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AdvanceETV

"Coordination action on Environmental Technology Verification ETV - Building a framework for international cooperation"

Coordination action

Area 6.3.3.3
Environmental technologies verification and testing

D 2.3.2 Conclusions and findings of the WP5 organised conference to support mutual recognition- to support cooperation with International ETV Forum

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1 Introduction

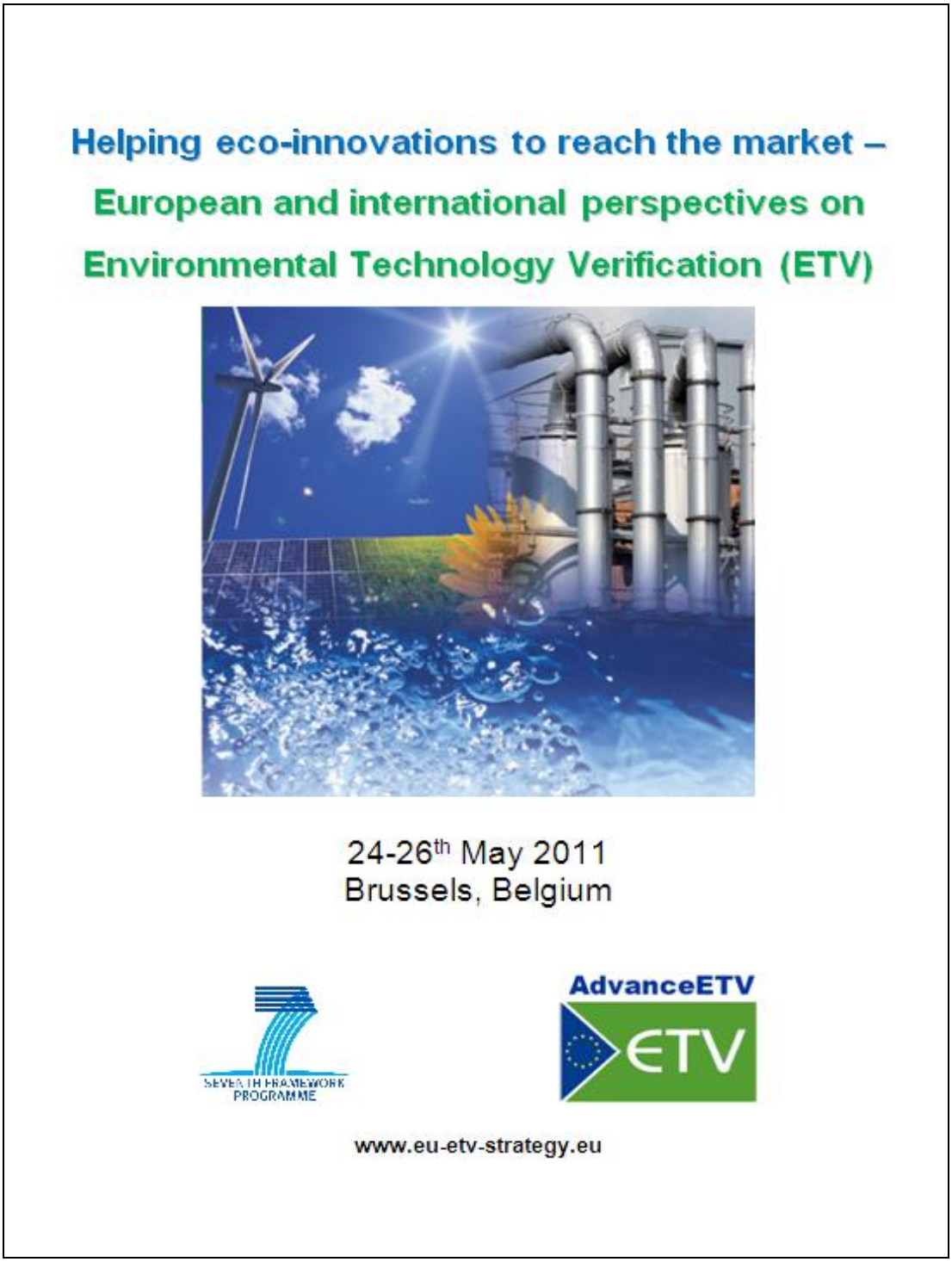

Figure 1: Front page of the proceedings of the conference

The ETV conference "Helping eco-innovations to reach the market – European and international perspectives on Environmental Technology Verification (ETV)" was organised by AdvanceETV and was held on 24-25th May 2011 at CEN-CENELEC Meeting Centre in Brussels/Belgium.
The first day of the event focussed on the introduction of the EU ETV pre-programme with the following presentations:

- **ETV in the landscape of EU innovation policy**
  (Nicholas Banfield, European Commission)
- **The EU ETV pre-programme**
  (Pierre Henry, European Commission)
- **The market case for ETV**
  (Jonathan Lonsdale, GHK Consulting Ltd/UK)
- **Environmental Technology Verification as an innovation service**
  (Thorkild Qvist Frandsen, Agrotech/Denmark)
- **The European General Verification Protocol – how is it organised?**
  (Uwe Fortkamp, IVL/Sweden)
- **The European General Verification Protocol – how does the verification procedure work?**
  (Uwe Fortkamp, IVL/Sweden)
- **Accreditation of Verification Bodies – a roadmap**
  (Carole Toussaint, COFRAC/France)
- **EU ETV pre-programme management**
  (Manuela Musella, EC Joint Research Centre/ The Netherlands)
- **Addressing barriers, gaps and needs for implementing ETV**
  (Derk van Ree, Deltares/The Netherlands)

The conference day was followed by a "Get Together" Event at the Representation of the State of Hessen to the European Union.

