EUROPEAN COMMISSION

DG Environment

EU Environmental Technology Verification pilot programme

General Verification Protocol

Version 1.2 – July 27th, 2016

Table of Contents

List of figures and tables

List of references

International Standardization Organisation. General criteria for the operation of various types of bodies performing inspection. ISO/IEC 17020.

International Standardization Organisation. General requirements for the competence of testing and calibration laboratories. ISO/IEC 17025.

Joint Committee for Guides in Metrology. International vocabulary of metrology – Basic and general concepts and associated terms (VIM) 3rd edition - 2008 version with minor corrections. JCGM 200:2012.

Part A: Environmental Technology Verification (ETV) pilot programme

A.I Introduction

Europe and the rest of the world are confronted with urgent environmental challenges such as climate change, the unsustainable use of resources and loss of biodiversity. Environmental technologies have a role to play in addressing these challenges and, at the same time, can contribute positively to competitiveness and growth.

The objective of Environmental Technology Verification (ETV) is to promote environmental technologies by providing technology developers, manufacturers and investors access to third-party validation of the performance of innovative environmental technologies. This helps manufacturers prove the reliability of their claims, and helps technology purchasers identify innovations that suit their needs. The expected impact on technology markets is acceleration of the acceptance and diffusion of innovative environmental technologies.

At a European level, the European Commission has launched a voluntary scheme for ETV on an experimental basis: the EU ETV pilot programme. This programme is intended for innovative technologies presenting an added value for the environment and ready for the market.

This General Verification Protocol (GVP) supports the development and implementation of this initiative. The GVP consists of three main sections and appendices:

- Part A: Environmental Technology Verification (ETV) pilot programme
- Part B: Verification procedures
- Part C: Quality management
- Part D: Supporting documents (appendices)

The GVP serves as the main technical reference for the implementation of ETV procedures by participating entities as well as the coordination of the programme at a European level.

The purpose of the GVP is to provide the organisational/technical framework and procedures required to support the provision of independent and credible information on new environmental technologies. Performance claims put forward by technology developers and manufacturers are verified as being complete, fair and based on reliable test results. Under ETV, test results produced prior to or during the verification process are thoroughly reviewed in order to assess the performance of the technology against relevant parameters. Mutual recognition of verification results is ensured in the European Union by following the procedures as laid down in the GVP.

ETV is not typically used for well-established technologies. In addition, companies willing to prove the compliance of their technology with a product standard are directed to product certification, as defined by the ISO/IEC Standard 17065 and implemented by certification bodies accredited to fulfil the requirements of this standard[1].

[1] ISO/IEC 17065 supersedes EN 45011/ISO/IEC Guide 65. The transition period extends to 1 September 2015.

ETV is recommended for technologies when innovative features or technical/environmental performance are not fully reflected in existing product standards. For example, an innovative wastewater treatment technology might produce higher quality effluent whilst using less energy than current technologies. ETV would consider many performance parameters together including energy consumption, enabling a useful comparison with relevant alternatives.

ETV focuses on parameters quantifiable and measurable through testing that are related to the performance of a technology and its environmental added value. The environmental added value is considered from a life-cycle perspective, i.e. taking into account the main benefits and impacts during the life cycle of the technology, but with a simplified approach. ETV does not have the same objective or provide the same information as specialised environmental tools based on life-cycle information such as Life-Cycle Analysis (LCA), Environmental Product Declaration (EPD) or Product Environmental Footprint (PEF).

The EU ETV pilot programme embeds adequate standards of quality into the procedures. Organisations undertaking the verifications under ETV pilot programme, hereafter referred to as 'Verification Bodies', must be accredited by national accreditation bodies, using the ISO/IEC Standard 17020 for type A inspection bodies. The GVP must be integrated in the documentation describing the accredited inspection activities of Verification Bodies. In other terms, the GVP defines an inspection scheme with the meaning of ISO/IEC 17020.

A.I.1 Scope

An innovative environmental technology may be presented for verification under the EU ETV pilot programme by any legal entity established within or outside of the European Union, hereinafter referred to as 'the proposer', if the technology fulfils the following criteria:

- It corresponds to the definition of an innovative environmental technology provided under Appendix 1 'Glossary of terms and definitions' with the potential to contribute to efficient use of natural resources and a high level of environmental protection;

- It belongs to one of the technology areas contained in Appendix 2 'List of technology areas in the EU ETV pilot programme';

- It is ready for the market or is already commercially available.

A.II Entities in the EU ETV pilot programme

The entities involved in the EU ETV pilot programme fall into two main groups. Those in the main organisational framework for the management of the programme and those involved in the individual verifications as shown in Figure 1.

Main entities and relations are described subsequently.

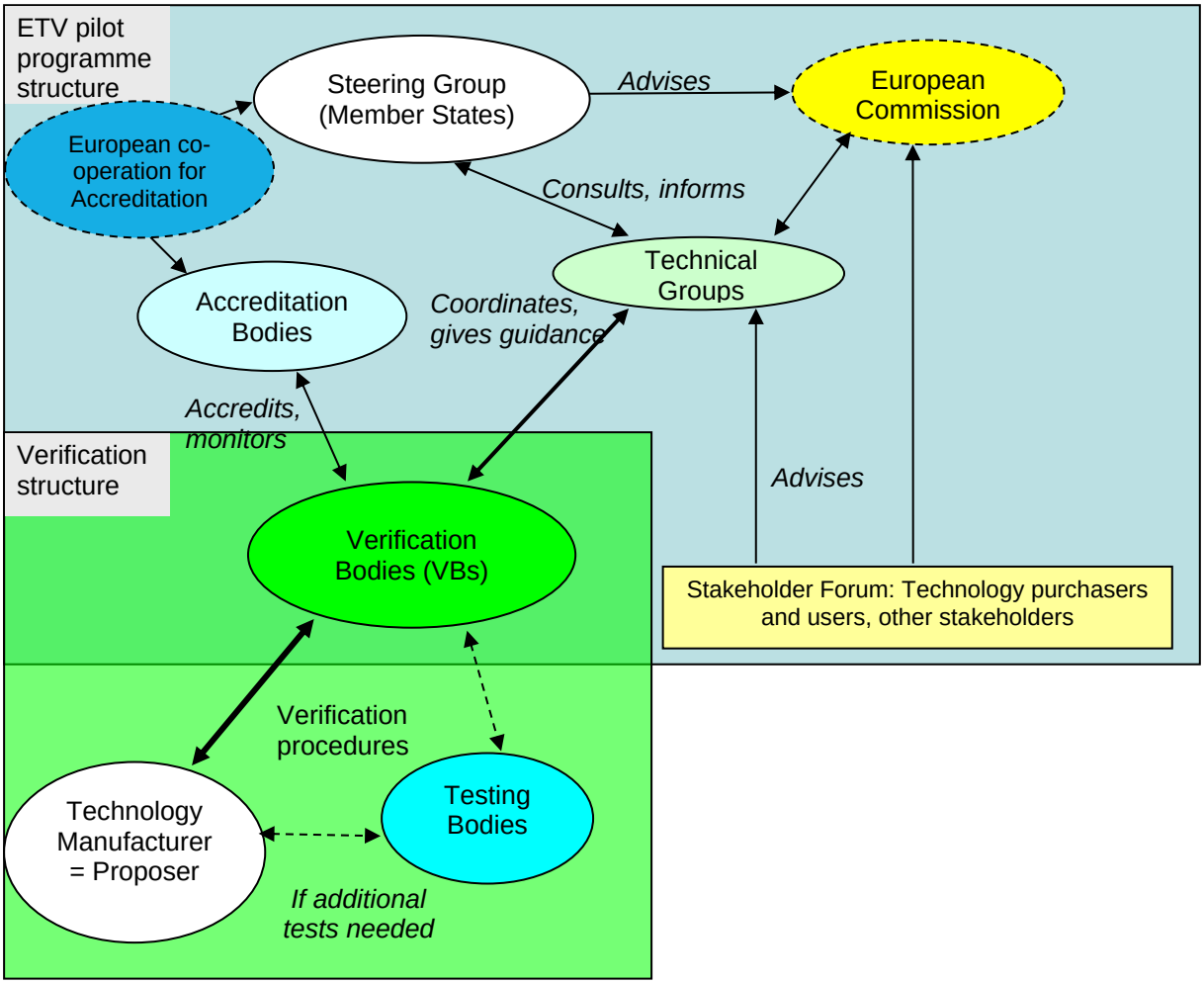

Figure 1 – EU ETV pilot programme entities and relationships

A.II.1 European Commission

The Commission services ensure the overall co-ordination and supervision of the EU ETV pilot programme. The Commission services convene and chair the Steering Group and the Technical working groups. In consultation with the Steering Group, they define the rules governing the programme, including the GVP and the technology areas covered. The Commission services register and publish the Statements of Verification issued by accredited Verification Bodies, or delegate the registration to another body. Where appropriate, the Commission services will also consult with the European co-operation for Accreditation (EA) on matters relating to the harmonisation of accreditation procedures, consistency of verification procedures across EA member bodies and mutual recognition of Statements of Verification.

A.II.2 Steering Group

A.II.2.1 Qualification and nomination

A Steering Group composed of representatives of the participating EU Member States will assist the Commission services in the implementation of the EU ETV pilot programme. European Free Trade Association (EFTA) countries that are members of the European Economic Area (EEA) and third countries having signed an Association Agreement with the European Union are also eligible to participate in the Steering Group.

The Steering Group may accept representatives of non-participating countries and international organisations as observers, as appropriate.

A.II.2.2 Roles and responsibilities

In particular, the Steering Group will advise the Commission services on:

- Ensuring the due recognition of Verification Bodies in all ETV participating countries and the acceptance of ETV 'Statements of Verification' in all relevant markets;
- The technology areas covered by the EU ETV pilot programme;
- The General Verification Protocol and other reference documents where appropriate;
- The activities of Technical Working Groups, in particular on guidance documents;
- The evaluation of the EU ETV pilot programme;
- Any other subject, such as the participation of small and medium-sized enterprises, relevant to the programme.

A.II.3 Verification Bodies

A.II.3.1 Qualification

A Verification Body shall:

1. be established under national law and have legal personality;
2. be accredited to comply with the requirements of ISO/IEC 17020. The Verification Body shall be considered an inspection body within the meaning of ISO/IEC 17020. The GVP shall be part of the documentation describing the inspection activities of the Verification Body. The technical scope of these inspection activities shall cover one or more of the technology areas listed in Appendix 2, or a subdivision of these areas such as the examples of technology groups or applications also given in Appendix 2;

   The maintenance of accreditation under ISO/IEC 17020 shall include annual surveillance of compliance to the requirements of the GVP;
3. be a third-party body independent of the proposers and of any other interested party interested in the verification. The Verification Body should meet the requirements for Type

A inspection bodies as defined in the normative Annex A of ISO/IEC 17020. A body belonging to a business association or professional federation representing undertakings involved in the development, manufacturing, provision, use or maintenance of environmental technologies, may, on condition that its independence and the absence of any conflict of interest are demonstrated, be considered such a body;

4. not be directly involved in the design, manufacture or construction, marketing, installation, use or maintenance of the specific environmental technologies submitted to this body for verification, or represent the parties engaged in those activities. This pertains to the Verification Body, its top-level management and the personnel responsible for carrying out verification tasks. This shall not preclude the use of environmental technologies that are necessary for the operations of the Verification Body or the use of environmental technologies for personal purposes;

5. not engage in any activity that may conflict with their independence of judgment or integrity in relation to verification activities for which they are selected. This pertains to the Verification Body, its top-level management and the personnel responsible for carrying out verification tasks and shall apply to consultancy services;

6. ensure that the activities of their subsidiaries or subcontractors do not affect the confidentiality, objectivity or impartiality of their verification activities;

7. carry out the verification activities with the highest degree of professional integrity and the requisite technical competence in the specific field and shall be free from all pressures and inducements, particularly financial, which might influence their judgement or the result of their verification activities, especially as regards persons or groups of persons with an interest in the results of those activities;

8. be capable of carrying out all the tasks assigned to it as described in section A.II.3.3 *Roles and responsibilities* in the technology groups for which it is accredited, whether those tasks are carried out by the Verification Body itself or by another entity on its behalf and under its responsibility;

9. have in place a system of Quality Management and Quality Assurance documenting, coordinating and monitoring the measures taken to ensure that verification activities are implemented in conformity with the requirements of Part C of the GVP. In particular, at all times and for each verification procedure and each technology group for which it has been accredited, a Verification Body shall have in place:

    - the necessary personnel with the relevant technical knowledge and sufficient and appropriate experience to perform the verification tasks;

    - the necessary agreements or conventions ensuring the availability of the personnel concerned in ETV procedures where these include external experts;

    - descriptions of procedures in accordance with which verification is carried out, ensuring the transparency and the ability of reproduction of those procedures. It shall have appropriate policies and procedures in place to distinguish between tasks it carries out as a Verification Body and any other activities;

    - appropriate recording and reviewing procedures of the products of verification activities ensuring their high level of quality and reliability.

Documents referred to above shall be made available on request to the relevant services of the European Commission and of national administrations.

10. ensure that the personnel responsible for carrying out verification activities have the following qualifications and skills:

    - sound technical and vocational training covering all the verification activities in relation to which the Verification Body has been selected;

    - satisfactory knowledge of the requirements of the verification procedures they carry out and adequate authority to carry these out;

    - appropriate knowledge and understanding of the potential environmental impacts associated with the use of technologies in relation to which the Verification Body is accredited, throughout the life cycle of related products, of key environmental aspects of these technologies and of the main technical factors influencing environmental impacts;

    - expertise in test methods; appropriate knowledge of statistical methods used in the context of tests and related calculations;

    - appropriate knowledge of the market aspects of the technology groups for which it is accredited, including users' needs and usual practices in the sector, main actors, and the regulatory framework;

    - the ability to draw up reports, records and Statements of Verification demonstrating that verification procedures have been carried out and ETV requirements have been satisfied.

