

CONSULTATION PAPER ON AN EU SYSTEM FOR ENVIRONMENTAL TECHNOLOGY VERIFICATION

The European Commission is considering proposing the establishment of an EU-wide system, offering credible verification of the performance and of the potential impacts on the environment of new technologies: Environmental Technology Verification (ETV). This public consultation aims at gathering a wide variety of views on the main options identified in order to prepare a Commission initiative in 2008.

Innovative environment-friendly technologies are needed to address the environmental challenges faced by Europe and the world, such as climate change, scarcity of natural resources or the loss of biodiversity. At the same time, developing and using these technologies opens up new technology fields and creates new business opportunities – eco-innovation could become a driver for future growth.

But many new technologies lack proven information on their performance under real or field conditions. This makes it difficult for their manufacturers to convince first customers due to the perceived risks, to secure the sources of finance necessary to fund related industrial developments and sometimes it delays the necessary authorisations to place the technologies on the market. In a recent survey of former recipients of a UK R&D grant scheme, testing and certification were identified as some of the most significant challenges they face en-route to market (see EIAG webpage in annexed list).

Along with other ways to meet the needs of reliable information on new technologies, technology verification systems have several advantages:

- They use qualified third parties and recognised procedures to ensure the reliability of verification results: investors and customers can have confidence that the new technology indeed meets the claimed performance;
- Most existing schemes are voluntary and therefore not part of mandatory requirements but can help prove the compliance with regulatory or customers requirements; their flexibility allows them to integrate different requirements and market situations;
- The establishment of such a scheme at EU level could offer the wide recognition necessary, both within Europe and globally, to make the most of verification results, following the principle 'verified once, accepted everywhere'.

For the purpose of this consultation, verification is to be understood as the independent quantitative assessment of the performance of an environmental technology, based on performance claims or pre-determined protocols.

It is to be distinguished from certification, which aims at guaranteeing that a technology meets technical standards or regulatory requirements permanently. Verification is most useful in areas where standards do not exist, in which case it may act as a standard precursor for specific products, tools or instruments, or in areas where standards are normally not applied.

1. EXISTING SYSTEMS AND SIMILAR APPROACHES

Several technology verification systems are already established in the world. In particular, the US Environmental Protection Agency and Environment Canada have been running such programmes for a decade. More recently, South Korea and Japan have launched similar programmes, on a pilot basis in the case of Japan.

The US system is based on verification protocols in pre-determined technology areas, the testing being done within the system. The main output is an extensive verification report, publicly available, with no judgement on the merits of the verified technology. Potential buyers have all the necessary information to make their own judgment, but analysing this information often requires a high level of expertise. Costs of verification for the vendor generally range between \$5,000 and \$100,000 (€3,500 - €71,000) and until recently, the vendors' contribution accounted overall for less than a fourth of the system total costs. The system has now changed to be fully funded through vendor's contribution. The average duration of a verification process is 14 months.

The Canadian system aims at verifying the claims on technology performance put forward by the vendors, and accepts tests data from any reliable independent third party. The main output is a verification certificate, including a short description of the technology and the performance claim that has been verified, giving a high level of assurance on the correctness of the claim. Costs of verification for the vendor generally range between CAD\$15,000 and CAD\$20,000 (€10,650 - €14,200), account for about half of the true cost of verification and does not include the cost of testings, which is done outside of the system and, depending on the complexity of the technology, can cost up to CAD\$100,000 (€71,000).

The flexibility of the Canadian approach, based on vendors' claims, seems *a priori* more appropriate in the European context, while focussing on some technological areas, like in the US system, may help better understand and address the needs of technology developers and users in these specific areas.

Some member States have established schemes which, although not addressing the whole scope or the same objectives of ETV, fulfil related needs. In the field of monitoring techniques in particular, three member States have established verification or certification programmes (MCERTS in the UK, UBA type-approval system in Germany, ACIME in France) and, for two of them, have laid down arrangements for mutual recognition of the schemes.

Some associations of industrial customers (EXERA in France, EI in the UK, WIB in the Netherlands) have also put in place a similar system, verifying new control and measurement technologies based on customers needs.

An EU system would build on existing schemes and use existing capacities and skills as far as possible, extending their benefits to the whole Single Market and ensuring a high level of recognition both within Europe and potentially worldwide.

2. MAIN FEATURES OF AN EU SCHEME UNDER CONSIDERATION

In the framework of the Environmental Technologies Action Plan (ETAP), the Commission has supported several research projects and one pilot project on ETV in a limited number of technology areas (see the common webpage of RTD projects in the annexed list). A recent report on ETV systems by the Commission's Institute for Prospective Technological Studies discussed some options for an EU scheme and presented the results of a market survey (see IPTS webpage in the annexed list).

