

Technical Guidance for Measurement, Reporting and Verification (MRV) of Greenhouse Gas Emissions in Abu Dhabi Emirate

Technical Guidance for MRV

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1. Introduction

This document serves to detail the technical requirements to establish and regulate the mandatory monitoring, reporting and verification of GHG emissions in the Emirate of Abu Dhabi. This has the broad aim of managing the reduction of GHG emissions in the Emirate in line with local, federal and international climate commitments and targets.

This guidance shall be applied in the Emirate, including all free zones according to the covered sectors, emissions threshold and greenhouse gas emissions described below.

Reporting is obligatory at the Facility level operating in a Covered Sector. The obligation to monitor and report greenhouse gas (GHG) emissions falls on the Operator of the Reporting Facility. Operators of facilities within the Covered Sectors are responsible for fulfilling all obligations related to registration, monitoring, reporting and verification of emissions. Monitoring, reporting and verification of emissions shall be obligatory for all Facilities whose activities result in Emissions meeting or exceeding the Emissions Threshold.

Operators of Facilities operating in Covered Sectors meeting or exceeding the Emissions Threshold and fall within the covered the sectors (see section 3: Target Audience below) are in-scope and shall register and submit self-generated emissions report produced in accordance with the requirements of *EAD Resolution No. 1 of 2024* on environmental data reporting. Note, it possible for Facilities who do not meet the scoping requirements to voluntarily participate in the scheme in which case, the Facility shall be treated as a Reporting Facility and shall adhere to the requirements of this document.

This guidance shall apply without prejudice to any obligations on an Entity and/or Operator according to the requirements of *Federal-Decree Law No. 11 of 2024* on the reduction of climate change effects and *Cabinet Resolution No. 67 of 2024* concerning the National Register for Carbon Credits.

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2. Purpose of document

The overarching aims of this document is to provide structure for a facility seeking to meet four core questions:

1. **Outline process:** describe what is happening in my facility?
2. **Describe calculation:** describe the calculation / measurement approaches I use to report on my emissions?
3. **Identify inputs:** identify the inputs that I use and gather within my facility to report on?
4. **Describe verification processes:** describe the verification / quality assurance processes that are in place to ensure any data I report is robust?

3. Target audience and scope

This document applies to all Facilities that are in-scope for the exercise and its contents shall be applied in the Emirate, including all free zones provided Facilities. Whether a Facility falls within scope depends on whether they:

- **Meet the emissions threshold:** the emissions threshold is currently defined at 25,000 metric tons of carbon dioxide equivalent (CO_{2e}) or more emitted directly into the atmosphere from a facility during the Reporting Period. Facilities exceeding this threshold are required to comply with monitoring, reporting and verification requirements as stipulated in this document.
- **Fall within the covered sectors:** The sectors included currently are power (electricity and water), oil & gas, petrochemicals, iron and steel, aluminum, cement. *(NB: this list is subject to change and is non-exhaustive)*

Reporting is obligatory at the Facility level operating in a Covered Sector. Note, voluntary participation for Facilities who do not meet the emissions threshold or fall within the covered sectors is possible. In which case, the Facility should be treated as a Reporting Facility and shall adhere to the requirements of this document.

The intent of this MRV is directed to those audiences who will assist Abu Dhabi in advancing its carbon pricing mechanisms aligned with global net zero goals and national climate strategies. These include (but are not limited to): the *United Nations Net Zero Coalition*, *UNFCCC Paris Agreement* at the global level, the *UAE Net Zero by 2050*, *UAE Long-Term Strategy* at national level and finally, *Abu Dhabi Aspirations NREEP* and the *Abu Dhabi Climate Change Strategy 2023 – 2027* at Abu Dhabi level.

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4. Terms and definitions

The following section provides a non-exhaustive list of terms used in this Technical Guidance and their accompanying definitions. These definitions provide some legal and procedural content, particularly to guide end-users in case of ambiguities. We anticipate a formalised MRV legislation to be in place and this document aims to supplement any current or impending legislation. As best as possible, these terms are aligned with any such current and impending legislations. However, where there are any inconsistencies (e.g., revisions in legislation), please refer to any definition in legislation issued as taking precedence.

No.	Term	Definition
1.	The Emirate	Emirate of Abu Dhabi
2.	The Agency	The Environment Agency – Abu Dhabi
3.	Facility	A unit or several fixed technical units used in activities regulated by this document within the sector covered by its provisions, or any activities that are technically directly related to the mentioned activities, located on one or more nearby or adjacent properties under common operational control, , which cause or can cause greenhouse gas emissions covered by the provisions of this document.
4.	Operator	The person or entity who operate or control a facility either as an owner of the facility, lessee of the facility or is delegated with operational control of the facility. Control over a facility shall include the authority to make legal, financial and operational decisions that affect the facility's compliance and the authority to make technical functioning decisions that affect the facility, including how it is managed, maintained and operated on day-to-day-basis.
5.	Covered Sector	Sectors that are covered by the provisions of this document, as may be amended from time-to-time
6.	Emissions Threshold	Emissions threshold triggering monitoring, reporting and verification obligations pursuant to the provisions of this Document, currently defined at 25,000 metric tons of carbon dioxide equivalent (CO ₂ e). Facilities exceeding this threshold are required to comply with monitoring, reporting, and verification requirements as stipulated in this Law.
7.	Monitoring	the systematic process of collecting data on greenhouse gas emissions from Facilities that ensures that emissions are accurately measured, recorded, and reported in compliance with this document
8.	Monitoring Plan	A detailed plan, outlining the methodologies and procedures for measuring and calculating emissions
9.	Reporting	The process by which operators of facilities submit detailed accounts of their greenhouse gas emissions according to forms issued by the Agency pursuant to this document.
10.	Reporting Period	A calendar year during which emissions must be monitored and reported
11.	Verification	The activities carried out by an accredited verifier to assess the conformity of the documents transmitted by the operator with the requirements of this document
12.	Accredited Verifier	An independent third party, legal entity authorized to carry out verification activities by the Agency

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5. Roles and responsibilities

The following section provides a non-exhaustive list of roles and responsibilities anticipated in the implementation of the MRV. As best as possible, these roles and responsibilities are aligned with any current and impending legislations. However, where there are any inconsistencies, please refer to any definition in legislation issued as taking precedence. Note, the absence of a party listed below does not necessarily mean that party is not authorized and/or involved in implementing the MRV.