11. guarantee impartiality when carrying out verification activities. This pertains to the Verification Body, its top level management and the personnel responsible for carrying out verification tasks;

    The remuneration of the top-level management of Verification Bodies and personnel responsible for carrying out verification activities shall not depend on the number of verifications carried out or on the results of those verifications.

12. take out liability insurance for verification activities;

13. observe professional secrecy with regard to all information obtained in carrying out their tasks during verification activities according to part B of the GVP, except in relation to the Commission, the European Court of Auditors, the Technical Working Groups as defined in A.II.4 and to the competent authorities of the Member States in which its activities are carried out. Proprietary rights shall be protected;

14. shall ensure that any subcontractor or subsidiary undertaking specific tasks connected with the verification meets the requirements set out in items 3 to 13 and shall inform the Accreditation Body accordingly. Activities may be subcontracted or carried out by a subsidiary only with agreement of the proposer;

15. take full responsibility for the tasks performed by subcontractors or subsidiaries wherever they are established. Verification Bodies shall keep at the disposal of the Commission services, the competent authorities of the Member States in which its activities are carried

out and the Accreditation Body the relevant documents concerning the assessment of the qualifications of the subcontractor or the subsidiary and the work carried out by them under *section A.II.3.3 Roles and responsibilities.*

Where a Verification Body demonstrates its conformity with the criteria laid down in the harmonised standards relevant for conformity assessment bodies or part thereof the references of which have been published in the *Official Journal of the European Union*, it shall be presumed to comply with the requirements set out in items 1 to 15 in so far as the applicable harmonised standards cover those requirements.

A.II.3.2 Nomination

Verification bodies are considered nominated under the EU ETV pilot programme when accredited by national accreditation bodies to perform verification activities for specified groups of technologies as defined in Annex 2 to the GVP.

Verification bodies shall inform the Commission services of their accreditation, of the renewal or non-renewal of accreditation and of any other information related to their accreditation status regarding ETV, providing relevant documentation where appropriate.

A.II.3.3 Roles and responsibilities

Verification bodies shall implement the GVP for the technology scope for which they are accredited following any guidance provided by the Technical Working Groups. This includes in particular:

- Receiving and processing proposals for verification in their technical scope, up to the publication and post-verification phases;
- Ensuring compliance with the quality management requirements and general test requirements of the GVP of any test bodies involved in their verifications, as provided under A.II.6.1, taking account of the possible accreditation or certifications of the test bodies;
- Where appropriate, requiring or validating test methods, witnessing tests, assessing and accepting test data provided by a test body, or by the proposer in case of in-house testing, as compliant with the requirements set in the GVP and the specific verification protocol;
- Participating in the Technical Working Groups relevant for their technology scope, including contributing actively and loyally to their activities and products, and sharing relevant information required by the work of the groups, including quick scans, specific verification protocols, draft and final verification reports and draft Statements of Verification developed under ETV;
- Providing technical advice to the proposers, in particular to the small and medium-sized enterprises applying to the EU ETV pilot programme, in the context of ETV procedures and in particular as regards the definition of the performance claim, choice of test bodies and use of the Statement of Verification, within the limits acceptable under A.II.3.1, Paragraph 4;
- Reporting annually to the Commission services and the national accreditation body on the activities implemented in the framework of the EU ETV pilot programme, including on post-verification as provided under B.VIII.

A.II.4 Technical Working Groups

A.II.4.1 Qualification

Technical Working Groups, with a minimum of one for the EU ETV pilot programme, are established in order to harmonise the implementation of ETV procedures by Verification Bodies and to ensure the same level of performance in terms of verification results, in particular Statements of Verification.

The members of the Technical Working Groups shall meet the requirements of independence, absence of conflicts of interest, professional impartiality and professional secrecy, as required from the personnel of Verification Bodies under Section A.II.3.1 'Qualification', paragraphs 4, 5, 7, 11 and 13. Those members of the Technical Working Groups not employed by Verification Bodies shall provide an undertaking covering these requirements.

A.II.4.2 Nomination

The Technical Working Groups altogether shall include at least one representative of each Verification Body and a similar number of other experts, the list of which shall be approved by the Commission services after consultation of the Steering Group. The composition of the Technical Working Groups shall be balanced with respect to technical, scientific and market expertise and as far as possible, represent the various parties interested in ETV.

A.II.4.3 Roles and responsibilities

The role of Technical Working Groups is to provide:

- Guidance on the application of ETV procedures, in particular through drafting guidance documents for use by Verification Bodies when implementing the GVP;

- Screening of potential environmental impacts associated with the use of technologies within the scope of the EU ETV pilot programme, throughout their life-cycle; identification of relevant key environmental aspects and technical factors influencing these impacts; drafting of guidance documents summarising the information resulting from this paragraph for use by the proposers and Verification Bodies; for the purpose of this paragraph, the technology areas of ETV may be detailed into groups of technologies or applications as appropriate;

- Exchange of good practices and experiences concerning the implementation of ETV, sharing advice, information on relevant market aspects for the technology area and dialogue with relevant stakeholders, including technology users.

The Technical Working Groups shall regularly inform the Steering Group of their activities and shall consult the Steering Group with respect to guidance documents.

In the case of a disagreement between a verification body and a proposer, another verification body or stakeholder, the relevant Technical Working Group shall give an opinion on specific cases or procedures, at the request of the Commission services or one of the parties concerned.

A.II.5 Accreditation bodies

A.II.5.1 Qualification and nomination

National Accreditation Bodies (NABs) are established under law in each of the Member States in application of Regulation (EC) No765/2008. They shall comply with the requirements of ISO/IEC 17011 and hold signatory status in the Multilateral Agreement for accreditation of inspection bodies to ISO/IEC 17020.

The participation of NABs in the EU ETV pilot programme is co-ordinated by the European co-operation for Accreditation (EA), which ensures EU wide recognition of the procedure for the accreditation of Verification Bodies.

A.II.5.2 Roles and responsibilities

The role of NABs in the EU ETV pilot programme is to accredit Verification Bodies according to ISO/IEC 17020 to implement Environmental Technology Verification as described in the GVP. This ensures:

- the technical competence and capacity of Verification Bodies to implement ETV procedures for specified technology groups;
- that an adequate quality management system is in place, in order to guarantee the required level of quality and reliability for ETV deliverables;
- due recognition of Verification Bodies in the European Union, in order to ensure the acceptance of ETV 'Statements of Verification' in all relevant markets.

A.II.6 Test bodies

Test bodies are organisations responsible for performing and reporting the testing of an environmental technology in accordance with the specific verification protocol.

A.II.6.1 Qualification

The test body or organization of which it is part shall be an entity that can be held legally responsible.

Test bodies shall fulfil the relevant requirements described in Part C *Quality management*, with respect to their role in the verification process (C.I), quality assurance and control for the verification process (C.III), as well as the quality management and general test requirements of the GVP.

The quality management and general test requirements of the GVP are those requirements of ISO/IEC Standard 17025 – 'General requirements for the competence of testing and calibration laboratories', that are considered relevant for the tests to be performed. The Verification Body is responsible for deciding which requirements of ISO/IEC 17025 are relevant and these shall be clearly indicated in the specific verification protocol established for the technology to be tested, in application of Chapter B.IV. A list of requirements that need to be considered is provided in Appendix 10.

The specific verification protocol may add further requirements on tests when this is necessary to ensure the quality of these tests and test data for the technology in question.

Moreover, if tests consist of analyses[2], the test body performing those analyses shall be accredited to applying ISO/IEC 17025 for the relevant analytical methods. Routine analytical quality control data and participation in proficiency tests for the analysis used and the relevant period shall be made available to the Verification Body upon request.

The Verification Body shall control the fulfilment of all requirements of the GVP including the quality management and general test requirements, through a test system assessment in accordance with Part C, including a test system audit where applicable. Where a test body demonstrates its conformity by way of accreditation to ISO/IEC 17025 for the methods of testing and calibration relevant for the verification process, it shall be presumed to comply with the requirements of the GVP for quality management and for general test requirements for those methods.

The staff of the test body shall not be the same as those responsible for the evaluation of the test results in the Verification Body and they shall not be dependent upon these.

In the case where the proposer performs the necessary tests in-house, in accordance with the provisions of Chapter B.V, the proposer shall fulfil the requirements described above for test bodies and this is to be controlled by the Verification Body in the same way.

A.II.6.2 Nomination

In consultation with the Verification Body, test bodies shall be designated by the proposer to perform tests if required. Such consultation is intended to facilitate control of the qualification of designated test bodies. The designation of the test bodies is a decision made by the proposer, even when the Verification Body has itself the qualification to act also as a test body.

The proposer is responsible for contracting with test bodies, and for payment of the services provided by them.

When several test bodies are involved, the Verification Body and proposer may agree that one of the test bodies be given a coordinating role. For example, taking samples and elaborating a general test plan that applies to all test bodies. However each test body remains responsible for applying the requirements set in the GVP, the specific verification protocol and in the test plan where applicable.

A.II.6.3 Roles and responsibilities

A test body is responsible for:

- drafting the test plan, in accordance with the relevant procedures of the GVP, the specific verification protocol and in agreement with the Verification Body and the proposer. When there is a coordinating test body, the verification body and proposer may agree that the coordinating test body drafts an overall test plan that applies to all test bodies. In such case the other test bodies may be exempted from preparing a specific test plan by the Verification Body, if deemed appropriate;

[2] Analyses are distinguished from tests when they follow highly standardized methods, independent of the innovation or specific features of the technology at the origin of the test samples. This concerns for example biological or chemical analysis of water samples and other products.

- performing the tests according to the test plan, ensuring the level of quality required by the specific verification protocol;

- where applicable, performing analyses, ensuring the level of quality assurance required by ISO/IEC 17025;

- drafting the report on tests performed and transmitting it to the proposer and Verification Body. Where applicable, the report of analytical data shall include the relevant uncertainties and limits of detection.

A.II.7 Proposer

A.II.7.1 Qualification

The proposer can be any legal entity or natural person, which can be the technology owner, manufacturer or an authorised representative of either. With consent of technology owners and/or manufacturers, the proposer can be another stakeholder undertaking a specific verification programme involving several technologies (e.g. as part of pre-procurement procedures).

A.II.7.2 Roles and responsibilities

The proposer initiates and supports verification of the technology from the first contact with the Verification Body until completion of the ETV process and use of the Statement of Verification unless the process terminates prematurely. The proposer is responsible for:

- drafting the 'quick scan' and the proposal for verification, providing the information necessary to plan and implement the verification process;

- contracting with the Verification Body and, where appropriate, with test bodies and paying for any contracted services;

- reviewing and approving the specific verification protocol and test plan(s);

- reviewing the test report(s), verification report and Statement of Verification;

- providing timely access to the technology, accessories, user manuals and training for the Verification Body and test bodies;

- complying with the rules for use of the Statement of Verification.

If further tests are needed after assessment of existing test data, the proposer may need to perform the necessary tests in-house, in which case the proposer shall comply with the requirements on qualification described in A.II.6.1 and shall follow the process provided in Chapter B.V.

A.II.8 Stakeholder forum

A.II.8.1 Qualification

Stakeholders with a justified interest in the EU ETV pilot programme may apply to join the stakeholder forum. Stakeholders may include industrial associations, environmental non-governmental organisations, public or private technology centres, organisations representing public or private purchasers of technologies, public authorities, individual companies or persons.

A.II.8.2 Nomination

The Commission services will convene the stakeholder forum with a view to progressively reach a balanced representation of interests.

A.II.8.3 Roles and responsibilities

The stakeholder forum will advise on general issues relevant to the implementation of the EU ETV pilot programme.

Thematic meetings or sub-groups of the stakeholder forum may be convened to advise on specific issues. In particular, sub-groups may advise the ETV Technical Working Groups on the needs of technology users, investors and regulators in specific technology areas.

Part B: Verification procedure

B.I Introduction

The verification procedure is divided in a number of distinct phases. Figure 2 shows the overall procedure[3].

