Civil Engineering Research Foundation (CERF) Evaluation Services

The Environmental Technology Evaluation Center (EvTEC) is a service center of the Civil Engineering Research Foundation (CERF), the research affiliate of the American Society of Civil Engineers.

THE ENVIRONMENTAL TECHNOLOGY EVALUATION CENTER CERF's NEWEST INNOVATION CENTER

Overview

The technology verification activities of the Civil Engineering Research Foundation (CERF) have expanded to encompass the environmental field with the initiation of a $1.84 million cooperative agreement with the U.S. Environmental Protection Agency (EPA). With this agreement as a basis, CERF is implementing a program to establish a self-supporting, market-based environmental technology verification center.

The CERF center is a key component of EPA's Environmental Technology Verification Program (ETV), designed to implement President Clinton's *Bridge to a Sustainable Future*, a strategy to advance innovative environmental technologies. The intent of the program is to verify the performance of new, commercially-ready environmental technologies and transfer this information to important customer groups such as state permitting agencies and consulting engineering organizations.

The CERF approach is unique compared to other verification programs in that it will be a market-driven private-sector effort rather than a government program. The program includes technologies across the spectrum of pollution prevention, control, remediation/restoration, and monitoring. The program objective is to focus on identifying and verifying those technologies that are ready for the market and required to serve industry needs.

The Environmental Technology Evaluation Center is based on the organizational concept of the "virtual center" model pioneered by CERF through its CEITEC and HITEC verification programs, established for infrastructure and highway-related technologies respectively. The "virtual center" structure relies on networks of experts, testing facilities, and stakeholders to provide the most appropriate approach for each technology evaluated, and to produce cost-effective, high-quality results without the high overhead costs of conventional centers. The approach is designed to maximize flexibility and to ensure that there is no bias for or against particular technologies, and no limitations on facilities or expertise.

Consistent with this concept, the environmental center seeks to involve the full range of stakeholders throughout the verification process. This involvement ranges from overall guidance by a broad-based Executive Committee, to participation in evaluation panels by representatives of technical, regulatory, public, academic, industry, and other interests. The center functions as a public-private partnership that provides a path to implementation for new technologies that are ready for the market.

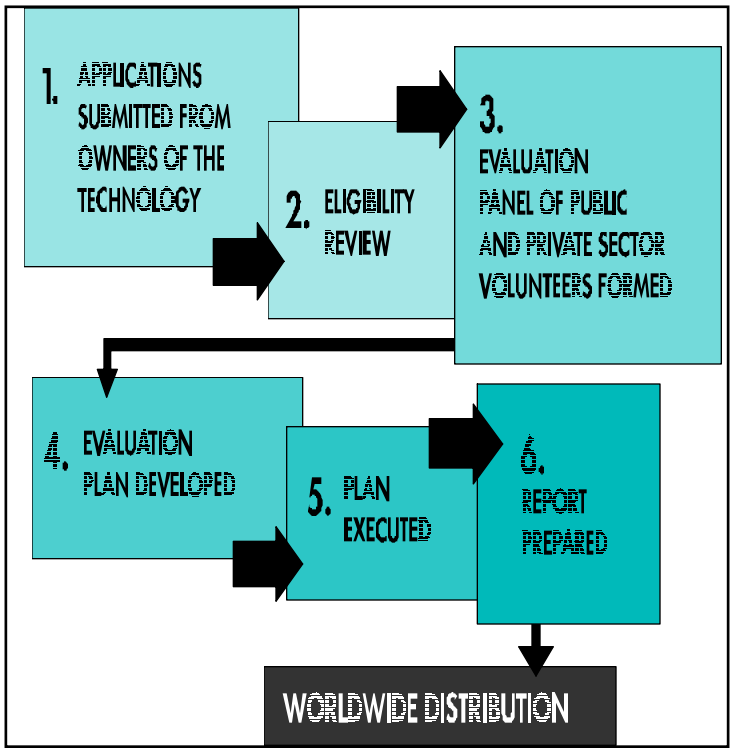
Benefits

CERF's Environmental Technology Evaluation Center:

- serves to advance the acceptance and use of innovative technologies within the environmental marketplace
- expands the opportunities for bringing new technologies into the marketplace
- reduces the time and expense for market introduction of innovative environmental technologies
- enhances private industry incentives to invest in research and development
- creates opportunities for government and industry collaboration
- enhances communication among stakeholders in the environmental community