Based on the preparatory projects and studies, a few points critical for the success of the scheme have been identified:

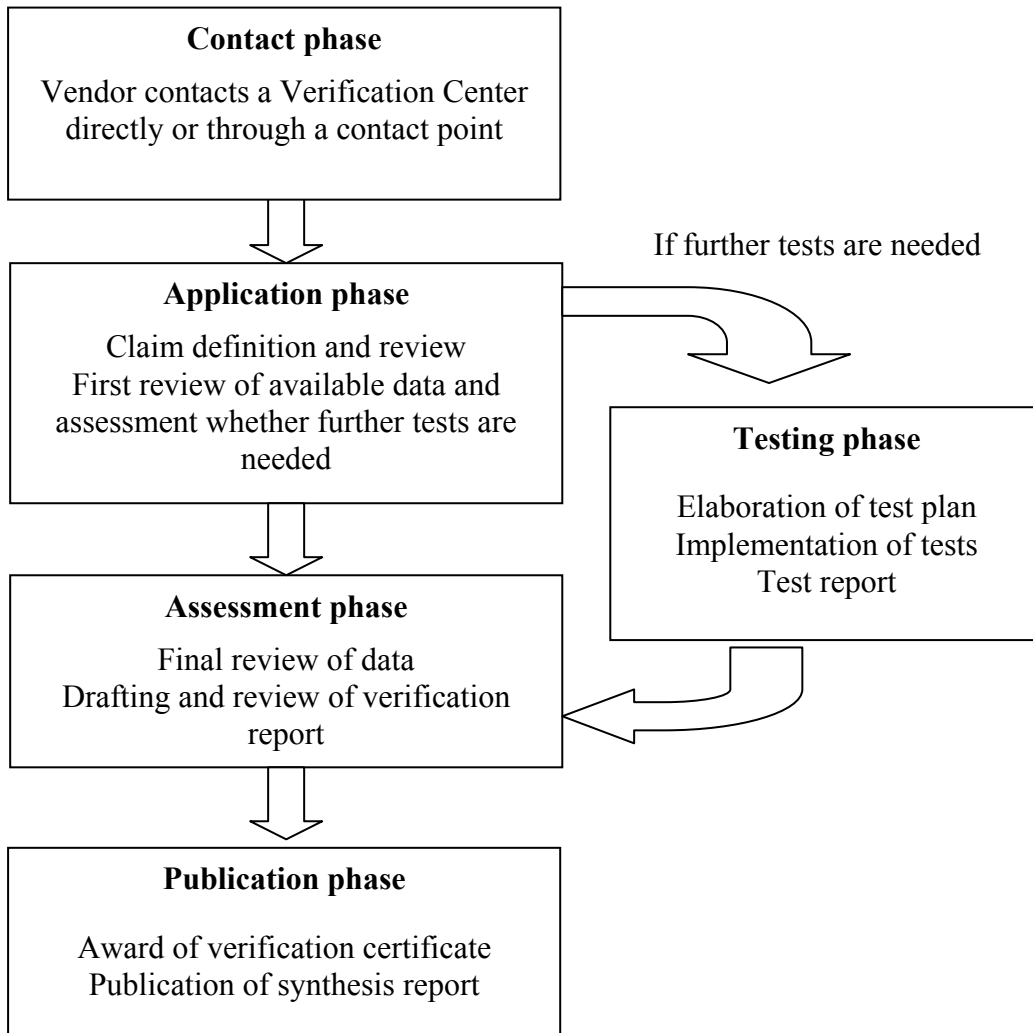
- The capacity to support SMEs and innovative businesses (both technology vendors and users) through a simple and user-friendly service;
- A wide recognition in the EU and ideally internationally making it unnecessary to repeat the verification in every Country where the technology is sold;
- A short verification time that does not compromise on the credibility and scientific soundness of verifications (in the order of 6 months, depending on technology and availability of test data);
- Limited costs for applicants, with the probable consequence that other sources of funding (public or private) will be required.

At this stage, it seems that a possible EU scheme addressing the points above could be based on the following operational principles:

- the ETV scheme verifies the claim put forward by the technology developer or vendor, after review of the claim to ensure that it addresses the relevant technical information and environmental impacts;
- the verification itself is based on the assessment of test data provided by the technology developer or vendor, following quality assurance procedures;
- if further tests are needed to assess the claim, a qualified laboratory performs the additional tests; available protocols and test standards are used whenever relevant;
- at the end of the process, a synthesis report is made publicly available describing the technology and performance claim and a certificate awarded to the technology vendor for use in business-to-business relations.

The system would be designed for environment-friendly technologies ready-for-the-market: production processes, industrial equipments or final products could be verified. It would not be designed for technologies at the pilot stage, which can still evolve before being put on the market, nor for standard technologies, which should be able to present enough references to convince customers.

