the local stakeholder about the project Benefit of the project to the village Bird carcasses Grievance Process	Mehmet ERDOĞAN
10	Ç.	Şükran	Stakeholder			
11	B.	Ümmü	Stakeholder			
12	C.	Dudu	Stakeholder			
13	Ö.	Feride	Stakeholder			
14	B.	Nefise	Stakeholder			
15	Ç.	Mehmet	Stakeholder			

The project activity area was visited on 23/08/2024 with the PP and by the VVB. The project employees were interviewed about the implementation status of the project, monitoring equipment and operation, generated electricity of the project activity.

During on-site audit it was confirmed that no negative feedback or comments were received related to project activity during grievance mechanism and continuous inputs for the monitoring period. There was also no grievance about the impact such as noise and flickering that reached the VVB during the stakeholders' interviews. In addition to this, the VVB assessed that whether a comment box available at the most appropriate and publicly accessible location (Kocadağ Village, the nearest residential area) so that stakeholders can provide feedback on the project. The continuous input/grievance mechanism has been verified through interview with the headman of village and the logbook /15/ have been checked. There isn't any positive or negative comment written on them.

In addition to this during interview, it is asked to the stakeholders and project employees if any legal contests or disputes have arisen during the monitoring period, and they confirmed that there is no legal contest or disputes have arisen.

C.4. Clarification requests, corrective action requests and forward action requests raised

Area of validation findings	No. of CR	No. of CAR	No. of FAR
Compliance with PDD form			
Compliance with GS Passport form		CAR ID 1	
Application of baseline and monitoring methodology and standardized baseline			
Validity of original baseline or its update	CR ID 2, CR ID 5		
Do No Harm assessment			
Impact assessment – Sustainable Development Matrix	CR ID 3		
Estimated GHG emission reductions or net anthropogenic GHG removals			
Validity of monitoring plan	CR ID 1		
Validity of sustainable monitoring plan			
Project participants			
Local stakeholder consultation process	CR ID 4		
Others (GS Issuance Review)			
Total	5	1	-

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	The title of the project activity is defined as “Cataltepe 16 MW Wind Farm Project, Turkey” in the PDD version 04 of 03/06/2025 /1/ which is in line with the GS4GG Registry. The version and the completion date of the report are available at the cover page of the PDD. “GS4GG Project Design Document Template /5/, version 1.5” which is the latest version is applied with the PDD /1/.
Findings	**NA**
Conclusion	RINA confirms that the PDD is based on the currently valid GS4GG Project Design Document Template /5/, version 1.5.

D.2. Compliance with GS Passport form

Means of validation	No GS Passport is available under GS4GG.
Findings	**NA**
Conclusion	No GS Passport is available under GS4GG.

D.3. Application of baseline and monitoring methodology and standardized baseline

Means of validation	The project correctly applies the approved baseline and monitoring methodologies “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 22.0 of 31/05/2024. /6/. The applied methodologies are approved by CDM and the applied versions are the latest version at the time of PDD submission. In addition, the following methodological tools are applied in this PDD: • TOOL07 “Tool to calculate the emission factor for an electricity system” Version 07.0 /8/. • TOOL01 “Tool for the demonstration and assessment of additionality”, Version 07.0 /9/. • TOOL03 “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion”, Version 03.0 /10/. • TOOL10 “Tool to determine the remaining lifetime of equipment”, Version 01 /11/. • TOOL11 “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”, Version 03.0.1 /12/. • TOOL02 “Combined tool to identify the baseline scenario and demonstrate additionality” Version 07.0 /13/. The project activity is a greenfield, grid connected renewable electricity generation project. • The project activity is the installation of wind power plant. • The proposed project activity is a wind project activity. There is no BESS activity. • The project does not involve capacity addition, a retrofit of (an) existing plant(s) or a replacement of (an) existing plant(s). • The project does not involve the installation of a hydro power plant. • Project activity does not involve switching from fossil fuels to renewable energy sources at the site of project activity. • Project activity does not involve switching from fossil fuels to renewable energy sources at the site of the project activity or biomass fired plants. • The project is not a retrofit, rehabilitations, replacements or capacity addition. According to applicability conditions given in the tools; • Tool 01 Tool for the demonstration and assessment of additionality: The project uses relevant tool together with ACM0002 methodology. No new methodology is used. • Tool 07 Tool to calculate the emission factor for an electricity system: This tool is applicable and used for the calculation of OM, CM and CM since the project activity includes grid power plants and supplies electricity to the grid.
Findings	NA
Conclusion	RINA confirms that the selected baseline and monitoring methodologies have been previously approved by the CDM Executive Board and are applicable to the project, which complies with all the applicability conditions therein the selected versions are valid at the time

	of submission of crediting period. It is also confirmed that the methodologies are correctly applied by comparing them with the actual text of the applicable versions. Applicability conditions of the applied tool are justified.