The second day of the conference introduced to the international perspectives on ETV with the following presentations:

- **Introduction to international ETV activities**
  (Benoit Desforges, Environment Canada/Canada)
- **Joint and co-verification roadmaps – practical tools for global cooperation**
  (Christian Grøn, DHI/Denmark)
- **Joint verification in practice: An example**
  (Mette Tjener Andersson, DHI/Denmark)
- **The route towards an internationally accepted ETV procedure**
  (Rick Gould, Environment Agency/UK)

2 Contents of the presentations

2.1 ETV in the landscape of EU innovation policy[1]

(Nicholas Banfield, European Commission)

Nicholas Banfield introduced to "Europe 2020 Strategy" that is a comprehensive 10-year EU strategy for green growth, innovation and jobs. The objective is to get Europe out of crisis

[1] The presentation „ETV in the landscape of EU innovation policy (Nicholas Banfield, European Commission)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

and prepare the EU economy for the next decade and the long-term challenges of sustainable growth, resources efficiency and aging.

Among the Europe 2020 flagship initiatives, there is the "Innovation Union" which aims to improve conditions and access to finance for research and innovation, to ensure that innovative ideas can be turned into products and services that create growth and jobs.

But obstacles on the road to markets for innovative technologies are the missing financing / (re-)investment (before receiving financing technologies have to prove that they work) and the lacking information about new technologies.

Environmental Technology Verification (ETV) as an ”Innovation market support tool” helps to overcome these obstacles by providing independent, reliable, scientifically-based source of information on the performance of new environmental technologies. Thus it offers benefits for technology producers, technology users and policy makers.

2.2 The EU ETV pre-programme[2]

(Pierre Henry, European Commission)

Pierre Henry outlined the objective of ETV which is to generate independent and credible information on new environmental technologies, by verifying that performance claims are complete, fair and based on reliable test results. This should help technology developers and vendors market new technologies, support technology purchasers and users make informed decisions and facilitate the implementation of environmental policies and regulations.

ETV was developed under ETAP, announced in SCP-SIP and is part of the forthcoming Eco-Innovation Action Plan that aims to boost eco-innovation in Europe. ETV is complementary with IPPC Directive (which will be replaced by the future IED - Directive on Industrial Emissions).

After a long time of preparation the ETV pre-programme is now ready for the first step of experimenting in Europe.

The ETV process and its steps were explained.

The different parties involved in the ETV process are the verification bodies, the accreditation bodies, testing bodies (analytical laboratories), the technical groups, the steering group and the advisory forum. They were introduced with their responsibilities and prerequisites, e.g. the accreditation of the verification bodies in compliance both with ISO17020 (Standard on “Conformity assessment - General criteria for the operation of various types of bodies performing inspection”) and the ETV General Verification Protocol (GVP) - as the GVP alone would, at the current stage, not have sufficient recognition in Europe.

To facilitate the beginning of the programme from 2011 to 2013 there are partnership agreements between the European Commission and 7 participating member states interested in ETV and willing to be included. But also organisations from other countries (even non EU countries, e.g. Norway, Iceland) can participate.

Until now there are discussions with other ETV programmes in the world and already now joint and co-verifications were possible.

ETV starts on an experimental basis with few technology areas (Water treatment and monitoring; Energy technologies; Materials, waste and resources). The choice of technologies was made based on a market evaluation of where innovation is needed.

[2] The presentation „The EU ETV pre-programme (Pierre Henry, European Commission)” is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

Key environmental aspects, in a Life Cycle (LC) perspective have to be taken into account and should not be missed when defining performance parameters.

It is necessary to ensure that Statements of Verification are not misleading. Parameters having an important influence on environmental impacts should be in and it should be possible to include information on non-verifiable aspects (e.g. maintenance).

Fixed costs that will come up will not have to be paid by the vendor (but by the EU and member states budget), only the direct costs of their technology verification.

In 2011 1 million € is budgeted and 1 million € is programmed in 2012 and 2013.

It is planned to have a call in September 2011, the submission of proposals in November 2011 and grant agreements in March 2012.

2.3 The market case for ETV[3]

(Jonathan Lonsdale, GHK Consulting Ltd/UK)

Jonathan Lonsdale introduced to the study on a detailed assessment of the market potential, and demand for an EU ETV scheme that will be finalised in June 2011. Its aim was to provide an ex-ante evaluation of the EU ETV scheme, to assess the market potential of the EU ETV scheme, including a detailed assessment of likely demand from vendors and users of environmental technologies, a cost-effectiveness analysis of the scheme for technology developers and an identification of technology areas with the highest value added and benefits to the developer and the EU overall.

Due to the limited time available a "twin track approach" was chosen. The study started with a literature review, a consultation with stakeholders of all 27 EU member states and an analysis of market and structural characteristics. 25 technology families and afterwards 7 business cases were chosen and evaluated by a screening based on demand and supply characteristics.

Key features of the business cases were high EU market potential; varying degrees of market maturity; large scope for innovation; strong SME supply base and high environmental impact potential.