The heart of the environmental center is a collaborative, consensus-based process illustrated below and described

CERF's Evaluation Process



CERF's ENVIRONMENTAL TECHNOLOGY EVALUATION CENTER

For all environmentally-related products, materials, services, equipment, systems and other technologies

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1 Applications are submitted by entrepreneurs and companies who wish to introduce their innovative technologies (products) into the civil engineering and public works marketplace. Depending on the type of technology or product, CERF's evaluation staff can also utilize the expertise available through HITEC, which specializes in highway and bridge applications, or CEITEC which encompasses other infrastructure-related technologies from the civil engineering and construction industries.

2 Upon receipt of an application, CERF's evaluation staff will review the information contained and evaluate it against these four primary criteria:

- Is the product beyond the prototype stage and "market-ready?"
- Can the applicant demonstrate ownership of the technology?
- Is the technology innovative in that its performance cannot be measured by an existing, widely-accepted standard or specification?
- Could a verification produce definitive results which would resolve environmental performance issues preventing acceptance of the technology or product.

For those applications which do not meet the above evaluation criteria, staff will refer the applicant to other organizations which might be able to provide assistance.

3 Once a product is accepted into the verification center, a unique volunteer technical evaluation panel is formed. The size and composition of the panels vary depending on the nature of the product being evaluated. Each panel has a core group of experts representing regulatory officials, industry representatives, public and private sector researchers, public interests and other stakeholders. In all cases, the goal is to assemble a panel which is diverse with respect to organization, expertise, experience, and geographic region. To avoid any potential conflicts of interest, CERF requires all panelists to complete disclosure forms and confidentiality agreements, and comply with CERF's Governing Principles.

> CERF intends to provide personalized service to each applicant; the details of the evaluation process will vary from product to product

4 Guided by CERF's Technical Protocol, the technical evaluation panels formulate an evaluation plan tailored specifically to the technology or product. As appropriate, performance criteria will be established to address the following issues:

- **Functional Performance**—Does the product perform as claimed or intended?
- **Constructability/Practicality**—Is the product easy to use and compatible with existing systems?
- **Cost**—Is the product's cost similar to costs of technologies with similar performance and capabilities?
- **Maintenance Requirements**—Does the product require frequent or significant upkeep?
- **Safety Aspects**—Is the product safe?
- **Environmental Characteristics**—Is the product environmentally sound?

The plan will identify the nature, costs, and timing of any testing, sampling, in-service demonstrations, or other activities necessary to evaluate the technology.

5 Once the applicant approves the plan and funding issues are resolved, the evaluation plan is executed. Sampling and Lab testing or chemical analyses tasks may be subcontracted to consultants or research organizations. In many cases, in-service demonstrations will be made in the volunteer panelists' region. The applicant is ultimately responsible for funding the evaluation; however, CERF will refer the applicant to known sources of financial assistance.

6 The resulting evaluation report is designed to provide a comprehensive picture of the product's performance on which future purchasing decisions can be based. Reports will be distributed to federal, state, and local officials and be available through the ASCE publications office. Summary information will be made widely available through CERF's Internet site and other worldwide distribution networks.

For more information on the environmental center contact:

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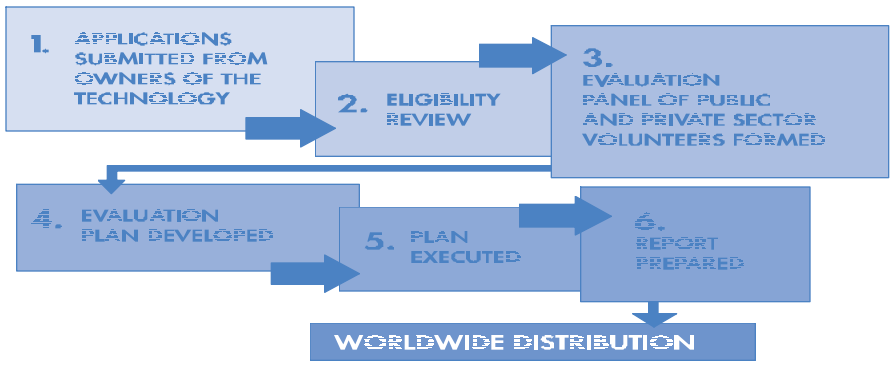
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