D.4. Validity of original baseline or its update

Means of validation	The project applies for a renewal of the crediting period under the requirements of The Gold Standard Foundation so the Methodological Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", Version 03.0.1 /12/ is applied to demonstrate that the conditions used to determine the baseline emissions in the previous crediting period still valid. The validity of the current baseline is assessed using the following Sub-steps: ***Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies*** It is validated that the project activity baseline is the "Grid-connected electricity generation from renewable sources". It is still in compliance with the current legal framework as stated in the generation license /15/. There are no additional laws that came into force that has an impact on the project activity and the project activity is still in line with the available law and regulations. In addition to this since 2019 Turkish Ministry of Energy and Natural Resources calculates and presents the Türkiye National Electricity Generation Grid Emission Factor /8/. Over the past years, Turkey has made minor several updates to its renewable energy policies, but no major changes have occurred. While ongoing adjustments have been made, the overall regulatory framework has remained stable. ***Step 1.2: Assess the impact of circumstances*** It is assessed that the conditions used to determine the baseline emissions in the previous crediting period are still valid. There is no need any of new fuels or raw materials and the impact of electricity or fuel prices in the identification of the current practice for the baseline emissions. As stated earlier the new national circumstances have an impact on the EF /8/ of the grid and thus on the project's current baseline emissions. ***Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.*** It is assessed that the remaining technical lifetime of the equipment that would have continued to be used in the absence of the project activity. In general, the technical lifetime of the project activity (including wind turbines) is defined as 25 years /11/ but in real case scenario it seems to be higher than the 25 years thanks to regular maintenance and new technical upgrades. So, the equipment's lifetime exceeds the crediting period for which renewal is requested. Equipment only requires regular maintenance. The baseline scenario identified at the validation of the project activity was the continuation of grid-connected electricity generation from renewable sources. Under this scenario, no investment from the project's proponent or third party (or parties) has been envisioned later specifically for the project. ***Step 1.4: Assessment of the validity of the data and parameters*** The data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are still valid have been assessed. For baseline calculation there are two main parameters: the electricity generation and the grid emission factor. In line with the tool and methodology /8/ /18/, only the grid emission factor has been updated during the third crediting period renewal. According to the tool /18/, the application of Steps 1.1, 1.2, 1.3 and 1.4 confirmed that the current baseline as well as data and parameters are still valid for the 2nd crediting period then this baseline, data and parameters can be used for the renewed crediting period. The project activity is in its 3rd crediting period. During the previous crediting periods, the project has not missed or skipped neither timeline of verification nor CP renewal process. The ongoing financial need for carbon revenue continues for the last crediting period. Since

	the increased maintenance and repair costs, exchange rate effect and the system usage and operation fees that need to be paid by the project activity to Turkish Electricity Transmission Corporation (TEİAŞ) is another important factor contributing to the project's expenditure. It is validated that the Cataltepe 16 MW Wind Farm Project, Turkey needs the supporting income derived from carbon credits since the electricity generation market has challenges due to the Regulator intends to keep electricity prices at minimum. As detailed in PDD Section B.5.2 OFN Revenues from carbon credit sales make only 0.21 percent of income. Carbon certification costs amount to 0.45 percent of the income and net carbon sales income amount -0.23 percent of net electric sales income.
Findings	**NA**
Conclusion	RINA verified that the baseline was updated assessed according to the tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" /12/. The conclusion is that the baseline of the type I component of the project activity complies and will continue to comply with the laws and regulations in the sector for the next crediting period. It can be concluded that the conditions used to determine the baseline emissions in the previous crediting period are still valid.

D.5. Do No Harm Assessment

Means of validation	As per GS4GG Safeguarding principles and requirements version 1.2, all projects shall conform to the Gold Standard for the Global Goals Safeguarding Principles & Requirements. SDG Impact tool has been also implemented as required by GS4GG and verified through the assessment tool by VVB /3/ /29/. The assessment is done as follows: Principle 1- Human Rights: The Project is not in conflict with the economic livelihood or other issue of the local community. Thus, the Project VVBs not cause any human rights abuse and respects internationally proclaimed human rights issue. Türkiye has ratified European Convention on Human Right /22/ on 10/03/1954. Therefore, the project is not expected to violate the rules regarding human rights. Principle 2 – Gender Equality and Women's Rights: Türkiye has ratified ILO convention 100, 111, 122 and 142, which provides gender equality and promotes women's employment /23/. The project outputs serve everyone without regarding gender. It provides electricity for all. Principle 3 – Community Health, Safety and Working Conditions: Türkiye has ratified ILO convention 155 /24/ and about work safety and precautions. Staff will be trained during operation phases. Principle 4 – Cultural Heritage, Indigenous Peoples, Displacement and Resettlement: According to the registered PDD /1/ and Validation Report /7/ of Çataltepe WPP, no sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture were observed in the project area. Principle 5 – Corruption: Türkiye has ratified several conventions on bribery and corruption /24/ including OECD and UN conventions. Principle 6 – Economic Impacts: Türkiye has ratified ILO 87 and 98 conventions. All employees are recruited according to the national legislation. Türkiye is a party of IPEC /26/, /27/ since 1992 and ratified ILO convention 138 and 182. Alize Enerji Elektrik Üretim A.Ş.. and appointed subcontractors do not involve in any form forced or compulsory labour Türkiye has ratified ILO 29 Forced Labour Convention /25/. **ENVIRONMENTAL & ECOLOGICAL SAFEGUARDING PRINCIPLES:**

