

**Environmental Finance Center Network
California State University, Hayward -
EPA Region 9
Annual Reports**

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**ENVIRONMENTAL FINANCE CENTER AT
CALIFORNIA STATE UNIVERSITY, HAYWARD
U.S. EPA REGION 9
1997 ANNUAL REPORT**

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**U.S. EPA REGION 9 - ENVIRONMENTAL FINANCE CENTER
AT
CALIFORNIA STATE UNIVERSITY, HAYWARD
1997 ANNUAL REPORT**

Executive Overview

The Environmental Finance Center, Region 9 (EFC9), is a University-based Center providing expertise on environmental financing and economic issues. EFC9 is affiliated with California State University, Hayward (CSUH), and is supported under the auspices of the U.S. Environmental Protection Agency (EPA). The Mission of the EFC9 is to educate and assist business/financial managers, owners, and advisors, public and private, in the application and use of innovative financing techniques that can further the implementation of environmental programs and projects; and to support the establishment of new environmental businesses and environmental technology development enterprises.

EFC9 achieves its mission through various undertakings, which include: conferences and seminars demonstrating methods of applying financial and economic mechanisms to environmental aspects of management; course curriculums developing environmental finance course content and case studies for use by education institutions throughout Region 9's environmental infrastructure; and financial research evaluating the effectiveness of existing financial mechanisms and the development of finance models that enhance the utilization of capital in the environmental needs marketplace. EFC9 is particularly interested in the use of public-private partnerships, supporting small business owners in capitalizing on environmental business opportunities and achieving regulatory compliance, promoting the adoption of pollution prevention technology by existing businesses, and encouraging and facilitating the funding of environmental innovation. The EFC is using the World Wide Web to make information available through its home page at <http://barney.sbe.csuhayward.edu/~efc9>

Summary of 1997

EFC9 completed a series of tasks in 1997 including the Arizona Business Opportunities Conference and the Technology Transfer Charrette which focused on issues of technology transfer between the San Francisco Bay Area National Laboratories and small environmental businesses. In addition, EFC9 continued work on its funding directory, *Financing Environmental Technology*, and commenced work on the Pollution Prevention Demonstration Project.

Continuing Work on The Funding Directory

In keeping with our focus on small environmental businesses, EFC9 continued work on *Financing Environmental Technology: A Funding Directory for the Environmental Entrepreneur*. Additional information has been researched on the environmental industry as a whole, and two new sections have been prepared as well. The first addition is a section on private investors known as Angels. The second addition is a short review of small business incubators in California.

EFC9 will continue working on the Environmental Finance Directory in 1998, with new information on venture capital and a compendium of environmental funding sources available in the other states in Region 9 - Arizona, Nevada and Hawaii.

Learning From The Past

This year, EFC9 has taken time to review our experience with Environmental Business Development Conferences, a staple of EFC9 work since it began. As we switch our focus to more intimate workshops, we reviewed what has worked and what hasn't and will be applying that knowledge to Environmental Finance Workshops. The first workshop will be held in San Francisco, early in 1998.

Environmental Entrepreneurial Charrette - Exploring Technology Transfer

At the end of 1997, EFC9 held its first charrette which focused on the process of technology transfer between the National Laboratories located in East San Francisco Bay and small environmental entrepreneurs. Attendees at the charrette included representatives from all three Bay Area National Laboratories (Sandia, Lawrence Berkeley, and Lawrence Livermore), Stanford Office of Technology Transfer, Environmental Protection Agency, Alameda Center for Environmental Technology, Bay Area Regional Technology Alliance, and various small environmental businesses.

Arizona EFC9 Environmental Business Opportunities Conference

Eighty people attended the sixth Environmental Finance Center, Region IX Environmental Business Opportunities Conference in Phoenix, Arizona on June 4, 1997. They came from all over Arizona--Flagstaff, Tucson and greater Phoenix. Participants gave the conference high marks - 97 percent of the respondents rated the conference very valuable (49%) or somewhat valuable (48%) overall. Topics covered at the Arizona conference included: green building products & practices,

exporting, environmental technology, eco-tourism, and marketing and sub-contracting for environmental products and services.

Pollution Prevention (P2) Demonstration Project

The goals of the P2 project is to understand what role the lack of available debt and equity finance plays in the development of the pollution prevention industry. EFC9 started the P2 project in the summer of 1997 by getting acquainted with the local Bay Area organizations involved in the P2 industry. Soon to follow will be a series of meetings and two charrettes involving P2 organizations, local economic development groups, and small businesses which are required to incorporate P2 products in their manufacturing processes. The final product for this project will include a model for P2 integration in industry.

[Selected State Agencies, Local Officials, Localities, Organizations and Small Businesses Served](#)

The following table represents a summary of state agencies, local officials, localities and small businesses served by EFC9 in 1997.