No.	Entity	Responsibilities
1.	Agency	<p>Mandated with managing, overseeing and ensuring the proper implementation of terms described in this document. This includes establishing, managing and overseeing the register of Facilities operating in the Covered Sectors.</p> <p>The Agency, shall:</p> <ol style="list-style-type: none"> 1- Establish, manage and oversee the register of Facilities operating in the Covered Sectors, 2- Oversee and enforce compliance with the reporting requirements for emissions by operators of Reporting Facilities, 3- Establish, manage and oversee the method and process of reporting of GHG emissions and other emissions by operators, 4- Issue and manage the list of accredited verifiers and accreditation methodology, 5- Collect and analyze emissions data, reduction measures, and prepare an annual emission record, 6- Organize and deliver training and awareness activities related to the implementation of the MRV, 7- Issue and update technical guidance on best available technologies and best practices relevant to the Covered Sectors, taking into account technical feasibility, economic viability, and environmental benefits, 8- Issue binding technical guidelines necessary for the effective implementation of the MRV, which shall have mandatory application including technical guidance addressing the monitoring, reporting, and verification of greenhouse gas emissions.
2.	Operators	<p>Operators shall secure that all Facilities operating in a Covered Sector are registered</p> <p>Operators of Covered Facilities shall submit a Monitoring Plan setting out measures to monitor and report emissions and shall annually submit a verified emissions report for each reporting period on the dates prescribed in this document</p> <p>Operators shall abide with the following general principles applied to monitoring and reporting:</p> <ol style="list-style-type: none"> 1- Monitoring and reporting shall be complete and cover all Emissions belonging to activities of Facilities in Covered Sectors, while avoiding double-counting. 2- Operators shall take appropriate measures to prevent any data gaps within the reporting period. 3- Monitoring and reporting shall be consistent and comparable over time. To that end, operators shall use the same monitoring methodologies and

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No.	Entity	Responsibilities
		<p>data sets, over reporting periods, subject to changes and derogations approved by the Agency.</p> <ol style="list-style-type: none"> 4- Operators shall obtain, record, compile, analyze and document monitoring data in a transparent manner that enables the reproduction of the determination of emissions by the verifier and the Agency. 5- Operators shall ensure that emission determination is neither systematically nor knowingly inaccurate. They shall identify and reduce any source of inaccuracies as far as possible. They shall exercise due diligence to ensure that the calculation and measurement of emissions exhibit the highest achievable accuracy. 6- Operators shall enable reasonable assurance of the integrity of emission data to be reported. They shall determine emissions using the appropriate monitoring methodologies 7- Operators shall take account of the recommendations included in the verification reports in their consequent monitoring and reporting. <p>Operators of facilities are encouraged to adopt best available technologies, technical innovations and best practices to improve operational efficiency, reduce emissions, and support industrial decarbonization. Facilities adopting best available technologies or demonstrating best practices may report these measures in the emissions reports.</p>
3.	Verifier	<p>Verifiers help advance the aims of the MRV, to conclude with a high degree of certainty that operator-reported data are free from inconsistencies and collected according to the monitoring methodology approved by the Agency.</p> <p>Verifiers shall be included on the list of accredited verifiers by applying to the Agency and providing satisfactory proof of the required certifications. Verifiers who are not accredited according to the provisions of this document but are included on the list of verification agencies issued by the Ministry of Climate Change and Environment (MOCCA) according to the provisions of Cabinet Resolution 67 of 2024 shall be deemed accredited verifiers for the purposes of this document.</p> <p>The accredited verifier should have an accreditation from the International Organization for Standardization (ISO) for the scope of verification including the activities, processes and methodologies for undertaking the verification as per ISO 14065 Standards, or any subsequent edition or update of that standard, or any other relevant ISO standard that may be introduced, including:</p> <ol style="list-style-type: none"> 1- ISO 14064-1, specifying principles and requirements at the organization level for quantification and reporting of greenhouse gas (GHG) emissions and removal, 2- ISO 14064-2, specifying principles and requirements and provides guidance at the project level for the quantification, monitoring and reporting of activities intended to cause greenhouse gas (GHG) emission reductions or removal enhancements, 3- ISO 14064-3, specifying principles and requirements for verifying and validating greenhouse gas (GHG) statements at organisation, project and product level, and ISO, 4- Where required, ISO 14067 specifying the principles, requirements and guidelines for quantifying and reporting the carbon footprint of a product (CFP) should also be followed.

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No.	Entity	Responsibilities
4.	Chairman of the Board of Directors	<p>The Chairman of the Board of Directors shall issue the regulations necessary for the implementation of the provisions of this document including:</p> <ol style="list-style-type: none"> 1- A list of accredited verifiers authorized by the Agency or, the Secretary-General of the Agency based on the criteria to be issued by Chairman of the Board of Directors, 2- A schedule of violations and corresponding administrative fines and appeals mechanisms, 3- Processes for resolving disputes between operators and verifiers or other stakeholders, 4- And any other regulation necessary for the effective implementation of this document.

Section 1: Greenhouse gas emissions measurement and reporting requirement

Step 1: Obligation to register

Any existing or new facility carrying out any activity at a Facility operating in a Covered Sector resulting in emissions of any greenhouse gas (GHG) emissions in a reporting year shall register in the register of Facilities held by the Agency

All Facilities holding an Environmental Permit shall be deemed registered at the register of facilities operating in a Covered Sector with immediate effect and shall provide the Agency with a self-generated emissions report produced in accordance with the requirements of EAD Resolution No. 1 of 2024, within the time-period specified in this document. The Agency may request any other information it deems necessary for registration.

The Agency shall maintain, manage and oversee the register of facilities, including those designated as Reporting Facilities.

a. Who is covered by this obligation to register?

Facilities in Abu Dhabi, who produce more than 25,000 tons of CO₂e per year from covered sectors and gasses, as defined – and subject to revisions - by the MRV legislation or EAD regulation.

