Verification and certification report form for GS project activities

VERICATION AND CERTIFICATION REPORT	
Title of the project activity	"Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria"
GS Reference number of the project activity	GS 4238
Version number of the verification and certification report	4.0Aa
Completion date of the verification and certification report	20/03/2023
Monitoring period number and duration of this monitoring period	4th Monitoring period 01/09/2020 – 31/03/2021 (7 months)
Version number of monitoring report to which this report applies	5 of 07/03/2023
Crediting period of the project activity corresponding to this monitoring period	01/04/2014 to 31/03/2021
Project participant(s)	Sofiyska Voda AD
Host Party	Bulgaria
Sectoral scope(s), selected methodology(ies)	Sectoral Scopes – 01 and 13 AMS-I.C ver. 20.0 of 01/06/2014 - Thermal Energy Production with or without electricity - SS 01 AMS-III.H ver. 17 of 28/11/2014 - Methane recovery in wastewater treatment - SS 13 AMS-I.D ver. 18 of 28/11/2014 - Grid connected renewable electricity generation - SS 01
Estimated GHG emission reductions or net anthropogenic GHG removals for this monitoring period in the registered PD	40,994 (7 months) SDG 13
Certified GHG emission reductions or net anthropogenic GHG removals for this monitoring period	44,972 (7 months) SDG 13
Name of VVB	RINA Services S.p.A (RINA)
Name, position and signature of the approver of the verification and certification report	**Giovanni D'Angelo** (Authorized officer signing for the DOE) Sustainability & Food Certification Compliance Unit

SECTION A. Executive summary

Purpose and general description of the project

The purpose of the project is to utilise the available renewable energy sources in the form of biomass received as a result from sludge treatment by the town of Sofia Municipality wastewater treatment plant, located in the Kubratovo (Kubratovo WWTP). Methane produced in Kubratovo WWTP is captured in common methane tanks (four digesters for anaerobic sludge treatment, each of 7,000m^3) serving as a buffer and then supplied to the newly installed CHP gas engines (three co-generations sets with 1,063 kW electric capacity and 1,088 kW thermal capacity each) for electricity and heat production, which in turn will substitute both the plant's electricity purchases from the grid and diesel fuel usage. Excess electricity is supplied to the grid.

The main purpose of the project is to transform the existing low-tech sludge treatment process at Kubratovo WWTP that existed before implementation of the project into an advanced treatment process matching the best sludge treatment practice available. The project replaces the baseline sludge drying beds and landfill sludge options disposal with mesophilic digestion of all primary and secondary sludge followed by mechanical dewatering in order to reduce GHG emissions.

The project was successfully validated by RINA and registered by the GS as a retroactive GS VER project.

Location

The project activity is situated in the Sofia region, near the village of Kubratovo, Bulgaria. The village of Kubratovo is located some 20 km outside the centre of Sofia, the capital of Bulgaria. The geographical coordinates of the project are: Latitude - 42º45'13.25"N and Longitude - 23º22'11.15"E

Scope of verification

Verification is the periodic independent review and ex-post determination by a VVB of the monitored reductions in GHG emissions that have occurred as a result of the registered GS project activity during a defined monitoring period. Certification is the written assurance by a VVB that, during a specific period in time, a project activity achieved the emission reductions as verified. The objective of this verification is to verify and certify emission reductions reported for the "Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria" for the period 01/09/2020 – 31/03/2021.

The scope of the verification is to verify that:

- The project activity has been implemented and operated in accordance with the registered PD or any approved revised PD;
- The monitoring plan, including compliance with any guidance provided by the Board regarding deviations from the provisions of a registered plan and/or methodology;
- The data and calculation of GHG emission reductions have been assessed to correctly support the emission reductions being claimed.

The verification shall ensure that reported emission reductions are complete and accurate in order to be certified.

Verification process

Verification is conducted using RINA procedures in line with the GS requirements and requirements specified in the CDM Validation and Verification Standard available at the time of the verification starts and applying standard auditing techniques. RINA assess and determines that the implementation and operation of the project activity, and steps taken to report emission reductions comply with the GS criteria. The verification assessment involved a document review of relevant documentation and the on-site visit.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

Conclusion

RINA commissioned by Sofiyska Voda AD is performing the verification of the emission reductions reported for the project activity "Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria", GS Registration Reference No. 4238 for the monitoring period 01/09/2020 to 31/03/2021, regarding the relevant GS requirements and principles for project activities. The project was validated by RINA Services (validation report 1.3 of 27/05/2016) and it was registered on 01/04/2016.

Final verification report.

The GHG emission reductions are calculated based on the approved methodologies /5,6,7/ and the monitoring plan included in the registered PD version 05 of 30/03/2016. In our opinion the GHG emission reductions reported for the project in the monitoring report version 05 of 07/03/2023 are fairly stated.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader, Verifier and Local expert	IR	RACHEV	KONSTANTIN	RINA BULGARIA	x	x	x	x

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer and Technical expert	IR	KIRATLI	Tugce	RINA Turkey

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human error in the quantification of emissions. Human error in monitoring data presentation and readings. Omission of the periodic calibration / check of the measuring equipment.	Low	The project owner has established a strong monitoring system (Scada software) and a procedure for monitoring reporting and data flow as well as the PP is certified against ISO 9001, ISO 14001 and ISO 45001. The client also appointed staff and head of the GS team who were trained and responsible for meter readings and recordings and auditing of these monitored data. The installation and calibration of the monitoring equipment was also stipulated in the system. The internal monitoring and management system has	Depending on the monitoring period being verified, conduct increased verifying during the months when there is a greater likelihood of errors and issues with data quality control due to project participants` leave schedules.
2.	Undue reliance on a poorly designed information system, which may have few effective quality control	Low		Depending on how the data is generated, processed and reported, place greater emphasis on verifying data captured and processed manually and/or in spreadsheets versus those that generated from automated system.
3.	Manual adjustment of otherwise automatically recorded activity levels.	*Low*		

			also established the QA/QC procedure to ensure the veracity and validity of the monitoring procedure and monitoring records. Calibration procedure is also available ensuring periodical checks of the used measuring equipment. So, the risk level is low.	