Selected State Agencies, Local Officials, Localities, Organizations and Small Businesses Served by EFC9 in 1997		
Agency/Organization/Locality	Contact	Service
Small Environmental Businesses		
Consultores e Investigadores Tecnicos	Enrique Cardenas G., PhD., Monterrey, Mexico	Environmental finance and technology transfer advice
Tasco	Theresa Sanders	Environmental finance advice
Thermatrix, Inc.	John Scoffield	Environmental Finance Workshop participant
Electrox	Watson Aldridge	Technology Transfer Charrette participant
Solar Detoxification	Don Ledbetter	Technology Transfer Charrette participant

Ocellus Corporation	Michael Droege	Technology Transfer Charrette participant
Nitrate Elimination Company	Ellen R. Campbell	Received a copy of the Environmental Finance Directory
California State Agencies/Organizations		
CA Trade and Commerce Agency - Environmental Technology Export Program	Mary Wilson	Future partner/sponsor for Environmental Finance Workshops
Carter Affiliates, Inc.	Richard Carter	Arizona Environmental Business Conference
LandTech Environmental, Inc.	Fred Coon	Arizona Environmental Business Conference
ADOC National Marketing	Greg Fisher	Arizona Environmental Business Conference
Eco-Group	Tom Hines	Arizona Environmental Business Conference
Painted Desert Tours	Bonnie Lewis	Arizona Environmental Business Conference
Progressive Solar, Inc.	Gail Marsland	Arizona Environmental Business Conference
SGS International Services	Cynthia McNulty	Arizona Environmental Business Conference
Kur-Carr Firm	Sally Kur	Arizona Environmental Business Conference
Local Agencies/Organizations		
Bay Area Regional Technology Alliance	Alex Glass	Partner/sponsor for Environmental Finance Workshops and Funding Directory
Alameda Green Business Program	Pamela Evans	Sponsor for Environmental Finance Workshops; received Funding Directory
Border Environmental Commerce Alliance	Larry O'Donell	Partner for Environmental Finance Workshops & environmental finance research
CalStart Small Business Hatchery for Advanced Transportation Technologies	John Huetter	Partner for Environmental Finance Workshops & environmental finance research
County of Santa Clara, Office of Pollution Prevention	Isao Kobayashi	P2 Project
Manufacturing Excellence (MANEX)	David Smithstein	P2 Project
Federal Agencies/Organizations		
Small Business Administration	Barbara Bazani	Partner/sponsor Environmental Finance Workshops
EPA, Region 9, Office of Pollution Prevention	Eileen Sheehan	P2 Project
EPA, Region 9, Office of Pollution Prevention	Karen Sundheim	P2 Project

EPA, Region 9, Office of Strategic Planning	Weinke Tax	Technology Transfer Charrette attendee
Lawrence Livermore National Laboratory	Kathy Kauffman	Technology Transfer Charrette participant
Lawrence Livermore National Laboratory	Rich Regaini	Technology Transfer Charrette participant
Lawrence Livermore National Laboratory	Steve Mathews	Technology Transfer Charrette participant
Lawrence Berkeley National Laboratory	Cheryl Fragiadakis	Technology Transfer Charrette participant
Sandia National Laboratory	Laura Santos	Technology Transfer Charrette participant
Office of US Senator John McCain	Kevin Adam	Arizona Environmental Business Conference
Office of US Representative John Stark		Environmental finance advice
Other Organizations		
Patagonia, Inc.	Mark Newton	Received a copy of the Environmental Finance Directory
CH2M Hill	Walter Bouchard, VP	Arizona Environmental Business Conference
Arizona Technology Incubator	Dr. Robert J. Calcaterra	Arizona Environmental Business Conference
University of Arizona	Dr. Michael Cusanovich	Arizona Environmental Business Conference
University of Arizona	Dr. Julie Leones	Arizona Environmental Business Conference
Bank One	Michael Stedron	Arizona Environmental Business Conference
Arizona Home Builders Association	Connie Wilhelm-Garcia	Arizona Environmental Business Conference
Arizona Small Business Development Network	Michael York	Arizona Environmental Business Conference
Arizona World Trade Center	Jonathon Green	Arizona Environmental Business Conference
United Nations Division for Sustainable Development	Tarcisio Alvarez	Received a copy of the Environmental Finance Directory

[EFC9 Activities](#)

Continuing Work on The Funding Directory

In keeping with our focus on small environmental businesses, EFC9 continued work on *Financing Environmental Technology: A Funding Directory for the Environmental Entrepreneur*. Additional information has been researched on the environmental industry as a whole, and two new sections have been prepared as well. The first addition is a section on private investors known as Angels. The second addition is a short review of small business incubators in California.

Angels

EFC9's research shows that while small firms and entrepreneurs are increasingly driving the economy, they are the least likely to receive the type of financing they need to grow. For entrepreneurs, raising patient, high risk equity financing is the critical capital formation challenge. Indeed, improving the climate for capital formation was the single most important topic at the 1995 White House Conference on Small Business. The need for equity capital in the range of \$250,000 to \$5 million was identified as a critical requirement from technology and growth small businesses. This is the market segment below the interest of most institutional venture capital firms and above the entrepreneur's ability to obtain capital from self-financing, friends and family.