The gasses to be checked against this CO₂e emission threshold are carbon dioxide and methane

The sectors included are power (electricity and water), oil & gas, petrochemicals, iron and steel, aluminum, cement.

Operators of Facilities operating in Covered Sectors not meeting the Emissions Threshold or in Non-Covered Sectors may voluntarily commit to monitoring, reporting, and verification of their emissions. In this case, the facility shall be treated as a Reporting Facility and shall adhere to the requirements within this guidance.

An operator voluntarily committing to the monitoring and reporting requirements may discontinue its commitment by submitting an application for exemption to the Agency. The application must demonstrate:

- Completion of the requirements for the last reporting period; and

- Sufficient evidence that the Facility emissions fall below the Emissions Threshold or that the Facility operates in a Non-Covered Sector.

b. What should be included in registration?

Any Facility operating in a Covered Sector and not holding an Environmental Permit, shall apply to the Agency for registration by no later than 31 March of the reporting period, according to forms developed by the Agency for this purpose. An application to the Agency for registration shall include:

- an address to which correspondence relating to the application should be sent
- registration number of the operator, its registered address
- the address of the Facility and a description of the site and location of the Facility on it,
- a description of the Facility, the activities to be carried out at the Facility and the specified emissions from those activities,
- a description of the raw and auxiliary materials used in carrying out the activities at the Facility, the use of which is likely to lead to specified emissions,
- The sources of emissions of Covered Emissions from the activities carried out at the Facility
- A self-generated emissions report produced in accordance with the requirements of EAD Resolution No. 1 of 2024 and the Technical Guidance Document (TGD) that was developed by the Agency to support the Resolution No. 1 of 2024
- A non-technical summary of the information referred to above – activities of the facility, materials used and sources of emissions
- any additional information that the operator wishes the Agency to take into account in considering the application, and
- Any other information requested by the Agency deemed necessary for registration

c. Registration to be renewed annually or updated in case of material change

Registration must be renewed annually by submitting an updated application, if registration information has changed, and a self-generated emissions report to the Agency.

Notwithstanding annual renewal of registration, operators shall apply to the Agency to update their registration information by immediately informing the

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Agency, according to forms established for this purpose, in the event that:

- Activities have not begun to be carried out at the Facility
- A regulated activity is no longer carried out at the Facility
- The Operator of the Facility ceases to have control over its operation pursuant to a change in ownership or delegation of authority or otherwise.
- Any significant changes occurring to the Facility by way of installation or de-commissioning of technical units, re-location of the Facility site, change in the nature or functioning or an extension of the Facility
- Changes in the level of emissions affecting the Emissions Threshold
- Any other change to the information submitted for registration

The Agency may update the registration at any time if it considers that it is necessary and/or if the Operators fails to apply for updating the registration as required above.

The updated registration is given effect by the Agency giving a notice to the operator of the Facility setting out the variations and/or updates to the registration.

Step 2: Calculation & monitoring of emissions post-registration

Each operator of a Reporting Facility shall monitor greenhouse gas emissions on the basis of a monitoring plan, taking into account the nature and functioning of the Facility to which it applies.

Each operator of a Reporting Facility shall develop and submit a detailed monitoring plan to the Agency within 90 days from the date of registration of the facility, and subsequently by 1st April of each year. The monitoring plan shall be subject to an external audit by an accredited verifier to ensure compliance with the regulatory requirements. The audit report must be submitted to the Agency along with the monitoring plan.

The monitoring plan shall be supplemented by written procedures which the operator establishes, documents, implements and maintains for activities under the monitoring plan, as appropriate. The monitoring plan shall describe the instructions to the operator in a logical and simple manner, avoiding duplication of effort and taking into account existing systems in place at the Facility or used by the operator.

Operators are required to revise their monitoring plans in the event of significant changes in operations,

methodologies, or regulatory requirements. Revised plans must be submitted to the Agency within 30 days of the change. The Agency shall review any subsequent revisions to the monitoring plan to ensure that the plan meets all regulatory requirements.

a. Contents of monitoring plan

The monitoring plan shall include:

- Description of the Facility
- Methods and standards for measuring and calculating greenhouse gas (GHG) emissions
- Data sources and data collection procedures
- Measurement equipment
- Quality assurance and quality control (QA/QC) measures
- Procedures for data management and record-keeping
- Identification of potential sources of emissions and corresponding monitoring methodologies

This should be done by partially completing the data gathering template excel with the above details. A blank template can be found in the Appendices.

b. Methods and Standards for Measuring Emissions

The methods and standards for measuring GHG emissions are detailed in Appendix 1. These guidelines shall be mandatory for all facilities required to measure and monitor emissions under this document. These methods must comply with internationally recognized standards and best practices. The Agency may issue additional guidelines covering other types of emissions.

For the purposes of a monitoring plan, please use either a calculation-based or measurement-based methodology. Where either approach proves not feasible, a fallback approach (including justification) may be used.

Under a standard methodology (the calculation approach) operators shall use, where possible, local and technology specific emission factors to multiplied by activity data to obtain emission levels. They may defer to international guidelines (e.g., IPCC) where local factors are not available.

A measurement-based methodology where emissions are determined by continuous measurement of concentration of GHG can also be used.

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Step 3: General principles applicable for monitoring and reporting of emissions

Operators shall abide with the following general principles applied to monitoring and reporting:

- Monitoring and reporting shall be complete and cover all Emissions belonging to activities of Facilities in Covered Sectors, while avoiding double-counting
- Operators shall take appropriate measures to prevent any data gaps within the reporting period
- Monitoring and reporting shall be consistent and comparable over time. To that end, operators shall use the same monitoring methodologies and data sets, over reporting periods, subject to changes and derogations approved by the Agency
- Operators shall obtain, record, compile, analyse and document monitoring data in a transparent manner that enables the reproduction of the determination of emissions by the verifier and the Agency
- Operators shall ensure that emission determination is neither systematically nor knowingly inaccurate. They shall identify and reduce any source of inaccuracies as far as possible. They shall exercise due diligence to ensure that the calculation and measurement of emissions exhibit the highest achievable accuracy
- Operators shall enable reasonable assurance of the integrity of emission data to be reported. They shall determine emissions using the appropriate monitoring methodologies set out in this document
- Operators shall take account of the recommendations included in the verification reports in their consequent monitoring and reporting

a. Annual reporting requirements:

The operator of a Reporting Facility shall submit to the Agency by April 1 of each year an emissions report that covers the annual emissions of the Reporting Facility in the reporting period and that is verified in accordance with the requirements of this guidance document.

