UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 9, 2001

OFFICE OF POLICY,
ECONOMICS, AND INNOVATION

EPA -SAB- EEC-CO M -01-001

Dr. Morton Lippmann, Interim Chair
Science Advisory Board

Dr. Hillary Inyang, Chair
Environmental Engineering Committee
Science Advisory Board

Dr. Roger Kasperson, Chair
Subcommittee on the Diffusion and Adoption of Innovations
Science Advisory Board

Dear Dr. Lippman and Colleagues:

Thank you for the Science Advisory Board Commentary Resulting from a Workshop on the Diffusion and Adoption of Innovations in Environmental Protection, EPA-SAB-EEC-COM- 01-001. My staff and I enjoyed participating in the meeting and found the Commentary useful in providing broader insights into this dynamic field of innovation diffusion.

We have coordinated our review of the Commentary with the other two EPA Offices - the Office of Water and the Office of Pollution Prevention and Toxics -that participated in the workshop. In addition to our comments, they will provide comments to you also.

We found many of your suggestions in the Commentary intriguing. The idea of creating a diffusion process model, for example, is something we have discussed internally for some time. Dr. Sim Sitkin's advice to "give attention to the characteristics of the organizations, we are trying to affect and ask 'how fertile is the ground for innovation?'" is particularly germane. Based on a recommendation from EPA ' s Reinvention Action Council last June, we created a partnership with the Massachusetts Department of Environmental Protection to explore with other states possible interest in adopting the Massachusetts Environmental Results Program, a sector-wide, self certification alternative to case-by-case facility permitting. Some questions that we face as this early phase of the diffusion process is unfolding, include those raised in your Commentary: "Who will be the likely early adopters, who will be the laggards? Who are the targets of the diffusion effort and what are the characteristics of their organizations and behavior that will bear upon their decision to adopt an innovation?"

Measuring the success of diffusion efforts is complicated. We agree with your suggestion that "a program to evaluate the success of particular diffusion efforts be designed not only to collect useful information for those efforts but also to provide larger insights and systematic learning on EPA's efforts to diffuse innovations generally." We agree with the wisdom "design in" evaluation rather than "adding it on" later.

In our Project XL effort, we have addressed evaluation issues in several ways - conducting an on-going analysis of XL project innovations (see our November 2000 Report *Project XL: Directory of Regulatory, Policy, and Technology Innovations, Volume* 1); examining stakeholder involvement (see our October 2000 Report *Project XL: Stakeholder Involvement Evaluation);* and preparing annual Progress Reports on each XL project. We recognize that our evaluation efforts are limited and that we need to address some of the larger questions your COMMENTARY raises: "Were measures of expected behavioral or process changes resulting from the innovation tracked and used for evaluation and assessment of success? Were models employed examining relationships among activities, environmental outcomes, and indicators/measures? Were data assembled on why the innovation was or was not adopted?"

In an effort to more systematically examine innovative approaches, my office is exploring the development of a framework for analyzing innovations. This framework is envisioned as a practitioner's tool to facilitate the process of capturing, identifying and examining the broader potential of innovative ideas. We have found that the effectiveness of a program or innovation is often assessed in terms of its chain of results: outputs and/or products; impacts that flow from these outputs; and effects reaching beyond the pilot scale. We think that such a framework could help to us develop the type of interim guidance your Commentary suggests: "If models for...measurement and evaluation are not readily available, EPA would benefit from developing some case studies evaluating the diffusion of innovations and providing the results as interim guidance."

Again, thank you and the highly qualified Subcommittee that was assembled to assist EPA in this exciting endeavor. We look forward to interacting with you and some of your colleagues again in the future.

Sincerely,

/ S /
Jay Benforado
Acting Associate Administrator

cc: Betsy Shaw, OEPI
Louise Wise, OW
Tom Murray, OPPT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 19, 2001

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Dr. Morton Lippman, Interim Chair
Science Advisory Board
Executive Director
US Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Dr. Lippman:

Thank you for the November 22, 2000, Science Advisory Board (SAB) commentary resulting from a workshop on the Diffusion and Adoption of Innovations in Environmental Protection EPA-SAB-EEC-COM-01-001. The Administrator asked that the Office of Prevention, Pesticides and Toxic Substances (OPPTS) respond to you directly.