What Is An Angel?

An angel is a private investor, who typically invests small increments of between \$25,000 and \$1,000,000 providing the seed capital that new companies need to take root. Seed stage capital for small businesses is often provided by angel investors who have a high net worth and have usually made their fortunes in their own businesses. Angels tend to be most interested in helping to build a business as opposed to buying in and cashing out at the most opportune moment. The cash and faith of these wealthy individuals often pay for enterprises considered too pricey for another credit card or bank loan, but too untested to attract venture capital or a stock offering.

Equity capital needs under \$250,000 are often filled by bootstrapping, friends and family, while the average venture capital financing has grown to over \$5 million. This has created a "capital chasm" in the range of \$250,000 to \$5 million. Angel investors can fill this gap, but the entrepreneur's ability to communicate efficiently with angels is usually limited by the local and personal nature of existing networks. Currently, equity capital networks are heavily concentrated in California and Massachusetts. EFC's continued research into Angels and Angel Networks will be a critical addition to the Environmental Funding Directory.

The Value of Small Business Incubators

Always exploring new avenues to help small environmental businesses survive and prosper, EFC9 has recently looked into the success of business incubators. According to the Small Business Administration, four out of five new businesses fail within the first five years. However, the National Business Incubator Association estimates that 80 percent of firms cultivated in an incubator continue to operate after the same time period has elapsed. Incubators provide a number of facilities and services including reduced rent, shared equipment and assistance with legal, financial, planning and marketing issues. In return, successful companies pay taxes, hire new employees and contribute to the local economy.

In the United States, most incubators fall under five categories: 1) mixed use, 2) technology, 3) light manufacturing, 4) service, and 5) micro-enterprise/empowerment. The majority of incubator clients tend to be involved in either light manufacturing, service, technology, or research. Table 1 below presents a breakdown of the types of incubators and clients in the US.

TABLE 1:

INCUBATORS AND INCUBATOR CLIENTELE BY TYPE

Incubator Type	Percentage
Mixed Use	42%
Technology	30%
Light Manufacturing	13%
Service	9%
Micro-enterprise/Empowerment	7%
Incubator Clientele by Industry Type	Percentage
Service	40%
Light Manufacturing	23%
Technology	22%
Research	7%

Other

8%

Source: NBIA, 1997.

Business incubators are relatively new and still evolving. They have been used for a variety of purposes including, job creation, wealth creation, industrial regeneration, technology transfer, and more recently, military base redevelopment and reuse. In the United States, incubators established to increase the growth rate of new and small businesses are seen as a tool for local growth and development. There are over 500 incubators recognized by the National Business Incubator Association in the United States, 90 percent of which have opened since 1983.

Several studies evaluating the impact of business incubators have found that higher success rates for incubated firms than they did for most new businesses. In addition, most firms stayed in the community after graduation, which means that the benefits of a successful incubator remain local.

Learning From The Past

Starting in early 1998, EFC9 will embark on a new series of small, hands-on environmental finance workshops that will build on the knowledge we have gathered from past conferences held throughout the Region.

From March 1995 until June 1997, EFC9 organized and held six conferences throughout the EPA's Region 9 focusing on environmental business development opportunities. Attendance ranged from about 30 at the first conference in Hayward to about 80 at the most recent conference in Arizona. The other conferences were held in Las Vegas in December 1995, San Bernardino in February 1996, Hilo in October 1996 and Honolulu the following day. The goal of these conferences was to present sessions led by local environmental business owners/operators and advisors on potential environmental business opportunity areas. Therefore, the subjects addressed at each conference varied, as presented in the table below. Each conference included at least one session (generally a panel) on environmental financing.

EFC9 Environmental Business Development Conferences: 1995 - 1997	
Conference Location	Topics Presented
Hayward, California	<ul style="list-style-type: none"> • green retail • base closure & conversion opportunities • environmental technology
Las Vegas, Nevada	<ul style="list-style-type: none"> • waste management • commercializing environmental technology • solar energy • exporting
San Bernadino, California	<ul style="list-style-type: none"> • waste management • commercializing environmental technology • environmental/green consumer products
Hilo, Hawaii	<ul style="list-style-type: none"> • remanufacturing/reuse • environmental building products & practices • organic farming • eco-tourism
Honolulu, Hawaii	<ul style="list-style-type: none"> • environmental building products & practices • sustainable landscaping

	<ul style="list-style-type: none"> • marketing • remanufacturing/reuse • eco-tourism
Phoenix, Arizona	<ul style="list-style-type: none"> • green building products & practices • exporting • environmental technology • eco-tourism • marketing • sub-contracting

To learn from each conference and improve our product, we solicited feedback and written evaluations. Many of the lessons we learned were largely administrative, such as the fact that most entrepreneurs, the fantastically busy people that they are, prefer to leave or arrive after lunch. For them, spending a full day away from work is a rarity. We also discovered the value of carefully chosen co-sponsors and timely, well-placed advertisements in local newsletters, newspapers and journals.

