

## Canada's environmental technology verification program

Ray Klicius, P. Eng. and Andrew Spoerri

Environmental Technology Advancement Directorate, Environmental Protection Service,  
Environment Canada

### 1. THE ETV PROGRAM

The Environmental Technology Verification (ETV) Program is an initiative designed to accelerate the growth and marketability of Canada's environment industry. The Program builds on Canada's reputation by emphasizing our capabilities and credibility in the environmental market.

The ETV Program provides validation and independent verification of environmental technology performance claims. This initiative has been developed to promote the commercialization of new environmental technologies into domestic and international marketplaces and thus provide industry with the tools to address environmental challenges efficiently, effectively and economically.

Environmental technology vendors (suppliers) apply to the Program for verification of the claims they make concerning the performance of their environmental technologies. If the claim is verified, the company is issued three documents: a Verification Certificate; a Verification FactSheet; Final Verification Report, and; is entitled to use the ETV logo (on the specified documentation) to market their technology in Canada and abroad. As each claim has very specific parameters, the logo may only be used in conjunction with the three verification documents.

This is a voluntary Program to provide buyers with an assurance that vendor's claims of

performance for an environmental technology are valid, credible and supported by suitable demonstration test information. Besides suppliers of environmental technologies, suppliers of equipment-based environmental services (where performance can be verified) are eligible to apply for verification.

The Government of Canada federal department, Environment Canada, was the lead department in the conceptualization and development of this initiative in cooperation with Industry Canada and with direction from the ETV government/industry Steering Committee. The Program originated from one of the key initiatives of the *Canadian Strategy for the Environment Industry*.

## **2. BACKGROUND**

The *Canadian Strategy for the Environment Industry*, announced by Environment Canada and Industry Canada in 1994, called for the examination of the certification of products, processes and services (Initiative 5). In response, Environment Canada and Industry Canada, in partnership with the Canadian Environment Industry Association (CEIA) and other stakeholders, embarked on an examination of options in October 1994 for a national certification program. Based on national consultations of various options in October - November 1995, the initiative was refocused towards the concept of an Environmental Technology Verification Program, modelled after a successful program in the American state of California.

During the Program's development since its conceptual stage in 1994, environment industry representatives and the CEIA have been continually consulted and generally very supportive. A *Draft Business Plan* was prepared and distributed for review in April 1996 for a series of national consultations held in May 1996. There was strong endorsement for the Program and positive feedback on the *Draft Business Plan*.

A strong message was heard from the environment industry participating in these consultations on the need for greater industry representation on the ETV Program Steering Committee. Consequently in July 1996, the Steering Committee was restructured to include a majority industry representation. The Steering Committee was

consulted on all major issues during the development of the ETV Program and played an integral part in all key Program milestones.

Canada faces the challenge of enhancing the international credibility and competitiveness of our environment industry and pursuing reciprocal agreements with international programs. A key message heard from stakeholders during the consultation process was the need for reciprocity with similar American (and international) initiatives. For reciprocity to be effective, Canada's ETV Program must have comparable elements and compatibility with other programs.

Environment Canada and the U.S. Environmental Protection Agency signed a Cooperative Agreement seeking harmonization of respective Programs. Furthermore, California Environmental Protection Agency, who is currently operating a similar environmental technology verification program, signed a Memorandum of Understanding with Environment Canada to strive for reciprocity. The agreement, designed to facilitate the exchange of information and reciprocity on respective verification programs, will set a precedent for similar agreements and international cooperation and open doors for Canadian environmental companies doing business abroad.

### **3. DEFINITIONS**

#### **3.1. Environmental Technology**

For the purposes of the ETV Program, environmental technologies are *products and processes* that offer an environmental benefit or address an environmental problem. This definition includes products and processes whose primary purpose is environmental protection or remediation. It also includes products or processes that contribute to environmentally sound production, including alternative production processes and materials. The focus is on environmental technologies and equipment-based services for industrial and institutional applications. (Note: the ETV Program does not deal with "green" consumer products which are addressed by Canada's Environmental Choice Program™.)