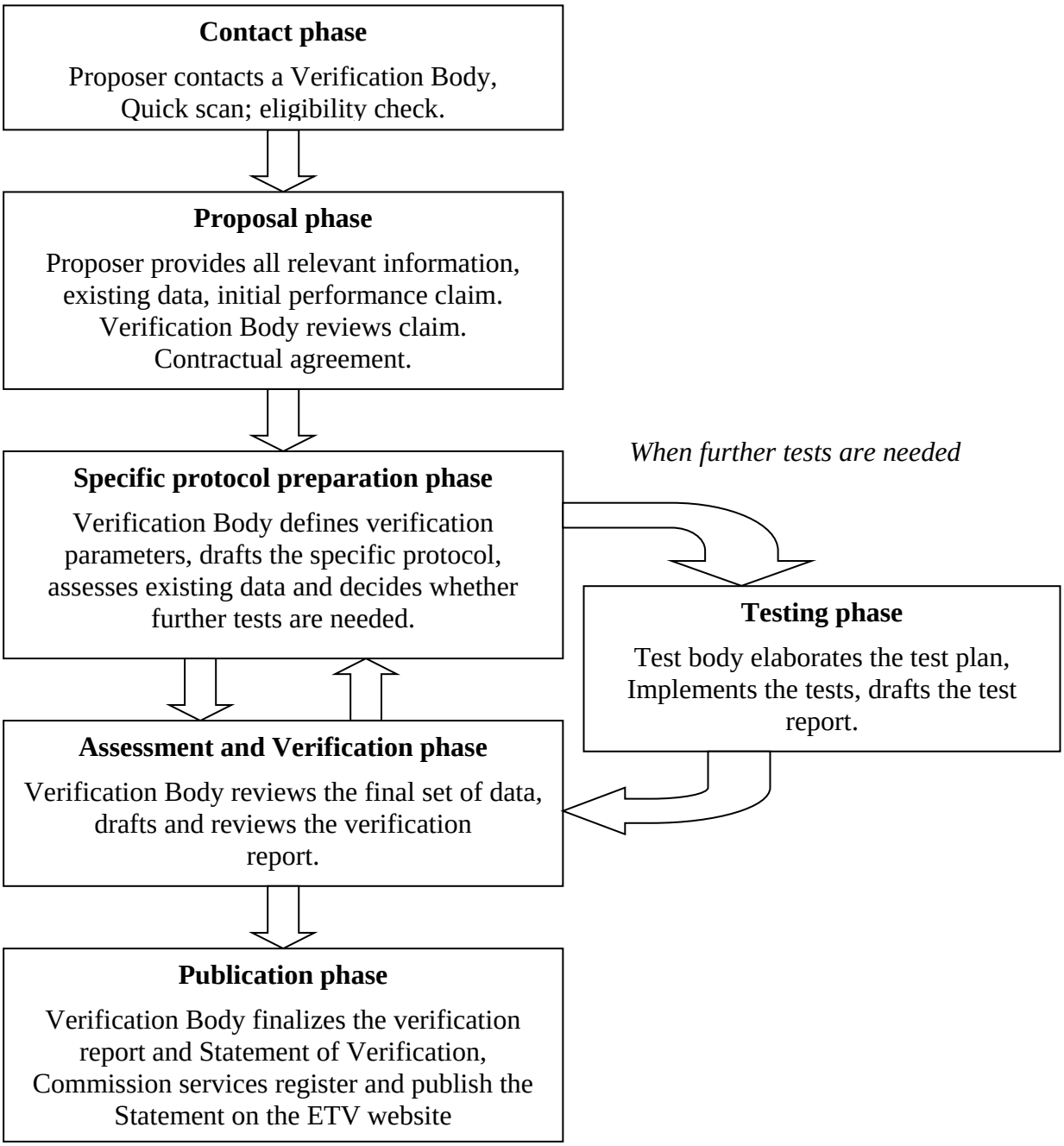

Figure 2: Phases of the EU ETV pilot programme verification procedure

[3] The short description of each step in the boxes is given for illustration only; please refer to the following chapters for the exact requirements.

B.II Contact phase

The starting point for verification is a contact between the proposer and a Verification Body. Many organisations, e.g. national authorities assisting in the development of small and medium-sized enterprises, branch organisations etc may provide general information on ETV. However, for a specific application the information should be checked with a Verification Body competent for the relevant technologies.

B.II.1 Quick scan and eligibility assessment

Before sending a full proposal for verification, the proposer first provides a quick scan document outlining the main characteristics of the technology to be verified, following the template provided in Appendix 3.

The aim of the quick scan is to enable the Verification Body to assess the eligibility of the technology and to give an early indication of the complexity and potential range of costs of a full verification. Where appropriate, the Verification Body provides advice on the drafting and completeness of the quick scan. The Verification Body assess the quick scan using the following eligibility criteria (not necessarily in the order shown):

- Is the technology description sufficiently clear? Are the preliminary elements for the performance claim specific to the technology and verifiable?

- Does the technology fall within the scope of the EU ETV pilot programme technology areas, as provided in Appendix 2? If the technology is in the scope of the programme but not in the accreditation scope of the Verification Body, the proposer will be referred wherever possible to other Verification Bodies whose accreditation scope is likely to include the relevant technology group;

- Is the technology ready for the market, i.e. is the technology available on the market, or if not, is it developed to the extent that no change affecting performance is likely before introduction to the market (e.g. full-scale or prototype scale with direct and clear scale-up instructions)?

- Does the technology present an environmental added value?

- Does the technology meet user needs in terms of functionality, claimed performance and environmental added value?

- Does it perform in line with applicable legal requirements?

- Does it show a sufficient level of technological innovation?

The answer from the Verification Body includes information on the eligibility of the technology and on the corresponding technology area. The Verification Body makes a recommendation on performing a full verification or not and a first indication of the range of costs.

The Verification Body shall exclude a technology from verification if it does not fall within the scope of the EU ETV pilot programme, is not ready to market, or if its performance, environmental added value and innovation levels are insufficient such that inclusion would harm the reputation of the programme. Otherwise, the decision to proceed is made by the proposer, even when the Verification Body does not recommend performing the verification.

B.III Proposal phase

After the contact phase, if the technology is considered to be eligible and if the proposer decides to perform the verification, the second step is the proposal phase, The proposer provides the information needed by the Verification Body to conclude a verification contract and, under the following step, draft the specific verification protocol.

If the information provided at this stage leads the Verification Body to reverse its eligibility assessment, the Verification Body shall inform the proposer of the new assessment and of the consequences for the verification process.

B.III.1 Proposal

The proposer submits a proposal for verification to the Verification Body, following the template provided in Appendix 4.

The proposal shall include:

- The name and address of the proposer and, if the proposal is lodged by the authorised representative of the technology owner or manufacturer, their name and address;
- Technical documentation sufficient for the Verification Body to understand the technology, review the performance claim and assess the conformity of the technology design with the performance claim. It shall contain at least the following elements:
    - a general description of the technology, including its unique identifier e.g. the commercial name under which the technology is or shall be available on the market;
    - any user manuals if available;
    - the conceptual design and, if necessary to explain in more detail, technical or scientific principles, manufacturing drawings and schemes of components, sub-assemblies, circuits, etc. These will be accompanied by descriptions and explanations necessary for the understanding of those drawings and schemes and operation of the technology;
    - where relevant, standards or technical specifications applied in full or in part;
    - results of design calculations made, examinations carried out, etc;
    - test reports, if available, and;
    - a description of the measures taken to ensure the quality and traceability of the technology under normal conditions of production, when the technology is available on the market.
- The intended application of the technology specified in terms of matrix, purpose and technical conditions, as explained in Table 1;

Table 1: Intended application of technology

Matrix	The type of material that the technology is intended for. Matrices could include soil, drinking water, ground water, alkaline degreasing bath etc.
Purpose	The measurable property that is affected by the technology and how it is affected. It is possible to define more than one purpose. The matrix and purpose will translate into performance parameters as described below. Examples include a given reduction of nitrate concentration in wastewater, separation of volatile organic compounds, reduction of energy use (MW/kg) etc.
Technologies	The practical application of the technical or scientific principles in the environmental area to achieve the purpose. The term 'technology' covers a variety of products, processes, systems and services. Examples include a heat exchanger, a recycling process, a membrane technology etc.
Technical conditions	All other information related to the technical conditions of operation or test of the technology for the given matrices and purposes described above. The technical conditions will translate into operational parameters, environmental parameters and additional parameters as described in detail below.

- The initial performance claim consisting of a set of parameters and values:
    - describing the functioning or performance of the technology in the intended application described above, mentioning any relevant assumption made;
    - relating to the technology itself, and not e.g. to the environmental management of the company, to the origin of raw material or to the information provided to users (unless this information is the purpose of the technology);
    - that highlight the advantages and innovative features of the technology, in terms of the environmental added value as well as other advantages relevant for users of the technology;
    - reflecting direct environmental impacts of the technology in the intended application described above and, to the extent possible, relevant indirect impacts on the environment from a life cycle perspective;
    - that are quantifiable and verifiable through tests.
- Available information and data on the environmental added value, focussing on those stages of the technology life-cycle where environmental pressures are significant or significantly different

from a relevant alternative identified for comparison in the case where a relevant alternative is available;

- Supporting evidence for the adequacy of the technology design. This shall mention any document that has been used in, or results from, tests carried out by the proposer or by a test body on his behalf and under his responsibility;

- The legal requirements applicable to the technology in the target market(s) for which the verification is performed and evidence that the technology performs in line with these requirements;

- Any relevant documents (including information on quality assurance and management) from any previous evaluations, verifications or certifications implementing the same or similar procedures to ETV. This will be used by the Verification Body to simplify the ETV procedure for the technology where possible;

- Any additional information on the technology, useful for the user and not included in the initial performance claim above.

The Verification Body shall review the proposal and the initial performance claim on the basis of the technical documentation, implementing:

- the relevant provisions of the General Verification Protocol (GVP);

- where relevant, the guidance prepared by the ETV Technical Working Groups;

and taking due account of:

- appropriate technical standards or reference documents for the related technology group as well as performance of state-of-the-art alternative technologies;

- key environmental factors (from a life-cycle perspective) including those identified by the relevant Technical Working Group;

- protocols prepared for similar technologies submitted for verification under the EU ETV pilot programme and, where appropriate, the relevant elements of protocols prepared under non-EU ETV programmes or from other research and pilot projects;

- advice of the EU ETV pilot programme stakeholder forum where appropriate.

Based on their review, the Verification Body may request the proposer to revise or further complete the proposal. If the review does not lead to halting the verification process, the preparation and conclusion of the contractual agreement follow on.

B.III.2 Contractual agreement

At this stage, if the proposer decides to proceed, the Verification Body provides a detailed cost estimate for the verification procedure (excluding tests) together with a list of potential tests and/or analyses to be performed. Based upon this cost estimate, a verification contract will be drafted and signed by the proposer and the Verification Body. The template in Appendix 5 *'Template proposed for the Verification Contract'* may be applied and adapted as necessary.

It is recognised that parts of the verification contract may, in some cases, need to be prepared after elaborating the initial elements of the specific verification protocol (e.g. application and parameter definition, requirements on test design and data quality, assessment of existing data). In such cases, a separate contract may be entered for these initial actions only, leaving the remaining actions for a second contract.

In the event that the contact phase including eligibility check (see B.II above) is included in the verification contract, the use of a fixed fee is recommended for this step.

The verification contract shall in any case cover the following items included in Appendix 5:

- Limitations of the verification report and Statement of Verification to the specific technology and the conditions of verification; these cannot be considered as an endorsement or guarantee of the technology;

- Obligation of the proposer to inform the Verification Body of any change made to the technology before the conclusion of the verification process;

- A clause stating that, in case further tests are required, the proposer will include in their contractual relationship with test bodies, provisions ensuring that the test body receives all relevant information on the tests to be performed including the specific verification protocol[4]; and allowing the Verification Body to receive all relevant information related to accreditations, quality management and the test system relevant for the tests to be performed, and to perform the test system assessment, including an audit where applicable;

- Issues of confidentiality, including the access to information by external experts and by EU ETV Technical Working Groups[5], and the publication of the Statement of Verification;

- Issues around Intellectual Property Rights (IPR); if some parts of the technology are owned by other organisations (e.g. used under licence), this should be disclosed. It is recognised that some proprietary elements may not be protected through patents but have to be respected as intellectual property nevertheless;

- Post-verification issues: including use of the ETV report, Statement of Verification and ETV logo; reporting by the proposer on the impact of ETV; handling of changes to the technology, to the application or other changes potentially affecting the conditions of verification; how these changes have to be reported and evaluated. The cost of evaluating these changes may be left to future agreements;

- Provisions on the legal regime applicable and the competent legal authorities in the case of a dispute related to the verification procedure.

The legal regime and competent legal authorities for the relations between the Verification Body and the proposer should be indicated in the contract.

[4] Confidential information may be removed if not essential, or may be covered by a confidentiality agreement with the test body.

[5] Before signature of the verification contract, any communication of information to external experts or to ETV Technical Working Groups requires the explicit consent of the proposer.

B.IV Specific verification protocol phase

Upon successful completion of the contact phase and proposal phase the next steps in the procedure are related to the establishment of the specific verification protocol. The specific verification protocol explains how the verification is to be conducted, including a definition of the parameters covered by the verification and all relevant requirements on tests and test data (e.g. test method selection, test design, data quality, data assessment, etc.). It shall include the following:

- Summary description of the technology, its intended application and associated environmental impacts;
- Precise definition of verification parameters (the revised performance claim);
- Requirements related to the test body quality management and general test requirements, i.e. those requirements of ISO/IEC Standard 17025 that are considered relevant for the tests to be performed[6]. This point may be omitted if the test bodies involved in the verification process are already designated and if they are accredited according to ISO/IEC 17025 for the relevant test methods;
- Requirements on test design, test methods, definition of calculation methods for performance parameters, as well as statistical methods and determination of uncertainty; the criteria for the acceptance of test data shall be explicit in these requirements;
- Description of the way in which additional parameters are to be dealt with in the verification process;
- Assessment of existing data and conclusions on the requirement for additional tests.

The Verification Body is responsible for the preparation of the specific verification protocol, following the provisions of the GVP and any relevant guidance provided by the EU ETV Technical Working Groups.

The Verification Body and the proposer shall reach an agreement on the verification parameters (i.e. the revised performance claim), on requirements on test data, on testing, and calculation methods, and on how other parameters are to be dealt with in the verification process.

Once the elements listed in the previous paragraph are agreed, the Verification Body shall assess the existing data provided by the proposer. The result of this assessment is a decision by the Verification Body on whether additional tests are needed. The assessment of existing data and conclusions are included in the specific verification protocol.

The specific verification protocol shall follow the structure given in the table of contents provided in Appendix 6. If additional tests are needed, the procedure continues with the 'testing phase', otherwise the 'assessment and verification phase' should follow.

[6] A list of requirements that need to be considered is in appendix 10.

B.IV.1 Description of technology, application and impacts

To reach a clear understanding of the technology, its intended application and impacts, the matrices, purpose and technical conditions for the technology shall be reviewed and amended if appropriate, as specified in Table 1 in Section B.III 'Proposal'.

B.IV.2 Definition of verification parameters (revised performance claim)

The performance of the technology to be verified is expressed through different parameters (called for this reason verification parameters) and their numerical value. The verification of a technology under ETV requires therefore a precise definition of the verification parameters. This shall be carried out by the Verification Body in co-operation with the proposer, building on the initial performance claim and using the template given for the parameter definition table (Table 6) in Appendix 6. All categories of parameters as mentioned in the parameter definition table shall be considered. Categories that are not relevant for a specific verification are excluded and this shall also be reported in the completed table.