Popular Topics for Small Businesses

In terms of popularity of topics, most businesses are interested in alternative modes of financing from bootstrapping to venture capital and angels. EFC9 held panels on financing and invited representatives from various financial institutions (banks, venture capital firms, public sector financing and private placement). The evaluations of these speakers reflected the likelihood that they would fund environmental businesses. Small business owners and entrepreneurs want to hear what works - what will bring them money. Unfortunately, past unfavorable experiences with banks brought a large measure of skepticism towards the bankers. Most small businesses did not expect to receive funding from banks, and at the Arizona conference this belief was reaffirmed by bank spokes-people. As a result, the bankers at the conference received the worst evaluations.

Conversely, the EFC found that using a case study approach with a successfully funded small business was extremely popular. The business owner described his attempts at getting his business financed which provided valuable information for both small businesses and financing organizations.

Networking and a Hands-On Approach

Most importantly, however, our EFC learned that most small business appreciate a small, hands-on approach, with plenty of time for networking during these events.

Attendees at our first conference, in Hayward, wrote:

"allow more time for meeting and networking with experts"

"give more opportunities to share and exchange ideas"

"allow more time between speakers to talk to them and more time to meet other attendees"

Our EFC altered it's standard conference format and determined that the best way to meet this need was to hold several sessions concurrently (this kept the sessions small, allowing time for give-and-take between the speakers and their audience), providing 1 1/2 hours for each session, and scheduling plenty of time before the luncheon speaker for networking.

Apparently we succeeded. From our most recent conference in Arizona we heard:

"Well worth the time and expense just for the networking opportunity"

"I wasn't sure what to expect-however I was impressed with the conference and the useful ideas and interaction with

the other participants"

At the Hilo and Honolulu conferences, many attendees stayed considerably past the end of the conference just to talk with each other. In San Bernardino, one attendee wrote:

"Great networking opportunity, everyone I talked to had something to share."

Finally, we also found that in the process of planning, we helped build networks in the community by telling people about each other and each others' organizations.

[Environmental Entrepreneurial Charrette - Exploring Technology Transfer](#)

Introduction

On December 4, 1997, EFC9 held its first charrette which focused on the process of technology transfer between the National Laboratories located in East San Francisco Bay and small environmental technology entrepreneurs. Attendees at the charrette included representatives from all three Bay Area National Laboratories (Sandia, Lawrence Berkeley, and Lawrence Livermore), Stanford Office of Technology Transfer, Environmental Protection Agency for Region 9, Alameda Center for Environmental Technology, Bay Area Regional Technology Alliance, and various small environmental businesses.

Background - The Environmental Technology Industry

The environmental technology industry is extremely diverse, covering a variety of high and low technologies and services. From precision monitoring instruments and consultancies, to recycling bins and waste transportation services, all are included in the environmental technology industry. As a result, there are relatively few barriers to entry for many sectors of the industry and it has provided a remarkably fertile ground for start-ups and entrepreneurs. Currently, there are over 60,000 small and medium-sized environmental firms in the United States, making up the bulk of the industry. Most of these environmental enterprises are specialized, owner managed and offer a limited range of equipment and services.

Federal investments in environmental technology have increased from approximately \$550 million in 1970 to \$4 billion in 1994. According to the National Science and Technology Council (April, 1995), this investment has paid off through demonstrated success in dealing with many environmental problems. For example, new technology has largely been responsible for often drastic reductions in hazardous air emissions from 1970 to the present. Since 1972, a national investment in water pollution control has helped restore water quality in a variety of United States underground and surface water resources. In other areas, however, environmental technology has not been able to offset increases in population and consumption which have made the United States the largest waste producer in the world.

There are many more environmental problems to be researched, and a host of new technologies that need to be developed, transferred or introduced. Developing, commercializing and expanding new technologies requires capital, however, and the environmental industry attracts very little private investment. Because government regulations are the primary drivers of the market, the environmental technology industry can be at the mercy of uncertain legislation and sporadic and/or uneven enforcement. The unintentional result is higher perceived risk associated with investment in the industry and a reluctance on the part of lenders to underwrite significant environmental technology purchases.

The National Laboratories

Alameda County, one of nine counties that make up the San Francisco Bay Area, is host to three National Laboratories, Sandia, Lawrence Livermore and Lawrence Berkeley. Formerly focused on defense, these labs have turned to a variety of new challenges since the end of the Cold War in the 1980s. Responding to the need for innovation in the environmental arena, the Labs have begun to emphasize environmental technologies as part of their new mandate.

All three East Bay Laboratories develop new environmental technologies which can then be transferred to the private sector for refinement and commercialization. This technology transfer is carried out through a series of methods including Cooperative Research and Development Agreements (CRADAs), personnel exchanges, sponsored research,

licensing and technical assistance. Unfortunately, the transfer process has its pitfalls for companies interested in the new technologies, especially small businesses with limited finances.