Thank you for allowing us to focus your committee's attention on a program that is of Agency-wide interest--the practice of pollution prevention as expressed through the multimedia Persistent, Bioaccumulative and Toxic (PBT) Initiative. This program is important to this Agency. It provides an effective framework that facilitates cross-program and multimedia planning and action. The program also provides a central focal point for industry and other stakeholders who struggle daily with environmental decisions centered on these priority PBT chemicals. The advice that you offer in your commentary will benefit us greatly as we implement this program. We are particularly intrigued with the idea of developing a diffusion strategy, and would seek your counsel on how best to accomplish this task. Initiative is a gateway to new innovations, especially pollution prevention opportunities and an opportunity to do business more effectively and efficiently.

I would also like to commend you on your recent workshop. The workshop, based on your commentary and the feedback that I received from my staff who attended and presented material, was most useful. It was a worthwhile learning experience, and provided useful guidance for moving our program forward.

Thank you again for convening this workshop. We look forward to further discussions with your committee. Should you have any questions, please feel free to call Tom Murray of our Pollution Prevention Division at 202-260-1876.

Sincerely,

/S/

Stephen L. Johnson
Principal Deputy Assistant Administrator

cc: Dr. Hillary Inyang, Chair
Environmental Engineering Committee, SAB

Dr. Roger Kasperson, Chair
Subcommittee on the Diffusion and Adoption of Innovations, SAB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 25, 2001

OFFICE OF WATER

Dr. Morton Lippmann
Interim Chair
Science Advisory Board

Dear Dr. Lippmann:

Thank you for the Science Advisory Board Commentary Resulting from a Workshop on the Diffusion and Adoption of Innovations in Environmental Protection (EPA-SAG-EEC-COM-01-001). The Commentary is a valuable contribution to EPA's efforts to diffuse innovations in environmental protection. It offers important suggestions that can be applied within the Agency. The following are specific highlights that seem most relevant.

The idea of a diffusion plan offers EPA the opportunity to potentially ensure adoption of ideas and innovations, thus improving environmental compliance. Specifically, the Commentary suggests that in addition to analysis of goals, barriers, incentives and resources, a diffusion plan would include targeting social networks as a key mechanism for diffusion. This is based on studies showing that "most individuals evaluate an innovation on the basis of the experience of peers who have adopted it and not on the basis of scientific research by experts." A diffusion plan would go beyond advertising and financial incentives, to identifying early adopters (the specific persons, organizations or entities who are most ready to adopt an innovation) and supporting their efforts to diffuse innovations throughout their networks.

An especially important point made in the Commentary and the Appendix A: Summary Minutes of Public Workshop was the idea that often more than one innovation is lumped together, making diffusion more difficult. For instance, the ideas of watershed protection and, to a lesser degree, the use of social sciences in environmental protection, are known. However, the details of how and why may not be as well known or adopted. These details may include the sub-innovations of the larger innovation, such as adaptive management, inter-jurisdictional cooperation, and community cultural assessments. The suggestion that we "unravel" and plan for each of a multiple of diffusions is very helpful.

The suggestion that EPA develop guidance on diffusion plans is well taken. In order for the Agency to take the next step in adopting a diffusion approach, managers and staff will need to grapple with new ideas and decide how best to adopt them. It would be a valuable exercise to

compare and contrast our normal communication and marketing efforts with diffusion principles. Such an analysis would be a first step in cultivating early adopters and could produce the best of both worlds with which to meet the various needs of the Agency regarding information dissemination and diffusion of innovations.

The idea of "policy entrepreneurs" provides an appealing label for innovative agency staff and may serve to motivate staff to be creative in accomplishing their goals. The Commentary suggests that EPA should use awards to encourage diffusion of innovations. In this light, EPA might choose to strengthen its award system to recognize the work of policy entrepreneurs.

Since environmental problems are human problems, it would be helpful if the Agency employed the expertise of scientists who study people, social process and the human-environmental relationship. Regardless of our ability to create innovations, the Commentary remarks that "ultimately, the perspectives of innovation developers do not matter much; the perspectives of potential adopters matter a great deal." This reminds us that while we understand the problems and have a number of solutions, it is more important to work with the people living with and trying to solve the problems so that they will create and/or adopt the best solutions.

Thank you again for the commentary.

Sincerely,

/ Signed /

Diane C. Regas
Acting Assistant Administrator