	Principle 1 – Climate and Energy: The project reduces greenhouse gas emissions and fossil fuel use compared to the baseline scenario. On the contrary the project generates renewable energy and supplies to the grid. Principle 2 – Water: The project is a wind power project thus there is no directly impact of water resources due to the project. Staffs produce the insignificant amount of waste waters, and this wastewater has been collected in an impermeable septic tank and collected via vacuum trucks by municipality and disposed according to Regulation on Control of Water Contamination as confirmed through the registered PDD /1/. Principle 3 – Environment, ecology and land use: The Land for the project has been approved by all relevant local Authorities. The project is susceptible to decreased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme conditions. Cataltepe 16 MW Wind Farm Project, Turkey systems do not affect herbal life negatively. Furthermore, Cataltepe 16 MW Wind Farm Project, Turkey does not affect negatively organism, flora, fauna or GMOs as confirmed through the previous registered PDD /17/ The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle. The environment is protected by several Laws and Regulations in Türkiye. The purpose of the "Law on Environmental Protection" is to protect the environment with principles of sustainable development and environment. The project owner also follows necessary procedures for environmental safety at the project site at international standard (such as Bern Convention). All wastes are disposed of according to related regulations. The methods are categorized for all materials. Waste oil produced has been collected appropriately and disposed via accredited abatement companies in line with the legal regulations as confirmed through the registered PDD /17/. The same processes apply for this crediting period.
Findings	NA
Conclusion	RINA confirms that conservative approach has been applied by PP to demonstrate sustainable development of the project activity which is in line with GS4GG requirements and SDG Tool Impact Requirements /3/.

D.6. Impact assessment – Sustainable Development Matrix

Means of validation	As per GS4GG, Sustainable Developments Goals are discussed under Section D.9 of this report.
Findings	NA
Conclusion	As per GS4GG, Sustainable Developments Goals are discussed under Section D.9 of this report.

D.7. Estimated GHG emission reductions or net anthropogenic GHG removals

Means of validation	***Baseline Emissions*** The calculation of baseline emission reductions is carried out in a conservative manner providing documentation and references to data sources. An approved CDM methodology, ACM0002 /6/ and methodological tool "Tool to calculate the emission factor for an electricity system /8/ is applied. The official published data, Turkish Ministry of Energy and Natural Resources /18/ are used to determine the emission factor of the grid. The emission factor is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the tool. ***OM Calculation*** Option (a) simple OM is selected to calculate the operating margin (OM) emission factor of the grid as per the tool since the average share of electricity generation by low-cost/must-run plants for five most recent years is found to be less than 50%. ***BM Calculation*** The build margin (BM) emission factor calculation is in line with the latest version of methodological tool "Tool to calculate the emission factor for an electricity system /8/. ***CM Calculation*** The combined Margin is calculated for wind and solar power generation project activities:

	wOM = 0.75 and wBM = 0.25 for the third crediting period and for subsequent crediting periods. ***Project Emissions*** Project emissions are neglected since the project activity is a wind power plant in line with the ACM0002 /6/. ***Leakage*** The leakage emissions are neglected as per ACM0002 /6/. ***Emission Reduction*** The ex-ante emission reduction has been calculated as the following equation in line with the ACM0002 /6/: ERy = BEy – PEy The project emission and leakage are neglected for the project activity. Therefore, the emission reduction equals baseline emissions. All the assumptions and data used by the project participants are listed in the PDD including their references and sources. All the documentation used by the project participants as the basis for assumptions and source of data are quoted and interpreted in the PDD and the Emission Reduction Calculation Spread Sheet /2/.
Findings	**NA**
Conclusion	It is RINA's opinion: (a) All assumptions and data used by the PP are listed in the PDD; (b) All documentation used by the PP as the basis for assumption and source of data is correctly quoted and interpreted in the PDD (c) All values used in the PDD and ERs spreadsheet including GWPs are considered reasonable in the context of the proposed project activity (d) The baseline methodology and methodological tools have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; All estimates of the baseline and project emissions can be replicated using the data and parameters values provided in the PDD and ERs spreadsheet.

D.8. Validity of monitoring plan

Means of validation

The monitoring plan (data and parameters fixed ex ante) includes all data and parameters fixed ex ante required by the applied methodology /6/.

Parameters ex-ante:

	Data/ parameter	Unit	Value applied	Assessment
/1/	Operating Margin of Türkiye National Grid (OM)	tCO_2/ MWh	0.7279	The data used to determine the OM emission factor of the grid is obtained from "Turkish Ministry of Energy and Natural Resources" /18/. The re-validation team has confirmed that this is the most updated data at the time for submission for re- validation, which is considered as appropriate.
/2/	Build Margin of Türkiye National Grid (BM)	tCO_2/ MWh	0.368	According to Tool07 "Tool to calculate the emission factor for an electricity system" the data used to determine the BM emission factor of the grid is obtained from last-registered PDD (previous validation), which is considered as appropriate.
/3/	Combined Margin of Türkiye National Grid (CM)	tCO_2/ MWh	0.6379	The emission factor is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the tool /8/.