Issues

Transferring technology from the Labs is highly beneficial. Businesses can obtain superior technology, increased market exposure, and improved technical credibility when they adopt Lab technologies. However, the bulk of the environmental industry is comprised of small and medium-sized businesses. Due to cost and time constraints (at best, the process can take at least one year to obtain technology from the laboratory), it is most often the large companies that are best suited to transfer technology from the National Laboratories. To that end, both the Labs and the industry suffer. The majority of the industry (small entrepreneurs) cannot afford to take advantage of new and innovative technologies from the Labs, and the Labs are forced to rely on a reduced pool of businesses to commercialize new technologies. As a result, too many creative new technologies languish on the "shelves" waiting for an entrepreneur willing to navigate the cost and complexities of technology transfer.

Issues Identified in the Technology Transfer Charrette

Putting Lab personnel and small businesses together, the Technology Transfer Charrette identified some key areas where the Technology Transfer process could be enhanced. According to the small business representatives the following points would save them time and money when approaching the Labs.

- More "one on one" interaction. Personal relationships with lab staff make the process run smoother.
- Better access to and understanding of available technology. Most small businesses do not know where to look for available Lab technologies, and too often the description of the technologies is vague.
- Better access to lab staff (i.e., a skills bank). Small businesses would like to know who at the Lab is working on what type of technologies.
- Better lab accessibility for the novice. Walking in the front door with no prior Lab experience has proven to be a formidable barrier to technology transfer.
- Better funding availability. Technology transfer takes time and money.

The Lab personnel also identified what would make their jobs easier when dealing with small businesses.

- Businesses should have a clear understanding of what they need before coming to the labs. Too many businesses show up with vague ideas and no identified technologies.
- Businesses should have a business plan in place before coming to the labs.
- Businesses must understand the time commitment and process of technology transfer before coming to the labs.
- Businesses need to be honest about their capabilities and financial situations with the labs.
- It would be extremely helpful to the labs if there were a list of businesses which are available to receive information on appropriate technologies available for commercialization.

Recommendations

- A third-party organization should be sanctioned by the Labs to pre-qualify small businesses before they come to the Labs. Pre-qualification would include: guidance on the technology transfer process, business plan review, and financial review and assistance.
- A third-party organization should be sanctioned by the Labs to provide information to small businesses on finance, marketing, commercialization, management, etc.
- The Labs should be prepared to work closely with this third party. This would include regular meetings and

keeping the third party apprised of changes in operation and policy, and personnel shifts.

- The Labs need to provide better information on available technologies. (Currently, available technologies is presented on their web sites, but only in short one-page descriptions. In addition, many small businesses do not yet have World Wide Web access.)
- A *Skills Bank* needs to be established which contains: a) a list of lab personnel and their particular skills, and b) a list of small businesses and their area of expertise. The *Skills Bank* would allow greater and more informed interaction between the principle investigators at the Labs and small business owners.
- The Lab may wish to consider forming their own list of volunteers and retired personnel who are interested in working with small businesses through the designated third-party organization.

Arizona EFC9 Environmental Business Conference

Eighty people attended the sixth Environmental Finance Center, Region IX Environmental Business Opportunities Conference in Phoenix, Arizona on June 4, 1997. They came from all over Arizona--Flagstaff, Tucson and greater Phoenix. Of those in attendance, 19 were speakers, most of whom attended other speakers' sessions. Among the remaining 61, most were small environmental business owners (44). Others came from local non-profit organizations (5), government agencies (4), Arizona State University and the University of Arizona (4), and the sponsoring organizations (2 from EFC9 and 2 from the Arizona State University, Center for the Advancement of Small Business).

The Conference began with a keynote address from Kevin Adam, Staff Assistant to Senator John McCain. He described the Senator's activities and concerns in the environmental arena as well as his current efforts in campaign finance reform. This was followed by a short overview of the environmental industry, presented by the Master of Ceremonies and Professor of Finance at California State University, Hayward, Dr. Sam Basu. Attendees then went to one of three concurrent sessions on green building products and practices, export or environmental technology. After a coffee break, attendees went to a second session on either eco-tourism, marketing or sub-contracting.

Lunch gave the attendees an opportunity to network and catch up with friends and colleagues. The group then returned to the main room where Jeanette Brown, recently appointed (2 days prior to the Conference), Director of the EPA Office of Small and Disadvantaged Business Utilization, gave a presentation about the services offered by her agency and tips for landing sub-contracts with federal government agencies.

The Conference concluded with a panel discussion on financing and business assistance. Panelists included a banker (Michael Stedron from Bank One), the Director of the Arizona Small Business Development Network (Michael York), and the owner of an environmental business start-up who has been seeking financing (Fred Coon).

All attendees received evaluation forms soliciting their feedback on the conference topics, speakers and overall program as well as how they heard about the conference. According to all of the feedback we received, the conference was a success. Ninety-seven percent of the respondents rated the conference very valuable (49%) or somewhat valuable (48%) overall. Only three percent thought it was not valuable.