It turned out that ETV is most beneficial where:

- No product standards currently exist and/or certification/standards are unharmonised across EU.
- Products are discrete and innovation is fast paced.
- Products are more expensive than incumbents, but can offer superior environmental performance.
- Technology is typically laboratory tested and the testing of environmental performance is complex.
- Markets are populated by relatively homogeneous technologies.
- Developers are SMEs (often with limited reputation, track record and facing strong incumbent competition).
- Risk averse customers prefer to buy market proven techniques.
- The relationship between buyer and seller is underdeveloped especially in nascent markets.

In order to make a success of ETV the following issues turned out to be of importance:

[3] The presentation „The market case for ETV (Jonathan Lonsdale, GHK Consulting Ltd/UK)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

- Marketing the ETV programme and brand (e.g. showing the added value of ETV compared to other certifications/labels, the expected benefits for SMEs and establish a dedicated and independent EU ETV website)
- Communicating the operational requirements of ETV (such as simple and transparent procedures, clear indication of entry point for ETV in development cycle)
- Complementarity with existing certifications
- Institutional buy-in from environmental regulators
- Number and location of verification bodies (Concentrated expertise in a few bodies is likely to be more efficient than geographic spread; minimum of 3 verification bodies in large markets in order to cater the demand from different EU regions)
- Funding options for ETV (Fee proportional to turnover of applicant and deferred until company is selling verified product; Contribution from users (joint development) or industry sponsorship)
- Possible funding support mechanisms (such as FP7/FP8; EU SET Plan; CIP; LIFE+ and national R&D funding mechanisms – although State aid limitations of support for verification)

2.4 Environmental Technology Verification as an innovation service[4] *(Thorkild Qvist Frandsen, Agrotech/Denmark)*

Thorkild Frandsen presented the experiences gained in the work in DANETV (Danish centre for verification of climate and environmental technologies) that was established in 2008 in Denmark.

Vendors participating in DANETV got already benefits in the early stages of verification processes, as e.g. sometimes the dialogue between technology supplier and verification body in the early phase leads to the result that further progress is necessary before verification (but then a better product is verified).

Another experience for companies verifying their products were that unexpected markets were entered or the verification statement was also useful for the internal marketing within the company.

Lessons learned:

- A fast and flexible ETV process is appreciated especially by SMEs as here often the fast access to the market is crucial for survival of company.
- ETV is a complex product to sell - as it is still new and sometimes hard to explain in short words (partly due to the flexibility of the concept), but branding of ETV is important to make the concept well-known
- Different marketing channels should be used for an effective marketing of the ETV concept (not only good website, as sometimes personal contact and face to face meeting are crucial) and the more people know it the more people demand it (snow-ball-effect).
- International acceptance of the verification statements is important
- The cost of an ETV can be a barrier for SMEs and thus financial support is needed to make ETV available for them
- Time is needed to train verification and test staff – it takes time to get familiar with the ETV methodology and the templates, but the time used there can be saved at the next verification

[4] The presentation „Environmental Technology Verification as an innovation service (Thorkild Qvist Frandsen, Agrotech/Denmark)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

- The active involvement of the environmental authorities is an important driver for success of the ETV (a successful example for that is VERA - Verification of environmental technologies for agricultural production – that was established in 2009 in Denmark)

2.5 The European General Verification Protocol – how is it organised?[5] *(Uwe Fortkamp, IVL/Sweden)*

The General Verification Protocol (GVP) is an important document and part of the ETU ETV pre-programme. It describes the process of verification (=3rd party validation of technology) and was developed based on the results of earlier and ongoing EU R&D projects (such as AdvanceETV) and the experience gained in international verification.

Uwe Fortkamp introduced to the different chapters of the GVP and its supporting documents, e.g. flow sheets to illustrate how the process works and the templates that guide through the verification process and have to be filled out in the course of the verification.

The organisations involved in the verification procedure are shown in figure 1.