The list of verification parameters and their expected values, also called the 'revised performance claim', shall ensure that the technology is tested for parameters and in ranges that are relevant for the purchasers and users of the technology considering regulatory requirements, intended applications, key environmental factors and state of the art performance of technologies performing similar functions or used in similar situations.

The definition of verification parameters shall consider and, where appropriate, include the following types of parameters:

- **performance parameters** related to the performance of the technology in fulfilling its purpose (also referred to as technical or functional performance);

- **operational parameters** related to the technical conditions of the intended application. The operational parameters shall be used in particular to determine the testing conditions. Examples of operational parameters include ambient temperature and concentrations of non-target compounds in matrix;

- **environmental parameters** related to potentially significant impacts on the environment, directly and indirectly, along the life cycle (e.g. raw materials, production, use, recycling, end-of-life disposal). These may include for example energy consumption or emission of pollutants to air or water. The definition of environmental parameters should normally build on the assessment of the environmental added value in the proposal (see B.III.1). Environmental parameters directly linked to the purpose of the technology should be considered as performance parameters;

The specific verification protocol may also consider **additional parameters** related to information about the technology that is useful for users but that may not necessarily be measurable through tests and therefore not included in the list of verification parameters above. Examples of possible additional parameters include the expected service time during which the claimed performance is respected[7], overall service life, health and safety issues, installation and maintenance requirements

[7] If the expected service time of the technology can be estimated through tests, this can be included as operational parameter rather than additional parameter.

and operating costs. In the statement of verification, the additional parameters are to be listed under "Additional Information".

All relevant parameters shall be listed and discussed in the specific verification protocol, with conclusions on which parameters should be considered for the final report, which ones can and should be verified, and what additional information is available and useful for the user.

When elaborating the specific verification protocol, the Verification Body shall take into account:

- guidance documents and protocols recommended by the EU ETV Technical Working Groups for the related technology group;
- appropriate technical standards or reference documents for the related technology group;
- advice of the stakeholder forum where appropriate.

If a standard giving relevant verification parameters for the technology under verification and its intended application is available, reference to this standard can substitute the definition of the verification parameters in question. This should not prevent the possible inclusion of other relevant parameters (in particular those related to environmental impacts).

The definition of verification parameters shall be done separately for each technology under verification in order to reflect the different requirements for different applications and technologies. However, if a specific verification protocol has been prepared under the EU ETV pilot programme for the same application and a comparable technology, the verification parameters of this protocol shall be considered for inclusion in the new protocol if relevant for the new technology.

B.IV.3 Requirements on test design and test methods

The specific verification protocol shall describe the essential requirements for the test design and test methods for the technology under verification.

The requirements shall reflect the definition of verification parameters under B.IV.2. However, specific requirements for the test design shall be given whenever necessary in order to ensure that the test data will enable the final data assessment and completion of the verification procedures. The requirements on test design shall include:

- Overall test design e.g. continuous or batch tests, scale, test methods etc;
- Scale (laboratory/simulated environment/field) and actual matrix used for tests; it should be the same matrix for which the verification parameters have been defined;
- Parameters to be measured;
- Methods to be used, including sampling, test and calculation methods, determination of uncertainty and statistical methods;
- Testing conditions;
- Data management;
- Quality assurance including test system audit where applicable;

- Test report contents.

Where appropriate, the specific verification protocol shall include specific requirements on the choice of the test methods or provide already the complete reference or description of the test method to be used. To the extent possible, the choice of the method should be explained, especially where several methods are applicable. If specific requirements for analytical methods or their performance have been identified as necessary, these shall be given.

If available and relevant, existing standard methods (e.g. ISO, CEN) should be used. Where no standard methods exist, documented methods shall be required and/or clearly described in the specific verification protocol or reference made to publicly available documents such as peer reviewed scientific articles.

The specific verification protocol shall also:

- define the requirements for the management of test data with respect to the format of data storage;

- define or make a reference to appropriate methods for the processing of raw test data into verification parameters;

- specify appropriate statistical methods for determination of uncertainty and claim verification and, where appropriate, define required levels of confidence consistent with the professional practice for the technology group in question;

- Mention explicitly the criteria for acceptance of test data in the context of the ETV process, if they are not obvious from the methods and requirements set.

B.IV.4 Additional parameters

Where appropriate, the specific verification protocol shall describe how additional parameters will be considered. In particular:

- Important (direct and indirect) environmental impacts that cannot be measured shall be mentioned qualitatively and verified as far as possible;

- Where quantified values are given, the origin of figures, calculation methods and assumptions made where appropriate, quality and levels of confidence where appropriate, shall be mentioned as far as possible;

- Information shall be carefully presented, limited to the information useful for the technology purchaser and users, avoiding any ambiguous or misleading statements and with the necessary caveats;

- To prevent any misunderstanding on their meaning and on the role of ETV, comparative statements and relative values shall be avoided unless absolutely necessary. If used, these shall be justified and carefully presented in the specific verification protocol, verification report and Statement of Verification.

B.IV.5 Assessment of existing data

As part of the development process and market implementation activities, the proposer may already have at their disposal, a set of test data that are relevant to the verification procedure and may serve (in full or in part) as the basis for the verification. These data can be submitted to the Verification Body for assessment in view of determining their acceptability in the verification process.

This shall include sufficient information for assessment, i.e. in addition to the data itself, full address and status (e.g. independent/dependent, certifications and accreditations etc.) of the data supplier and of any third parties involved (e.g. test design, witnesses etc). Data must be supplied in a format that allows assessment against the requirements as set in B.IV.3. The test plan and test report shall be provided along with any other information covering in substance the content provided in Appendix 7 'Table of content for the test plan and test report'. The necessary quality control for existing data is described in part C.II 'Quality of existing data'.

In order to facilitate the acceptability of the existing test data, it is recommended that tests carried out before an ETV proposal are performed by organisations accredited as complying with the requirements of ISO/IEC 17025 for the relevant test methods.

The Verification Body shall assess the existing test data against the parameters, methods, quality requirements and target values defined for this specific verification in application of B.IV.3 and B.IV.4. The Verification Bodies shall conclude whether additional tests are needed to comply with the requirements of the specific verification protocol. The accepted existing data are summarized in the format to be used when reporting test data.

B.V Testing including test plan

After completion of the specific verification protocol preparation phase and if additional tests are needed, the testing phase is entered into.

Steps to be undertaken as part of the testing phase are:

- Test site selection;
- Test plan;
- Testing;
- Test report.

The proposer shall designate one or more test bodies to perform the tests in accordance with A.II.6.2.

Alternatively and where appropriate, the proposer may perform the necessary tests in-house. This may be the case in particular when the necessary test equipment or skills are not easily available outside of the proposer. In this case, the proposer shall fulfil the requirements provided for test bodies in A.II.6.1 and the test plans, all preparatory measures such as sampling and the actual tests shall be prepared and implemented by the proposer in agreement with, and where appropriate witnessed by, the Verification Body.

The tests shall be planned and performed in accordance with the specific verification protocol.

B.V.1 Test site selection

The test sites shall be defined by the test body in accordance with the requirements set in the specific verification protocol.

The test plan provided in B.V.2 shall include a description of the test sites enabling the reader to understand the selection of the site in relation to the matrix/matrices, purpose and operation parameters defined for the verification. The description will include any information required for the test staff to access the site.

If the technology under verification is installed and operated at a field site, the test body shall ensure that the selection of the site implies no commercial or other interests possibly influencing the test results. In particular, the field site shall not be dependent upon the proposer. If a site dependent upon the proposer is the only option available, the use of that site shall be justified in the test plan, and precautions such as access logging shall be applied to ensure and document that the test results were not under undue influence.

B.V.2 Test plan

The test plan is unique for each test occasion and gives the exact information required by the test staff to conduct the tests. Reference to the specific verification protocol used shall be given. A table of contents for the test plan is given in Appendix 7 and shall be followed.

The test plan shall be drafted by the test body and approved by the proposer and the Verification Body. Where tests are performed in-house by the proposer, the test plan shall be drafted by the proposer and approved by the Verification Body.

The test method(s) used shall make reference to standards, preferably international or European standards or equivalent public references. If in-house methods are used, the method shall be documented and referenced, outlined, or included in full in an appendix to the test plan. Appropriate selection and use of statistical procedures shall be justified.

If not described in the test method, the test plan shall specify how the required item(s) of the technology to be tested will be obtained. To the extent possible this shall be done by random selection where the proposer has no influence on the choice of the item(s) and has no possibility to affect their properties. For example the item(s) could be purchased by the test body in retail store (if the technology is a consumer item), or randomly collected from the proposer's storage facility. The selection method shall be transparently reported in the test and verification reports and statement of verification.

The test plan shall describe the quality assurance for the specific test planned, as provided in C.III.2

The test schedule shall be given.

The descriptions of test operation shall allow the test staff to perform the tests as required in the specific verification protocol and to replicate operations with the least possible variation during the test. The description shall allow tracing of any errors back to sources with equipment, methods, operations or staff.

B.V.3 Testing

Testing shall be done according to the test plan.

Amendments to and deviations from the test plan shall be recorded and approved by the proposer and the Verification Body. The amendment and deviation forms shall be recorded as part of the records of testing.

B.V.4 Test report

The format of the test report to be used is given in Appendix 7. The test report is drafted by the test body and communicated to the proposer and Verification Body. Where tests are performed in-house by the proposer, the test report is drafted by the proposer and approved by the Verification Body.

The format and location for archiving the raw data shall be indicated in the test report. The list and summary of any amendments to the test plan and deviations recorded during tests shall also be included.

The test report shall include all measured and calculated data as well as naming the staff that performed the test. The test and calculation methods shall be described, if not given in the analytical and test methods used. If relevant, details on equipment and software used shall be included.

B.VI Assessment of all data and verification of performance

Upon completion of the testing phase and the collection of all relevant data, the verification body proceeds with the assessment and verification phase. This consists of several steps:

- Test report review;
- Conclusion of the test system assessment;
- Assessment of all test data;
- Verification.

B.VI.1 Test report review

As indicated in section C.III, the Verification Body shall review the test report(s). This review can support the test system assessment and the assessment of data presented below. The review shall also include an assessment of whether the tests followed the requirements of the specific verification protocol and the test plan.

B.VI.2 Conclusion of the test system assessment

At this stage of the verification process, the Verification Body has to conclude the test system assessment, and decide whether the test system in which the data has been produced is suitable; considering in particular the quality management and general test requirements of the GVP, in line with sections A.II.6.1 and C.I, and other relevant requirements of the specific verification protocol. Where applicable, this assessment incorporates the results of the test system audit.

B.VI.3 Assessment of test data

The Verification Body shall collect all data relevant for the verification:

- Existing data accepted after assessment as provided in B.IV.5;
- New test data as provided in B.V.4.

The Verification Body then assesses whether these collected data are complete and satisfy the requirements and criteria for acceptance provided in the specific verification protocol and test plan. Special attention is paid to the determination of the associated uncertainty. The verification body shall also carry out a critical review of the data, e.g. through random consistency checks.

This assessment can be part of the test report review, and in the case of existing data it can be carried out earlier (i.e. at the specific verification protocol stage).

B.VI.4 Verification

Based on the previous steps, the Verification Body shall conclude whether there is a defendable and complete data set for verification and reporting. If this is not the case, previous steps of the verification procedure, including the specific verification protocol, assessment of existing data and testing phase, may have to be re-iterated.

When the Verification Body reaches a positive conclusion, it shall report this assessment as part of the verification report.

Once the conclusion is positive, the Verification Body establishes the verified performance and associated uncertainty in conformity with the calculation methods provided in the specific verification protocol, and determines whether the data supports the performance claim, using appropriate statistical techniques, and considering appropriate levels of confidence.

The result of this stage is a confirmation or determination of the performance of the technology based on reliable test results (the verified performance claim).

Where applicable, the Verification Body shall assess the appropriateness and usefulness of additional information for the Statement of Verification, and draft the necessary caveats to avoid confusion or misleading interpretation of this additional information. These will include:

- Additional parameters mentioned in B.IV;
- Information on operating conditions not considered for verification (e.g. limit temperatures or atmospheric moisture, maximum longevity etc);
- Qualitative information on environmental impacts (e.g. origin of raw materials, reference to complete life-cycle analysis or life cycle inventory, requirements on suppliers, instructions for re-use or recycling of materials);
- Other information, e.g. information about operating costs, provided by the proposer under its own responsibility.

B.VII Reporting and publication

Based on the outcome of the assessment of data and verification, and provided that the verification procedure is not interrupted by the proposer or the Verification Body, the next phase includes the following steps:

- Drafting the Verification report;
- Drafting the Statement of Verification;
- Publication of the Statement of Verification.

The Verification Body shall draw up a full report on all the steps taken and results obtained in the implementation of the verification contract, and a draft Statement of Verification. After possible revision and with the agreement of the proposer, the Verification Body shall approve the Statement of Verification and submit it to the Commission or to the body designated by the Commission for registering and publication.

B.VII.1 Verification report

At the end of each verification, the verification Body shall produce a verification report. This report shall follow the structure of the table of content provided in Appendix 8. The verification report shall compile or summarise all information relevant for the verification, as provided under B.VI.2, and it shall include all relevant documents produced during verification as appendices:

- The quick scan;
- The proposal;
- The specific verification protocol;
- The test plan[8];
- The test report.

B.VII.2 Statement of Verification

Upon completion of the verification procedure, the Verification Body shall issue a Statement of Verification.

The Statement of Verification shall be a short document of around 4 pages, summarising the verification report. It shall include:

- A summary description of the technology verified, and exact commercial name, type or reference number, purpose and conditions of use;
- The verified performance (or verified performance claim), including the field of application, conditions and assumptions under which the verified performance is met;
- A summary of the procedures followed by the Verification Body and by test bodies, including the statistical confidence range on results where applicable;
- Any information necessary to understand and use the verified performance claim; if this includes information not verified during the ETV procedure, such as additional parameters, this should be clearly stated and explained.