C.2. Consideration of materiality in conducting the verification

The project is a small scale GS project activity and a 5 percent materiality threshold is applied. At the beginning of the verification, the team has assessed the nature, scale and complexity of the verification tasks by carrying out a strategic analysis of all activities relevant to the project activity. The verification team has collected and reviewed the information relevant to assess, that the designated verification team is sufficiently competent to carry out the verification and to ensure that it is able to conduct the necessary risk analysis.

RINA confirms that the claimed emission reductions are free from material errors, omissions or misstatements, with a reasonable level of assurance, and proceeds with the verification as defined in the verification plan.

SECTION D. Means of verification

D.1. Desk review

The Monitoring Report version 01 of 26/02/2022 and amended versions 02 of 29/04/2022, 03 of 05/05/2022, ver. 4 of 26/01/2023 and ver. 5 of 07/03/2023 /2/, the registered PD version 05 of 30/03/2016 /1/, the emission reductions calculation spreadsheets /17,18/, were assessed as part of the verification. The list of all documents reviewed are referenced during the verification is available in Appendix 3 below. In addition to this documentation an amended IRR excel file was verified “IRR_Kubratovo_ver.03_05052022” /54/.

D.2. On-site inspection

Duration of on-site inspection: 26/04/2022 to 26/04/2022				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Local citizens attitude; contribution of the project to the local citizens; complains; organization scheme and responsibilities; data collecting and archiving; technical amendments (if there); environmental responsibilities and fulfilment of legal requirements; social responsibilities and communication with local citizens; calibration and maintenance of the used monitoring equipment; monitoring data; GHG emission reduction estimation and calculations; baseline and project emission estimations; SD indicators and Sustainability MP; grievance mechanism data and details. GS4GG new requirements and project registration was also observed. Project site area tour	Kubratovo WWTP - Sofia Region, near the village of Kubratovo, Bulgaria	26/04/2022	Konstantin Rachev

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Rangelov	Jelyaz	Sofiyska Voda – WWTP Deputy Director	26/04/2022	WWTP details. Monitoring data. Software usages.	Konstantin Rachev
2	Nikolov	Vasil	WWTP – Senior Manager		WWTP details. Monitoring data. Software usages.	
3	Dimitrov	Hristo	Sofiyska Voda – Treatment and dewatering sewage Manager		Calibration and maintenance of the used monitoring equipment; data collecting and archiving; technical details	
4	Milkov	Viktor	Green Carbon Bulgaria – project consultant		MR detailed sections discussion; Monitoring data; GHG Emission reduction estimation and calculations	
5	Dimirov	Hristo	Manager of Methane tanks		Local citizens attitude; contribution of the project to the local citizens; complains	
6	Desheva	Galina	Village Benkovski citizen		Local citizens attitude; contribution of the project to the local citizens; complains	
7	Kolev	Metodi	Village Svetovrachene citizen		Local citizens attitude; contribution of the project to the local citizens; complains	
8	Petrova	Teodora	Environmental protection Manager		Environmental responsibilities and fulfilment of legal requirements; social responsibilities and communication with local citizens	
9	Doneva – Kiryanova	Hristina	OHS Manager		Occupation Health and Safety requirements and trainings	
10	Brankova	Bojanka	Specialist Process Management		Data collection and archiving.	
11	Cvetkov	Iliya	Manager Energy Efficiency		Electric Meters calibrations and data collection	
12	Tarasheva	Simona	Novi Iskar Municipality Lawyer		Benefit of the project activity Complaints about project Grievance Mechanism	
13	Stoycheva	Vanina	Novi Iskar Municipality Ecologist			

The project had been described in the company website: https://www.sofiyskavoda.bg/en/about-us/gold-standard

For the project a Grievance Expression Process Book was prepared and available in the administrative building of WWTP Kubratovo. Telephone numbers were also given for feedback on the project: + 359 2 812 25 30; +359 2 813 29 20. The project Contact person is Jelyaz Rangelov – WWTP Deputy Director. For the project activity was also presented an email address: goldstandard@sofiyskavoda.bg

During the on-site assessment local citizens, Sofiyska Voda Environmental protection Manager, Novi Iskar Municipality staff and other responsible staff have been interviewed. All of them were with positive opinion for the realized ongoing project activity and no complaints have been issued. All applicable legal environmental permissions have been issued and no remarks by the local competent authority are raised. No official comments and complains are received and documented through the presented, mail, phone, Grievance Book /3,4/, etc.

D.4. Sampling approach

N/A
No sampling approach is used for this project activity

D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CR	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form			
Compliance of the project implementation with the registered PD			
Post-registration changes			
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline			
Compliance of monitoring activities with the registered monitoring plan			
Compliance with the calibration frequency requirements for measuring instruments			
Assessment of data and calculation of emission reductions or net removals	CR1		
Others: GS Monitoring Parameters			
Total	1	0	0

SECTION E. Verification findings

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

Means of verification	The used MR form is GS4GG MR Template /52/.
Findings	N/A
Conclusion	The PP does use the GS4GG Monitoring Report Form /52/

E.2. Remaining forward action requests from validation and/or previous verification

No FARs have been raised during the third verification phase and GS feedback round. The PP has received a Letter of Approval N 26-00-1543 dated of 19/01/2016 /44/.