Collaborative Work With Other EFCs

In conjunction with the Great Lakes Environmental Finance Center for Region 5, EFC9 is working on a Pollution Prevention (P2) Demonstration Project which involves a series of tasks. Beginning with a series of meetings with local economic development organizations, EFC9 will assess the role of financing as a barrier to the expansion of P2 in business and industry. The tasks are as follows:

Bay Area Pollution Prevention (P2) Directory Extension

This project will extend the EPA Region 9 inventory of Pollution Prevention service providers for the Bay Area in conjunction with the EPA P2 Team. The directory extension will include the following information.

- What services do these providers offer?
- Do they assist specific industries?

- Do they focus on large or small companies?
- Do they provide financial assistance to companies engaged in P2 activities?
- What are the accomplishments of these organizations?

Plan for a Bay Area Industry

A specific industry will be targeted by EFC9 in conjunction with the US EPA Region 9. A plan will be produced for stimulating more P2 activities in that Bay Area Industry. A case study of successful P2 implementation in that industry will be developed.

New and Emerging Issues

California Environmental Technology Consortium (CETC)

EFC9 has begun a new partnership this year with the California Environmental Technology Consortium. Promoting and sustaining technology development for environmental solutions, the Consortium unites three California environmental technology incubators (Alameda Center for Environmental Technology, Border Environmental Commerce Alliance and Environmental Business Cluster) that assist start-up companies with basic business infrastructure needs like subsidized office space, secretarial services and business planning. These services save precious capital and costly mistakes for a newfound entrepreneur. The three consortium members, in addition to offering basic business services at each individual incubator site, also provide technical assistance, development, demonstration, commercialization and debt/equity funds through "cooperative research and development agreements (CRADAs)" with federal laboratories, state regulatory agencies, private industry and a "virtual" legion of Consortium partnerships nationally.

Other Consortium Alliance partners include: City of Chula Vista, Rohr Inc., Port of San Diego, San Diego Gas & Electric, Science Applications International Company, Environmental Protection Agency, Economic Development Administration, California Trade & Commerce, California Environmental Protection Agency, the James Irvine Foundation, Alameda Reuse & Redevelopment Authority, Bank of America, Bay Area Council, California State University-Hayward, College of Alameda, County of Alameda Economic Development Alliance for Business, East Bay Conversion & Reinvestment Commission, Ernest Orlando Lawrence Berkeley National Laboratory, ICF Kaiser Engineers, Lawrence Livermore National Laboratory, Pacific Gas & Electric Co., Peralta Community College District, Sandia National Laboratory, University of California, Office of the Provost, University of California-Berkeley, Woodward Clyde, Applied Materials, Arthur Andersen & Co., Bank America Foundation, City of San Jose Redevelopment Agency, The Compton Foundation, The Gauntlett Group, Inc., Gray, Cary, Ware & Freidenrich, San Jose State University, Union Bank of California and United Defense.

The Consortium's goals for the future include:

- Engaging in a Memorandum of Understanding with the Mexican government for implementation of environmental education and training; environmental technology transfers; plus, strengthen cross-border environmental trade and commerce alliances for statewide technology initiatives.
- Establishing and maintaining Environmental Technology Consortium satellite offices to serve Latin America, Pacific Rim, Asia and South America markets.
- Continuing expansion of California's three incubator facilities to host statewide "technology-specific" campaigns beginning with "hydrogen energy technologies" in early 1998.
- Increasing the scope of work for CETC (state-wide consortia) to include EPA-certified site remediation technology demonstrations for environmentally contaminated Department of Defense conversion projects.
- Expanding the "911" environmental technology hotline developed for the California Environmental Protection Agency and the State of California via telecommunications and multimedia enhancements.
- Encouraging and facilitating environmental technology manufacturing and distribution activities to be located on Native American tribal lands to promote alternative economic development strategies for the State of California

and its Native American residents.

Alameda Center for Environmental Technology (ACET)

Having worked together on the *Funding Directory for the Environmental Entrepreneur*, EFC9 will seek new ways to work with the Alameda Center for Environmental Technology. The Alameda Center for Environmental Technologies is a business cluster and incubator supporting the development and growth of entrepreneurial environmental businesses. Special emphasis is placed on the establishment of environmental technology companies and, in particular, those technology enterprises that wish to transfer to the private sector environmental technologies developed at the three National Laboratories located in the San Francisco Bay Area.

ACET will utilize the EFC9 experience on streamlining and expediting existing national laboratory technology transfer processes to better assist ACET businesses in acquiring technology licenses from the Labs. ACET businesses can call upon the start-up business expertise at the EFC9 for consultation.

Projects for the Future

Pollution Prevention Charrettes

In conjunction with EFC5, EFC9 has scheduled at least two charrettes for 1998 which will focus on pollution prevention. These charrettes will help determine the strengths and weaknesses of local P2 organizations and identify needed improvements. The charrettes will also focus on issues of finance and to what extent the lack of available funding hinders the Pollution Prevention industry. The first charrette will occur sometime in late January or early February.