Parameters ex-post:

	Parameter	Description/Assessment

<table>
<tr><td></td><td>/1/</td><td>$EG_{PJ,grid,y}$ (MWh)</td><td>Quantity of electricity generation supplied by the project plant to the grid in year y
The quantity of electricity supplied by the project plants/units to the grid and the quantity of electricity delivered to the project plant/unit from the grid will be measured. Net generation will be calculated via subtracting energy delivered by the project activity to the grid for internal consumption from electricity fed to the grid.
The electricity generation of the plant will be calculated based on meter readings and crosschecked with EPIAS records that are the basis of sold electricity.
The net electricity will be measured continuously and recorded at least monthly. For this crediting period the value of the parameter is defined as 41,000 MWh/y /2/. Estimated amount of electricity generation has been determined by the average of 2012 to 2023 years as 41,000 MWh/y
Net electricity generation will be measured by two meters which will be sealed by TEIAS. The meters will comply with EMRA (Energy Market Regulatory Authority) regulation /19/. The accuracy class of the meters defined and confirmed as 0.5s are in line with the “Communiqué for Measurement Devices used in the Electricity Market” /20/ as explained in the PDD /1/. The maintenance and calibration of meters are under TEIAS responsibility. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration.
<u>Current Meters</u>
<table>
<tr><td></td><td>Electricity Meter (Primary)</td><td>Electricity Meter (Secondary)</td></tr>
<tr><td>Manufacturer</td><td>Landis</td><td>EMH</td></tr>
<tr><td>Model</td><td>Gyr</td><td>LZQJ-XC-P2FB</td></tr>
<tr><td>Serial number</td><td>51052836</td><td>6839363</td></tr>
<tr><td>Date of installation</td><td>06/10/2017</td><td>10/11/2017</td></tr>
<tr><td>Date of initial calibration</td><td>15/01/2015</td><td>07/06/2017</td></tr>
<tr><td>The accuracy of meters</td><td>0.2s active
0.5s re-active</td><td>0.2s active
0.5s re-active</td></tr>
</table>

The meters have the accuracy of 0.2s active and 0.5s re-active as confirmed through first index protocol /21/. The accuracy class of the meters complies with the “Communiqué for Measurement Devices used in the Electricity Market” /20/ and given information in the PDD /1/. The electricity meters are sealed by TEIAS as confirmed during the site visit.
The meters were calibrated in 2017 as confirmed through first index protocol /21/ performed by TEİAŞ. The recalibration of these meters will be done in line with the equipment requirements and through the period defined by national metrology institutes country by country and for Türkiye this period is defined as 10 years. The calibration of meters is deemed appropriate and in compliance with the national regulation /19-20/. In addition, protocol between company and TEİAŞ; It is stated that the periodic inspection and testing of the meters should be done every 2 years.</td></tr>
<tr><td>Findings</td><td colspan="3">NA</td></tr>
<tr><td>Conclusion</td><td colspan="3">It is RINA’s opinion that the monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions. RINA has checked all the parameters presented in the monitoring plan against the requirements of the methodology and methodological tools.
RINA confirms that the monitoring arrangements described in the monitoring plan, including the data management and quality assurance and quality control procedures, are feasible</td></tr>
</table>

	within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed GS4GG project activity can be reported ex post and verified.

D.9. Validity of the sustainability monitoring plan

Means of validation

The Sustainability Monitoring Plan includes the way of monitoring for each GS4GG indicator.

	Parameter	Description/Assessment
1	$EG_{PJ,grid,y}$	**SDG 7 -** Indicator 7.2.1 – "renewable energy share in the total final energy consumption": The electricity generation supplied to the grid will be monitored by EPIAS records. It is expected that the project generates 41,000 MWh/y /2/. Estimated amount of electricity generation has been determined by the average of 2012 to 2023 years as 41,000 MWh/y
2	Quantitative employment and income generation	**SDG 8:** Decent Work and Economic Growth: Number of employment generation will be monitored once for each monitoring period by employment SGK records (Social insurance registries of employees). The project provides at least 7 permanent employments.
3	Quality of employment	**SDG 8:** Decent Work and Economic Growth: HSE trainings will be provided to all employees. Attendance records or training certificates of Health and Safety trainings will be provided to all employees.
4	ERy	**SDG 13:** Indicator 13.3.1 – Baseline emissions correspond to emission reductions and are calculated as the net electricity generated by the project activity, multiplied with combined margin CO2 emission factor for grid connected power generation in year y. Both measured and calculated Emission reductions will be calculated as considering the EPIAS records for the net electricity generated and the emission factor for the grid, which is calculated and published by The Ministry of Energy and Natural Resources of Türkiye /18/. According to EF and net electricity generation emission reduction is applied as 26,154 tCO_2.
5	Release of pollutants	Safeguarding Principle 9.5 Hazardous and Non-Hazardous Waste During the operation of the project activity, there are no positive nor negative impacts expected. During excavation and construction no hazardous, toxic or flammable materials have not been used. Wastewater produced by workers during operation is collected in an impermeable septic tank and later they are periodically transferred to wastewater treatment plant. Hazardous waste is handled appropriately in closed containers and transported by licensed transporters to the licensed processing and disposal facilities.