The format and content of emissions reports is detailed in Appendix 1. These guidelines shall be mandatory for all facilities required to measure and monitor emissions under this document. These may be updated by the Agency as needed.

Emissions reports must be submitted to the Agency according to the following process and method of submission

Completed excel reports and verification documents will be emailed to EAD at the email address on the page where this document can be downloaded.

b. Minimum requirements to follow:

Emissions reports must include, at a minimum:

- Total GHG emissions for the reporting period. Additional emission types, including air pollutants, may be integrated into the reporting framework upon issuance of specific guidelines by the Agency, including abiding and referencing the Technical Guidance Document (TGD) that was developed by EAD to support the self-reporting of environmental data including the air emission and other types of releases.
- Emissions data by source and type of GHG.
- Methodologies used for data collection and calculation.
- Any deviations from the monitoring plan.
- Verification statement from an accredited verifier.

Beyond these minimum requirements please, where possible, ensure robustness of data reported and provide as much detail as possible. This may, for instance, take the form of detailed reporting of activity data, specifying confidence / uncertainty levels where possible, and providing any additional information that would aid reporting. This would also assist the Agency in the internal verification of emissions estimation and consistency of information.

Step 4: Verification of data reported

All emissions reports must be verified by an accredited verifier to ensure accuracy and compliance with the regulatory requirements. The objective of verification is to conclude with a high degree of certainty that the operator reported data are free from inconsistencies and collected according to the monitoring methodology approved by the Agency.

All emissions reports shall be audited by an accredited verifier who is accredited pursuant to the standards of the International Organization for Standardization (ISO) governing requirements to be met by verifiers, specifically ISO (14065: 2021) specifying the principles and requirements for bodies performing validation and verification of environmental information statements, or any subsequent edition or update of that standard, or any other relevant ISO standard that may be introduced.

The accredited verifier should have an accreditation of International Organization for Standardization under ISO 17029 Conformity assessment — General principles and requirements for validation and verification bodies, or any subsequent edition or

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update of that standard, or any other relevant ISO standard that may be introduced.

Verification report shall be issued to the operator by the accredited verifier upon fulfilment of the requirements stipulated in this Article. The operator shall submit the verification report to the Agency together with the operator's report.

a. Verification requirements:

The verification process shall include a thorough review of the monitoring plan, methodologies, emissions data, and supporting documentation. Operators should provide the verifier with sufficient information so that they can plan and carry out the verification activities as required by the provisions of this document. The verifier should gather sufficient information and evidence during the verification process to issue a verification report with reasonable assurance.

Verification Activities and Process

- The accredited verifier must determine, for each verification engagement requested, the time allocation needed to properly carry out the verification.
- The verification activities should begin during the year being reported on, rather than after the year has ended, and no later than the middle of that year.
- The accredited verifier must conduct a site visit at one or more appropriate times during the verification process.
- The accredited verifier must draft the verification report. The requirements for the content of the verification report shall be issued by the Agency.

b. Obligations of accredited verifiers

- Accredited verifiers shall establish, document, implement and maintain one or more procedures for verification activities and shall design, document, implement and maintain a management system in accordance with ISO 14065, or any subsequent edition or update of that standard, or any other relevant ISO standard that may be introduced
- Accredited verifiers shall maintain and manage records, including records on the competence and impartiality of personnel, to demonstrate compliance with this guidance, shall make the information available to the operator and other relevant parties and shall safeguard the confidentiality of information obtained during the verification in accordance with the ISO 14065, or any subsequent edition or update of that standard,

or any other relevant ISO standard that may be introduced

- The accredited verifier shall be independent from the operator and impartial in carrying out its verification activities. The verifier and any part of the same legal entity shall not be an operator, the owner of an operator or owned by them, nor shall the verifier have relations with the operator that could affect its independence and impartiality.
- An accredited verifier cannot perform verification activities or issue verifications reports for the same facility for more than six consecutive years. The accredited verifier will take two consecutive years break from the facility
- By no later than 1st July of each reporting year, the accredited verifier must notify their planned verifications to the Agency

c. Grace period for new facilities to gain exemption from verification

Facilities that have commenced operations within 24 months preceding the end of the applicable reporting period shall be classified as new facilities for the purposes of this document.

New facilities meeting the Emissions Threshold shall be exempt from the verification requirement for the reporting periods during their first year of operation.

Facilities subject to the grace period must submit a verified emissions report in the third year of operation. This report shall cover:

- Emissions data for the preceding reporting period (year 2 of operation)
- Any relevant adjustments or recalibrations necessary for compliance with this regulation

Operators of new facilities must notify the Agency of their operational start date within 90 days of commencing operations to qualify for this exemption.

This exemption applies solely to the verification requirement and does not waive the obligations for:

- Monitoring and data collection during the grace period
- Submission of unverified emissions data as required by this guidance

The Agency reserves the right to revoke the grace period for any facility if significant non-compliance with monitoring requirements is identified during the exemption period.

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Step 5: How to correct any errors and omissions in the emission report

Operators must promptly identify and report any errors or omissions in their emissions reports or monitoring plans to the Agency. Errors or omissions discovered by the operator, verifier, or Agency must be corrected within 30 days from the date of discovery.

Operators are required to submit a corrected emissions report or monitoring plan, including a detailed explanation of the error and the corrective actions taken. The Agency shall review and approve the corrected report or plan within 30 days from the date of submission. All corrections must be documented and retained as part of the operator's records for a minimum of 5 years.

In the event of discrepancies between the emissions data reported by the operator and the data verified by the accredited verifier, the operator must resolve the discrepancies in consultation with the verifier. The operator must submit a revised report addressing the discrepancies within 30 days from the date of notification by the verifier.

If a dispute arises between the operator and the verifier regarding the accuracy of the emissions data or the monitoring plan, the operator may request a review by the Agency. The Agency shall review the dispute and issue a decision within 60 days from the date of the request. The decision of the Agency shall be final and binding.