E.3. Compliance of the project implementation with the registered project design document

Means of verification	The project activity was shifted from JI to GS registration and was registered as retroactive project under the requirements of The Gold Standard Foundation in 2016 /40/. The project implementation follows the data presented in the registered PD. the PP had applied for re-registration under GS4GG requirements and an Annex 1 form had been issued for the process for re-registration on 09/03/2020 /30, 47,48,49,50,51/.
Findings	N/A
Conclusion	The project is fully implemented according to the description presented in the PD, which is discussed above. The verifier confirms, through physical inspection at site that all features of the GS project activity including the equipment's, data collecting systems and storage have been implemented in accordance with the registered PD. The project activity is completely operational and the same has been confirmed

	on-site.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline

N/A

E.4.2. Corrections

N/A

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

N/A

E.4.4. Inclusion of a monitoring plan to a registered project activity

N/A

E.4.5. Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline

N/A

E.4.6. Changes to the project design of a registered project activity

N/A

E.4.7. Types of changes specific to afforestation and reforestation project activities

N/A

E.5. Compliance of monitoring plan with the monitoring methodology including applicable tool and standardized baseline

Means of verification	The MP complies to the applicable methodologies and tools approved in the registered PD /1,2,5,6,7,9-14/.
Findings	N/A
Conclusion	The monitoring plan of the project activity is in accordance with the approved baseline and monitoring methodologies: AMS-I.C ver. 20.0 of 01/06/2014 - Thermal Energy Production with or without electricity - SS 01 AMS-III.H ver. 17 of 28/11/2014 - Methane recovery in wastewater treatment - SS 13 AMS-I.D ver. 18 of 28/11/2014 - Grid connected renewable electricity generation - SS 01

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

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

Means of verification	All data and parameters that were fixed ex ante in the registered PD /1/ are properly used during this verification phase (01/09/2020 to 31/03/2021) and correspond to the registered PD /1/. The estimation data is presented in the excel sheets /17 and 18/. Data and parameters fixed ex ante, used for the ER calculations /1,2,40/: 1. $EF_{EL,y}$ - tCO_2/MWh – value applied 1.0190 2. $MCF_{s,BL,final}$ – value applied 0.4

	3. DOCs - value applied 0.5 4. DOC_F - value applied 0.5 5. F - value applied 0.5 6. UF_{BL} - value applied 0.89 7. GWP_{CH4} - value applied 28 /45/ for 2021 year – IPCC Fifth Climate Change Synthesis Report of 2014 (page 87) /45/ and previous approved value of 25 for 2020. 8. η_{flare} - % - value applied 80 9. $\eta_{BL,thermal}$ - % - value applied 92 10. $EF_{FF,CO2}$ - tCO_2/TJ - value applied 54.30 11. $NCV_{i,y}$ - GJ/t - value applied 46.50 12. $EF_{CO2,i,y}$ - tCO_2/GJ - value applied 76.30 13. $PE_{fugitive,s,y}$ - value applied 0.05 14. D_{CH4} – kg/m^3 – value applied 0.670 These figures have been crosschecked by the next requirements: /1,2,5, 7,11,12,13, 17,18, 26,41,45, 51/ ηflare - value applied 80. Two conditions specified in 'project emissions from flaring, version 02.0.0' are being met in this case for applying 80% efficiency: The temperature of the flare (TEG.m) and the flow rate of the residual gas to the flare (FRG,m) and the flame is detected in minute m (Flamem) conditions fulfilled. For conservative approach the efficiency was decreased from 90% to 80%.
Findings	CR1: The correct source of GWP of Methane is not provided. The CR is closed in the Final VR.
Conclusion	RINA confirms that the parameters listed above are fixed ex-ante and used for baseline, project emissions and leakage emissions calculation in accordance with the applied methodology and methodological tools and they are the same used at the validation stage

E.6.2. Data and parameters monitored

Means of verification	All data and parameters that are monitored are properly measured and quoted during this verification phase (01/09/2020 to 31/03/2021) /2, 17,18/ and correspond to the applicable methodologies from the registered PD /1, 5-7, 40/. The monitoring data is presented in the excel sheet /18/ and the final ER estimations are given in the sheet "Sofiyska_voda_VER_Calculation_ver.01_2020-2021" /17/. The final figures are also presented in the MR /2/. All figures and estimations were checked during the on-site visit in the used software – SCADA energy and SCADA Technological /31/. Monitoring parameters for this monitoring period used: 1. Amount of dry matter in the sludge in the year y (SDG 13) - Measure the total quantity of sludge entering the digesters - $S_{final,PJ,y}$ The value for this monitoring period is: 20,075.45 t 2. The net quantity of heat supplied by the project activity during the year y (SDG 13) - Steam thermal energy meter would be used to measure the quantity of heat generated by the boiler - $EG_{thermal,y}$ The value for this monitoring period is: 51.86 TJ 3. Electricity generated by the CHP in the year y (SDG 13) – it will be measured ex-post and recorded monthly - $EG_{grid,y}$ The value for this monitoring period is: 13,822.64 MWh 4. Quantity of biogas generated by the anaerobic digesters (SDG 13) - The biogas flow is monitored by integrated digital gas-flow meter taking into account the temperature and pressure of the gas. The final result is normalised - $BG_{burnt,y}$ The value for this monitoring period is: 6,201,673 Nm^3 5. Quantity of sludge entering the anaerobic digesters (SDG 13) - Measured by liquid flowmeter - $Q_DG_{s_inlet}$ The value for this monitoring period is: 412,917 m^3