Environmental technologies address a wide range of environmental protection and

conservation needs, including:

- Pollution prevention
- Pollution detection and monitoring
- Environmentally-related human health protection
- Pollution control and treatment
- Energy efficiency/management
- Emergency response
- Non-hazardous and hazardous waste management
- Site remediation and restoration
- Land and natural resource management.

### **3.2. Equipment-based Service**

For the purposes of the ETV Program, equipment-based environmental services are services that can make claims based solely on measurable performance of the equipment or technology used. Such services can be verified in the same manner as technologies.

Excluded from consideration are "people-based" environmental services; essentially any service for which a strict performance-based verification would not be possible. Also excluded is the certification of individual environmental practitioners.

### **3.3. ETV FactSheets**

Two ETV FactSheets will be made available through the Program. One is the ETV *Program* FactSheet, providing a general overview of the ETV Program. The second is a *Verification* FactSheet, providing vendor-specific information when a vendor successfully completes the ETV process.

The ETV Program FactSheet is a one page (double-sided) information sheet containing recent developments and updates on the Program and published in English and French. The 'Government of Canada' insignia and the Canada wordmark is in the bottom left and bottom right corners respectively. The Program FactSheet is published and updated approximately every 3 months by ETV Canada Inc. with input from Environment Canada and contains a brief description of the ETV Program, its benefits and advantages

to industry, and application information. It may also outline verifications completed to date and in which technology sectors.

Each successful vendor is also issued a *Verification* FactSheet. This contains the same template markings as the Program FactSheet (ETV Logo and government wordmarks). It states that the company has successfully completed the ETV Program and describes the verification claim in detail, including specific parameters, operating conditions and applications. A brief statement about the nature of the Program is also included.

### **3.4. Verification Certificate**

The Verification Certificate is awarded to vendors by ETV Canada Inc. upon successful validation of their performance claim. The Certificate is the vendor's authenticated proof of having successfully completed the ETV Program. This is the vendor's primary credential proving that the verified performance claim is recognized by the Government of Canada and will serve as an integral marketing document. It contains the same template markings as the FactSheet as well as: the successful vendor's full corporate/identifier, address and contact numbers; performance claim; statement that the vendor has successfully completed the ETV Program; signature by ETV Canada Inc.; Certificate No.; effective date and expiry date, and; a brief statement about the nature of the ETV Program.

### **3.5. Verification Report**

The Verification Report is issued to vendors by ETV Canada Inc. upon successful validation of their performance claim. The Report contains: a detailed description of the technology; a detailed description of the performance claim including specific parameters, operating conditions and applications; the results of data assessment and claim validation, and; a disclaimer.

The ETV Logo is not intended to serve as stand-alone proof of verification, but rather must be used in conjunction with a specific performance claim. Vendors, having successfully obtained a verification through the Program, may only use the ETV Logo on the ETV FactSheet, Verification Certificate and Final Verification Report issued to them with respect to a validated claim.

### **3.6. Verification Entity**

Verification Entities (VE) are third party, impartial, specialized and accredited laboratory and testing facilities, technical review services, and various technical specialists sub-contracted by ETV Canada Inc. to supply technical data generation, assessment and validation expertise. As the basis for the credibility of the vendor's verified claim is the data assessment and verification, the VE sub-contracted by ETV Canada Inc. (and approved by the vendor) must have the technology-specific and specialized expertise, capability and facilities to either conduct the data assessment for the verification or conduct necessary demonstrations and testing and generate the required technical data to support the claim. However, a VE may not both generate the required data and then assess/validate that same data for any one performance claim, unless it is acceptable to both ETV Canada Inc. and the vendor.

## **4. PROGRAM STRUCTURE & STRATEGY**

The ETV Program, conceptualized and originating as a federal government initiative, is delivered and administered by a private sector partner - ETV Canada Inc. ETV Canada Inc. operates the ETV Program on behalf of the Government of Canada and is permitted for a specified period of time under a license agreement to use the ETV Logo and issue Verification Certificates, FactSheets and Final Reports.

Environment Canada is responsible for Program policy and general direction through provisions in the license agreement. The Canadian Environment Industry Association and private sector representatives, also under provisions of the license agreement, would provide input to Environment Canada on Program oversight and direction through participation in semi-annual performance reviews of the license agreement.