Failure to correct errors or resolve discrepancies within the specified timeframes may result in administrative penalties, including fines and other enforcement actions.

Step 6: Responsible persons for compliance and mandating compliance

The Chairman of the Abu Dhabi Judicial Department, based on the proposal of the Chairman of the Board of Directors of the Agency, shall issue a decision specifying the Agency's employees who have the status of judicial officers. These officers are authorised to ensure the compliance of registered operators, including inspection, oversight, and auditing of the facilities.

The Agency may take any of the following disciplinary measures to ensure compliance with the requirements of this document:

- Issuing a notice for remedy of the violation, specifying the violation and time for remedy.
- Temporarily suspending the activities of the Facility

- Revoking or suspending the environmental permit granted to the facility
- Temporarily or permanently closing the Facility.
- Publishing the name of the non-compliant person through any means of written, audio, or electronic publication

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Section 2: Frequently Asked Questions (FAQs)

Q1: Where can I get further guidance?

For clarification on terms and methodology, you may refer to the Technical Guidance Document (TGD) that was developed by the Agency to support the Decision No.1 of 2024. When relevant legislation (including impending Abu Dhabi MRV legislation) are created, these should be consulted as priority.

To align with best practices and other jurisdictions, operators may – at their own discretion and risk – consult EU Monitoring and Reporting Regulation (“MRR”) as indicated in the data-gathering tool. Occasional references will also be made to Directive 2003/87/EC (“Directive”), which is the Directive that implements the Regulation. Further useful guidance, including a glossary of key defined terms, can be found in Article 3, MRR: Definitions, and Article 3 of Directive 2003/8.

These should be used for clarification of terms and methodologies. It is important to note that the MRV system does not fully comply with the GHG Protocol, covering only one component under Scope 1. This distinction should be clearly understood by users to avoid confusion and the potential risk of being labeled as engaging in “greenwashing.”

These regulations are not binding in the jurisdiction of Abu Dhabi.

Please note, it is your responsibility to ensure that you are using the latest version of the Regulation and Directive.

Q2: Do you have a preferred form / template for facilities submitting emissions reports?

EAD has prepared the standard format for reporting. The excel for reporting is available from EAD at the email address on the download page for this document.

Q3: What system is used for submitting the report?

Emissions reports must be submitted to the Agency according to the process and method of submission notified by the Agency to the operators. The submission process shall include steps for uploading the report, verification documents, and any additional required information. Evidence for verification may not rely on a meter but on documents such as invoices or calibration certificates.

The current submissions process is via email. The Agency may in future establish a reporting platform in the form of digital system to facilitate the submission, management, and verification of greenhouse gas emissions data from operators.

Q4: What requirements do I need to follow in selecting an accredited verifier?

The accredited verifier should have an accreditation of International Organization for Standardization for the scope of verification including the activities, processes and methodologies for undertaking the verification as per ISO 14064 Standards, or any subsequent edition or update of that standard, or any other relevant ISO standard that may be introduced.

Q5: How do I check if someone is an Accredited Verifier and how do I apply to be a verifier?

The Agency shall annually issue a list of accredited verifiers authorised to perform verification activities and issue verification reports as required by this document. Verifiers shall be included on the list of accredited verifiers by applying to the Agency and providing satisfactory proof the required certifications.

Q6: How do I monitor and report my emissions?

Facilities must follow the Operational Control Approach, as this MRV system is designed to measure emissions from facilities over which operators have operational control. This is especially relevant given the complexity of corporate structures in the UAE

Facilities must monitor emissions through either:

- Calculation based methodology: determining emissions from source streams based on activity data (measured or default values) and recognized calculation factors.
- Measurement based methodology: determining emissions through continuous measurement using instruments at the facility.

If a facility relies on a single meter or gauge to monitor processes (e.g., for power generation or diesel usage in smaller entities like hospitals), the facility should highlight this reliance in its report. Where possible, facilities should reduce dependence on a single monitoring point to improve data accuracy.

6. Sources and references

In designing this document, we have surveyed the following regulations (sorted chronologically by type / level starting from Local Laws, then federal laws then Cabinet Resolutions):

- Law No. (1) of 1974 pertaining to the reorganization of the Governmental Body in the Emirate of Abu Dhabi and its amendments,
- Law No. (2) of 1971 pertaining to the National Advisory Council and its amendments,
- Law No. (16) of 2005, pertaining to the reorganization of the Abu Dhabi Environment Agency and its amendments,
- Federal Decree No. (61) of 1995 concerning the United Nations Framework Convention on Climate Change,
- Federal Law No. (24) of 1999 Concerning the Protection and Development of the Environment and its amendments,
- Federal Decree No. (238) of 2016 Ratifying the Paris Agreement on Climate Change;
- Federal Decree-Law No. (11) of 2024 on the Reduction of Climate Change Effects,
- Cabinet Resolution No. (37) of 2001 Incorporating Regulations into the Implementing Bylaw of Federal Law No. (24) of 1999 Concerning the Protection and Development of the Environment and its amendments,
- Cabinet Resolution No. (67) of 2024 Concerning the National Register for Carbon Credits,
- Decision of the Chairman of the EAD Board of Directors No. 1 of 2024, concerning reporting of environmental data in the Abu Dhabi emirate,
- and based on what was presented to and approved by the Executive Council.

7. Document change history

This document reviewed periodically aligning with the (EAD-CPR-01) Control of Documents Procedure.

Doc. No.	Rev. No.	Rev. Date	Revision Description	Page No.	Approved by
Remarks:					

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Appendix 1: Manual for EAD Template Workbook

1.1. How is the template structured?

The template is organized into four distinct sections, each serving a unique purpose in the data collection process.

1. The first section is introductory in nature, containing a table of contents and this sheet, to enable the end-user to understand the purpose of this document
2. The second section contains identifiers for the site and details of relevant facilities / process streams
3. The third section contains pages for the end-user to fill out calculation methods used and in the event that neither prescribed methods are used, why a fallback approach is chosen. Where the facility has identified methane emissions, there will be a sheet to populate relevant information.
4. The fourth section contains pages to enter any data gaps the end-user anticipates, data assurance and any additional information they wish to provide.