The cover page of the Statement of Verification shall follow the template provided in Appendix 9. The other pages of the Statement of Verification shall follow the structure of the table of content provided in Appendix 9.

[8] If the Verification Body considers that all relevant information from the test plan is also included in the test report, the test plan may be omitted as appendix to the verification report.

The Statement of Verification may include a disclaimer related to legal compliance, e.g. "Unless stated otherwise, this verification has not evaluated and cannot guarantee compliance with specific legal requirements. Ensuring legal compliance is the responsibility of the proposer".

The Statement shall be signed by the Verification Body and the proposer. The Verification Body shall submit the Statement of Verification to the Commission or to the body designated by the Commission for registration and publication.

B.VII.3 Publication

The verification report is delivered by the Verification Body to the proposer. For reasons of transparency it is recommended that the proposer accepts publication of this report, possibly without appendices if the proposer considers that publishing these may harm the protection of intellectual property.

The verification report, possibly without appendices, shall be shared with the EU ETV Technical Working Groups under the same conditions of confidentiality applying to the verification body (see A.II.4.1). EU and national control authorities (including the EU Court of Auditors and Anti-Fraud Office) and national accreditation bodies may request access under relevant procedures.

The Statement of Verification and, where appropriate, the verification report, shall be published on a dedicated website designated by the Commission services.

B.VIII Post verification

B.VIII.1 Use of the Statement of Verification and ETV logo

The proposer may use the Statement of Verification for marketing purposes and for official approvals. It may be included in the technical documentation of the verified technology. The proposer shall make the statement available in full and shall not use parts of the statement for any purpose.

The proposer may refer to the Statement of Verification as follows: *The XX technology was verified in the framework of the EU Environmental Technology Verification (ETV) pilot programme for the application AA (including purpose and matrix[9]) by BB Verification Body on DD.MM.YYYY. The Statement of Verification has been registered under number NN and is accessible at the following address: http://iet.jrc.ec.europa.eu/etv/* (where appropriate, replace this address with the one of the dedicated website designated by the Commission services.)

The proposer shall not use the ETV logo alone either on products or on published (printed, web or other) matter other than the Statement of Verification. The ETV logo may be used on publications together with the reference to the Statement of Verification, as provided above, as long as the meaning of ETV is correctly reflected by the publication, avoiding in particular any confusion with endorsement or approval of the technology.

[9] See description in Table 1 in Section B.III.1

The proposer shall ensure that the verified technology continues to conform to the published Statement of Verification. If any of the following changes to the verified technology have occurred, the proposer shall report to the Verification body with the data needed to evaluate whether the conditions for verification have changed:

- change of ownership;
- design changes;
- change of intended application or operational conditions;
- other changes likely to modify the performance results reported in the Statement of Verification.

Substitution of one part with another with the same documented specifications is not considered a change, unless it affects the environmental added value or one of the parameters reported in the Statement of Verification.

The Verification Body shall evaluate reported changes and data at the cost of the proposer. If, after evaluation, the Verification Body concludes that the conditions for verification have changed, a new verification procedure shall be engaged by the proposer for this technology or alternatively, the Statement of Verification shall be withdrawn.

The Statement of Verification shall be withdrawn by the Verification Body if misused by the proposer. Misuse is defined as violation of the conditions of EU ETV pilot programme verification. In the case of withdrawal, the Statement of Verification and verification report shall be removed from all web sites.

The proposer may also request that the Statement of Verification and associated report be withdrawn from the web if, for example, the technology is no longer on the market. This request should be made in writing to the Verification Body, committing to no future use of the Statement of Verification, reference to it or the ETV logo. The verification Body shall communicate this request to the Commission services and the Statement of Verification and associated report will be consequently withdrawn from the ETV website.

B.VIII.2 Follow-up on performed verifications

Customers' feedback on the usefulness of ETV when applying verified technologies and associated environmental added value, and proposers' feedback on the added value of ETV in the marketing of verified technologies and the economic benefit, are needed to contribute to the continuous evaluation and improvement of the system.

Verification Bodies shall seek and collect such feedback by surveying systematically proposers one year after completion of the verification process. In addition, the Commission services provide and operate the stakeholder forum for general exchange of experience among the community.

Complaints related to specific technology verifications under ETV should be addressed to the relevant Verification Body. In the case of a disagreement between the Verification Body and another party in relation to the EU ETV pilot programme, an opinion may be sought from the relevant Technical Working Group by the Commission services, the Verification Body or the other party. In case the Verification Body decides not to follow the opinion of the Technical Working Group, a detailed report justifying this decision should be addressed to the Commission services and to the accreditation body having accredited the Verification Body for the EU ETV pilot

programme. The Commission services or the accreditation body may decide appropriate measures on the basis of this report.

Complaints related to the competence or qualification of a Verification Body under the EU ETV pilot programme should be addressed to the relevant national accreditation body following the procedure indicated in the quality manual of the Verification Body.

Complaints related to the EU ETV pilot programme procedures should be addressed to the services of the European Commission co-ordinating the EU ETV pilot programme.

B.VIII.3 Outreach

The EU ETV pilot programme strives to support verified technologies. Verified technologies are published by the Commission services and are included in other ETV outreach materials. The EU ETV pilot programme will conduct targeted outreach activities and further encourage and support the Member States and other contact points in outreach activities at a national level.

On a regular basis, activities will be implemented to evaluate the success and effectiveness of the programme, its bodies and procedures.

Part C: Quality management

In order to ensure confidence in verification results, strict quality management of the organizations involved and quality assurance of the verification process are required. The Verification Bodies and test bodies shall demonstrate that they meet the requirements of the GVP. Verification Bodies shall be accredited as inspection bodies type A under ISO/IEC 17020 to applying the GVP. Test bodies performing analyses for the purpose of verification shall be accredited according to ISO/IEC 17025 'General requirements for the competence of testing and calibration laboratories' for the relevant methods of analysis.

C.I Quality assurance and control for the verification process

Principles of quality assurance in all steps of verification and testing are shown (for illustration only) in Figure 3.

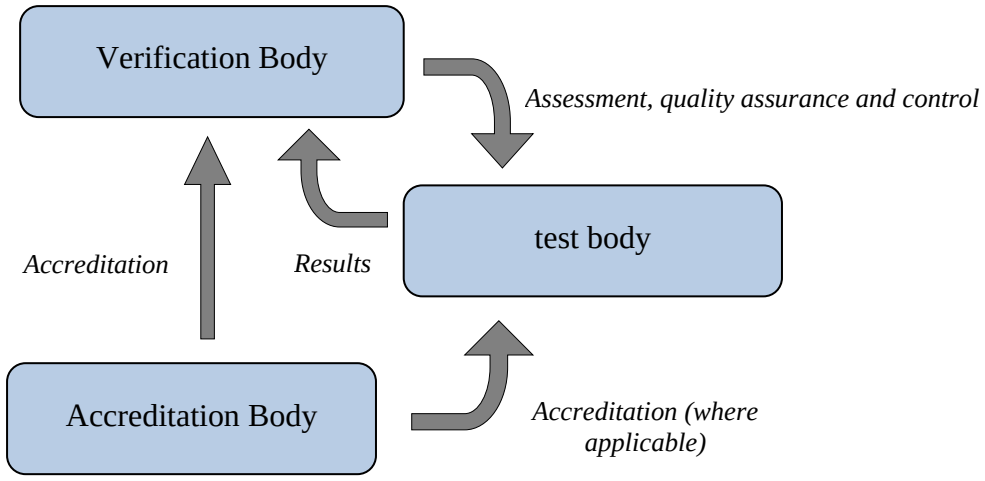

Figure 3: Principles of quality assurance in ETV (indicative only)

The National Accreditation Bodies shall ensure that ETV Verification Bodies conform to the requirements of ISO/IEC 17020 for inspection bodies (type A) and the General Verification Protocol and, where applicable, that test bodies conform to the requirements of ISO/IEC 17025 for the relevant test or analytical methods.

The Verification Body has the overall responsibility for ensuring that the verification is conducted according to the General Verification Protocol. The Verification Body shall control that the test body performs test planning, execution and reporting according to the requirements of the GVP and of the relevant specific verification protocol.

The Verification Body shall ensure that the test bodies involved in a verification meet the quality management requirements and the general test requirements of the GVP. The quality management and general test requirements of the GVP are those requirements of ISO 17025 that are considered relevant for the tests to be performed. A list of requirements that need to be considered can be found in Appendix 10. A test body can demonstrate meeting these requirements by accreditation according to ISO/IEC 17025 for the methods of testing and calibration relevant for the specific verification process concerned.

In order to ensure that all quality requirements provided in the GVP are met, the Verification Bodies and the test bodies shall undertake the reviews, assessments and audits provided in the GVP, Chapter C.III on Quality Assurance.

C.II Quality control for existing data

The quality of the existing data shall be evaluated by the Verification Body, by checking documentation, raw data and quality control data from the data production. Existing data shall meet the applicable requirements set in the specific verification protocol. The existing data shall be accepted only if it has been produced and reported under quality assurance compliant with the relevant quality management and general test requirements, as indicated in A.II.6.1 and C.I. In the event that the body producing these data was accredited according to ISO/IEC 17025, for the relevant methods of testing and calibration at the time of production of these data, it shall be presumed to comply with these requirements. The test plan and test report shall be provided along with any other relevant information as indicated in Appendix 7 'Table of content for the test plan and test report'.

In addition to checking documentation and data, the Verification Body may undertake one or more of the following actions to evaluate the acceptability of the existing data, in particular in the absence of accreditation or in the case of data produced by the proposer or by bodies dependent upon the proposer:

- spot checks;
- witness checks;
- conditional acceptance of existing data, in which case the conditions for acceptance shall be detailed in the specific verification protocol; these conditions may include re-testing.

Spot checks and witness checks may be performed before finalisation of the specific verification protocol; otherwise they need to be combined with a conditional acceptance.

C.III Quality assurance

C.III.1 Verification Body

The Verification Body shall have and apply appropriate procedures for ensuring that the plans, performance and products of verification activities meet the required level of quality and reliability, i.e. how the Verification Body plans quality assurance in terms of review, assessment and audit. This shall include the reviews, assessments and audits provided in Table 2 'Quality assurance steps for verification bodies'. The procedure shall describe the process of test body audits and audit evaluation, including audit responsibilities and planning, auditor training and competences, and audit reporting.

Table 2: Quality assurance steps for verification bodies.

Entity	**Object**	**Verification Body internal auditor**	**External technical expert**
Verification Body	Specific verification protocol	Review	Review
Test body	Test plan	Review	-
Test body	Test system and test body quality management system	Test system assessment, with or without test system audit	-
Test body	Test report	Review	-
Verification Body	Verification report	Review	Review
Verification Body	Statement of verification	Review	Review

The test system assessment must include a test system audit for test activities that are not covered by an ISO/IEC 17025 accreditation.

The quality assurance planned for a specific verification must be described in the specific verification protocol, providing the names of experts and auditors, as well as the timing of reviews and audits, where applicable. This may require amendment following assessment of existing data.

The Verification Body recruits external experts for reviewing documents. These external experts shall not have permanent contracts or links with the Verification Body; they shall not belong to an organisation hosting or having a financial interest in the Verification Body or in the proposer and the Verification Body shall document their competence in a list of experts. The Verification Body must document that the recruited external experts are free from any undue commercial, financial or other pressures that may adversely influence the judgement of the experts.

The reviewing process shall be documented to ensure an adequate level of quality and reliability. Description of the method for documenting reviews shall be included in the quality manual.

C.III.2 Test body

The test body shall have and apply appropriate procedures[10] for ensuring that the plans for the performance of and products of test activities are of the required level of quality and reliability, i.e.

[10] These procedure may be included in the quality manual or other relevant quality documents, or in a quality plan dedicated to the verification

how the test body plans quality assurance in terms of review and audit. This shall include the reviews and audits provided in Table 3 'Quality assurance steps for test bodies', unless provided differently in the specific verification protocol.

Table 3: Quality assurance steps for test bodies.

Entity	**Object**	**Test body internal auditor**	**Test body staff responsible for test activities**
Test body	Test plan	Review	-
Test body	Test system and test body quality management system	Test system audit	-
Test body (analyses)	Method performance		Validation[11]
Test body (analyses)	Analytical performance		Quality control and review[12]
Test body	Test report	Review	-

The quality assurance planned for a specific test must be described in the test plan, providing the names of experts and auditor, as well as the timing of reviews and audits (where applicable). The review of analytical performance should include:

- laboratory stated uncertainties and limits of detection;
- analytical quality control data;
- information on participation in proficiency tests for the analysis used and the relevant period.

The reviewing process shall be documented to ensure an adequate level of quality and reliability. A description of the method for documenting reviews shall be included in the quality manual or in a dedicated quality plan.

Non-standard test methods must be clearly described in the specific verification protocol or in the test plan, including required calibration and quality control procedures. Non-standard test methods have to be validated as per ISO-17025 section 5.4.5.

The records of test data (raw data) shall be stored, transferred, maintained and controlled in order to ensure data integrity for a period defined in the test plan, but not shorter than 5 years from completion of the test.

Proposer complaints shall be addressed in accordance with the relevant procedures of the test body and reported to the Verification Body.

[11] This action should normally be part of the quality management system of an accredited test body.
[12] This action should normally be part of the quality management system of an accredited test body.

Part D: Supporting Documents (Appendices)

Appendix 1: Glossary of terms and definitions

(1) 'Technology' means the practical application of technical or scientific principles to achieve a given purpose. The term technology covers products, processes, systems and services.

(2) ‘Environmental technologies’ are all technologies which provide an environmental added value compared to relevant alternatives.