The EU scheme could be implemented by a network of Verification Centres, one per technology area, and follow the procedure summarized below:



The role and use of the verification outputs (certificate and report) may differ depending on the market context and stage of development of the industrial project:

- they can be used to convince potential customers of the merit of the technology, or as a proof that it can meet customers requirements such as those expressed in public tendering documents;
- they can be used to convince investors or other financial partners of the technical and environmental soundness of the technology, to ensure the funding of investments necessary for its production;
- when an authorisation procedure (certification, type-approval) is necessary to market the technology in some member States or third country, they should help prove compliance with all or part of the authorisation requirements;

- when many new technologies are developed on a given market, with possibly variable performances, they can help the most performing technology prove their superiority and they can help purchasers and investors to better discriminate technologies on the basis of reliable information;
- the public availability of synthesis reports may help create references and benchmarks on the environmental performance of technologies, indirectly contributing to the development of more performing technologies and increasing the role of environmental performance in the competition between technology providers.

The EU ETV system would begin in a few thematic areas and would enlarge its scope progressively. Based on research projects in this field and on the experience of the US and Canadian systems, potential areas for the initial stage include monitoring techniques (such as continuous emission monitors or water quality control), waste water treatment technologies, equipments for renewable sources of energy and energy efficiency, air pollution abatement technologies including Greenhouse Gas abatement, clean technologies including waste and resource recycling.

3. ADDITIONAL ELEMENTS ON THE POSSIBLE STRUCTURE AND OPERATIONS OF AN EU SCHEME

This section is particularly addressed to the stakeholders already involved in technology development, testing or similar activities, and potentially interested in the possible structure and conditions of operation of an EU scheme.

The following structure, based on existing institutions and capacities, could be envisaged for the EU scheme:

- a small EU ETV Secretariat (less than 10 staff members) would ensure the overall coherence of the scheme, represent the scheme vis-à-vis public authorities and international partners; the Secretariat could be hosted by the European Commission or act under contract with the Commission;
- thematic Verification Centres (one for each of the technology areas covered by the system) would review the applications, verify tests data and award verification certificates; Verification Centres would be existing institutions, selected through a competitive process by the ETV Secretariat (or the European Commission) to implement the scheme in their area of expertise for the whole EU;
- when further tests are needed, qualified Testing Laboratories would implement the tests following a test plan agreed with the Verification Centre and prepare a test report; Testing Labs would be chosen by the technology vendor in agreement with the Verification Centre;
- national, regional or sectoral contact points, from existing networks providing support to SMEs, would aim at informing on the scheme and facilitating the relations between SMEs, Verification Centres and Testing Labs.

The synthesis report would be the only publicly available document and would be published at the end of the process. It would be valid for a fixed period of time to avoid providing support to out-dated technologies (for example for three years, as is the case in the Canadian system). It would include also the conditions of use, or maintenance requirements, or any additional information necessary to substantiate the performance claim.

The verification certificate would be accepted in all member States. In particular, it should be accepted by national authorities (such as certification bodies) as a valid input in national type-approval or certification procedures, with no need to repeat the verification through national procedures if the performance claim includes the same requirements as national procedures. The Commission is investigating also the conditions under which EU verification certificates could be accepted by other Verification systems in the world.

Funding provided by the technology vendor would cover the work of Verification Centres associated with their application (estimated in the range of €5,000 to €20,000 depending on the technology) and, where relevant, the work of testing labs (estimated in the range of €10,000 to €70,000 depending on the technology). Some support to the running of the scheme may be possible from EU and Member State resources.

The participation of stakeholders in advisory boards would be organised by the ETV secretariat and by Verification Centres. These boards would advise the actors of the system both on general issues (how to optimise verification procedures, support to innovation, the network of contact points, the communication strategy...) and on issues specific to the technology areas covered (technology trends, market or legal issues having an impact on verification...).

ANNEX: non-exhaustive list of links to relevant documents and websites

- (1) General information on ETAP and related actions and projects:
http://ec.europa.eu/environment/etap/index_en.htm
- (2) Studies commissioned by the Commission, Joint Research Centre (Institute for Prospective Technological Studies) on Environmental Technologies Verification systems:
<http://www.jrc.es/publications/pub.cfm?id=1504>
- (3) Paper of the UK Environmental Innovations Advisory Group on 'Testing and Certification' available on the EIAG page:
<http://www.dti.gov.uk/sectors/environmental/EIAG/page10066.html>
- (4) Research projects funded by the EU RTD 6th Framework-Programme and relevant for technology verification:
<http://www.eu-etv-strategy.eu/>
- (5) Website of the US Environment Technology Verification programme:
<http://www.epa.gov/etv/>
- (6) Website of the Canadian Environmental Technology Verification programme:
<http://www.etvcanada.ca/overview.asp>
- (7) Website of the South Korean system for the designation and verification of new environment technologies:
<http://www.koetv.or.kr/eng/index.html>
- (8) Website of the pilot project on Environmental Technology Verification in Japan:
<http://www.env.go.jp/policy/etv/en/index.html>
- (9) Website of the UK Monitoring Certification Scheme (MCERTS):
http://www.sira.co.uk/services_mcerts.html
- (10) Presentation of the Nordic project on Water Technology Verification Centres:
<http://www.nordicinnovation.net/prosjekt.cfm?Id=1-4415-201>
- (11) Website of EXERA, French network of users of measurement, control and monitoring equipments:
<http://www.exera.com/>