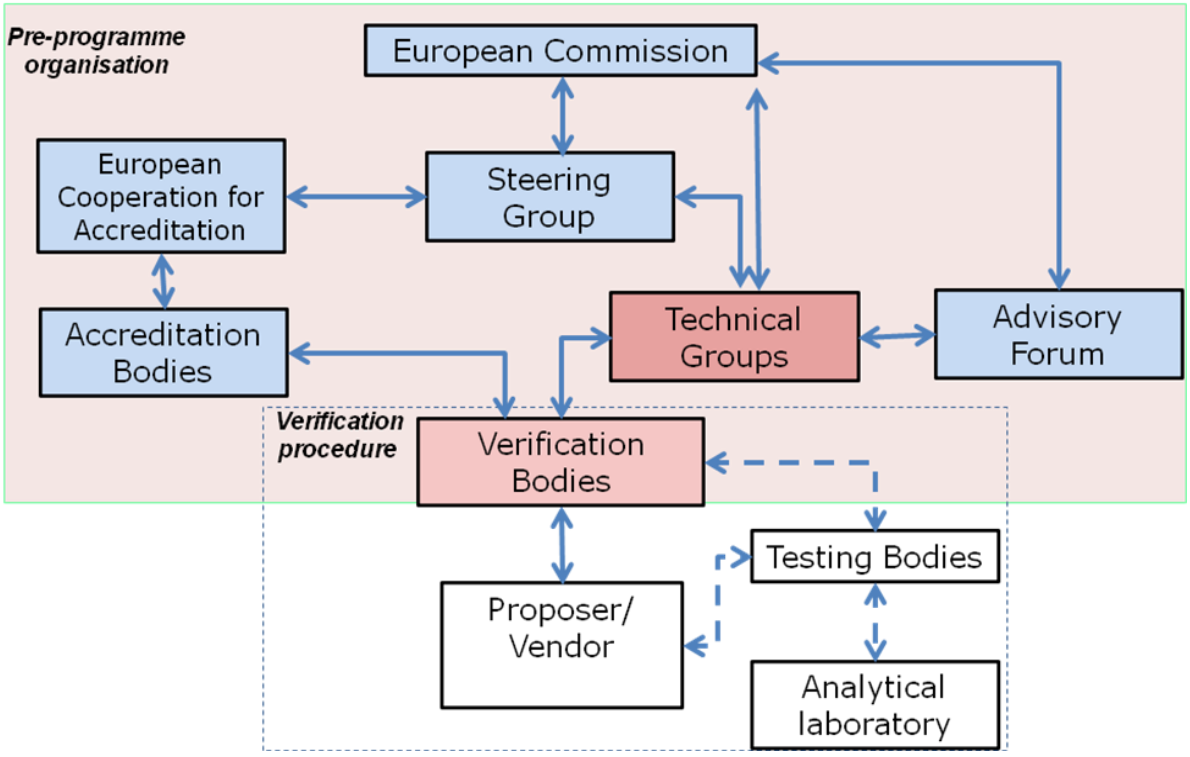

Figure 1: Organisations of the EU ETV pre-programme and their relationship

Most organisations are in place already, they only have to be accredited to assure quality. In order to save costs it is foreseen that no new organisations are created just for verification.

[5] The presentation „The General Verification protocol – how is it organized? (Uwe Fortkamp, IVL/Sweden)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

2.6 The European General Verification Protocol – how does the verification procedure work?[6] *(Uwe Fortkamp, IVL/Sweden)*

Uwe Fortkamp introduced to the different steps of the verification procedure that are also shown in figure 2.

During the contact phase a quick scan is done in order to assess the suitability of the technology for the verification, to identify the relevant technology group and to give a first indication about the complexity and range of costs for a full verification.

Afterwards a proposal is prepared and a contract is concluded between the vendor and the verification body. This step is followed by the Specific protocol phase which contains the crucial definition of performance parameters, which have to be defined in a clear verifiable way. A number of parameters (such as consumables, waste generated, and longevity) are determined and have to be considered when developing the claim. In this phase existing data are checked on their usability for the verification.

In case testing is needed as the existing data are not sufficient for the verification the proposer can choose a testing body (who has of course to be accredited). The test could also be done inhouse at the proposer (which is a difference to other ETV systems). Afterwards all data will be assessed and integrated in the verification report by the verification body. The verification report is proprietary of the proposer and he decides on the access to the verification report. The Verification statement is approved within the EU ETV pre-programme and is published by EU.

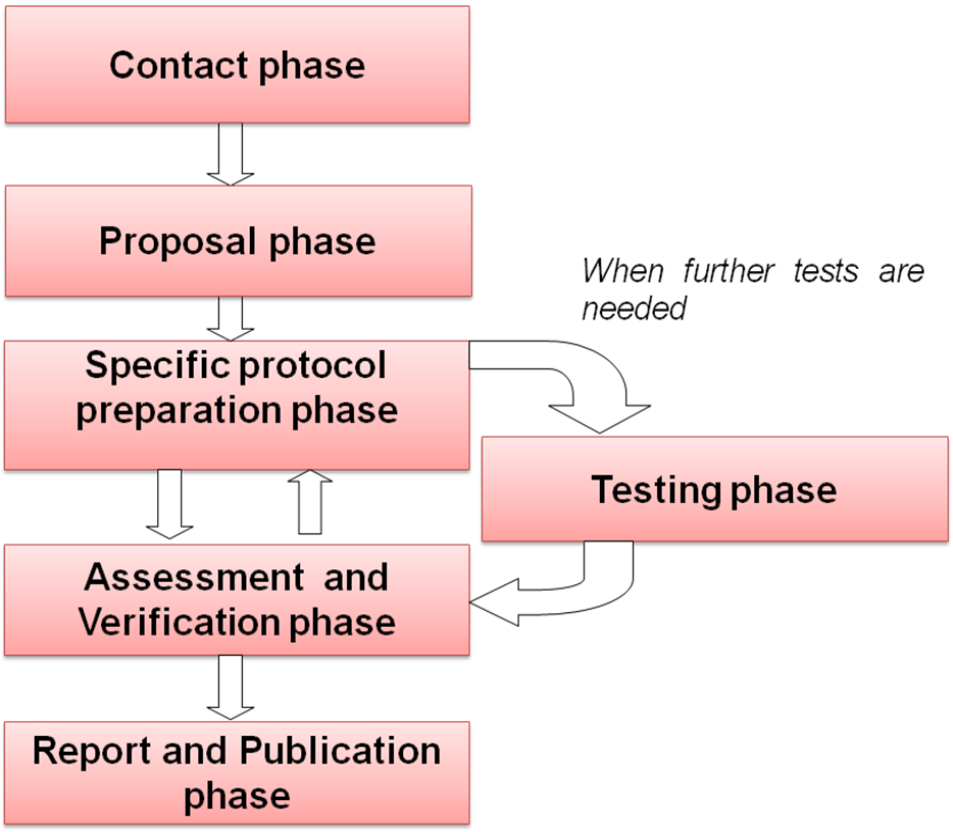

Figure 2: Phases of the verification process

[6] The presentation „The General Verification protocol – how does the verification procedure work? (Uwe Fortkamp, IVL/Sweden)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