Findings	NA
Conclusion	RINA confirms that sustainability monitoring plan and indicators included in the PDD confirm to the sustainable development requirements of GS4GG.

D.10. Crediting period

Means of validation	The third crediting starting date is 19/04/2025 /1/. The length of crediting period is defined as 7 years so end date of CP is 18/04/2032.
Findings	**NA**
Conclusion	RINA confirmed that this is the third crediting period of the registered GS4GG project activity.

D.11. Project participants

Means of validation	Project Participant of the project activity is Alize Enerji Elektrik Üretim A.Ş.who is authorized to benefit from carbon income.
Findings	NA

Conclusion	Project Participant of the project activity is Alize Enerji Elektrik Üretim A.Ş.. who is authorized to benefit from carbon income.

D.12. Local stakeholder consultation process

Means of validation	The project validated via onsite audit on 23/08/2024 for re-validation. Based on the interviews, there are no complaints from the local community regarding the project implementation &operation /15/. The project participants applied a local stakeholder consultation (LSC) process on 08/04/2008 line with the regular requirements of GS. Also, a stakeholder feedback round has been realized in compliance with the GS procedures governing the issue 60 days by sending the project summary and environmental and socioeconomic questionnaire by courier for initial validation of project. Also, grievance box has been located at Mukhtar's office and always available for stakeholders to provide their opinion. Grievance box was checked during on site visit and no compliance was observed. For the Cataltepe 16 MW Wind Farm Project, Turkey, stakeholder engagement procedure was conducted at the muhktar of Kocadağ village head and the local stakeholders from same villages face to face on 23/08/2024. During the meeting, the stakeholders stated that they had no complaints. In addition, feedback box was checked to see whether there have been any complaints from the local stakeholders, and it is seen that there were no negative comments from the local stakeholders.
Findings	**NA**
Conclusion	RINA verified that no negative feedback is received during the CP renewal process on 23/08/2024.

D.13. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)
Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	N
Corrections	N
Inclusion of a monitoring plan to a registered project activity	N
Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline	N
Changes to the project design of a registered project activity	N
Types of changes specific to afforestation and reforestation project activities	N

SECTION E. Internal quality control

The draft final validation report before being submitted to the client is subjected to an independent technical review to confirm that all validation activities has been completed according to the pertinent RINA's procedures. The technical review is performed by a technical reviewer(s) qualified in accordance with the RINA's qualification procedure.

SECTION F. Validation opinion

RINA has performed the validation of the updated PDD version 04 of 03/06/2025 for the project activity "Cataltepe 16 MW Wind Farm Project" in Türkiye, GS Registration Reference No. 574; the validation is performed for the 3rd renewal crediting (from 19/04/2025-18/04/2032) and is based on the information available to us.

The review of the PDD version 0.3 and the subsequent follow-up interview have provided RINA with sufficient evidence to determine the validity of the original baseline and the sustainable indicators; the project correctly applied the baseline and monitoring methodologies ACM0002, Grid-connected electricity generation from renewable sources - version 22.0 of 31/05/2024.

In conclusion it is RINA's opinion that the project activity meets all the relevant GS requirements (GS VERs), SDG(s) for the renewal of the 3rd renewal crediting period.

SDG	SDG Impact (defined in B.6.)	Estimated Annual Average
13 Climate Action (M)	Emission Reduction	26,154 tCO2/year VERs
7 Affordable and Clean Energy	Generating Clean Energy	41,000.000 MWh
8 Decent Work and Economic Growth	Employment	7 people One Health and Safety Training per year

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH_4	Methane
CL	Clarification Request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CRT	Coordination and Technical Control Staff
DCI	Certification Division of RINA Services Spa
DNA	Designated National Authority
VVB	Validation Verification Body
EB	Executive Board
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GS4GG	Gold Standard for Global Goal
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MoV	Means of Verification
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig.: *We declare that Mr:*	**Mehmet ERDOGAN**
è qualificato come[1]: *is qualified as:*	**TL – VAL[4] – VER – TEC – REG-EXP[3]- ITR**
nello schema[2]: *for the scheme:*	**VCS – CCB – GS4GG**
per le seguenti aree tecniche: *for the following technical areas:*	**1.1 – 1.2 – 9.2 – 13.1 – 13.2**

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA *TECHNICAL AREA DESCRIPTION*	SCOPO SETTORIALE *SECTORAL SCOPE*
1.1	Thermal energy generation	1
1.2	Renewables	1
3.1	Energy demand	3
9.2	Iron, steel and Ferro-alloy production	9
13.1	Waste handling and disposal	13
13.2	Manure	13

in accordo alle istruzioni dell'Unità responsabile (OU) per sostenibilità & cambiamenti climatici.
in accordance with the instructions of the responsible unit (OU) for the sustainability & climate change.