1.2. How do I monitor and report my emissions?

You may use either a calculation-based methodology or a measurement-based methodology.

A calculation-based approach consists of determining emissions from source streams based on activity data obtained by means of measurement systems or laboratory analyses or default values (e.g., multiplying activity data against recognised calculation factors).

A measurement-based methodology consists of determining emissions from emissions sources by means of continuous measurement of the GHG emitted using measurement instruments in your facility and activity data.

Calculation of emissions under the standard methodology (calculation approach)

Under the standard methodology, the operator shall calculate combustion emissions source stream by multiplying the activity data related to the amount of fuel combusted, expressed as terajoules based on net calorific value (NCV), by the corresponding emission factor, expressed as tonnes of CO₂ per terajoule (t CO₂/TJ) consistent with the use of NCV, and the corresponding oxidation factor.

The agency may allow the use of emission factors for fuels expressed as t CO₂/t or t CO₂/Nm³. In such cases, the operator shall determine combustion emissions by multiplying the activity data related to the amount of fuel combusted, expressed as tonnes or normal cubic metres, by the corresponding emission factor and the corresponding oxidation factor.

The operator shall determine process emissions per source stream by multiplying the activity data related to the material consumption, throughput or production output, expressed in tonnes or normal cubic metres, by the corresponding emission factor, expressed in t CO₂/t or t CO₂/Nm³ and the corresponding conversion factor. Where a tier 1 or tier 2 emission factor already includes the effect of incomplete chemical reactions, the oxidation factor or conversion factor shall be set to 1.

For Scope 1 emissions, the 2006 IPCC Guidelines and the GHG Protocol is the reference standard for methods for calculation. Where possible, we encourage the use of higher tiers estimation methods by using country or technology specific emission factors where data is available. In case local or technology specific emission factors are not available, please defer to the IPCC Emission Factor Database ([linked here](#)) as a substitute standard.

Calculation of emissions under the mass balance methodology

Under the mass balance methodology, the operator shall calculate the quantity of CO₂ corresponding to each source stream included in the mass balance by multiplying the activity data related to the amount of fuel or material entering or leaving the boundaries of the mass balance, with the fuel's or material's carbon content multiplied by 3,664 t CO₂/t C.

The emissions of the total process covered by the mass balance shall be the sum of the CO₂ quantities corresponding to all source streams covered by the mass balance. CO emitted to the atmosphere shall be calculated in the mass balance as emission of the molar equivalent amount of CO₂.

For deriving the carbon content from an emission factor, the operator shall use the following equations:

for emission factors expressed as t CO₂/TJ

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$$C = (EF \times NCV) / f$$

for emission factors expressed as t CO₂/t

$$C = EF / f$$

In those formulae, C is the carbon content expressed as fraction (tonne carbon per tonne product), EF is the emission factor, NCV is the net calorific value, and f is the factor 3,664 t CO₂/t C.

The quantity of fuel or material processed during the reporting period shall be calculated as the quantity of fuel or material in stock at the beginning of the reporting period minus the quantity of fuel or material at the end of the reporting period plus the quantity of fuel or material received during the reporting period, minus the quantity of fuel or material moved out of the facility.

Where it is technically not feasible or would incur unreasonable costs to determine quantities in stock by direct measurement, the operator may estimate those quantities on the basis of one of the following:

- data from previous years correlated with output for the reporting period.
- documented procedures and respective data in audited financial statements for the reporting period

Calculation of emissions using a measurement based methodology

A measurement-based methodology shall consist in determining emissions from emission sources by means of continuous measurement of the concentration of the relevant greenhouse gas in the flue gas and of the flue-gas flow, including the monitoring of CO₂ transfers between installations where the CO₂ concentration and calculation-based methodology is applied, the operator shall for each source stream define, in the monitoring plan, whether the standard methodology or the mass balance methodology is used.

Further, please consult where appropriate the Technical Guidance Document (TGD) developed by the Agency to support the self-reporting of environmental data including the air emission, GHGs and other types of releases.

1.3. How do I fill out this template?

Step 1: Gather all identifying information relating to your facility

Include the following information and fill it out in **Sheet 2C1_Identifiers**

Description of your facility (including your permit number)

Contact details of the GHG manager / person-in-charge of the facility

This step is where the activities of a facility are outlined in a manner that allows the regulator or an auditor to clearly understand what are the sources of emissions at the site and where are they key measurement points that are being used to calculate or measure those emissions for reporting.

Step 2: Familiarise yourself with key terms

The template contains terms that might sound similar but have very different meaning. For instance, “emission source” and “source stream” have technically different meaning and this is reflected in the template. For the purposes of the template, the words “tier” and “category” will also have special technical meaning (see step 5 below).

As best as possible, key terms are defined in red and embedded throughout the template but if in doubt please consult the list below:

1) ‘activity data’ means data on the amount of fuels or materials consumed or produced by a process relevant for the calculation-based monitoring methodology, expressed in terajoules, mass in tonnes or (for gases) volume in normal cubic metres, as appropriate;

(2) ‘source stream’ means any of the following: (a) a specific fuel type, raw material or product giving rise to emissions of relevant greenhouse gases at one or more emission sources as a result of its consumption or production; (b) a specific fuel type, raw material or product containing carbon and included in the calculation of greenhouse gas emissions using a mass-balance methodology;

(3) ‘emission source’ means a separately identifiable part of an installation or a process within an installation, from which relevant greenhouse gases are emitted or, for aviation activities, an individual aircraft;

