

**ENVIRONMENTAL PROTECTION AGENCY  
ENVIRONMENTAL FINANCIAL ADVISORY BOARD**

**DEC 10 2001**

Dr. James Gallup, PE  
SBIR Program Manager  
National Center for Environmental Research (8722R)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Dear Dr. Gallup:

Thank you for your electronic mail of October 10, 2001, requesting comments from the Environmental Financial Advisory Board (EFAB) and the Environmental Finance Centers (EFC) on the draft Small Business Innovation Research (SBIR) program solicitation scheduled to open January 21, 2002.

As described in the solicitation, the research topics cover technologies for stormwater runoff, combined sewer overflows, and contaminated sediments. We felt that given the general orientation of EFAB toward finance issues and in particular the emphasis placed by the solicitation on affordable and cost-effective technologies that it would be best to focus our attention on these matters.

Heather Himmelberger, Director of the New Mexico Environmental Finance Center provided the following comments which we believe effectively captures our interest in the solicitation. She first discusses cost and affordability issues and then outlines a series of questions that we believe will help reviewers incorporate the issue of costs. For the sake of completeness we have included her comments in their entirety and recommend them to the Office of Research and Development for use in the SBIR program.

Comments provided by Heather Himmelberger, P.E., Director of the Environmental Finance Center serving Region 6:

**“In my experiences as an Environmental Engineer, I have certainly had the opportunity to evaluate technologies of many types for many different purposes, including the evaluation of new or emerging technologies. There is no question that cost should be a consideration of the review, although there is certainly room for discussion regarding what place or importance the cost evaluation has in the overall review. It is important to allow cost to be considered without unduly stifling creativity or the development of important technologies. The bottom line is cost should be in the mix, but should be balanced against other factors.**

**That said, the next step is to determine how to consider cost. It is important to know what something is going to cost a system over the long term (capital and operation and maintenance for the life of the system/equipment.) It is also important to know whether the technology may have other more subtle cost implications. Would it require a higher level operator that would impact cost and ability to use the technology in a remote or rural setting (i.e., greater pay, more training, difficult to attract an operator), would it require the disposal of a hazardous waste, would it involve daily interaction with a system, etc. These factors, which most likely are not fully covered in the O&M cost, need to be examined as well.**

**In terms of cost effectiveness, this determination can only be made by comparing the new technology with the existing technologies, or in lieu thereof, to the existing practice. Therefore, some of this information would have to be supplied with the application. In terms of affordability, it is not possible to make such a determination in a vacuum. Two similarly sized systems may have drastically different affordability criteria. The technology might be affordable in City A which has low unemployment, high salaries, etc., but completely unaffordable in City B which has high unemployment, lower salaries, declining population base, etc. This may be true even if City B receives full grant funding for the capital costs. Quite often, it is the O&M costs which are the bigger problem, not the capital costs. Therefore, instead of determining affordability per se, the proposer can be asked to supply incremental cost information that can be used to examine affordability for a specific location.**

**Given the discussion above, the following list of questions were developed that may help reviewers incorporate the issue of cost.**

- 1. What size range of system would this technology apply to?**
- 2. What are the capital and operating costs (O&M) for the technology over the size range specified in Number 1?**
- 3. Is there an existing technology (or technologies) that already meets this need?**
- 4. What is the current cost of the technology(ies) that meet this need within the size range stated above? Cost for capital expense and cost for operation and maintenance.**

5. How does the cost of your technology (as stated in Number 2) compare to the cost of the current technology over the stated size range? Both for capital and O&M costs.
6. What is the useful service life of your technology expected to be? How does that compare to the useful service life of the current technology(ies)?
7. Describe the cost benefits of your technology (if any). In particular, is your technology cheaper to install or operate, is your technology more cost effective from a life-cycle cost perspective, is your technology more cost effective over a particular size range?
8. If your technology is not more cost effective than existing technologies, what other benefits would your technology offer that would make it desirable to install even if it is not less expensive?
9. If your technology is addressing a need for which there are no competitive existing technologies, describe how the costs of your technology (O&M and capital) compare to the current practice of not using this type of technology at all. [For example, if your technology addresses underground evaluation of water pipe and there is no technology that does this type of evaluation, how does the cost of using this technology and completing infrastructure upgrades compare to the current practice of completing upgrades. Is there a cost savings or some other type of benefit associated with the technology. There may be a cost savings associated with doing repairs only on the part of the pipe that appears to have problems based on the evaluation rather than removing the whole pipe.]
10. Consider the incremental cost of using your technology for different sized systems. This cost can be calculated for various system sizes that fall within your appropriate size range on a monthly cost per household basis. This calculation needs to consider capital and operation and maintenance costs. A range of incremental costs can be calculated for various financing models. The three scenarios to consider are: capital costs completely funded by grants and O&M funded solely by system users, capital costs funded at 0% grant for 20 years and O&M funded solely by system users, capital costs funded at 4% for 20 years, O&M costs funded solely by system users. Each of these scenarios needs to be completed for the selected size ranges.
11. Does your proposed technology require additional skills, expertise, or unusual practices that are not currently required? For example, how much operator attention does the system require? Is there a hazardous waste generated which must be disposed of? Would the technology require a higher level certified operator? Would it require any special skills or training? Are there any locational considerations (can't be too close to certain other facilities, has to be enclosed, etc.)?"

We appreciate your offering this second opportunity to submit comments to the SBIR program and hope that you find them helpful. Both EFAB and the EFCs would like to continue working with your Office, especially in the area of commercialization of promising environmental technologies. Please let us know if you are interested in further collaboration by contacting George Ames at (202-564-4998).

Sincerely,



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Robert O. Lenna  
Chair, EFAB



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A. Stanley Meiburg  
Executive Director

cc: EFAB Members  
EFC Directors  
Mike Ryan, Deputy Chief Financial Officer  
Joe Dillon, Comptroller