(3) 'Relevant alternatives' are commercially available technologies relevant for comparison with the technology under verification and performing the same or a similar function.

(4) ‘Innovative environmental technologies’ are environmental technologies presenting a novelty in terms of design, raw materials and energy involved, production process, use, recyclability or final disposal, when compared with relevant alternatives.

(5) 'Environmental added value' means the reduction of the environmental pressure or a positive impact on the environment including but not limited to removal, prevention, reduction, mitigation of pollutants released to the environment, restoration of environmental damages or use of natural resources in a more efficient and sustainable manner.

(6) 'Performance claim' means a set of quantified and measurable technical specifications representative of the technical performance and environmental added value of a technology in a specified application and under specified conditions of testing or use.

(7) 'Verification' means the provision of objective evidence that the technical design of a given environmental technology ensures the fulfilment of a given performance claim in a specified application, taking any measurement uncertainty and relevant assumptions into consideration.

(8) 'Operational parameters' means measurable parameters that define the application and the verification and test conditions.

(9) 'Environmental parameters' means measurable parameters related to potential environmental impacts or the environmental added value in a life-cycle perspective.

(10) 'Life-cycle perspective' means the consideration of the main environmental benefits and pressures or impacts generated by a technology along its life cycle, from the extraction of raw materials, manufacturing process, use and maintenance, until the end of life of related equipment or products.

(11) 'Additional parameter' means information on a technology, not covered by performance, operational or environmental parameters, but considered in the verification process because of its usefulness and relevance for technology users.

(12) 'Matrix' means the type of material that the technology is intended for.

(13) ‘Purpose’ means the measurable property that is affected by the technology and how it is affected.

(14) 'Technology group' means a class of technologies serving the same or closely related purposes (i.e. is used in the same application).

(15) 'Accreditation' shall have the meaning assigned to it by Regulation (EC) No 765/2008.

(16) 'National accreditation body' shall have the meaning assigned to it by Regulation (EC) No 765/2008.

(17) 'Harmonised standard' means a standard adopted by one of the European standardisation bodies listed in Annex I to Directive 98/34/EC on the basis of a request made by the Commission in accordance with Article 6 of that Directive.

(18) 'General verification protocol' (GVP) means the description of the principles and general procedure to be followed by the EU ETV pilot programme when verifying an environmental technology.

(19) ‘Specific verification protocol’ means the protocol describing the specific verification of a technology and applying the principles and procedures of the General Verification Protocol.

(20) ´Ready to market´ means that the technology is available on the market or at least available at a stage where no change affecting its performance will be implemented before introducing the technology on the market.

(21) ´Amendment´ is a change to a specific verification protocol or a test plan done before the verification or test step is performed.

(22) ´Deviation´ is a change to a specific verification protocol or a test plan done during the verification or test step performance.

(23) ‘Test system assessment' means determining whether the test system and quality management system applied by a test body to generate data for verification purposes comply with the requirements of the General Verification Protocol and of the specific verification protocol. It includes the review of the relevant accreditations, and may include a test system audit.

(24) ‘Test system audit’ means the examination of a test system and of a quality management system. It is achieved through the review of relevant procedures, observation of actual practices and evaluation of test performance. Where applicable, it includes the examination of control data for relevant period, participation in proficiency testing and/or control of calibration of measurement devices. It is aimed to provide the necessary evidence for the test system assessment.

Appendix 2: List of technology areas in the EU ETV pilot programme

The technology areas covered by the EU ETV pilot programme are defined by the Commission services in consultation with the Steering Group where countries participating in the pilot programme are represented.

These technology areas (e.g. water treatment and monitoring) will be further detailed into specific technology groups or applications where ETV is most likely to add value (e.g. drinking water treatment), by the Technical Working Groups where Verification Bodies are represented.

Technical Working Groups shall keep the list of technology groups or applications updated, creating new groups or applications as needed, and possibly dividing groups further into subgroups if needed for the screening of environmental impacts and identification of key environmental aspects, as described in the General Verification Protocol.

The establishment and revisions of the list of technology groups or applications will take into account the following aspects:

- The existence or emergence of a significant number of innovative environmental technologies potentially suited to ETV;
- The demands of technology developers and users, in particular SMEs;
- The availability of specific protocols, technical standards, scientific studies or research providing a satisfactory basis for the verification procedures;
- The availability of a significant number of test bodies having the necessary capacity and quality standards to provide accurate and reliable test data;
- The needs, in terms of technological development or quality requirements, emerging from EU and international policy developments;

Table 4 shows the list of technology areas (first level) and some examples of technology groups or applications (second level) in the scope of the EU ETV pilot programme.

Table 4: Technology areas in the scope of the EU ETV Pilot Programme

Technology areas	Examples of technology groups/ applications with illustrative technologies
1. Water treatment and monitoring	• Monitoring of water quality for microbial and chemical contaminants (e.g. test kits, probes, analysers) • Treatment of drinking water for microbial and chemical contaminants (e.g. filtration, chemical disinfection, advanced oxidation) and desalination of seawater • Treatment of wastewater for microbial and chemical contaminants (e.g. separation techniques, biological treatment, electrochemical methods, small-scale treatment systems for sparsely populated areas)

Technology areas	Examples of technology groups/ applications with illustrative technologies
	• Treatment of industrial water (e.g. disinfection, filtration, purification)
2. **Materials, waste and resources**	• Recycling of industrial by-products and waste into secondary materials, recycling of construction waste into building materials (e.g. reworking of bricks), recycling of agricultural waste and by-products for non-agricultural purposes • Improved resource efficiency through material substitution • Separation or sorting techniques for solid waste (e.g. reworking of plastics, mixed waste and metals), materials recovery • Recycling of batteries, accumulators and chemicals (e.g. metal reworking technologies) • Reduction of mercury contamination from solid waste (e.g. separation, waste mercury removal and safe storage technologies) • Products made of biomass (health products, fiber products, bioplastics, biofuels, enzymes)
3. **Energy technologies**	• Production of heat and power from renewable sources of energy[13] (e.g. wind, sea, geothermic and biomass) • Reuse of energy from waste, biomass or by-products (e.g. 3rd generation biofuels and combustion technologies) • Generic energy technologies (e.g. micro-turbines, hydrogen and fuel cells, heat pumps, combined heat and power production, heat exchangers), distribution, energy storage • Energy efficiency in industrial processes[14] and in buildings (e.g. thermal envelope, wall insulation, energy efficient windows, heating, ventilation and air conditioning systems)

[13] More elaborated examples can be found in the IPCCC Fourth Assessment Report, Chapter 4: Climate change 2007, in particular the examples under technological developments with demonstrations or small-scale commercial application, but approaching market introduction.

[14] If the technology applied for energy efficiency is very specific to the industrial process, or if the competence needed to assess the technology is specific to the industrial sector and practices, the technology should be considered instead under 'cleaner production and processes'.

Table 5 shows areas that may be added to the technological scope of the EU ETV pilot programme by the Commission services following consultation with the Steering Group and taking account of the results of existing ETV or similar schemes in these areas.

Table 5: Potential additional technology areas in the EU ETV Pilot Programme scope

4. Soil and groundwater monitoring and remediation	• Soil and groundwater monitoring (e.g. test kits, probes, analysers) • Soil pollution remediation in situ and on site (e.g. thermal treatment, air venting, chemical oxidation) • Management and de-pollution of sediments, sludge and excavated soils
5. Cleaner production and processes	• Savings of material resources by process optimisation, e.g. savings of chemicals or carbon • Improved energy efficiency by process optimisation (i.e. specific techniques applicable to particular industrial processes[15]) • Prevention and reduction of pollution and waste from industrial processes (e.g. new methods in surface coating)
6. Environmental technologies in agriculture	• Reduction of air contamination and odour (e.g. housing techniques, air treatment), efficient use of water • Recycling of nutrients and organic carbon from manure (e.g. separation, digestion), re-use of sewage sludge and re-use of waste water after treatment • Reduction of pesticide use and contamination (e.g. spreading equipment, precision application) , prevention of pollution from nitrates and phosphates
7. Air pollution monitoring and abatement	• Air emissions monitoring (e.g. sensors, analysers and monitors, including continuous emission monitors) • Abatement of pollution from stationary sources (e.g. filtration, scrubbers, stabilisation of by-products, leakage prevention)

[15] When the processes in question are related to water treatment or waste treatment, then the relevant technological area is 'water treatment and monitoring' or 'materials, waste and resources' respectively.

Appendix 3: Template for the Quick Scan

This template may be modified by the ETV Technical Working Groups and published as a guidance document, without need to update the General Verification Protocol.

VB logo

EU Environmental Technology Verification

Quick-Scan

Purpose: *This form aims to collect sufficient information about the proposed technology in order to evaluate eligibility under the EU ETV Programme and to provide early indication of the potential costs involved. The proposer completes the Quick scan for assessment by the Verification Body. The boxes for responses, in grey, may be extended but responses should remain brief and no more than one half-page each..*

Verification Body	Proposer
Name: Contact person: Address: Telephone: Telefax: Email:	Name: Contact person: Address: Code NACE: Number of employees: Telephone: Telefax: Email:

Quick-Scan date:	
Previous Quick Scan performed: ☐ No ☐ Yes, date:	*Indicate if you have already submitted a quick-scan on the same or similar technology to be evaluated by this Verification Body*

Identification of the Technology	
Name of the Technology:	*NB : A technology can be a product, a process or a service*

Technology Area:

If the technology could fit in more than one area, please signal this and insert a clarification in the comment section.

☐ Water Treatment and Monitoring

☐ Materials, Waste and Resources

☐ Energy Technologies

☐ Other:

Comments:

General description of the Technology

Introduction or context:

Briefly explain the specific problem(s) or opportunities your technology wishes to address

Main purpose of the technology:

How does this technology address the problems or opportunities?

Relevant alternatives

The 'relevant alternative' helps to determine the environmental added-value and innovation level through a qualitative comparison (quantitative if data is available). It should perform an identical or similar function as the technology under verification but it can correspond to different technologies working in sequence, e.g. in recycling, a material sorting procedure including dismantling can be an alternative to a crusher. It should be a current technology that is commercially available, it should be legal and accepted by end-users in the specific targeted market(s), It should also be effective in achieving a reasonably high level of protection of the environment.

Principle used:

Which are the scientific or technical principles and techniques used by this technology

Which are the main claim(s) on the technology's performance that would need to be verified? (Preliminary elements for the performance claim)

Consider as much as possible verifiable, quantifiable features, expressed in absolute (i.e. not comparative) terms. Please note that the initial performance claim is starting point for the verification and may evolve during the verification process

Under which conditions is this performance(s) achieved?

Detail the key operational parameters and limits in order for the technology to perform as described in the claim.

Main technical standards, regulations or references applicable to this technology:

Are there existing standards that cover (parts of) this technology? What are the main regulations relevant for this technology? Are you aware of any guidelines that would be useful for the verification of this technology?

Market readiness

Is the technology already on the market?

☐ No ☐ Yes, number years:

If no, is there a prototype or a demonstration unit available?

☐ No ☐ Yes ☐ Pilot scale ☐ Full-scale

When transforming the prototype/ demonstration unit into a marketable product, will any changes affect the technology's performance?

☐ No reason:

☐ Yes How substantial will the changes be?

Comments:

A verification will check whether the technology matches the claimed performance. Ideally this verification should only be done once the product is finished, so as to reduce costs of new verifications with changes or upgrades to the technology.

The intention is to determine if the technology is ready to market: "is it available on the market or at least available at a stage where no substantial change affecting its performance will be implemented before introducing the technology on the market (e.g. full-scale or pilot scale with direct and clear scale-up instructions)".

Innovation level

Description of the innovation provided by the technology, in comparison with relevant alternatives on the market:

Novelty presented by the technology in terms of design, raw materials involved, energy used, production process, use, recyclability or final disposal, when compared with the alternatives identified above

Environmental added-value

Please provide a short overview of the major positive and negative environmental aspects of your technology in each of the four main life-cycle stages identified below:

You are expected to provide as much information as possible, especially for the manufacturing and use phases. Qualitative or quantitative information may be given on emissions, waste streams, consumption or use of raw materials, energy and water. The information provided will help the Verification Body assess whether your technology would fit and benefit from an ETV. If you have no detailed information you are encouraged to provide any generic information you may have useful to the evaluation.

In some cases you may limit the amount of information, in particular when:
i) the technology will lead to environmental pressures/impacts that are not significantly different than those of the relevant alternative
ii) those environmental pressures/impacts are negligible compared to those of the other phases
iii) the information cannot be obtained – please provide a short justification in this case

Natural resources (raw materials, energy) extraction and transformation phase:

Is this stage under your direct control? ☐ Yes ☐ No

Do you have information concerning environmental aspects for this stage? ☐ Yes ☐ No ☐ Partial

In terms of environmental impacts or environmental added value, are there significant differences in this stage between your technology and relevant alternatives?

☐ Yes ☐ No

Extraction, refining, processing, transformation and transport of natural resources including every aspect of all activities involved before the manufacture of the technology's equipment, sub-assemblies or products. By definition, this also includes all of the raw materials, the energy and water used and all waste or emissions released to the environment during these activities.

Major positive and negative environmental aspects:

Manufacturing phase:

Is this stage under your direct control? ☐ Yes ☐ No

Do you have information concerning environmental aspects for this stage? ☐ Yes ☐ No ☐ Partial

In terms of environmental impacts or environmental added value, are there significant differences in this stage between your technology and relevant alternatives?

☐ Yes ☐ No

Manufacturing of parts, components, machinery and of products including every aspect of the production of the technology. In general, it is expected that this will include the production of most if not all sub-assemblies. This also includes all of the water, energy and consumables used, together with all of the emissions and all of the products and wastes. This will generally occur on production sites under control of the proposer.