	6. Dry substance content in the sludge (SDG 13) - Laboratory samples and the results are recorded hourly, monthly and yearly - ρ_{sludge} /t/m^3 / 7. Methane content in biogas in the year *y* (SDG 13) - The fraction of methane in the gas is being measuring with a continuous analyser using equipment that can directly measure methane content in the biogas - $W_{CH4,y}$ /%/ 8. Quantity of fossil fuel (naphta) used for emergency needs in the year y. - The yearly quantity is calculated using accounting documents for the purchased quantity of fuel during the reported period the initial and the residual content of the reservoirs - FC_y The value for this monitoring period is: 0 /t/ 9. Volumetric flow of the gaseous stream (SDG 13) - The quantity of biogas is measured continuously - $V_{t,db}$ The value for this monitoring period is: 53,529.54 m^3CH_4 10. Mass flow of methane in the residual biogas flared (SDG 13) - The quantity and quality of biogas is measured continuously and normalized - $F_{CH4.}$ Methane in the residual biogas flared The value for this monitoring period is: 35,864.79 kgCH_4/year
Findings	None
Conclusion	The monitoring has been carried out in accordance with the monitoring plan contained in the registered PD. All the parameters were monitored and determined as per the registered monitoring plan. VVB confirms through the conducted on-site visit verification, document review, and verification of the used monitoring system that complies with the registered monitoring plan. During the verification, all the relevant monitoring parameters of the registered monitoring plan have been verified with regards to the appropriateness of the verification method; the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. It is confirmed that all the monitoring parameters have been measured/determined without material misstatements and are in line with all applicable standards and relevant requirements. RINA confirms: - That all the parameters stated in the registered PD have been monitored; - The responsibilities and authorities for monitoring and reporting are in accordance with those stated in the registered PD; - The monitoring results are consistently recorded as per the approved frequency; Quality assurance and quality control procedure have been applied in accordance with the registered PD, as well as applicable GS requirements /47-51/.

E.6.3. Implementation of sampling plan

Means of verification	N/A
Findings	N/A
Conclusion	N/A

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

Means of verification	The used measuring equipment are properly calibrated as per the applicable legal requirements – A616 of 11/09/2018 and N 259 of 29/04/2021 for calibration frequency /39/ for calibration frequency issued by the State Agency for Metrological and Technical Surveillance. The next measuring equipment during the verification period is used: 1. Automatic gas analyser, flow meter system “Awite” (serial number 564_09): - calibrated every six months by external company “Drager” /42/ 2. Automatic gas analyser, flow-meter system „Binder, Combimass eco basic“ (Model 022218-0620J1 S/N 642404) – the meter is integral part of flow meter system “Awite” 3. Digital Electric meter (measured electricity exported / imported (combined) to the grid) - /43/. The new meter is ZQM 202C.8 with serial number

	95591212, calibrated every 4 year. Last calibration date on 27/10/2020 /43/. Old electric meter ZMD402CT, ser.N 37566358, as per Protocol of 05/04/2019 /43/. 4. Digital Electric meter (measured electricity exported / imported (combined) to the grid) - /43/. The new meter is ZQM 202C.8 with serial number 95591181, calibrated every 4 year. Last calibration date on 23/10/2020 /43/. Old electric meter ZMD402CT, ser.N 37566359, as per Protocol of 05/04/2019 /43/. 5. Four inlet sludge flow to digesters (serial numbers: 000015791/X001, 000015791/X003, 000015791/X004, 000015791/X002) – there is not requirements for external calibration /39/. The information is continuously recorder in SCADA Technological /31/. 6. Five Automatic gas analyser flow meter system (serial numbers: S.No.C080650, S.No.C080647, S.No.C080649, S.No.C080648, S.No.C120564) – there is not requirements for external calibration /39/. The information is continuously recorder in SCADA Technological /31/. 7. Turbine gas meter (serial number 450345/2011) – the meter is using for cross – checking purpose 8. Three digital thermal energy meters "Kamstrup" – measured thermal energy generated by the CHPs exhaust gasses (serial numbers: 69303430, 69303431, 69303432) – $EG_{thermal}$ – installed on 30/12/2013 with factory calibration and recalibrated in October 2020 (available calibration sticker on the device, check during the on-site visit). The period of calibration is 5 years /39, 53/. 9. One digital thermal energy meters "Kamstrup" – measured thermal energy generated by the boiler ($EG_{thermal}$): serial number 69303436. Period of calibration – 5 years. /53/
Findings	none
Conclusion	The description of the used meters presented in the monitoring report is in line with the operation as confirmed through the site visit observation. All the conducted measuring data for the monitoring period correspond to the applicable legal and other requirements.

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

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

Means of verification	The calculation data for this verification phase (01/09/2020 to 31/03/2021) are presented in the MR /2/ and in the next excel sheets: "Sofiyska_Voda_monitoring_data_2020_2021" /18/ and "Sofiyska_voda_VER_Calculation_ver.01_2020-2021" /17/. All the data is also available in the used software: SCADA Energy and SCADA Technological /31/. The calculations correspond to the applicable and approved methodologies: /1, 2, 5-7, 40/. All the data have been cross – checked between the excel files and used SCADA software. The main formulas that are used are: $BE_{s,final,y} = S_{final,BL,y} * DOC_s * UF_{BL} * MCF_{s,BL,final} * DOC_F * F * 16/12 * GWP_{CH4}$ $BE_{grid,y} = EG_{grid,y} \times EF_{grid,y}$ $BE_{thermal,Co2,y} = \left(\frac{EG_{thermal,y}}{\eta_{BL,thermal}}\right) \times EF_{FF,CO2}$ The total estimated baseline emissions are: 48,554 $tCO_{2,e}$
Findings	N/A
Conclusion	RINA confirms that baseline emissions have been appropriately calculated and are consistent with site visit observations, the applied methodology, registered PD and the validation report.