REVISIONE *REVISION*	DATA *DATE*	MOTIVAZIONI PER LA REVISIONE *REASON FOR THE REVISION*
0	24.03.2023	First Issue
1	12/04/2023	GS4GG extension
2	24/07/2023	GS4GG VAL extension
3	10/12/2023	TEC SS3 extension
4	31/01/2024	ITR extension

Il Responsabile di schema
Scheme Manager

[1]

VAL:	Validator
VER:	Verifier
TEC:	Technical Expert
TL:	Team Leader
FIN-EXP:	Financial Expert
REG-EXP :	Regional Expert
ITR :	Independent Reviewer
DET:	Déterminer

[2]

CDM:	Clean Development Mechanism
VCS:	Verified Carbon Standard
GS4GG:	Gold Standard for Global Goals
SCS:	SocialCarbon Standard
JI:	Joint Implementation
ISO14064-2 :	International standard 14064 part 2
UER :	Upstream Emission Reduction
CCB :	The Climate, Community & Biodiversity Alliance

[3] Turkey

[4] For GS4GG only

CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra: *We declare that Mr/Mrs/Ms:*	**Konstantin Dimitrov RACHEV**
è qualificato come[1]: *is qualified as:*	**TL – VAL – VER – TEC – ITR**
nello schema[2]: *for the scheme:*	**GS4GG – VCS – SCS – UER – CCB - ISO14064-2**
per le seguenti aree tecniche: *for the following technical areas:*	**1.2 – 3.1 – 5.1 – 13.1**

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA *TECHNICAL AREA DESCRIPTION*	SCOPO SETTORIALE *SECTORAL SCOPE*
1.2	Renewables	1
5.1	Chemical industry	5
13.1	Solid waste and wastewater	13
3.1	Energy demand	3

in accordo alle istruzioni dell'Unità responsabile (OU) per sostenibilità & cambiamenti climatici.
in accordance with the instructions of the responsible unit (OU) for the sustainability & climate change.

REVISIONE *REVISION*	DATA *DATE*	MOTIVAZIONI PER LA REVISIONE *REASON FOR THE REVISION*
0	19/07/2016	-
1	20/03/2022	Update qualification as ITR
2	31/01/2024	Update to TA 3.1

Il Responsabile di schema
Scheme Manager

[1] **Legend:**

VAL:	Validator
VER:	Verifier
TEC:	Technical Expert
TL:	Team Leader
FIN-EXP:	Financial Expert
REG-EXP :	Regional Expert
ITR :	Independent Reviewer
DET:	Déterminer

[2] **Legend:**

CDM:	Clean Development Mechanism
VCS:	Verified Carbon Standard
GS4GG:	Gold Standard for Global Goals
SCS:	SocialCarbon Standard
JI:	Joint Implementation
ISO14064-2 :	International standard 14064 part 2
UER :	Upstream Emission Reduction
CCB :	The Climate, Community & Biodiversity Alliance

Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1	Alize Enerji Elektrik Üretim A.Ş.	PDD for "Cataltepe 16 MW Wind Farm Project, Turkey"	Version 04 of 03/06/2025 Version 03 of 10/03/2025 Version 02 of 22/11/2024 Version 01 of 08/09/2024	Project Participant
2	Alize Enerji Elektrik Üretim A.Ş.	Baseline Study_Cataltepe WPP_v0.2	Version 02 of 10/03/2025 Version 01 of 27/08/2024	Project Participant
3	Gold Standard Foundation	GS4GG Standard Requirements	version 1.2 of 23/10/2019	Publicly available
4	CDM Executive Board	CDM Validation and Verification Standard for Project Activities	version 03 of 09/09/2021	Publicly Available
5	Gold Standard Foundation	GS4GG PDD Report Form	version 1.5 of 29/06/2023	Publicly available
6	CDM Executive Board	"ACM0002", "Grid-connected electricity generation from renewable sources"	version 22.0 of 31/05/2024.	Publicly Available
7	Re-carbon	Validation report N° 878	Version 0.6 of 30/06/2023	Project Participant
8	CDM Executive Board	Methodological Tool: Tool to calculate the emission factor for an electricity system	version 07.0 of 31/08/2018	Publicly Available
9	CDM Executive Board	Methodological Tool: Tool for the demonstration and assessment of additionality	version 07.0 of 23/11/2012	Publicly Available
10	CDM Executive Board	Methodological Tool: Tool to calculate project or leakage CO2 emissions from fossil fuel combustion	version 03.0 of 22/09/2017	Publicly Available
11	CDM Executive Board	Tool to determine the remaining lifetime of equipment	version 01 of 16/10/2009	Publicly Available
12	CDM Executive Board	Methodological Tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	version 03.0.1 of 02/03/2012	Publicly Available
13	CDM Executive Board	Combined tool to identify the baseline scenario and demonstrate additionality	version 07.0 of 22/09/2017	Publicly Available
14	CDM Executive Board	Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation	version 03.0 of 22/09/2017	Publicly Available
15	Halil Bey Village	Logbook	seen on 25/06/2024	Project Participant
16	Energy Market Regulatory Authority	Generation License EU/1167-2/835	date of 18/04/2007	Project participant
17	Alize Enerji Elektrik Üretim A.Ş.	Registered PDD of 2nd crediting period	version 06 of 23/06/2023	Project participant
18	Turkish Ministry of Energy and Natural Resources	Türkiye National Electricity Grid Emission Factor Information Form	version 00 of 18/03/2024	Project Participant
19	The Ministry of Trade and Industry	Regulation of Metering and Testing of Metering Systems	of 24/07/1994	Project Participant