Major positive and negative environmental aspects:

Use phase:

Is this stage under your direct control? ☐ Yes ☐ No

Do you have information concerning environmental aspects for this stage? ☐ Yes ☐ No ☐ Partial

In terms of environmental impacts or environmental added value, are there significant differences in this stage between your technology and relevant alternatives?

☐ Yes ☐ No

Use and maintenance phase of a product, a process or a service including estimates of its use by the client/end-user refers to consumables, maintenance, and all raw materials, energy and water used for its functioning, as well as all the emissions, products and waste streams.

Major positive and negative environmental aspects:

End of life phase:

Is this stage under your direct control? ☐ Yes ☐ No

Do you have information concerning environmental aspects for this stage? ☐ Yes ☐ No ☐ Partial

In terms of environmental impacts or environmental added value, are there significant differences in this stage between your technology and relevant alternatives?

☐ Yes ☐ No

Major positive and negative environmental aspects:

End of life of a technology including every aspect of all activities involved in the 'End of Life' of a product or an equipment, when it is discarded by the client/end-user, including its recycling, dismantling and/or disposal of all components. This also includes all of the water, energy and consumables used, together with all types of emissions, all of the products and wastes.

Potential to meet user needs

Does the technology have the potential to meet user needs?

☐ Yes ☐ No

What specific user needs is the technology addressing? How does this technology meet the user needs?

Does this technology address a need in the market? Are the advantages provided a real advantage to the user? If the technology is already on the market provide general information on its success in addressing user needs.

Fulfilment of legal requirements

What is the target market for this technology?

☐ EU ☐ Specific country/countries:

☐ Other:

Does the technology fulfil the legal requirements in the targeted market(s)?

☐ Yes ☐ No

Comments:

Intellectual Property Rights (IPR)

Are you the sole and full owner of the technology? ☐ Yes ☐ No

If no, do you detain intellectual property or other rights on the technology?

☐ Yes

Description of the license or other contractual arrangement giving you the legal right to ask for the technology to be subject to a verification procedure:

☐ No

Are there any Intellectual Property issues in respect of this technology or any part or aspect of the technology that might prevent its development and/or which could result in any legal or other issues for the ETV Programme?

☐ Yes ☐ No

Comments:

☐ Please tick here to authorize the Verification Body to share the information provided in the Quick Scan in a confidential way with the ETV Technical Working Groups.

The purpose of information sharing is harmonization and improvement of the EU-ETV programme. All members of the Technical Working Groups have the same confidentiality obligations as the Verification Body.

Please note that, once a verification contract is concluded, the main process documents including the Quick Scan, specific verification protocol and verification report, will be shared with the ETV Technical Working Groups in a confidential way.

Existing data

Are there available test results or other data to back-up the technology's performance?

Please include in your comments, if a test plan was followed, if standard methods were used, if testing was done by accredited testing bodies, i.e. ISO 17025

☐ Yes ☐ No

Comments:

If test results are not available, please indicate if you have a test plan prepared and/or if there are test methods available, including standard methods.

Assessment of the technology description

The technology fits in the scope of the EU ETV programme?

Comments:

☐ Yes ☐ No

Description/principles clear ? ☐ Yes ☐ No

Comments:

Clear and verifiable performance claim(s)? ☐ Yes ☐ No

Comments:

Ready-to-market? ☐ Yes ☐ No

Comments:

Prototype in advanced stage of development? ☐ Yes ☐ No

Comments:

Technology shows innovative characteristics? ☐ Yes ☐ No

Comments:

Potential to meet user needs? ☐ Yes ☐ No

Comments:

Fulfilling legal requirements (limited to VB's expertise)? ☐ Yes ☐ No

Comments:

Technology shows environmental benefits? ☐ Yes ☐ No

Comments:

Life-cycle aspects described? ☐ Yes ☐ No

Comments:

Test results are available? ☐ Yes ☐ No

Comments:

Further testing would/could be necessary? ☐ Yes ☐ No

Comments:

Conclusions of quick scan by the Verification Body

Enough information is provided to conclude? ☐ Yes ☐ No

If no, indicate the information that needs to be provided:

If yes, is the technology recommended for ETV? ☐ Yes ☐ No

Why?

Technology in the scope of VB ? ☐ Yes ☐ No

Comments / remarks / recommendations:

Estimated cost range for a verification (excluding tests):

Proposer:
Name:
Date:
Signature:

Verification body:
Name:
Date:
Signature:

Appendix 4: Template for the Verification Proposal

This template may be modified by the ETV Technical Working Groups and published as a guidance document, without need to update the General Verification Protocol.

VB logo

EU Environmental Technology Verification

Verification Proposal

Purpose: *This form intends to collect further information on the technology you would like to propose for verification after the first eligibility check. At this stage, all relevant information is exchanged between the proposer and the Verification Body in order to conclude a verification contract and allow for the preparation of the specific verification protocol. This Proposal is to be completed by the proposer and assessed by the Verification Body. The boxes for responses, in grey, may be extended. Additional information and documents may be attached, with references in the core text for clarity.*

Verification body	**Proposer**
Name: Contact: Address: Telephone: Telefax: Email: Date Quick Scan:	Name: Contact: Address: Telephone: Telefax: Email:

Previous Verification:

Previous Verification performed: ☐ No ☐ Yes, date:

Remarks out of Quick Scan to be considered (for Verification Body):

Technology Description– technical documentation

The technical documentation shall make it possible to understand the technology, to define the performance claim and to assess the conformity of the technology design with the performance claim. It shall contain at least the following elements:

- *a unique identifier for the technology, e.g. commercial name;*
- *a general description of the technology;*
- *conceptual design and manufacturing drawings, schemes of components, sub-assemblies, circuits, etc;*
- *descriptions and explanations necessary for the understanding of those drawings, schemes and operation of the technology;*
- *where relevant, standards or technical specifications applied in full or in part;*
- *results of design calculations made, examinations carried out, etc.*

Technology Description:

Intended application of the technology

The application of the technology should be defined by describing the matrix and the purpose(s) of the technology. The matrix refers to the type of material for which the technology is intended e.g., soil, drinking water, ground water, cooling water, alkaline degreasing bath, effluent from domestic wastewater treatment plant etc.

The purpose(s) is a measurable property that is affected by the technology e.g, reduction of nitrate concentration, separation of volatile organic compounds, reduction of energy use (MW/kg), bacterial removal, monitoring of NO_x, improvement of heating value etc. It is important that the purpose describes the claimed effect in ***quantitative*** *terms, e.g. reduction of nitrate concentration in mg NO_3/L. For further information on how to define the matrix and the purpose, please refer to the General Verification Protocol, Table 1 in Section B.III.1 or to the Guide for Proposers.*

Matrix:

Purpose:

Technical conditions:

Initial performance claim

The specifications included in the initial performance claim shall relate to the technology itself and shall be quantitatively verifiable through tests. The initial performance claim shall state the conditions under which the specifications are applicable and mention any relevant assumption(s) made. For further information on how to define a clear initial performance claim, please refer to the Guide for Proposers.

Initial performance claim:

Description of tests performed and existing data

The tests performed on performance parameters shall be described with all necessary details, including the qualification of testing bodies, test methods used (with references to standards where appropriate), test plans and test reports. Consult the Verification Body if there are confidentiality issues related to the information on tests.

Are there available test results or other data to back-up the technology's performance?

☐ Yes

Description of test plan:

Description of test methods, including reference if standard methods were used:

Description of existing data:

Qualification of the test body for the relevant tests:

☐ ISO 17025 ☐ none ☐ other:

☐ No

Is there a test plan available? ☐ Yes ☐ No ☐ Unknown

Is there a test method available? ☐ Yes ☐ No ☐ Unknown

Full description:

Environmental added-value

Please provide as much information as possible on the positive and negative environmental aspects resulting from your technology Firstly, please identify the technologies that constitute relevant alternative(s) to your technology since this may help to identify the environmental added-value of your technology. Then indicate the phases which are most relevant to your technology, in terms of environmental aspects. You may indicate that a particular phase is not relevant to assess the environmental aspects of your technology when:

- *the technology will lead to environmental pressures/impacts that are not significantly different than those of the relevant alternative(s)*
- *those environmental pressures/impacts are negligible compared to those of the other phases*
- *the information cannot be obtained – please provide a short justification in this case. It is expected that for the manufacturing and use stages the proposer will normally possess relevant information, as designer and manufacturer of the technology.*

For each of the identified phases, and especially for the manufacturing and use phases please indicate as much qualitative information as possible regarding each environmental parameter. When available, support the elements provided with quantitative information. You may present information based on a comparison with the relevant alternative, or you may present absolute values, if you are unable to compare the performance of your technology with the one of a relevant alternative(s).

Relevant alternatives (if available):

For the phases identified in the Quick Scan as different from the relevant alternative(s), please provide information as detailed as possible on the following environmental parameters:

Indicate relevant phase:

Emission of pollutants to air:

Identify or quantify air pollutants including those listed under the green-house gas emissions

Emission of pollutants to water:

Identify or quantify water pollutants

Emission of pollutants to soil:

Identify or quantify soil pollutants

Consumption of natural resources:

Identify consumption of natural resources, especially rare raw material required for the process Energy and water consumption will be addressed in the two following points.

Energy consumption:

Identify energy consumption and energy sources (indicate use of non-renewable or renewable energy)

Water consumption and related processes:

Identify the consumption or the use of water but also the quality of the water used and the necessary treatment before and after use, the consumption or the use of water. This section includes process water, but also water used in bulk such as cooling water.

Production of non-hazardous waste:

Identify or quantify non- hazardous waste

Production of hazardous waste:

Identify or quantify hazardous waste

If relevant, additional information on the overall productivity of the technology should also be provided, namely:

Production efficiency – productivity:

Indicate any significant differences in productivity of the technology vs. the relevant alternative (e.g. for recycling: ratio of substance recycled vs. quantity of substance contained in the waste).

Production efficiency – final quality:

Indicate the differences in the quality of the final product vs. the relevant alternative (e.g. for recycling: the level of purity of the recovered substance).

Other information (additional information that might be useful for the assessment relating to e.g., economic, social and safety aspects):

Provide additional information that could justify or complement the information provided for environmental criteria. For example, a technology might be proposed that has little or no environmental benefits in comparison to the existing commercially available alternatives but provides greater social, economic or safety benefits

Assessment of Proposal (for the Verification Body)

Assessment of the technology

Performances parameters correctly described:	☐ Yes	☐ No
Innovative technology:	☐ Yes	☐ No
Ready-to-market:	☐ Yes	☐ No
Prototype in advanced stage of development:	☐ Yes	☐ No

Assessment of environmental aspects

Conclusions:

Preliminary assessment of existing data

Tests performed on technology:	☐ Yes	☐ No
Comments:		
Test body suitably qualified:	☐ Yes	☐ No
Comments:		
Test plan available:	☐ Yes	☐ No
Comments:		
Test plan suitable:	☐ Yes	☐ No
Comments:		
Test method available (standards):	☐ Yes	☐ No
Comments:		
Test methods described:	☐ Yes	☐ No
Comments:		
Test methods suitable:	☐ Yes	☐ No
Comments:		
Test methods reproducible:	☐ Yes	☐ No
Comments:		
Test methods accurate:	☐ Yes	☐ No
Comments:		
Test results available:	☐ Yes	☐ No
Comments:		
Test results relevant to the performance claim:	☐ Yes	☐ No
Comments:		
Test results can be used in the verification process	☐ Yes	☐ No
Comments:		

Conclusions on the Proposal:

Proposer:	**Verification body:**
Name:	Name:
Date:	Date:
Signature:	Signature:

Appendix 5: Indicative template for the Verification Contract

Verification contract

Technology name *(commercial name or name under which it will be available on the market)*	

Verification body		**Proposer**	
Name:		Name:	
Contact:		Contact:	
Address:		Address:	
Telephone:		Telephone:	
E-mail		E-mail	

{Verification Body name} agrees to perform the verification of the above mentioned technology for the below defined application in accordance with the EU-ETV environmental technology verification method as described in the General Verification Protocol version 1.1.

Application

Matrices:

Purposes:

Costs and payments

The steps and the costs of the verification procedure includes {check parts and indicate costs as appropriate}:

Verification steps	**Costs {currency}**
Quick scan report and proposal review	
Specific verification protocol	
(in case of tests) Test system assessment and possible audit	
Final assessment and verification report	
Statement of Verification	
Total costs	

Costs are all inclusive, excluding VAT.

Example of the payment scheme is as follows:

Payment	**Time of payment**
10% advance payment	With signed contract
50% payment	After approval of specific verification protocol
40% final payment	After delivery of verification report and statement

Potential tests and analyses

On the basis of available information and as an indication, data from the following tests and analyses are considered necessary to complete the verification procedure. This will have to be confirmed or revised in the specific verification protocol. It is the responsibility of {Proposer} to contract with appropriate test bodies. {Proposer} will include, in any contract with test bodies, provisions ensuring that the test body receives all relevant information on the tests to be performed including the specific verification protocol[16], and allowing {Verification Body} to receive all relevant information related to accreditations, quality management and the test system relevant for the tests to be performed, and to perform the test system assessment, including an audit where applicable. The cost of the tests and analyses is not included in the estimates above[17].

Tests	**Analyses**	**Comments**

Deliverables

{Proposer} agrees to provide without costs and delay for {Verification Body}:

- A contact person for the verification;
- Existing test data of the technology;
- Information on technology, details and mode of action as required for a full understanding of the technology;
- Comments on documents submitted for comment.

{Verification Body} agrees to provide within the contract:

- Verification of the technology as indicated in this contract;
- One original verification report and verification statement.

Information

[16] Confidential information may be removed if not essential, or may be covered by a confidentiality agreement with the test body.

[17] If appropriate, a cost estimate for the tests and analyses may be provided separately.

{Verification Body} and {Proposer} shall both inform the other party of any change in the conditions for the verification, in particular of any change made to the technology before the conclusion of the verification process.

