

# EPA's Environmental Technology Verification Program



## ETV Centers

**ETV Air Pollution Control  
Technology Center -**  
RTI International

**ETV Advanced Monitoring  
Systems Center -** Battelle

**ETV Greenhouse  
Gas Technology  
Center -** Southern Research  
Institute

**ETV Drinking Water  
Systems Center -** NSF  
International

**ETV Water Quality  
Protection Center -** NSF  
International

**ETV P2 Coatings and  
Coating Equipment  
Pilot -** Concurrent Technologies  
Corporation

**Environmental and  
Sustainable Technology  
Evaluations**

## ETV Definitions

### ETV Does Evaluate and Verify

**ver.i.fy:** to establish or prove  
the truth of the performance of a  
technology under specific,  
predetermined criteria or  
protocols and adequate data-  
quality assurance procedures

**synonyms:** confirm,  
corroborate, substantiate,  
validate

**eval.u.ate:** to carefully examine  
and judge the efficacy of a  
technology; to submit  
technologies for testing under  
conditions of observation and  
analysis

**synonyms:** measure,  
estimate, classify, test

### ETV Does Not Certify

**cer.ti.fy:** to guarantee a  
technology as meeting a  
standard or performance criteria  
into the future

**synonyms:** ensure, warrant,  
guarantee

## What Is ETV?

Throughout its history, the U.S. Environmental Protection Agency (EPA) has evaluated technologies to determine their effectiveness in monitoring, preventing, controlling, and cleaning up pollution. Since the early 1990s, however, numerous government and private groups have determined that the lack of an organized and ongoing program to produce independent, credible performance data is a major impediment to the development and use of innovative environmental technology. Such data are needed by technology buyers and permittees, both in the United States and abroad, to make informed technology decisions. To overcome this impediment, EPA established a program to accelerate the implementation of environmental technology through objective verification and reporting of technology performance. Established in 1995 by EPA, the Environmental Technology Verification (ETV) Program develops testing protocols and verifies the performance of innovative technologies that have the potential to improve protection of human health and the environment.

## What Is the Goal of ETV?

The goal of ETV is to provide credible performance data for commercial-ready environmental technologies to speed their implementation for the benefit of purchasers, permittees, vendors and the public.

## What Are the Benefits of the ETV Program?

- Provides objective, credible performance data to purchasers
- Facilitates technology acceptance and permitting at the state/local level
- Reduces risk for financial investors
- Levels the playing field among competitors through standardized tests and objective reporting
- Facilitates export of environmental products

## How Does ETV Operate?

The ETV Program operates as a public-private partnership mainly through cooperative agreements between EPA and private nonprofit testing and evaluation organizations. These ETV verification organizations work with EPA technology experts to create efficient and quality-assured testing procedures that verify the performance of innovative technologies. ETV now operates six centers which cover a broad range of environmental technology categories. Vendors and others in the private sector, as well as federal, state and local government agencies, cost-share with EPA to complete priority ETV protocols and verifications. In 2005, a new element of ETV was initiated, Environmental and Sustainable Technology Evaluations (ESTE), in which the most important technology categories for meeting EPA needs are verified through contracts with verification organizations.

## What Are ETV's Accomplishments, Impacts and Outcomes?

Since its inception in 1995, ETV has verified almost 400 technologies and developed more than 85 protocols. A survey of participating vendors completed in 2001 showed overwhelming support for the ETV Program. Responses indicated that 73 percent of the vendors were using ETV information in product marketing, and 92 percent of those surveyed responded that they would recommend ETV to other vendors. To date, more than 65 vendors have had multiple products verified by ETV. From 2002 to 2006, ETV conducted verification of monitoring and treatment technologies relevant for the Nation's homeland security. In 2006, EPA published a two-volume set of 15 case studies which document actual and projected outcomes from verifications of technologies in 15 technology categories (EPA/600/R-06/001 and EPA/600/R-06/082). Seven types of outcomes are described; some examples include pollutant emission reductions, technology acceptance and use, scientific advancement, and human health impacts.