2.7 Accreditation of Verification Bodies – a roadmap[7]

(Carole Toussaint, COFRAC/France)

Within the framework of European ETV pre-programme, Verification Bodies must be accredited by their national accreditation body (independent organisation) according to the standard of accreditation selected (ISO/IEC 17020 Standard – Standard for accreditation of inspection bodies) in order to ensure confidence and the international recognition.
The ISO/IEC 17020 Standard defines in particular requirements concerning the formation and the qualification of the personnel responsible for doing the inspection, the methods and procedures of inspection used and the contents of the reports or certificates issuing after the inspections.

The process of accreditation of the verification bodies according to ISO/IEC 17020 consists of the 4 steps:

1. Analysis: The step of analysis leads to a contractual agreement between the accreditation body and the candidate with the accreditation.
2. Assessment: Evaluation of the conformity assessment body in order to check if the body applies the procedures which it defined in to fulfil the requirements of the accreditation.
3. Decision: Examination of the assessment report by an independent committee
4. Notification: Notifying the decision to the candidate for accreditation and delivering of a certificate specifying the field and the duration of the accreditation.

As an example at COFRAC in France the process of accreditation takes 6-9 months with average costs of 5.000 EUR.

2.8 EU ETV pre-programme management[8]

(Manuela Musella, EC Joint Research Centre/The Netherlands)

The players of the European ETV pre-programme are organised in different bodies, each having its function and role. Manuela Musella gave detailed description of the parties involved in the EU ETV pre-programme:

Verification Bodies (VBs):

- Receive and process the proposals for verification in their technology area
- Assess, approve and report test data performed by the proposer
- Ensure compliance with the quality management requirements of the GVP of any test bodies involved
- Participate in the technical groups relevant for their technology area
- Annual report to the EC and the national accreditation body on the activities implemented, including on post-verification
- Assure confidentiality on sensible data

[7] The presentation „Accreditation of Verification Bodies – a roadmap (Carole Toussaint, COFRAC/France)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm
[8] The presentation „EU ETV pre-programme management (Manuela Musella, EC Joint Research Centre/The Netherlands)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

Test Bodies:

- Plan and perform tests where needed (on VB demand)

Analytical Laboratories:

- Plan analysis and selecting analytical methods (in accordance with the requirements of the test body) and plan and perform tests where needed.
- Report the analytical data to the test body

Both test bodies and analytical laboratories shall fulfil the relevant requirements of the GVP and might be the same as the verification body, but the group performing the test cannot be the same doing the evaluation.

Commission Services - DG ENV, DG JRC (DG ENTR, DG R&I):

- Ensure overall coordination and supervision and publish the Statements of Verification
- Convene and chair the Steering Group and the Advisory Forum

Steering Group: (representatives of Member States):

- Defines the rules governing the EU ETV pre-programme
- Draws the General Verification Protocol and defines the technology areas to be covered

Advisory Forum (interested stakeholders = technology purchasers and users):

- Advises ETV processes, scope, results and on general issues relevant for the implementation and gives advice to Technology Groups on needs of users, investors and regulators in specific areas

Accreditation Bodies (National Accreditation Bodies [Regulation (EC) No765/2008]):

- Ensure technical competences and capacity of the VBs and ensure their recognition in the EU

European co-operation for accreditation:

- Help in harmonisation of accreditation procedures, consistency of verification procedures and mutual recognition of Statements of Verification

Technical Working Groups (Representatives of VBs and other experts, chaired by European Commission (JRC-Petten):

- Harmonise the implementation of the ETV procedures by the VBs and ensure the same level of quality of verification results
- Guide on the application of the ETV procedures in specific technology areas (One Technical Working Group per technology area)
- Contribute to pre-standardisation/standardisation activities
- Facilitate the exchange of good practices concerning implementation of ETV and the sharing of information on relevant market aspects for the technology area
- Dialogue with relevant stakeholders, including technology users
- May give an opinion in case of conflict between VB and proposer

2.9 Addressing barriers, gaps and needs for implementing ETV[9]

(Derk van Ree, Deltares/The Netherlands)

Derk van Ree introduced to some existing gaps and the resulting needs in ETV.

ETV can support faster market entry of innovative technologies. But a potential barrier for SMEs are the technology verification costs. So it is necessary to look for the possibility of public – private funding and other funding mechanisms. In order to save costs verification should be started to be addressed at the development stage (to allow for verification using existing test data – and avoid having to spend additional money for re-doing the tests).

The EU ETV pre-programme should support communication among stakeholders, as the different stakeholder groups (end-users, authorities, consultant/engineers) are interested in different details of verification (e.g. engineers – interested in performance characteristics=claims, authorities – interested in performance requirements).

The performance claims are crucial for the verification procedure and need to be defined based on eco-innovation parameters and market relevance (incl. legislative requirements) in a consistent way.