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

Means of verification	The calculation data for this verification phase (01/09/2020 to 31/03/2021) are presented in the MR /2/ and in the next excel sheets: "Sofiyska_Voda_monitoring_data_2020_2021" /18/ and "Sofiyska_voda_VER_Calculation_ver.01_2020-2021" /17/. All the data is also available in the used software: SCADA Energy and SCADA Technological /31/. The calculations correspond to the applicable and approved methodologies: /1, 2, 5-7, 40/. All the data have been cross – checked between the excel files and used SCADA software. The main formulas that are used are: $PE_y = PE_{power,y} + PE_{fugitive,y} + PE_{flare}$ $PE_{power,y} = PE_{FC,y} = FC_{,jy} \times COEF_{,y}$ $COEF_{,y} = NCV_{,y} \times EF_{CO2,,y}$ PE_{flare} are determined: $F_{CH4,t} = V_{t,db} * V_{CH4,t,db} * \rho_{CH4,t}$ $F_{CH4,t} = V_{t,db} * w_{CH4,y} * D_{CH4}$ $PE_{flare} = F_{CH4,}t * GWP_{CH4} *((100- \eta_{flare})/100)$ The total estimated project emissions are: 3,582 $tCO_{2,e}$
Findings	None
Conclusion	RINA confirms that project emissions have been appropriately calculated and are consistent with site visit observations, the applied methodology, registered PD and the validation report, as well as applicable GS requirements /47-52/.

E.8.3. Calculation of leakage GHG emissions

Means of verification	No leakage emissions are considered for this project activity
Findings	N/A
Conclusion	N/A

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

Means of verification	The calculation data for this verification phase (01/09/2020 to 31/03/2021) are presented in the MR /2/ and in the next excel sheets: "Sofiyska_Voda_monitoring_data_2020_2021" /18/ and "Sofiyska_voda_VER_Calculation_ver.01_2020-2021" /17/. All the data is also available in the used software: SCADA Energy and SCADA Technological /31/. The calculations correspond to the applicable and approved methodologies: /1, 2, 5-7, 40/. All the data have been cross – checked between the excel files and used SCADA software. The main formulas that are used are: ER = BE – PE – LE The total ER for this verification period is 44,972 tCO_{2e} (7 months)
Findings	N/A
Conclusion	RINA confirms: - All the data and parameters were monitored in accordance with the registered PD /1/; - The data presented in the monitoring report /02/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment.

	- The calculation of emission reductions has been carried out in accordance with the formulae and methods described in the registered PD, the applied methodology and methodological tools; Emission factor and default values have been applied in the calculation in accordance to the registered PD.

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

Means of verification	During this verification phase (01/09/2020 to 31/03/2021 – total of 7 months) /2/, there is a little higher ER results achieved (9.7%) compared to the estimated one in the registered PD /1/ which is caused by increasing of incoming municipality wastewater. The value presented in the registered PD /1/ (on average monthly basis) is 40,994 tCO_2e. for this monitoring period (7 months) and the real achieved reductions on average monthly basis is 44,972 tCO_2e. (7 months). The estimation is based on average monthly generated emission reduction.
Findings	None
Conclusion	The emission reduction calculations provided in the spreadsheet have been verified to be correct and in line with the registered PD. This is a normal operation difference due to increasing of incoming municipality wastewater and short monitoring period, as well as increasing of GWP of Methane, compared with the PDD.

E.8.6. Remarks on difference from estimated value in registered PD

Means of verification	The actual difference is 9.7 % (higher).
Findings	None.
Conclusion	The increase of VERs generated is around 10% compared to the value in the approved PDD. In this case it is necessary to assess the IRR of the project using current data for the electricity generation, which gives the direct financial income of the project and compare it to the approved IRR calculation sheet and PDD. The approved equity IRR of the project is calculated as 12.35% before taxes and the benchmark is estimated at 16.40% in the approved PDD /1/. The annual electricity generation in the approved PDD is estimated at 15,348 MWh. The electric energy generated during this monitoring period of 7 months is 13,823 MWh as follows: In 2020 for 4 m. (01/09-31/12) – 7,970 MWh (monitored real generation) In 2021 for 3 m. (01/01-31/03) - 5,853 MWh (monitored real generation) The annually adjusted electricity generation for 2020 and 2021 is as follows: 2020: (15,348:12)*8+7,970 = 18,202MWh/year (Generation based on PDD and IRR calculation sheet for part of 2020 before start of this monitoring period(8 months) plus real monitoring data) 2021: (15,348:12)*9+5,853 = 17,364 MWh/year (Generation based on PDD and IRR calculation sheet for part of 2021 after the end of this monitoring period (9 months) plus real monitoring data) Replacing this value in the IRR calculation sheet of the project for the current monitoring period in the Investment analysis gives a value of 12.43% for the equity IRR before taxes which is only 0.8 % higher than the IRR in the approved PDD and is still much lower than the benchmark of 16.40%. The project can still be considered not financially viable without income from VERs and additional /1, 54/

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification

GHG Emission Reductions or Removals	01/09/2020 – 31/12/2020 tCO_2e	01/01/2021 – 31/03/2021 tCO_2e	TOTAL 01/09/2020 - 31/03/2021
Baseline Emissions	26,037	22,517	48,554
Project Emissions	1,891	1,691	3,582
Leakage	0	0	0
Net GHG emission reductions or removals	**24,146**	**20,826**	**44,972**

Findings: None

Conclusion: The emission reduction calculations provided in the spreadsheets have been verified to be correct and in line with the registered PD and MR for this verification phase.

E.8.8. Assessment of the sustainability parameters

Means of verification

The information is presented is Section D.2 Data and parameters monitored.