Environmental Finance Workshops

Workshop #1

Planning has begun for the 1998 environmental workshops. Learning from past experience, EFC9 will promote small, hands-on affairs where local environmental entrepreneurs can meet and exchange ideas with local equity providers. Invitees would include angel forums, representatives from the SBA ACE-Net program, small venture capital firms known to have financed environmental technology, etc. Local banks which favor loans for small businesses would also be included. The Funding Directory, which EFC9 prepared in 1996, will be utilized to determine local contacts in the debt/equity arena in the Bay Area. The first Workshop is scheduled for late-January or early February and may be co-sponsored by San Francisco State University and the California Environmental technology Export Program. This workshop will be held in San Francisco.

Workshop #2

The second Workshop, which will be similar in style to the workshop discussed above, is tentatively scheduled for March or April and will most likely take place in Nevada.

Workshop #3

The third Workshop is proposed for Southern California, probably the San Diego area, where we will expand our focus to include an emphasis on finance for environmental technology export. EFC9 will make this the largest of the three Workshops and will look for co-sponsors including the North American Development Bank, the Border Environment Cooperation Commission, and the Border Environment Commerce Alliance. This event will be heavily marketed, which means it requires extended "lead time" to get the word out and line up additional sponsors. Ideally, it will occur in September or October of 1998.

This workshop will be a model for future Environmental Finance for Export workshops that will look beyond the border to other Latin American countries, the Pacific Rim nations, and Russia and the NIS.

Continued Development of the Funding Directory

Financing Environmental Technology, the funding directory that EFC9 started in 1997 will be expanded to include Nevada, Arizona and Hawaii. The venture capital section will also be expanded to include a review and analysis of a series of telephone interviews with venture capitalists who have funded environmental technology companies, and environmental technology companies that have received venture capital. Eventually, EFC9 would like to expand this directory to cover the United States, with each EFC taking the lead in their own regions.

In the future, EFC9 plans to make the Funding Directory the first volume in a multi-volume set which would help small environmental business succeed. Other volumes will include: *Exporting for the Environmental Entrepreneur*; *Commercializing and Marketing Your Product*; *Technology Transfer for the Environmental Entrepreneur*; and, *Successful Business Plans for the Environmental Entrepreneur*. EFC9 is also currently looking into the possibility of turning our first volume, *Financing Environmental Technology*, into a platform for an extension course for small environmental businesses.

National Conference on Environmental Finance

EFC9 is currently researching the possibility of hosting a National Conference on Environmental Finance in 1999. Interested partners include the Alternative Agricultural Research and Commercialization, Inc.(AARC) Program from the Department of Agriculture and the EPA. The Conference would involve segments on equity finance including presentations and workshops on private placements, angel investors and venture capital. A venture capital forum may also be included.

Privatizing Water

In keeping with its emphasis on the private sector, EFC9 is interested in pursuing the issue of privatizing public utilities, especially drinking and waste water systems. While many cities in the United States are considering the possibility of turning over their systems to the private sector, much of the available information is confusing and often conflicting. Through interviews and case studies EFC9 plans to assemble a comprehensive review, focusing on both pros and cons, of the local experience with privatizing a water system.

[Publications Available From EFC9](#)

- *Financing Environmental Technology: A Funding Directory for The Environmental Entrepreneur*. February, 1997. (157 pages)
- *Pollution Trading: A Case Study of the Possible Effects of Alternative Methods of Disposal of Rice Straw in The Sacramento River Basin/Delta Area*. November, 1996. (48 pages)
- *Investigation of Pollution Prevention Experiences of Three Facilities in The Flexographic Printing Industry*. July, 1996. (39 pages)
- *Awareness and Use of State Facility Plans by The Banking Community in 19 States*. Summer, 1995. (115 pages)
- *Technology Transfer Report*. May, 1995. (43 pages)
- *Environmental Business Opportunity Conference*. March, 1995. (145 pages)
- *MERCADO Business Plan and Financial Analysis*. February, 1995. (51 pages)
- *California Agricultural waste Characterization Study*. December, 1993. (68 pages)
- *Employment Creation, Capital Needs, and Tax Revenue Projections for Selected Parts of the Recycling Industry*. June, 1993. (219 pages)
- *Critical Mass Analysis: An Analytic Approach*. June, 1993. (24 pages)
- *Review and Analysis of Financial Incentives of SDBE*. June, 1993. (89 pages)
- *San Francisco MERCADO Project: Market Development Plan*. May, 1993. (52 pages)