As SMEs are an important group in the EU their needs as stakeholders have to be kept in mind. Here the gaps are mainly the

- Branding of ETV system – communicating of ETV
- Language – as SMEs are not always fluent in English or French
- Database with the existing verifications

Concerning the set-up of the EU ETV pre-programme the following gaps and needs were identified:

- Need for specific testing methods
- Quality management/assurance and conformity assessment
- Training - also for people involved in the ETV pre-programme (as active organisations)

The aim is to get harmonisation and mutual recognition between the different international ETV systems to make the slogan “Verified once, accepted everywhere” become reality. In order to reach that aim an action plan is needed.

The action plan should cover the following action categories:

- Research and development
- Verification of technologies and performance targets
- Mobilisation of financing and market-based Instruments
- Awareness raising and training

The research and development actions need to be managed in a coherent setting. A R&D roadmap is a tool to structure and determine which actions are needed: what needs to be developed (which specific tools), in which R&D stage (research, development or innovation) and when (timing) to attain the application of ETV. Stakeholder perspectives and end user needs have to be leading in the overall set up.

[9] The presentation „Addressing barriers, gaps and needs for implementing ETV (Derk van Ree, Deltares/The Netherlands)” is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

A structured approach has been developed for the analysis of ongoing research activities related to international cooperation and mutual recognition. This framework is used to transform the barriers, gaps and needs into an action plan providing a starting point for the discussion how ETV can support eco-innovation and what still needs to be done to strengthen the applicability of this tool in an international market.

25th May 2011

2.10 Introduction to international ETV activities[10]

(Benoit Desforges, Environment Canada/Canada)

Benoit Desforges was giving his speech on behalf of the International Working Group (IWG) on ETV.

The ETV International Working Group (IWG), that was established in May 2008, is working towards international recognition to ensure that a technology verified in one member program will be accepted as verified in other member programs (=mutual recognition).

In February 2009 an IWG Work Plan was developed. The IWG Members are now drafting and finalizing position papers on the 12 work activities for IWG discussion and the position papers will be complementary to an international ETV standard.

The IWG Work Plan comprises topics, such as: Organization (separation of verification and testing organization), government oversight, Quality Management System (which is a major item that led to the set-up of a subgroup on quality assurance), factors to be verified, definition of verification, transparency, stage of the continuum (commercial ready or earlier?), conflict of interest, openness (can any vendor apply?) and government funding of ETV programs.

The Work Plan items were separated and given under the lead of the different countries. All items are planned to be finished by the end of this year.

Benoit Desforges introduced to the different existing ETV systems and their characteristics - each programme is very different to each other in the way it is managed.

So far there have been some co- and joint verification projects (which are an opportunity to collaborate right now), e.g. between DANETV, USEPA and the Canadian ETV Program:

For future mutual recognition the development of potential roadmaps and recommendations on ISO standards for accreditation of test agents, laboratories and verification organizations and the contribution to the development of an International ETV Quality Management System (QMS) is very important.

The next steps on international ETV activities are:

- To continue progress and collaboration among members and observers of the IWG with mutual recognition of ETV being the ultimate objective
- Work in cooperation with EU, AdvanceETV and other jurisdictions on co- and joint-verification processes (e.g. within international projects initiated among the programs)
- Engage discussion through international meetings, workshops and forums

[10] The presentation „Introduction to international ETV activities (Benoit Desforges, Environment Canada/Canada)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

- Continue discussion and collaboration among stakeholders on the development of an internationally accepted ETV Standard

2.11 Joint and co-verification roadmaps – practical tools for global ETV cooperation[11]

(Christian Grøn, DHI/Denmark)

There are already several ETV programmes worldwide with own ways of testing and verifying technologies. This can create problems with mutual recognition and then create trade barriers, i.e., verification in one country might not be acceptable in another.

Joint and co-verification are two options for collaborative environmental technology verification to bridge the time until common standards are available that would allow "Verify once – accept everywhere".

- Joint verification: Is suitable for the phase when 2 programmes want to cooperate closely, but still do not know each other so well (and thus still want to control each other in the verification procedure)
- Co-verification: Here the second programme is only integrated in first and final phase of the verification procedure; the other phases are done by one programme alone; this requires more trust in and more knowledge about each other.
- If 2 ETV systems with common, but also different requirements want to have joint or co-verification they must balance the "at least required" as a compromise. Minimum requirements have to be defined for each phase of the verification procedure.
- Several successful joint and co-verifications have already been done by US EPA ETV, ETV Canada, DANETV and NOWTECH.

Christian Grøn introduced to the steps that have to be taken by the Operating programme (OP- is doing most of the work) and the Cooperating programme (COP - is invited from time to time to the work) during the different phases of a joint and co-verification. The basis for the co-verification is that COP needs to trust OP (this can be assured by the review of all documents used = the plan and report review).

- It is important to use generic wording (so everybody can find himself there), e.g. "Screening check form" – from the content similar to the "quick scan" of the EU ETV pre-programme.
- Concerning the contract it is necessary to have a clear distribution of tasks between COP and OP. An essential part of the contract is an agreement upon requirements for COP acceptance of OP verification.
- Existing data: Third party or integrity requirements are to be met for existing data.
- Statement of verification: If the vendor receives 2 different verification statements from each of the programmes participating (COP and OP) the scientifical part of both must be the same.

[11] The presentation „Joint and co-verification roadmaps – practical tools for global ETV cooperation (Christian Gron, DHI/Denmark)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

2.12 Joint verification in practice: An example [12]

(Mette Tjener Andersson, DHI/Denmark)

From DANETV's point of view Mette Tjener Andersson introduced to a joint verification that was done with the company HACH-LANGE, a supplier for water analysis, and its product "LUMIStox", a luminescent bacteria testing system for application at laboratory in accordance with ISO 11348.