SDG Contributions targeted: SDG 13 - Climate action
Amount of dry matter in the sludge in the year: The value for this monitoring period is: 20,075.45 t
The net quantity of heat supplied by the project: The value for this monitoring period is: 51.86 TJ
Electricity generated by the CHP: The value for this monitoring period is: 13,822.64 MWh
Quantity of biogas generated by the anaerobic digesters: The value for this monitoring period is: 6,201,673 Nm3
Quantity of sludge entering the anaerobic digesters: The value for this monitoring period is: 412,917 m3
Dry substance content in the sludge in t/m3: The parameter is measured by an accredited Laboratory.
Methane content in biogas in the year in %: The parameter is measured continuously.
Quantity of fossil fuel (naphta) used for emergency needs: The value for this monitoring period is 0 t
Volumetric flow of the gaseous stream (methane) to the flares: The value for this monitoring period is 53,529.54 m3CH4/h
Mass flow of methane in the residual biogas flared: The value for this monitoring period is 35,864.79 kgCH4/year

SDG 11 – Sustainable cities and Communities
Emissions of SO2, NOx, CO and dust in the stack flue gas. Waste oil disposed.
-Waste oil disposed for this monitoring period is 4,030 kg /32/.
-Air Emission measurement Protocols /35,36/

	SDG 6 – Clean water and sanitation COD and BOD 5 of the inlet and effluent wastewater. Values for this monitoring period have been verified /22,31,34/ Quantity of waste water (sludge) treated: total of 412,917 m3
Findings	N/A
Conclusion	RINA confirms that monitoring of all monitoring SD parameters during this monitoring period is in line with registered project and are consistent with site visit observations, as well as applicable GS requirements /47-52/

SECTION F. Internal quality control

The draft final verification report before being submitted to the client is subjected to an independent technical review to confirm that all verification 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 G. Verification opinion

RINA Services Spa (RINA) has performed verification of the emission reductions reported for the project activity "Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria", GS Registration Reference No. 4238 for the period 01/09/2020 – 31/03/2021 (7 months), with regard to the relevant GS requirements and principles. The project participants are responsible for the preparation for the collection of data in accordance with the monitoring plan and the reporting emission reductions from the project. It is RINA's responsibility to express an independent verification opinion on the reported emission reductions from the project and does not express any opinion on the selected baseline scenario or on the validated and registered PD. Based on documented evidences and corroborated by an on-site assessment RINA can confirm that: (i) the project has been implemented and operated as per the registered PD; (ii) the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable GS requirements and principles; (iii) the monitoring is in place as per the applied baseline and monitoring methodology; (iv) the monitoring complies with the registered monitoring plan; (v) the monitoring plan in the registered PD is as per the applied baseline and monitoring methodology.

SECTION H. Certification statement

It is RINA's opinion that the GHG emission reductions stated in the Monitoring Report version 05 of 07/03/2023 for the project activity "Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia" in Bulgaria, for the period from 01/09/2020 to 31/03/2021 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodologies /5/,/6/,/7/. Hence RINA is able to certify that the emission reductions from the project during the monitoring period from 01/09/2020 to 31/03/2021 amount to **44,972 tCO_2e.**

GHG Emission Reductions or Removals	**01/09/2020 – 31/12/2020** **tCO_2e**	**01/01/2021 – 31/03/2021** **tCO_2e**	**TOTAL** 01/09/2020 - 31/03/2021
Baseline Emissions	26,037	22,517	48,554
Project Emissions	1,891	1,691	3,582
Leakage	0	0	0
Net GHG emission reductions or removals	**24,146**	**20,826**	**44,972**

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CDM-PCP	Clean Development Mechanism Project Cycle Procedure
CDM-PS	Clean Development Mechanism Project Standard
CDM-VVS	Clean Development Mechanism Validation and Verification Standard
CH_4	Methane
CR	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 and Verification Body
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GS	Gold Standard
GS4GG	Gold Standard for Global Goals
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PD	Project Design
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SD	Sustainability Development
SMP	Sustainability Monitoring Plan
SS(s)	Sectoral Scope(s)
UNFCCC	United Nations Framework Convention on Climate Change
VER	Voluntary Emission Reduction
MOEW	Ministry of Environment and Water

Appendix 2. Competence of team members and technical reviewers

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 – 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

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

Il Resp. OU
Head of OU

[1] Legend:

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

[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

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS4GG Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports

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RINA SERVICES

classification, certification, inspection & testing

CERTIFICATO DI QUALIFICA PER GLI SCHEMI VOLONTARI*
*QUALIFICATION CERTIFICATE FOR VOLUNTARY SCHEMES**

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms: **Tugce Kiratli**

è qualificato come:
is qualified as: **TEC, VAL, VER, TL, ITRP LOCAL EXPERT**

per le seguenti aree tecniche:
for the following technical areas:

AREE TECNICHE *TECHNICAL AREAS*	DESCRIZIONE DELL'AREA TECNICA *TECHNICAL AREA DESCRIPTION*	SCOPO SETTORIALE *SECTORAL SCOPE*
1.2	Renewables	1
13.1	Solid waste and wastewater	13

REVISIONE *REVISION*	DATA *DATE*	MOTIVAZIONI PER LA REVISIONE *REASON FOR THE REVISION*
0	19/07/2016	First issue with new template
1	09/06/2017	Added qualification as ITRP and Local Expert

Responsabile di schema
Scheme Leader
Laura Severino

*SCHEMI VOLONTARI/ VOLUNTARY SCHEMES: ACR American Carbon Registry, CCB The Climate, Community & Biodiversity Alliance, GS Gold Standard, JI Joint Implementation, SCS Social Carbon Standard, VCS Verified Carbon Standard.