When a vendor comes to ETV Canada Inc. and wants their technology "verified", this involves the confirmation of a quantifiable performance claim supported by reliable data. The verification of particular technology performance claims are based on stringent technology-specific protocols. These protocols serve as the template and manual for the complete verification procedure to validate the specified performance claims of a

particular technology. The Verification Entity assesses the integrity of supplied data and the validity of associated performance claim(s) based on the data provided and following the detailed, rigid, technology-specific protocol. For a claim to be verified, ETV Canada Inc. must be satisfied that all of the following criteria have been fulfilled:

- The technology is based on sound scientific and engineering principles.
- The claim is fully supported by peer-review quality data, which are supplied by the applicant or generated upon applicant's request through an independent test program conducted by a qualified testing agency.
- The conditions of performance for the claim are clearly defined.

The process of having a claim verified through the ETV Program consists of four stages:

**Pre-screening; Application Review; Verification, and; Award.**

- In the **Pre-screening stage**, for a technology to be eligible, it must be an environmental technology or an equipment-based environmental service, meet minimum Canadian environmental standards and/or national guidelines for the specific technology or claim, and be currently commercially available or commercially ready for full-scale application. If the technology meets these criteria, the applicant submits a Pre-screening Application to ETV Canada Inc. which is reviewed to assess eligibility and feasibility and to resolve any conflict of interest which may exist between the applicant and ETV Canada Inc.
- During the **Application Review stage**, if the technology is eligible for application, the applicant submits a Formal Application which requests additional information about the technology, the claim to be verified, and the information (or data) that is currently available to support the claim. ETV Canada Inc. reviews the Formal Application for completeness and determines if it can be accepted into the ETV Program. If the application isn't acceptable, the applicant may choose to modify and resubmit it. If the application is accepted, ETV Canada Inc. receives detailed data and information from the applicant to substantiate the claim. It reviews the information and proposes a verification process for the claim, including identification of a Verification Entity (i.e. approved technical expert(s)) and a cost estimate for the program. ETV Canada Inc. discusses the scope and cost of the proposed program with the applicant, and reaches

agreement on the Verification Entity (including resolution of any conflict of interest between the applicant and the Verification Entity) and associated costs.

- During the **Verification stage**, the Verification Entity reviews the supporting data to determine if the claim is adequately substantiated or if additional testing is required to substantiate the claim. If additional testing is required, an independent testing of the technology is conducted by another Verification Entity or approved testing facility, with costs paid by the applicant. The Verification Entity prepares a report on the results of the verification program, and submits it to ETV Canada Inc. and the applicant for review and approval. If the claim cannot be substantiated, the applicant may choose to modify the claim such that it is substantiated with the existing data.
- In the **Award stage**, if the applicant's claim is substantiated, ETV Canada Inc. prepares a FactSheet to accompany the Verification Report and awards a Verification Certificate to the applicant. The applicant is then entitled to use the Certificate, FactSheet and Final Report in domestic and international marketing activities.

The cost of verification through the ETV Program is predicted to be approximately \$10,000 - 15,000. These figures are estimates and will vary depending on the complexity of the performance claim. Verification costs are separate from demonstration and/or testing costs. As every applicant is expected to submit supporting test data, the costs to generate this data is typically required for technology commercialization regardless of whether the company chooses to verify a technology performance claim. In addition, if additional test data is required to substantiate the performance claim, these costs are incurred by the technology vendor and are above and beyond the verification cost.

ETV Canada Inc. and the Government of Canada encourage buyers and regulatory authorities to accept the verification certificate as support for suppliers' claims concerning product performance. This increases the marketability of the verified products, expedites provincial permit approvals, and reduces the need for repeated demonstration testing. The benefits include enhanced international marketability, accelerated commercialization of innovative technologies, and potentially greater inter-provincial acceptance of new environmental products and processes. The result should be a healthier environment and increased domestic and international trade.

Pilot verifications are important to ensure adequate technology-specific protocols are created and established for new technologies. As vendors apply to the Program with new and innovative technologies, protocols must be developed and implemented for the verification of these technologies. These pilots must be conducted and protocols developed by a qualified facility with appropriate expertise. Pilot activities and protocol development are scheduled to continue for at least the first year of the Program's operation.