- The joint verification was mainly done by DHI/DANETV, Battelle, US EPA ETV, Environment Canada, ETV Canada and an expert group.
- Performance parameters were identified as being important for a potential customer, such as minimum level of detection, range of application, precision, robustness and repeatability.
- For the quality assurance of the verification mainly done by DHI several reviews audits (internal and audit from Battelle) and several reviews were done.

HACH-LANGE had the following outcome of the joint verification:

- Met tender requirement of U.S. EPA ETV
- Had an intensive third-party test of their products and gained new knowledge
- Would have the opportunity to get EU ETV (when programme starts in operation)
- If the product is redesigned or replaced, ETV can be re-evaluated under EU ETV pre-programme

Lessons learned for DHI/DANETV:

- Good cooperation and knowledge sharing between ETV-operators
- This experience was used as input to the joint and co-verification roadmaps (presented in the presentation of Christian Grøn)
- US EPA ETV required both a review and approval phase and so for future joint or co-verifications the time schedule has to be extended
- DHI working methods were evaluated by US EPA and Environment Canada ETV programmes which means extended trust for next joint or co-verification

2.13 The route towards an internationally accepted ETV procedure [13]

(Rick Gould, Environment Agency UK/UK)

The presentation described how the work package 4 (WP 4) of AdvanceETV and the International Working Group (IWG) for ETV worked together to define the needs of ETV schemes, determine which standards were already available to support ETV, what is needed for Quality Assurance (QA) and what would be needed for mutual recognition.

The needs for a unifying system were to:

- Provide a harmonised, international framework
- Have a uniform foundation, but allow for national flexibility

[12] The presentation „Joint verification in practice: An example (Mette Tjener Andersson, DHI/Denmark)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

[13] The presentation „The route towards an internationally accepted ETV procedure (Rick Gould, Environment Agency/UK)" is available on the AdvanceETV website at: http://www.eu-etv-strategy.eu/activities/etv-conference_11.htm

- Not be another product-certification scheme
- Allow for legislation
- Provide for joint and co-verification (which is done by AdvanceETV WP3)
- Focus on innovative technologies
- Use existing standards and conformity-assessment mechanisms
- Use the system of standards development to produce any standards where there are gaps

A Quality Assurance Group (QAG) was set up within the IWG and started its work in October 2009 in order to identify the necessary functions of an international ETV framework with mutual recognition, identify the elements of a framework and to suggest a framework for consideration by the IWG.

Two IWG documents had to be produced:

- ETV Framework and Policy - a policy document which describes how ETV programmes work at all the organisational levels
- ETV Procedure - describes the processes of verification, and provides a harmonised framework for mutual recognition

The EU-ETV General Verification Protocol (GVP), which was developed at the same time, applies the minimum requirements of these 2 IWG documents. These minimum requirements could also be applied nationally and thus - hopefully - make mutual recognition possible.

In the future development is planned regarding the progression towards international standards through ISO and CEN and further work on the ETV Framework and Policy, the ETV Procedure (both of them should be developed as an international standard) and the EU GVP.

3 Discussion and comments

3.1 Issues raised during the presentations

In the course of the conference several questions and comments came up on the following topics:

General Verification Protocol (GVP):

- GVP (that was prepared with Member states representatives) needs to be in place before accreditation can start. It also needs to be fully in line with the forthcoming Eco-Innovation Action Plan - that's why the GVP was not yet made public.
- GVP = manual to follow during the verification;

  Specific verification protocol = specific for every verification/technology, but one could make use of the former ones. In Europe the specific verification protocol is for a specific technology/product, not for a whole technology group (in the US it is for a whole technology group)

Verification Body (VB):

- Is the call for proposal for Verification Bodies (VB) open for 3 years or on yearly basis?

  It is a 2 step process: a partnership agreement for 3 years will be signed. On an

annual basis there are grant agreements in order to have stability for 3 years, but make fine tuning possible on a yearly basis.

- Is it possible to consider also a consortium (group of organisations – from 1 country or more) as VB?

  The organisation accredited is fully responsible, but may work together with other experts.
- The question was raised how many verifications are needed for a profitability of the VBs, but no easy answer was possible, as this is case dependent.
- VBs could do the whole verification process (testing and verification). The GVP says that they just have to declare that the group in charge for the testing and the one responsible for the verification is really an independent (in staff and responsibility) institution in the VB organisation.

Advisory Forum and Technical Groups:

- VB and technical groups are distinguished, as the technical groups e.g. discuss verification protocols (which do not affect confidentiality issues).
- VB are guided by technical groups. The technical groups receive guide on users needs from the Advisory Forum (that is gathering information from stakeholders). For the Advisory Forum an annual conference is planned (but that does not exclude other ways of communication in the meantime).

  No top-down approach is foreseen (which would mean that technical groups give an exact list and definition of parameters to VBs), but more a bottom–up approach. The target is a more continuous process: Technical groups bring in information from stakeholders and give them to VBs as they need to know enough to do their work.

Accreditation:

- VB assesses the verification results and thus the testing body needs to be accredited – this has to be checked by the VB.
- Accreditation procedure is done by national bodies.
- For accreditation the GVP is needed. Accreditation bodies already know the GVP draft and can prepare, but they cannot yet start – until the GVP is fixed.