TEC: Technical expert; VAL: Validator; VER: Verifier; TL: Team leader; FIN EXP: Financial Expert; ITRP: Independent technical reviewer

RINA Services S.p.A. è accreditato/riconosciuto da
RINA Services S.p.A. is accredited /recognized by

UNFCCC	quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM *as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects*
VCSA	per condurre la Validazione e la Verifica di Progetti VCS *to carry out Validation and Verification of VCS Projects*
GS Foundation	per condurre la Validazione e la Verifica di Progetti GS *to carry out Validation and Verification of GS Projects*
Ecologica Institute	per condurre la Validazione e la Verifica di rapporti SCS *to carry out Validation and Verification of SCS Reports*
American Carbon Registry ACR	per condurre la Validazione e la Verifica di Progetti ACR *to carry out Validation and Verification of ACR projects*
The Climate, Community & Biodiversity Alliance CCB	per condurre la Validazione e la Verifica di Progetti co-benefit CCB *to carry out Validation and Verification of co-benefit CCB projects*

GHG_QUAL_CERT_EN_07_16 Voluntary(Certificate) Page 1 of 1

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Sofiyska Voda AD	GS-PD for project activity "Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria" in Bulgaria	version 05 of 30/03/2016	Project participant
2	Sofiyska Voda AD	MR for project activity "Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria" in Bulgaria	version 01 of 26/02/2022 version 02 of 29/04/2022 version 03 of 05/05/2022 version 04 of 26/01/2023 version 05 of 07/03/2023	Project participant
3	Sofiyska Voda AD	Grievance Book	verification period	Others
4	Sofiyska Voda AD	Website massages and mailbox	verification period	Others
5	CDM Executive Board	Baseline and monitoring methodology AMS-III.H "Methane recovery in wastewater treatment"	version 17 of 28/11/2014	Others
6	CDM Executive Board	Baseline and monitoring methodology "AMS-I.C", "Thermal Energy Production with or without electricity"	version 20.0 of 01/06/2014	Others
7	CDM Executive Board	AMS-I.D "Grid connected renewable electricity generation"	ver. 18 of 28/11/2014	Others
8	CDM Executive Board	Validation and Verification Standard	version 03.0 of 09/09/2021	Others
9	CDM Executive Board	Methodological Tool "Tool to calculate project or leakage CO_2 emissions from fossil combustion"	version 02 of 02/08/2008	Others
10	CDM Executive Board	Tool to calculate the Emission Factor for an electricity system	ver. 04 of 04/10/2013	Others
11	CDM Executive Board	Methodological Tool "Tool to calculate baseline, project and/or leakage emissions from electricity consumption"	version 01 of 16/05/2008	Others
12	CDM Executive Board	Methodological Tool "Emissions from solid waste disposal sites"	version 07 of 16/04/2015	Others
13	CDM Executive Board	Methodological Tool "Project emissions from flaring"	version 02 of 20/07/2012	Others
14	CDM Executive Board	Methodological Tool "Project and leakage emissions from anaerobic digesters"	version 01 of 02/03/2012	Others
15	Sofiyska Voda AD	Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria Project LSC Report	version 2 of 28/07/2015	Project participant
16	Sofiyska Voda AD	Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria Project GS Passport	version 06 of 26/05/2016	Project participant
17	Sofiyska Voda AD	Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria Project – Sofiyska Voda VER calculation excel sheet "Sofiyska_voda_VER_Calculation_ver.01_2020-21"	version 01 of 20/02/2022 version 02 of 16/01/2023	Project participant
18	Sofiyska Voda AD	Methane Gas Capture and Electricity Production at Kubratovo Wastewater Treatment Plant, Sofia, Bulgaria Project – monitoring data:	version 01 of 20/02/2022	Project participant

		"Sofiyska_Voda_monitoring_data_2020_2021"		
19	Sofiyska Voda AD	Flow diagram – WWTP Kubratovo	Up to date	Project participant
20	Sofiyska Voda AD	Technical data and schemes of WWTP Kubratovo	Up to date	Project participant
21	Bulgarian Accreditation Agency	Certificate of reaccreditation N50 LI/12.03.2018, valid up to 12/03/2022.	12.03.2018	Others
22	Ministry of Environment and Water of Bulgaria	Permission for wastewater discharge into surface water N 1295 of 14/04/2014, amended as per Decision 3021 of 14/07/2020	14/04/2014	Others
23	CDM Executive Board	Rules and References, Methodologies, etc	Website: https://cdm.unfccc.int/EB/index.html	Others English language
24	The Gold Standard	Principles and Requirements , Methodologies, etc.	Website: https://www.goldstandard.org/tags/gs4gg	Others English language
25	Ministry of Environmental and Water	Environmental laws and requirements	Website: https://www.moew.government.bg/en/	Others English language
26	2006 IPCC Guidelines for National Greenhouse Gas Inventories	2006 IPCC Guidelines for National Greenhouse Gas Inventories	Website: https://www.ipcc-nggip.iges.or.jp/public/2006gl/	Others English language
27	Sofiyska Voda AD	Internal Air Emission Monitoring Plan of 2019	2019	Project participant
28	TUV NORD	Certificate covering BS OHSAS 18001:2007 (Occupation Health and Safety Management system), issued on 16/01/2015 and Certificate covering ISO 45001:2018, issued on 16/01/2018 and renewal of 16/01/2021	16/01/2015 16/01/2018 16/01/2021	Project participant
29	TUV NORD	Certificate covering EN ISO 14001:2004 (Environmental Management system), issued on 16/01/2015 and Certificate covering ISO 14001:2015, issued on 16/01/2018 and renewal of 16/01/2021 Certificate covering ISO 9001:2015, issued on 04/07/2019	16/01/2015 16/01/2018 16/01/2021	Project participant
30	The Gold Standard	E-mail from GS (Mrs. Annyta Luo dated 13/11/2019, concerning the transition to GS4GG Requirements	13/11/2019	Others
31	Sofiyska Voda AD	Plant monitoring records for the crediting period from the used database: Scada Technological and Scada Energy	01/09/2020 – 31/03/2021	Project participant
32	Sofiyska Voda AD	Contract with company "Industrialni Surovini" of 26/06/2015 for buying of hazardous waste. Identification Record for waste oil collection of 04/09/2020 (660 kg) Identification Record for waste oil collection of 19/02/2021 (3,370 kg)	04/09/2020 19/02/2021	Project participant
33	Sofiyska Voda AD	Internal and external protocols of conducted health and safety trainings covering the crediting period	01/09/2020 – 31/03/2021	Project participant
34	Sofiyska Voda AD	Monthly measuring data of wastewater in the inlet and outlet of the WWTP for the crediting period	01/09/2020 – 31/03/2021	Project participant
35	Ministry of Environment and Water – Executive Environment Agency	Protocols 2439, 2440 and 2442 of 16/11/2018 for own air emission measurement covering the three co – generators.	16/11/2018	Project participant

