

Verifying New Technologies for Air Pollution and Greenhouse Gases

In an ever-increasing number of areas, the potential for aligning market forces with environmental protection is growing. Many venture capitalists point to the development of “green” technologies as one of the few bright spots in a slowing economy. New technologies for preventing, controlling, and monitoring air pollution and greenhouse gases are among the most attractive targets.

One of the biggest hurdles to successfully bringing new technologies into the marketplace, however, is developing the credible, high-quality performance data that purchasers, regulatory bodies, financiers, and vendors require before investing in new technologies. To help new technologies enter a risk-adverse marketplace, the U.S. Environmental Protection Agency (EPA) established the Environmental Technology Verification (ETV) Program.

The ETV Program

Established in 1995, the goal of the ETV Program is to accelerate the acceptance of new environmental technologies entering the marketplace by supplying data verifying their performance.

The program is managed by EPA's National Risk Management Research Laboratory (NRMRL), part of the agency's Office of Research and Development. NRMRL engineers and scientists provide oversight of verification tests, assuring the credibility of the program as a whole, including quality assurance processes and data. ETV verification establishes or proves the truth of performance of a technology under specific, predetermined criteria and testing protocols.

Verification reports and statements are free and open to the public through the ETV Web site, www.epa.gov/etv.

The ETV Program operates through a number of public-private partnerships between EPA and private, nonprofit testing and evaluation organizations. Working together, technical experts from EPA and their partners develop efficient and quality-assured protocols and test plans for verifying technology performance. ETV partners are responsible for planning and performing the verification tests, as well as developing verification reports and

statements designed to effectively communicate test results to interested stakeholders and end-users.

Technology Verification Centers

ETV operates verification centers that test technologies across a broad range of categories. The centers operate with the assistance of stakeholder committees whose members are drawn from diverse backgrounds, such as state and local regulatory agencies, industry, academia, environmental groups, and investment companies. Stakeholders help prioritize environmental technology needs, identify commercially available products that meet those needs, and develop test plans. Once a technology category has been prioritized for verification, a call for vendors is announced and vendor applications are received. Then, input from stakeholders is incorporated into a test/quality assurance plan that is reviewed by participating vendors and EPA representatives. An appropriate test location(s) is selected and the equipment is tested using procedures outlined in the test/quality assurance plan. A verification report and statement are developed by the ETV centers and reviewed by EPA, the participating vendor, and peer reviewers.

Vendors and others in the private sector, as well as federal, state, and local government agencies share costs to complete protocols and verifications.

Verification Centers for Air

Two ETV centers focus exclusively on verifying technologies related to air: the Air Pollution Control Technology Center and the Greenhouse Gas Technology Center.

Air Pollution Control Technology Center (APCT). Operated in cooperation with RTI International, APCT verifies the performance of commercial-ready technologies designed to control stationary and mobile air pollution sources and to mitigate the effects of air pollutants. Control technologies APCT addresses include diesel engine emission control devices, outdoor wood-fired hydronic heaters, dust suppression and soil stabilization products, paint overspray arrestors, and indoor pollution mitigation products.

APCT readily shares its findings with stakeholders and potential users of tested technologies. The APCT Web site, <http://epa.gov/etv/center-apc.html>, posts the names of stakeholder group and technical panel members, as well as the minutes from their meetings, verification protocols, test/quality assurance plans, verification reports, verification statements, recent publications, and other relevant documents. To date, APCT has verified the performance of 52 technologies and posted the verification results on its Web site.



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The center also maintains a database of contact information of more than 900 air pollution control technology developers, vendors, and other interested parties. Please contact APCT through the Web site to be added to the database.

Greenhouse Gas Technology Center (GHG). Operated in cooperation with Southern Research Institute, GHG provides independent performance testing of technologies that produce, mitigate, monitor, or sequester greenhouse gas emissions. Since 1997, GHG has located promising greenhouse gas mitigation and monitoring technologies, subjected them to independent, third-party performance testing, and provided the results to the public free of charge. The center has completed or initiated verifications of 36 environmental technologies, such as microturbines, fuel cells, and ground-source heat pumps for distributed generation; and fuel additives for increased fuel efficiency. For more information on these technologies or on the center, visit the GHG Web site at www.epa.gov/etv/center-ggt.html.

Other Verification Centers

While APCT and GHG focus their efforts exclusively on investigating technologies for air, other ETV verification centers include air technologies as part of a broader suite of verification efforts. The Advanced Monitoring Systems Center (AMS), operated in cooperation with Battelle, verifies the performance of commercial-ready technologies that monitor contaminants and natural species in air, water, and soil. The center tests both field-portable and stationary monitors, as well as innovative technologies that can be used for site characterization. To date, AMS has verified 60 technologies for monitoring air

contaminants such as ammonia, particulate matter, hydrogen sulfide, dioxin, and others. The AMS Web site is www.epa.gov/nrmrl/std/etv/center-ams.html. Other ETV centers include the Drinking Water Systems Center, the Water Quality Protection Center, and the newly-formed Materials Management and Remediation Center.

International interest in verification is growing. In addition to the U.S. ETV Program led by EPA, Canada, the European Union, Japan, Korea, the Nordic countries, and the Philippines have developed fully operating or pilot verification programs. Additional countries have also expressed an interest in developing verification programs.

Learn More About ETV

Sharing research results and outcomes with interested stakeholders and end-users is one of ETV's primary goals. The ETV Web site, provides verification reports and statements, protocols and test plans, stakeholder information, meeting summaries, and other important resources.

In addition, ETV distributes monthly newsletters using the program's listserv, ETVoice, to inform subscribers about the availability of new information on recent technology verifications, future events, vendor solicitations, and highlights of the ETV Program. To join the listserv, send a blank e-mail to join-etvoice@lists.epa.gov.

Teresa Harten, Abby Waits, Scott Fogle, and Patrick Hurd contributed to this month's column. It was written by Aaron Ferster, Science Writer-Editor with EPA's Office of Research and Development in Washington, DC. **em**

For more information on the research discussed in this column, contact Deborah Janes, Public Information Officer, U.S. Environmental Protection Agency (B205-01), Office of Research and Development, Research Triangle Park, NC 27711; phone: 1-919-541-4577; e-mail: janes.deborah@epa.gov. Disclaimer: Although this text was reviewed by EPA staff and approved for publication, it does not necessarily reflect official EPA policy.

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