Standards:

- There are two options to get to standardization (to enable the harmonization): The faster access to standardization via CEN and the approach towards an international standard via ISO (which has a different process than CEN). CEN has an agreement with ISO that CEN standards can also be eligible to ISO standards. But anyhow these 2 options should be evaluated and be included in the consultations in order to estimate the acceptance that both options would get globally.

Performance claims:

- From the experience of DANETV: SMEs often want to verify their technology for a large range of details. So discussions with the vendor are important to see which of the parameters really make sense to be verified.
- Experience from former projects related to ETV: Defining the performance claims is sometimes more difficult than testing.
- The question was raised to what extend the parameters are negotiable (e.g. number and kind of parameters) and how much they have to be fixed. Crucial parameters have to be identified by the technical groups and should be equal for all (but on top there may be differences on the parameters).

Scale:

- According to the experience of a participant especially energy and life balance will be asked by the end user. As some things work perfect at lab or pilot scale, but when an upscale is done they do not work anymore – the scale is also interesting for the end user.
- Before the verification it is important to decide which parameters can be verified in small scale and which ones have to be verified in a larger scale.

Reporting:

- The inspection report should contain all relevant elements. The verification report needs to include everything while the verification statement only needs to include all information relevant for the stakeholders.

Costs:

- It was not possible to quantify the person hours/months that were necessary for the joint verification of the product "LUMIStox" from HACH-LANGE that was mainly done by DHI/DANETV, Battelle, US EPA ETV, Environment Canada, ETV Canada and an expert group. An estimation (from a similar verification) for the contribution of DHI/DANETV was 1 million Danish krone (approx. 134.000 EUR) and 20.000 - 25.000 US Dollar for US contribution. The Canadian contribution was much less than the US because DHI/DANETV was doing the testing (which is most cost-intensive).

Others:

- ETV Canada is getting more interest due to the interest on ETV in the EU. But ETV Canada still has not as much vendor verifications as before and there is also insurance due to the situation with the US who are restructuring their ETV programme.

3.2 Issues addressed during the discussion on "How can ETV support eco-innovation to reach the market?"

On 25th May 2011 the participants of the conference were invited to join a discussion on the following questions that were identified as being important:

1. What are advantages for vendors in international cooperation on ETV?
2. Which requirements have to be met regarding confidentiality /transparency?
3. Which requirements have to be met regarding quality/cost balance?
4. How to operate ETV locally and have global recognition?

1. What are advantages for vendors in international cooperation on ETV?

How can SMEs (=subgroup of vendors that profits most from ETV) be integrated in a most efficient way?

- Access to wider markets, competitive advantage
- Needs to be made aware for the company strategy on commercialization or when approaching new markets
- ETV can serve as marketing tool as it makes information more visible
- Identify ambassadors in the non-participating pre-programme countries for making SMEs aware of ETV in order to try a bottom-up approach
- ETV as a tool to increase credibility on the market
- Vendor can use ETV to get a better feeling on the claims needed by the market
- Can help SMEs to increase competitiveness when they consider ETV right from the beginning (during the development of a product)
- Verification could become a recommended element when applying for public funds for RTD.

2. Which requirements have to be met regarding confidentiality / transparency?

Providing too less data – is this still a valuable verification or a 2nd class verification?

How is confidentiality handled in the contract negotiation?

- The issue should be handled flexible depending on potential investor requirements
- The discussion must be on what can be made public beyond the verification statement.
- In DANETV there were so far no conflicts concerning the publication of full reports
- Users want to see what is behind the verification statement (data, results)→ they want to see the full report
- Publish the verification protocol once it is approved (independent of progress in verification) → other vendors then understand what is required in this area
- ETV needs a shared responsibility by vendors and beneficiaries/ purchasers/authorities, so that verification is recognised in an appropriate way. So policy mechanisms can be a way to strengthen the added value (policy on different levels can use results out of verification)
- Publish verification statements in different languages
- The verification statement should be a fair summary and contain enough credible information to make it useful and informative.
- Think well about publishing failures – in the Canadian ETV system failures are not published as this can ruin a company. But if public money was involved also negative results should be made public.

3. Which requirements have to be met regarding quality / cost balance?

- Quality/cost balance always has to consider reliability demands (the more quality is wanted, the more costs may come up)
- In Europe cost differences between countries will have an influence on this balance → this will be a market mechanism
- Cost is relative and related to the added value
- From the vendor perspective it depends on the return on investment expected
- Links could be set to business planning and business incubators to overcome potential financial problems

- Quality/cost balance problems occur during verification (test) planning within a verification project and need to be solved there
- What scale of testing is required? → should be at the smallest scale that produces consistent and reliable results

4. How to operate ETV locally and have global recognition?

Vendors want to undergo verification only once and have it accepted on the global market. Users want to have access to verification statements from all over the world and be able to trust them.

In order to achieve this it is necessary to have:

- A basic treaty – declaration of intend (e.g. that certain standards are being followed)
- One standard
- One police force (accreditation mechanism) in order to make verification in a way everybody can trust it → this is actually done in EU
- One forum (e.g. common website to start simple) – inventory of existing verifications, partnerships with existing mechanisms (e.g. policy)
- One Framework (operating/cooperation)

  Partnerships with existing mechanisms (e.g. national institutes offering verification work)
- One brand