36	Accredited Laboratory “Labland”	Air Emission Protocols: Cogenerator 1: Protocol 109/09.11.2020 Cogenerator 2: Protocol 110/09.11.2020 Cogenerator 3: Protocol 111/09.11.2020	09/11/2020	Others
37	Sofiyska Voda AD	Annex with company “Industrialni Surovini” of 07/04/2020 for buying of hazardous waste.	07/04/2020	Project participant
38	Sofiyska Voda AD	Calibration Protocols of Drager Awite covering the verification period.	01/09/2020 – 31/03/2021	Project participant
39	State Agency for Metrological and Technical Surveillance	Orders: A616 of 11/09/2018 for calibration frequency N 259 of 29/04/2021 for calibration frequency	11/09/2018 29/04/2021	Others
40	RINA	Final Verification Report, covering the 3th verification monitoring period 01/09/2018 to 31/08/2020	ver. 2.0 of 02/04/2021	Others
41	Sofiyska Voda AD	EPC Contract between companies Sofiyska Voda AD and Pazel Finance and Leasing for Co – generators	09/04/2008	Project participant
42	Drager	Measuring equipment AWITE Calibration protocol files dates: 27/05/2020; 21/07/2020; 27/11/2020; 10&28/06.2021; 21/09/2021; 19/11/2021	27/05/2020; 21/07/2020; 27/11/2020; 10&28/06.2021; 21/09/2021; 19/11/2021	Project participant
43	Sofiyska Voda AD	Electricity meter exchange protocol of 05/04/2019 Electricity meter exchange protocol of 23/10/2020 Electricity meter exchange protocol of 27/10/2020	05/04/2019 23/10/2020 27/10/2020	Project participant
44	MOEW	Letter of Approval N 26-00-1543 dated of 19/01/2016	19/01/2016	Project participant
45	IPCC	IPCC Fifth Climate Change 2014 Synthesis Report	2014	Other
46	“Pehlivanov Engineering” Laboratory	Protocols of 29/12/2017 and 06/12/2019 for own air emission measurement covering the biogas boilers.	29/12/2017 06/12/2019	Project participant
47	GS4GG	PRINCIPLES & REQUIREMENTS	Version 1.2, Published October 2019	Others
48	GS4GG	SAFEGUARDING PRINCIPLES & REQUIREMENTS	Version 1.2, Published October 2019	Others
49	GS4GG	RENEWABLE ENERGY ACTIVITY REQUIREMENTS	14/01/2021	Others
50	GS4GG	VALIDATION & VERIFICATION BODY REQUIREMENTS	14/01/2021	Others
51	GS4GG	GS4GG Transition Annex	09/03/2020	Others
52	GS4GG	GS4GG MR Template	Ver. 1.1 of 14/10/2020	Others
53	Laboratory AC Boyana AD	Digital thermal energy meter Calibration Certificates: Calibration Certificate N79608/2020 of 21/10/2020 (ser.N 69303430) and previous Protocol of 23/05/2017 (5 years period of calibration). Calibration Certificate N79607/2020 of 21/10/2020 (ser.N 69303431) and previous Protocol of 23/05/2017 (5 years period of calibration). Calibration Certificate N79606/2020 of 21/10/2020 (ser.N 69303432) and previous	23/05/2017 10/2020	Others

		Protocol of 23/05/2017 (5 years period of calibration). Calibration Certificate N20-10-15-01/26.10.2020 (ser.N 69303436) and previous Protocol of 23/05/2017 (5 years period of calibration).		
54	Sofiyska Voda AD	Excel file: “IRR_Kubratovo_ver.03_05052022”	Version 03 of 05/05/2022	Project Participant
55	GS4GG	Annex 3 – Audit Techniques Checklist		

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

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

FAR ID	xx	**Section no.**	E.2	**Date:** DD/MM/YYYY
Description of FAR				
None				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
VVB assessment				**Date:** DD/MM/YYYY

Table 2. CR from this verification

CR ID	01	**Section no.**		**Date:** 29/04/2022
Description of CR				
The correct source of GWP of Methane is not provided.				
Project participant response				**Date :** 29/04/2022
The source for CH4 GWP is corrected to 5th IPCC Report.				
Documentation provided by project participant				
SofiyskaVoda_4th_Monitoring_Report_2020-2021_v.02				
VVB assessment				**Date:** 02/05/2022
MR ver. 02 of 29/04/2022 is fairly stated.				

Table 3. CAR from this verification

CAR ID		**Section no.**		**Date:** DD/MM/YYYY
Description of CAR				
n/a				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
VVB assessment				**Date:** DD/MM/YYYY

Table 4. FAR from this verification

FAR ID	xx	**Section No.**		**Date:** DD/MM/YYYY
Description of FAR				
N/A				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
VVB assessment				**Date:** DD/MM/YYYY

Document information

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