Intellectual property rights

{Proposer} warrants that the technology submitted for verification is owned or that intellectual property rights are fully controlled by {Proposer}.
[Alternatively:] Statements by the owner(s) of the technology or related intellectual property rights, consenting explicitly to the verification, are annexed to this contract.

{Proposer} will retain all rights to technical data produced during the verification.

{Verification body} will retain all rights to the verification process, protocols, plans, methods and procedures developed by {Verification body}.

Schedule

A detailed schedule shall be part of the specific verification protocol. This will be available for comment within 6 weeks from the date of signature of the contractual agreement or from the date of the first payment, whatever comes latest.

Limitations

{Verification Body} performs the verification as described for the application of the technology as defined in this contract. This verification cannot be considered an endorsement, approval, authorization or warranty of any kind, and the performance parameters provided cannot be extended to other applications or to other technologies. The verification results reflect the performance of the technology at the time and under the conditions of verification; they cannot be understood as guaranteeing the same level of performance in future or under other conditions.

{Proposer} agrees not to use the Statement of Verification or verification report, or to refer to those for any other technology or application, and not to use extracts of the Statement of Verification for any purpose.

Confidentiality

The final version of the Statement of Verification will be made available publicly by the EU ETV pilot programme through appropriate media such as the EU-ETV web site. The final versions of reports, protocols and plans may be made publicly available by the EU ETV pilot programme after agreement between {Verification Body} and {Proposer}.

All other information obtained or produced during the verification is considered confidential for the party not owning the intellectual property rights.

During verification, {proposer} allows {Verification Body} to give external auditors access to all information obtained or produced during the verification, as specified in the EU ETV General Verification Protocol.

{Proposer} agrees that general information on the verification process and the following documents produced during the verification may be shared in a confidential way with the ETV Technical Working Groups for the purpose of co-ordination and improvement of the

EU-ETV scheme: Quick scan without financial estimates, draft and final specific verification protocol, draft and final verification report without appendices, draft and final Statement of Verification. It is reminded that all members of the Technical Working Groups share the same confidentiality obligations as the Verification Body.

In exceptional and justified cases where the sharing of specific pieces of information with the Technical Working Group, in the conditions of confidentiality indicated above, would appear to put at risk the reputation or commercial interests of {Proposer} or third parties, {Proposer} may ask {Verification Body} not to share these pieces of information or data. The Verification Body will then inform the Technical Working Group why this information cannot be shared.

Liability

{Verification Body} assumes no liability for any damages associated with the use of verification results, and {Proposer} agrees to cover any costs that may be imposed upon {Verification body} in connection with claims raised with this respect.

{Verification Body} assumes no liability for delays or for verification results that damage the sales of the technology or the proposer.

Force majeure

The parties of this contract shall not be liable for failures beyond their control.

Termination

Either party may terminate this contract with a 15 days written notice. In the case of termination, any costs endured by {Verification Body} as part of the verification that cannot be averted shall be paid in full by the terminating part. If the termination is done by the {Verification Body} due to proposer's non-fulfilment of the obligations in this contract then the costs shall be paid in full by{Proposer}.

Disputes

Any dispute that may arise in relation with the verification procedure shall be governed by {Verification Body home country} law.

Signatures

Verification body		**Proposer**	
Name:		Name:	
Signature:		Signature:	
Title:		Title:	
Date:		Date:	

Appendix 6: Table of Contents and parameter definition table for the specific verification protocol

The specific verification protocol shall have the following table of content.

Table of contents

1. Introduction
   1.1. Name of technology
   1.2. Name and contact of proposer
   1.3. Name of Verification Body and responsible of verification
   1.4. Organisation of verification including experts, and verification process
2. Description of the technology and application
   2.1. Summary description of the technology
   2.2. Intended application including matrix, purpose, technologies, technical conditions
   2.3. Associated environmental emissions and/or impacts
3. Verification parameters definition (revised performance claim)
   3.1. Performance parameters[18]
   3.2. Operational parameters
   3.3. Environmental parameters
   3.4. Additional parameters
   3.5. Parameter definition table
4. Test methods
5. Requirements on test design and data quality
   5.1. Test design
   5.2. (if needed: Reference analysis)
   5.3. Data management
   5.4. Quality assurance
   5.5. Test report requirements
6. Evaluation methods
   6.1. Calculation of performance parameters including determination of uncertainty
   6.2. statistical methods
   6.3. Evaluation of test quality
   6.4. Comments on additional parameters
7. Existing data
   7.1. Summary of existing data
   7.2. Evaluation of existing data quality
   7.3. Accepted existing data
   7.4. Conclusion on the need or not for additional tests and measures

[18] Including the consideration of regulatory requirements, application based needs, key environmental factors and state of the art performance of similar technologies as provided under B.IV.2.

8. Verification schedule
9. Quality assurance including test system audit where applicable
10. References

Appendix 1 Terms and definitions

Parameter definition table

The parameter definition table, included in the specific verification protocol as section 3.5, shall follow the following template. This template may be modified by the ETV Technical Working Groups and published in a guidance document, without updating the General Verification Protocol.

Table 6: Parameter definition table

Parameter (list of parameters to be considered in the specific verification protocol)	Value	Existing legal requirements and/or BAT values	Test method(s)	Test/available data (+ performer of tests)
Performance parameters (technical or functional performance)		e.g. Required in France, legal reference	e.g. ISO....	available data + sample (laboratory)
Operational parameters e.g. temperature	e.g. max 80° C			e.g. monitored for 2 months (subcontractor)
Environmental parameters				
Resource use during production of the product or equipment				
Resource use during use phase Water Electricity Raw materials	e.g. 600 m^3/year		e.g. flow meter type...	
Consumables				
Use of hazardous substances				
Waste generated				
Emissions (air, water)				
Reusability, recyclability (fully or in part)				
End of life decommissioning and disposal				
Additional parameters				
Man-power needed operation maintenance				
Space needed operation maintenance				
Service life				
Robustness/vulnerability to changing conditions of use				

Appendix 7: Table of Contents for the test plan and test report

The test plan shall have the following table of content:

Test plan

1. Introduction
   1.1. Name of technology
   1.2. Name and contact of proposer
   1.3. Reference of the specific verification protocol
   1.4. Name of test body/test responsible
2. Test design
   2.1. Test site
      2.1.1. Types of test sites
      2.1.2. Addresses
      2.1.3. Descriptions
      2.1.4. Special needs (e.g. access restrictions or clearance, training needs)
   2.2. Tests
      2.2.1. Test methods (incl. sampling methods)
      2.2.2. Test staff
      2.2.3. Test schedule
      2.2.4. Test equipment
      2.2.5. Type and number of samples
      2.2.6. Operation conditions
      2.2.7. Testing
      2.2.8. Technology maintenance
      2.2.9. Health, safety and wastes
      2.2.10. Analytical performance requirements (if applicable)
      2.2.11. Preservation and storage of samples (if applicable)
      2.2.12. Data management including storage, transfer and control (where applicable)
3. Quality assurance
   3.1. Test plan review
   3.2. Performance control – analysis
   3.3. Data integrity check procedures
   3.4. Test system audit
   3.5. Test report review
4. Test report
   4.1. Amendment report
   4.2. Deviations report
5. References

Appendix 1 Terms and definitions
Appendix 2 References methods

Appendix 3 In-house test methods
Appendix 4 In-house analytical methods
Appendix 5 Data reporting forms

The test report shall have the following table of content:

Test report

1. Introduction
   1.1. Name, description of, the condition of, and unique identifier of the technology tested
   1.2. Name and contact of proposer
   1.3. Name and contact of test body
   1.4. Unique identification reference of the test report[19],
2. Test design
   2.1. Reference to test plan and specific verification protocol
   2.2. Identification of the method(s) used
3. Description of the method for selecting the technology item(s) to be tested and date of receipt where relevant
4. Test results
   4.1. Date(s) and location(s) of performance of the tests
   4.2. Test results with estimation of the uncertainty
   4.3. Information on specific test conditions, such as operational conditions
   4.4. Test data summary
   4.5. Test performance observation, including opinions and interpretations where appropriate and needed, additional information if required by specific methods
   4.6. Test quality assurance summary, incl. audit results where applicable
   4.7. Amendments to and deviations from test plan
   4.8. The name(s), function(s) and signature(s) or equivalent identification of person(s) authorizing the test report
5. References

Appendix 1 Terms and definitions
Appendix 2 Test data report
Appendix 3 Test system audit reports (where applicable)
Appendix 4 Review of analytical performance (where applicable)
Appendix 5 Amendment and deviation reports for test

[19] and on each page an identification in order to ensure that the page is recognized as a part of the test report, the page number and total number of pages, and a clear identification of the end of the test report

If the verification involves sampling, the section 3 above (Description of the method for selecting the technology item(s) to be tested and date of receipt where relevant) shall include the following sub-sections, where necessary for the interpretation of test results:

3.1. The date of sampling;

3.2. A unique identifier of the substance, material or product sampled[20];

3.3. The location of sampling[21];

3.4. A reference to the sampling plan and procedures used;

3.5. Details of any operational conditions during sampling that may affect the interpretation of the test results;

3.6. Any standard or other specification for the sampling method or procedure, and deviations, additions to or exclusions from the specification concerned.

[20] including the name of the manufacturer, model or type of designation and serial numbers as appropriate.

[21] including any diagrams, sketches or photographs

Appendix 8: Table of Contents for the Verification report

The verification report shall have the following table of content:

Table of contents

Appendix 9: Template for the cover page and table of contents for the Statement of Verification

Verification Body logo(s)

Technology:

Registration number:

Date of issuance:

Verification Body	**Proposer**
Name:	Name:
Contact:	Contact:
Address:	Address:
Telephone:	Telephone:
E-mail	E-mail
Web	Web

Signatures

Verification Body	Proposer

Accreditation Mark
accreditation register or certificate number

Internet address where this Statement of Verification is available:
http://iet.jrc.ec.europa.eu/etv/

The Statement of Verification shall have the following table of content:

Table of Contents

1. Technology description
2. Application
   - 2.1. Matrix
   - 2.2. Purpose
   - 2.3. Conditions of operation and use
   - 2.4. Verification parameters definition summary
3. Test and analysis design
   - 3.1. Existing and new data
   - 3.2. Laboratory or field conditions
   - 3.3. Matrix compositions
   - 3.4. Test and analysis parameters
   - 3.5. Tests and analysis methods summary
   - 3.6. Parameters measured
4. Verification results (performance, operational and environmental parameters)
5. Additional information, including additional parameters[22]
6. Quality assurance and deviations

[22] with comments or caveats where appropriate

Appendix 10. List of ISO 17025 requirements to be considered as part of the quality management and general test requirements of the GVP

As indicated above, the quality management and general test requirements of the GVP are those requirements of ISO 17025 that are considered relevant for the tests to be performed. A requirement is to be considered relevant if it directly contributes to or influences the quality of the tests to be performed.

The table below distinguishes 3 types of requirements in ISO 17025 for the purpose of ETV:

- Those "essential" that should be considered relevant in all circumstances in which they apply;
- Those "important" that may or may not be relevant depending on the nature of the test(s) and of the body performing the tests (considered on a case-by case basis);
- Those "minor" that are an integral part of a quality management system, but are not likely to directly influence the quality of tests performed under ETV

In order to ensure that the relevant quality management and general test requirements are fulfilled, a test system audit is mandatory for the test activities that are not covered by an ISO-17025 accreditation. The relevance of the requirements has to be assessed using Table 7 ‘Relevance of ISO17025 requirements for the quality of specific tests in the context of EU-ETV’ below in a risk-based perspective, focusing on those elements that are most likely to affect the quality of the tests to be performed. Elements affecting the quality of tests that are out of the scope of the verification do not need to be considered.

The procedures referred to in ISO 17025 can be part of the quality manual of the test body, they can be part of a quality plan dedicated to the tests involved in the verification, or they can be integrated in the test plan.

Table 7: Relevance of ISO17025 requirements for the quality of specific tests in the context of EU-ETV

ISO-17025 Requirement	Relevance for EU-ETV			Comment
	Essential	Important	Minor	
4. Management requirements				
4.1 Organization	4.1.1 4.1.3 4.1.4 4.1.5 a) b) d) e) f) g) h) i) k)	4.1.2	4.1.5 c) j) 4.1.6	
4.2 Management system	4.2.1 4.2.5 4.2.6	4.2.2 4.2.7	4.2.3 4.2.4	
4.3 Document control	all			
4.4 Review of requests, tenders and contracts		all		focus should be on the review of the contract(s) applicable to the verification
4.5 Subcontracting of tests and calibrations	all, if applicable			
4.6 Purchasing services and supplies	4.6.1 to 4.6.3	4.6.4		focus should be on the services and supplies that are used in the tests applicable to the verification
4.7 Service to the customer	4.7.1		4.7.2	
4.8 Complaints		all		
4.9 Control of nonconforming testing and/or calibration work	4.9.1	4.9.2		
4.10 Improvement			all	
4.11 Corrective action	all			Essential when the nonconforming work could reoccur during the tests related to the verification
4.12 Preventive action			all	
4.13 Control of records	all			
4.14 Internal audits		all	-	Includes audits foreseen in C.III
4.15 Management reviews			all	
5. Technical requirements				
5.1 General	all			
5.2 Personnel	5.2.1 5.2.3 5.2.4 5.2.5	5.2.2		

5.3 Accommodation and environmental conditions	all			
5.4 Test and calibration methods and method validation	all			
5.5 Equipment	all			
5.6 Measurement traceability	all			(whenever applicable)
5.7 Sampling	all			
5.8 Handling of test and calibration items	all			
5.9 Assuring the quality of test and calibration results	all			
5.10 Reporting the results	5.10.1 5.10.5 to 5.10.9		5.10.2 5.10.3 5.10.4	5.10.2 and 5.10.3 are replaced by appendix 7 of the GVP as far as test reports are concerned