Visit the ETV Web Site and Subscribe to the ETVoice Listserv  
at:  
<http://www.epa.gov/etv>

Numerous EPA offices and state programs are being supported by ETV technology testing results. These include technologies related to mercury, particulates, NO<sub>x</sub> and SO<sub>x</sub>, emissions control and monitoring, stormwater control and treatment, infrastructure rehabilitation, control of runoff and energy recovery from combined animal feeding operations, distributed energy generation for greenhouse gas reduction, pathogen and arsenic treatment in drinking water systems, and lead in dust monitoring. ETV's support of state drinking water programs has been documented by a 2006 Association of State Drinking Water Administrators (ASDWA) survey, which showed that 29 states recognize and use ETV reports in policy making, permitting decisions, and/or reducing pilot testing. ASDWA and its members have consistently supported the NSF ETV program's drinking water center because ASDWA understand the need for independent evaluation of alternative drinking water treatment technologies. ASDWA relies heavily on these evaluations to support the use of technologies and products in the drinking water industry and assure a proper standard of care.

### How Do the ETV Centers and ETV-ESTE Operate?

**Stakeholder Guidance** – The efforts of ETV centers are guided by the expertise of stakeholder groups. These groups consist of representatives of verification customers for a particular technology sector: buyers and users of technology, technology developers and vendors, state and federal regulatory personnel, consulting engineers, environmental organizations, financiers, and underwriters. More than 500 individuals are active in ETV stakeholder groups. Their primary functions are assisting the centers in developing protocols for testing, prioritizing the types of technologies to be verified, and implementing outreach activities to the customer groups they represent. In ETV-ESTE stakeholder groups are critical to developing balanced test plans, reviewing reports, and helping to disseminate results.

**Performance Verification Objectives and Reporting** – ETV is a voluntary program that makes objective performance information available to help decision-making. ETV does not rank technologies, label or list technologies as acceptable or unacceptable, determine “best available technology,” or approve or disapprove technologies. Verification activities are announced in relevant publications, and on the ETV Web site and ETV listserv. Appropriate quality assurance procedures are incorporated into all aspects of the process and all reports are subjected to peer review. Verification statements of three-to-five pages, based on the performance data in the reports, are signed by EPA and the verification organization, and are posted on the ETV Web site.

### What Is the International Interest in ETV?

Strong international interest in technology verification has bolstered ETV's impact abroad. To date, over 65 technologies from international vendors have been verified by the ETV Program. Approximately 10 percent of the visits to the ETV Web site are from foreign nations, and ETV protocols are being used worldwide to verify technologies. In 2005, ETV hosted an Environmental Technology Verification International Forum, at which representatives from verification programs operating or planned in Canada, Korea, Japan, Singapore, and the European Union (EU) discussed the potential for collaborating internationally on verification. ETV participated in a second international forum in Canada in 2006, and a third forum is being planned for 2007, possibly in the EU. ETV continues to work with international partners to find global acceptance of verification results. ETV, with co-sponsors—EPA Office of International Affairs, U.S. Agency of International Development, and U.S. Asian Environmental Partnership—has conducted workshops on technology verification in India, Thailand, and Taiwan, and in the United States for Malaysia and the Philippines.

### Want to Know More About the ETV Program?

With over 3 million hits per year, the ETV Web site, at [www.epa.gov/etv](http://www.epa.gov/etv), provides users with up-to-date information on the ETV Program. The site contains descriptions of each ETV Center, as well as ETV verification reports/statements, protocols and test plans, stakeholder lists, fact sheets, meeting summaries, and other publications. The ETVoice listserv informs subscribers about the availability of new information on technology testing procedures, upcoming testing events, vendor solicitations, the performance of ETV-verified technologies, upcoming meetings and events, and general news related to the ETV Program. Subscribe to the ETVoice on the Internet at <http://www.epa.gov/etv/etvoice/subscribe.html>.

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