20	Turkish Energy Market Regulatory Authority	Communiqué for Measurement Devices used in the Electricity Market	of 22/03/2003	Project Participant
21	TEIAS	1st Index Protocol of the Electricity Meters	date of 22/04/2011	Project participant
22	Website: Argument: Language:	https://www.mevzuat.gov.tr/MevzuatMetin/1.5.6701. pdf Human Rights Turkish	Retrieved on 05/07/2024	Publicly Available
23	Website: Argument: Language:	http://www.ilo.org/ankara/areas-of-work/equality- discrimination/lang--tr/index.htm Gender Equality and Women's Rights Turkish	Retrieved on 05/07/2024	Publicly Available
24	Website: Argument: Language:	https://www.mevzuat.gov.tr/MevzuatMetin/1.5.3628.pdf Bribery and Corruption Turkish	Retrieved on 05/07/2024	Publicly Available
25	Website: Argument: Language:	http://www.ilo.org/ipec/programme/lang--en/index.htm Elimination of Child Labour English	Retrieved on 05/07/2024	Publicly Available
26	Website: Argument: Language:	http://www.ilo.org/ipec/Regionsandcountries/lang-- en/index.htm Regions and Countries English	Retrieved on 05/07/2024	Publicly Available
27	Website: Argument: Language:	http://www.ilo.org/dyn/normlex/en/f?p=1000:11200:0::NO::P11200_COUNTRY_ID:102893 Regions and Countries English	Retrieved on 05/07/2024	Publicly Available
28	Website: Argument: Language:	https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C155 Occupational Safety and Health Convention English	Retrieved on 05/07/2024	Publicly Available
29	Alize Enerji Elektrik Üretim A.Ş.	SDG Impact Tool version	Version 02 of 06/03/2025 Version 01 of 02/07/2024	Project participant
30	Verra	https://registry.verra.org/app/search/VCS/All%20Projects, Argument: VERRA Database	Retrieved on 05/07/2024	Other
31	GCC	https://projects.globalcarboncouncil.com/pages/submitted_projects	Retrieved on 05/07/2024	Other
32	Alize Enerji Elektrik Üretim A.Ş.	Alize-Cataltepe Ongoing Financial Need_v0.1	Version 0.1 of 10/03/2025	Project Participant

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

Table 1. Remaining FAR from previous verification

FAR ID		Section no.		Date:
Description of FAR				
Project participant response				**Date:**
Documentation provided by project participant				
VVB assessment				**Date:**

Table 2. CR from this verification

CR ID	1	**Section no.**	Supporting Documents	**Date:** 19/11/2024
Description of CR				
Please provide the following supporting documents: - Social Security Records - Registered PDD for CP2 - no double accounting commitment, - ODA declaration and - cover letter with VVB.				
Project participant response				**Date:** 22/11/2024
PP has provided the following supporting documents with VVB: - Social Security Records - Registered PDD for CP2 - no double accounting commitment, - ODA declaration and - Cover letter				
Documentation provided by project participant				
DOE assessment				**Date:** 27/12/2024
Social security records, registered PD, no double accounting commitment, ODA declaration and cover letter have been shared. **Hence CR ID 1 is closed.**				

CR ID	2	Section no.		Date: 19/11/2024
Description of CR				
1. It is not clear how to select estimated electricity generation because according to generation license it is possible to produce more than 41,000 MWh. 2. Section A.1 Please check the statement"With a total installed power generation capacity of 16 MW, the project is estimated to supply grid as 62,414 MWh and 39,618 tCO2-eq emission reduction per annum over the first 7-year crediting period and 41,000 MW and 26,693 CO2-eq per annum during for the 2nd 7-year crediting period". Because this is third and the last CP.				
Project participant response				**Date:**
1) PP can use only registered 1st crediting period's PDD capacity and registered turbines. So PP can use To be realist and conservative side, the average annual value of Çataltepe WPP's electricity generation between 2012 and 2023 has been used for CP3 renewal crediting period as CP2. 2) The statement is already correct. The section A.1 is already included all 3 crediting period's values as following: "With a total installed power generation capacity of 16 MW, the project is estimated to supply grid as 62,414 MWh and 39,618 tCO2-eq emission reduction per annum over the first 7-year crediting period and 41,000 MW and 26,693 CO2-eq per annum during for the 2nd 7-year crediting period. To be realist and conservative side, the average annual value of Çataltepe WPP's electricity generation between 2012 and 2023 has been used for CP3 renewal crediting period as CP2. So, the project is estimated to supply grid as 41,000.000 MWh and expected annual emission reductions of the project is approximately 26,154 tCO2/year during for this 3rd crediting period."				
Documentation provided by project participant				
DOE assessment				**Date:** 27/12/2024
1) Estimated amount in PD is appropriate. 2) Closed. **Hence CR ID 2 is closed.**				