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- (4) 'uncertainty' means a parameter, associated with the result of the determination of a quantity, that characterises the dispersion of the values that could reasonably be attributed to the particular quantity, including the effects of systematic as well as of random factors, expressed in per cent, and describes a confidence interval around the mean value comprising 95 % of inferred values taking into account any asymmetry of the distribution of values;
- (5) 'calculation factors' means net calorific value, emission factor, preliminary emission factor, oxidation factor, conversion factor, carbon content, biomass fraction or unit conversion factor;
- (6) 'combustion emissions' means greenhouse gas emissions occurring during the exothermic reaction of a fuel with oxygen;
- (7) 'reporting period' means a calendar year during which emissions have to be monitored and reported;
- (8) 'emission factor' means the average emission rate of a greenhouse gas relative to the activity data of a source stream or a fuel stream assuming complete oxidation for combustion and complete conversion for all other chemical reactions;
- (9) 'oxidation factor' means the ratio of carbon oxidised to CO₂ as a consequence of combustion to the total carbon contained in the fuel, expressed as a fraction, considering carbon monoxide (CO) emitted to the atmosphere as the molar equivalent amount of CO₂;
- (10) 'measurement system' means a complete set of measuring instruments and other equipment, such as sampling and dataprocessing equipment, used to determine variables such as the activity data, the carbon content, the calorific value or the emission factor of the greenhouse gas emissions. It is also possible, in lieu of a measuring instrument or meter, that a document (e.g., an invoice or calibration verification) is used.
- (11) 'fugitive emissions' means irregular or unintended emissions from sources that are not localised, or too diverse or too small to be monitored individually

Step 3: Description of the installation and its activities (including site diagram)

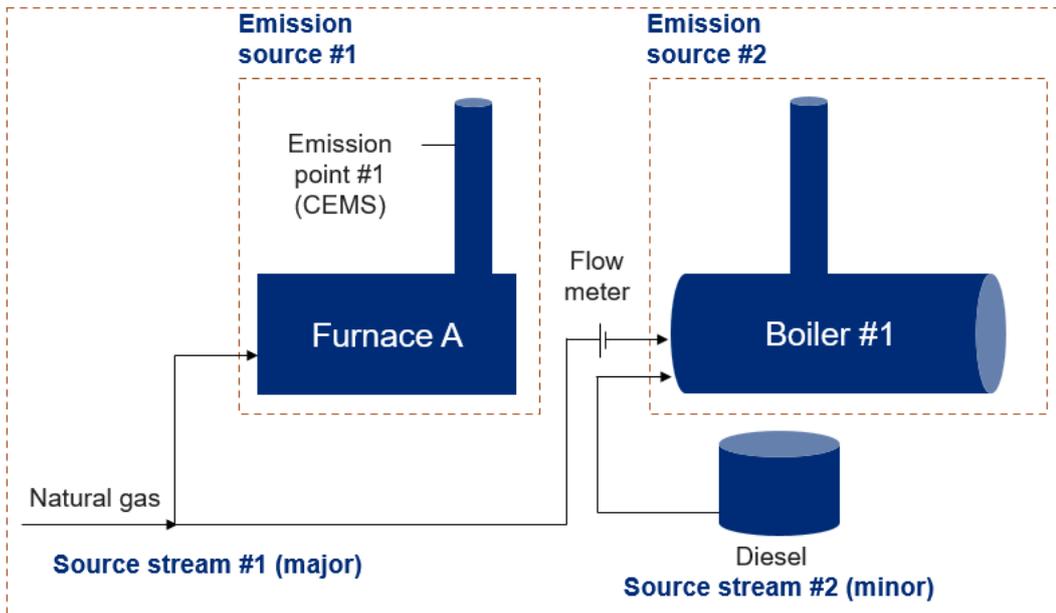
Please provide here a brief outline description of the site and the installation, and describe the location of the installation on the site. Please include a non-technical summary of the activities carried out at the installation, briefly describing each activity performed and the technical units used within each activity. In particular, the description should also identify and explain any part(s) of the installation which are not operated by the applicant, or parts which are not deemed to fall under the scope of the scheme. This description must be sufficient for demonstrating that neither data gaps nor double counting of emissions occur.

This description should provide the linking information which is needed to understand how the information given in other parts of this template are used together for calculating the emissions. It is recommended that a diagram of the emission sources, source streams, sampling points and metering equipment be included where such diagram simplifies describing the installation or referencing emission sources, source streams, measuring instruments and any other parts of the installation relevant for the monitoring methodology including data flow activities and control activities. Any later reference to a source, stream or measurement point should be identifiable on this diagram. Where a diagram is omitted from a sufficiently simple facility, the agency may later request it be created.

Example visualization of a site's mapped activities

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Example facility



A facility may have multiple streams existing on site but in practice not all are material contributions to emissions and less stringent standards may be applied in order to reduce monitoring requirements.

Operators may review the relative contribution of individual source streams to the total of all monitored emissions and classify the smallest as 'de-minimis' or 'minor':

- **De-minimis:** source streams that are jointly <1 kT CO₂e or <2% total, up to a limit of 20 kT CO₂e, whichever is higher
- **Minor:** source streams that are jointly <5 kT CO₂e or <10% total, up to a limit of 100 kT CO₂e, whichever is higher
- **Major:** all other source streams.

Examples of minor or de-minimis sources would be:

- Stand-by power generation sources that are activated at a low frequency for maintenance and testing.
- Equipment at infrequently used locations

This is required to be done for the monitoring plan. Processes and procedures for how the measurement devices to be used for reporting will be maintained in good order should also be included. This is to demonstrate that the readings taken from those devices will be correct when used in the reporting.

Step 3: Fill out the summary table

To aid the EAD in its data collection, we have included a summary table in the template in **Sheet 2c2_Facility Description**. This summary table requires you to quantify at a high level your static and dynamic data, and any relevant activity data. It will also ask you to estimate, in aggregate, your annual emissions level for this particular facility (**not your whole entity**).

- **Static data** includes information on emission sources and/or site which does not change frequently
- **Dynamic data** captures time-variant information like production volumes and operational details that affect emissions

For the purposes of this template, the majority of the collection will pertain to dynamic data. However, please fill out both your dynamic and static data in this summary worksheet. Identify in the drop down boxes of section (e) of sheet 2c2 which calculations will be completed and the relevant sheets to complete will be identified:

- Calculation approach for CO₂ - sheet 3d1 and 3d2
- Measurement approach for CO₂ - sheet 3e1 and 3e2
- Fall-back approach - sheet 3f

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- Methane emissions - sheet 3g

Please align any inputs you place in this sheet (2c2) with inputs you place in the remainder of the template and if applicable, any inputs provided to the National-level MRV and avoid inconsistencies.

Step 4: Select a monitoring approach to be followed and include relevant information for each approach

As above, you may choose between a calculation-based or measurement-based approach. Either approach will require you to provide information on your source stream and the relevant uncertainty level you attribute to these source streams.