Efforts to achieve reciprocity with the U.S. programs and other similar international initiatives are ongoing. Efforts are also underway to investigate the establishment of a new work item under ISO and pursue recognition from the United Nation's Economic Commission for Europe and NAFTA's Commission for Environmental Cooperation. Endorsement and buy-in from all Canadian provinces and territories is important to the success of the ETV Program. The goal is to obtain formal recognition by the provinces/territories by engaging them into the ETV Program through joint development of standardized environmental technology evaluation procedures that provide Canada-wide acceptance of technology evaluations. Negotiations are ongoing with provincial representatives to solicit their participation on an Inter-provincial Working Group on the Standardization of Environmental Technology Evaluations and to sign bilateral agreements. The goal of the Working Group is to facilitate cooperation among all provinces/territories for the testing, demonstration, evaluation and verification of environmental technology performance claims in a manner that allows for mutual acceptance among all parties.

## **5. CURRENT STATUS**

The license agreement between Environment Canada and ETV Canada Inc. will be signed in March 1997. ETV Canada Inc. will be open for business and accepting applications by April 1, 1997. Also in preparation for program operation, the first phases of the pilot verifications and development of the general verification protocol will be completed by April. The ETV Program will be officially launched by the Minister of

Environment Sergio Marchi in June 1996. Efforts to solicit the endorsement and buy-in by the provincial governments and confirm the participation of the provinces/territories on the proposed Inter-provincial Working Group on the Standardization of Environmental Technology Evaluations is an on-going activity.

The development of a new ISO work item, as well as pursuing recognition from international organizations such as the United Nation's Economic Commission and NAFTA's Commission for Environmental Cooperation are also ongoing.

## **6. ROLES / RESPONSIBILITIES**

As the ETV Program will be a government / private-sector partnering initiative, there are certain Program development and operational activities which Environment Canada is best suited to undertake and some which ETV Canada Inc. should undertake. The respective roles between the Environment Canada and the ETV Canada Inc. are outlined below.

### **6.1. ETV Canada Inc.**

ETV Canada Inc. is operating under license from Environment Canada to deliver and administer the ETV Program. Specifically, the licensee is accountable for:

- assuming day-to-day responsibility for ETV Program delivery;
- overall management and leadership functions;
- financial management on a cost recovery basis;
- marketing and promotion;
- coordination of technical expertise to complete verifications;
- issuing of awarded verification certificates;
- monitoring use of verification certificates;
- addressing conflict of interest and confidentiality issues;
- general administration of the Program.

ETV Canada Inc. is responsible for the final development, implementation and ultimate success of the Program.

The contact for ETV Canada Inc. is:

Mr. John McMullen, President, 2197 Riverside Dr., Suite 300, Ottawa, ON K1H 7X3,  
(613) 247-1900 ext.228, Fax: (613) 247-2228

### **6.1. Government of Canada**

Environment Canada's role is to ensure the credibility and quality oversight of the ETV Program, particularly for the ETV Logo, is maintained. The mechanism for this oversight will be through the semi-annual review of the license agreement.

Initially, Environment Canada will take the lead with respect to international reciprocity activities with input from ETV Canada Inc.

Efforts to obtain endorsement and recognition from the provinces and the Canadian Council of Minister's of the Environment (CCME's) Environmental Protection and Planning Committee are the responsibility of Environment Canada with input from ETV Canada Inc. This includes activities to establish, solicit membership and provide secretariat services for the Inter-provincial Working Group for Standardization of Environmental Technology Evaluations.

The facility currently conducting the pilot/protocol development project under contract to Environment Canada is Water Technology International (WTI) Corp. This pilot/protocol development will continue under the direction and supervision of Environment Canada with input from ETV Canada Inc. WTI's activities include: further general protocol development; technology-specific protocol development; pilot verifications of technologies not investigated in earlier activities; round-robin verifications with U.S. programs; assistance in the design and implementation of a program to train proposed Verification Entities; technical input for ISO new work item development and Inter-provincial Working Group activities, and; refinement of the ETV database's interface with the marketplace.