CR ID	3	Section no.		Date: 19/11/2024
Description of CR				

1. Section A. 1 it is stated: “The project’s capacity was increased to 27.75 MW in 2019 but PP has used only 16 MW for this GS registered project for SDG7 and SDG13. And monitoring of net energy generation (SDG7), PP has simply subtracted the SCADA values of unregistered turbines from gross generation data of EPIAS and SDG13 has been calculated accordingly.” But parameter Egpj,grid,y please see the statement: “

> The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. Data measured by meters will be crosschecked with the "Monthly electricity meter readings" records

2. Main source of electricity generation and consumption is not clear in the same parameter.

Project participant response	**Date:** 22/11/2024

1) EG Pj,grid,y parameter has been revised accordingly.

2) Main source of electricity generation and consumptions are EPIAS records. And they will be crosschecked with the “Monthly electricity meter readings” records (OSOS-OSF)

Documentation provided by project participant

1-

DOE assessment	**Date:** 27/12/2024

1- OK
2- OK

Hence CR ID 3 is closed.

CR ID	4	Section no.		Date: 19/11/2024

Description of CR

1. Please clearly define the end of the complementary stakeholder consultation.
2. Section A.2

> The Project location has a distance of 1 km to Hacımahmutlar neighbourhood, 2 km to Kocadağ village, 2.5 km to Damlar village, 5 km to Havran and 85 km to Balikesir.

Please clarify why there is no invitation for the Hacımahmutlar neighbourhood

3. During on site visit on 23/08/2024 there is no participant from Hacımahmutlar neighbourhood and Damlar Village.

Project participant response — **Date:** 22/11/2024

1. The feedback request for renewal crediting period has made between 01/08/2024 and 01/10/2024 with sending out the documents to the all stakeholders officially, and verbally on the same day with the mukhtar of Kocadağ village and no feedback or comments hav been received between in these days and also until now.

2. The Hacımahmutlar and Damlar Villages' locals stakeholders were invited 14 years ago verbally and face to face but they are not interested in with project and also these places have not selected chosen convenient place for the grievance logbook during the first LSC. As VVB and GS-SC team knows that, the continuous input/grievance mechanism expression method and discussed with the locals which place is convenient for the grievance book (logbook) during the LSC meeting in CP1. As a result of discussion, the grievance book was given to the mukhtar of Kocadağ village. At the same time, the contact details of the project owner, consultant and the GS teams member were shared with the stakeholders. All these details have been given in the logbook for stakeholders to make any comments they want to write. The PP has checked the comments in the book on a regular basis, and record responses. The grievance (logbook) book was checked and no complaints about the project during these 14 years. The PP are in a good relationship with the local stakeholders.

3. As explained above, there is no participant from Hacımahmutlar neighbourhood and Damlar Village, because they have not joined this kind of meeting, so they were not there during on site visit on 23/08/2024.

Documentation provided by project participant

DOE assessment — **Date:** 27/12/2024

1) Closed
2) Closed.
3) Closed.

Hence CR ID 4 is closed.

CR ID	5	Section no.		Date: 19/11/2024
Description of CR				
1. PD shall describe On-going Financial Need with figures. PD shall also include the previous issuance as well for reference.				
Project participant response				**Date:** 22/11/2024
Unfortunately, PP can not describe On-going Financial Need with figures. Because there are no VERs issuance for period 01/08/2012 to 19/04/2018. And second crediting period included between 19/04/2018 and 18/04/2025. And the related 1st performance review of CP2 has finished on 12/08/2024 and still there is no income from GSVERs yet but it will be assessed accordingly in first verification of CP3. And these details have been already included in the PDD.				
Documentation provided by project participant				
DOE assessment				**Date:** 27/12/2024
1) Closed. **Hence CR ID 4 is closed.**				

Table 3. CAR from this verification

CAR ID	1	**Section no.**		**Date:** 19/11/2024
Description of CAR				
1- Please check the date of first submission date. Time of First Submission Date" is related to the preliminary review/listing process. Therefore, please correct the time of first submission date on the cover page. 2- Please check the date of design certification date for CP1				
Project participant response				**Date:** 22/11/2024
1.VVB's comment is correct for CP1. PP should select the day to be submitted to GS as the First Submission Date. It can be seen also CP2 registered PDD and other registered GS projects. 2. The date of design certification date for CP1 is revised as 23/09/2009 in the PDD.				
Documentation provided by project participant				
DOE assessment				**Date:** 27/12/2024
1) Closed. **2)** Closed. **3)** **Hence CAR ID 1 is closed.**				

Table 4. FAR from this verification

FAR ID		Section No.		Date:
Description of FAR				
Project participant response				**Date:**
Documentation provided by project participant				
DOE assessment				**Date:**

Document information

Version	*Date*	*Description*
01.0	10/06/2016	Initial publication.