Where you cannot comply with either approach, you may then provide justification as to why a fallback approach is chosen and the monitoring methodologies you use for emission sources or source streams under the fallback approach.

Step 5: Categorise your source stream and emission sources

Whether for calculation or measurement based reporting the approach is to clearly identify the source streams and the data gathering points that allow calculation or measurement. These should be traceable to the schematic provided on sheet 2c1.

For individual source streams & emission sources, you are be required to follow the individual tier requirements which will have their own separate uncertainty requirements

According to best practices, facilities are typically categorised in four Tiers as per the table below

	Tier 1	Tier 2	Tier 3	Tier 4
Tiers for activity data (maximum permissible uncertainty for each tier)	± 7,5 %	± 5 %	± 2,5 %	± 1,5 %

Note this is aligned with category C in EU legislation. The levels A and B referred to in EU legislation are not used.

All facilities should aim to follow the highest Tier possible.

Monitoring methodology not based on tiers ("the fallback methodology")

The operator may use a monitoring methodology that is not based on tiers for selected source streams or emission sources, provided that all of the following conditions are met:

- It is technically unfeasible or would incur unreasonable costs to conduct achieve at least tier 1 under the calculation-based methodology for one or more major source streams or minor source streams or a measurement-based methodology for at least one emission source related to the same source streams
- the operator assesses and quantifies each year the uncertainties of all parameters used for the determination of the annual emissions in accordance with the ISO guide to the expression of uncertainty in measurement (JCGM 100:2008) or another equivalent internationally accepted standard, and includes the results in the annual emissions report.
- the operator demonstrates to the satisfaction of the competent authority that by applying such a fallback monitoring methodology, the overall uncertainty thresholds for the annual level of greenhouse gas emissions for the whole facility do not exceed 7.5 %

Sheet 3f provides a format to detail the fall-back monitoring methodology covering

- a detailed description of the monitoring methodology applied for all source streams or emission sources, for which no tier approach is used.
- a concise description of the monitoring approach, including formulae, used to determine your annual CO₂ or CO₂(e) emissions in the text box below.
- a concise justification for the application of a fall-back approach to the above emission sources
- demonstration that the overall uncertainty for the annual level of greenhouse gas emissions for the whole installation does not exceed 7.5%.

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The agency may request full details of your justification to demonstrate that application of a tiered calculation based method or measurement approach is technically not feasible or would lead to unreasonable costs.

Step 6: Data quality – tiers by approach, calculation factor, fuel and/or material quantity

The below list of available tiers should be used for each activity and parameter (fuel quantity, emission factor etc.).

	Tier 1	Tier 2	Tier 3	Tier 4
Tiers for activity data (maximum permissible uncertainty for each tier)	± 7,5 %	± 5 %	± 2,5 %	± 1,5 %

Where there are reasons why compliance with the prescribed uncertainty level for each tier is not possible, please flag these.

Step 7: Risk assessment: QA/QC measures

In **sheet 4H – Verification and Data gaps**, please specify any data gaps you've encountered and the verification process you used to verify information.

For the verification process, it is expected that a description of the verification methodology applied for all source streams or emission sources will be provided. Reference to the source streams as described on sheet 2c1 should be provided to allow clear identification of which process applies to each source stream where multiple processes or source streams exist.

In the event that there are any data gaps from any of the source streams or measurement approaches, please briefly describe these here with the reasons for their occurrence and their estimated emissions impact.

In **sheet 4I – Management & QA** where possible, please specify any QA/QC measures and procedures on your site – including the relevant management personnel involved.

For those with responsibilities for monitoring and reporting emissions from the installation, identify the relevant job titles/posts and provide a succinct summary of their role relevant to monitoring and reporting.

For the procedures used to ensure quality assurance of measuring equipment provide a brief description that identifies how all relevant measurement equipment is calibrated and checked at regular intervals, if applicable, and how non-compliance with the required performance is dealt with.

For the procedures used to ensure regular internal reviews and validation of data the brief description should outline the review and validation process that includes a check on whether data is complete, comparisons with data over previous years, comparison of fuel consumption reported with purchase records and factor obtained for fuel suppliers with international reference factors, if applicable, and criteria for rejecting data.

For individual procedures, details expected are

- Title of procedure
- Reference for procedure
- Diagram reference (where applicable)
- Brief description of procedure
- Post or department responsible for the procedure and for any data generated
- Location where records are kept

Step 8: Add additional information and be ready to clarify anything

In **Sheet 4J – Additional Information**, please include anything you find relevant that has not been covered by inputs in your worksheet. Where there are any inconsistencies (e.g., between national and sub-national inputs) please also flag these.

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Space is provided to describe any use of carbon removal programs (e.g., carbon offsetting, carbon capture programs) and any additional information on how emissions are reduced. If these methods comply with relevant guidelines (e.g., IPCC Guidelines) please note which guidelines are applicable.

1.4. What should I do with the reporting template once I have filled it out?

Where there are any changes or modifications to the contents of this document once submitted (including changes to your methodology), please notify the EAD. You should also regularly check if the contents of this document are up to date and your facility is functioning as you declare it is and record and declare any modifications.

Each operator shall regularly check whether the monitoring plan reflects the nature and functioning of the facility. The operator shall inform the agency of any changes planned in the nature or functioning, or an extension, of the facility which may require updating of the document. The agency or a verifier may offer suggestions for how the monitoring methodology can be improved and the operator should account for these through action or explanation why no action is taken.

The operator shall notify the agency of any proposals for modification of the monitoring plan without undue delay. Any significant modification of the monitoring plan as mentioned above shall be subject to approval by the agency. Where the agency considers a modification not to be significant, it shall inform the operator without undue delay.

While awaiting approval from the agency the operator may carry out monitoring and reporting using the modified monitoring plan where it can reasonably assume that the proposed modifications are not significant, or where monitoring in accordance with the original monitoring plan would lead to incomplete emission data. In case of doubt, the operator shall use in parallel both the modified and the original monitoring plan to carry out all monitoring and reporting in accordance with both plans, and it shall keep records of both monitoring results.

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Appendix 2: EAD Excel template to be filled by operator



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