- *Printing Industry Study: Focus Group Analysis of Lithographers and Screen Printers.* April, 1993. (83 pages)
 - *Preliminary Findings on Scavenging in the Bay Area.* November, 1992. (5 pages)
 - *Market Development Recycling Zone Report.* March, 1992.
 - *Advanced Disposal Fee Analysis.* February, 1992. (27 pages)
 - *Market Feasibility Study: San Francisco MERCADO Project.* February, 1992. (42 pages)
 - *Review and Analysis of Financial Incentives for SDBE Development, Source Reduction and Re-Manufacturing.* November, 1991. (56 pages)
 - *Strategy Package to Assist Cities and Counties in The Creation of Recycling Market Development Zones.* October, 1991. (71 pages)
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Environmental Finance Center, Region 9 at California State University, Hayward 1996 Annual Report

Organizational Description:

The Environmental Finance Center, Region 9 (EFC9), is a University-based Center providing expertise on environmental financing and economic issues. EFC9 is affiliated with California State University, Hayward (CSUH), and is supported through the auspices of the U.S. Environmental Protection Agency (EPA). The Mission of the EFC9 is to educate and assist business/financial managers, owners, and advisors, public and private, in the application and use of innovative financing techniques that can further the implementation of environmental programs and projects; and to support the establishment of new environmental businesses and environmental technology development enterprises. EFC9 achieves its mission through various undertakings, which include: conferences and seminars demonstrating methods of applying financial and economic mechanisms to environmental aspects of management; course curriculums developing environmental finance course content and case studies for use by education institutions throughout Region 9's environmental infrastructure; and financial research evaluating the effectiveness of existing financial mechanisms and develop finance models that enhance the utilization of capital in the environmental needs marketplace. EFC9 is particularly interested in the use of public-private partnerships, supporting minority and small business owners in capitalizing on environmental business opportunities and achieving regulatory compliance, promoting the adoption of pollution prevention technology by existing businesses, and encouraging and facilitating the funding of environmental innovation.

Overview

The Environmental Finance Center, Region IX's mission is focused on informing entrepreneurs, managers, and investors about opportunities available within the Environmental Industry, and to assist these parties in taking advantage of these opportunities.

In support of this mission, the Environmental Finance Center, Region IX (EFC9) has accomplished the following during FY 96:

EFC9 Accomplishments:

U.S.Environmental Industry Profiles

EFC9 developed Profiles of the U.S.Environmental Industry to assist environmental entrepreneurs in understanding the competitive dynamics at play within the Environmental Industry; and to assist them in choosing a market segment with the greatest potential for their competitive success.

Environmental and entrepreneurial investors and lenders stress the need for entrepreneurs to possess an intimate knowledge of their Industry and Segment in order to compete successfully for investment capital and business loans. The Environmental Industry Profiles are to be used by entrepreneurs when developing their business plans, and when interviewing for financing of all sorts.

The Profiles include information on the following industry aspects:

- Global Environmental Industry trends
- U.S. Environmental Industry global market share
- Industry/Segment/Subsegment revenue trends
- Industry/Segment/Subsegment growth rates
- Industry/Segment/Subsegment market share

- Percent of industry by process type
- Percent of industry by media type
- Percent of Industry owned by private vs. public sources
- Number of competitors participating in
- Industry/Segment/Subsegment
- Average revenue per Industry/Segment/Subsegment competitor
- Employment effects of Environmental Industry
- Environmental Industry Market share leaders
- Nature of Environmental Industry competition
- Customers served by Industry/Segment/Subsegment
- U.S. Environmental Industry import/export review

Environmental Industry Labor Market Review, Model, and Database Development:

To further assist Environmental Industry entrepreneurs in developing Business Plans that have the highest potential for securing financing, EFC9 completed a comprehensive search and review of existing sources of information on the status of the Environmental Industry labor market. This information is necessary for entrepreneurs to ensure investors that the needed skill mix and quantity of labor is available to meet the entrepreneur's employment needs. It is also necessary information to determine the cost of labor within the entrepreneur's Industry segment/subsegment. The better this information, the better the entrepreneur's Business Plan estimates of capital requirements and returns to the investor.

Labor market information systems review

EFC9 found that integrated labor market information systems are almost non-existent, in general. There is even less data available on the labor needs of the Environmental Industry because this industry, as yet, has no functional Standard Industrial Classification code (SIC) assigned and tracked by the U.S. government. Therefore, EFC9 constructed its own model to establish a meaningful framework for assessing environmental industry labor needs.

Labor market model

EFC9 used the SIC codes that encompass the environmental business segments as defined by the environmental industry information provider, Environmental Business International (EBI). EFC9 identified the labor resources employed by the SIC codes included in the industry segments. From these listings we eliminated those labor categories that seemed to be unrelated to the Environmental Industry. Working with the occupational categories that remained, we identified the labor skills necessary to obtain employment in the environmental portions of these businesses. We integrated four main categories:

- industry classification
- occupational classification
- skills assessment, and
- training programs.

The EFC9 model creates a cross-reference of these categories. This cross-reference is used to overlay the Industry's growth segments with the available labor force and the training programs available to train/retrain workers for employment in the Environmental Industry. For example, given the industry segments that are forecasted to experience growth, what are the occupational titles and skill needs associated with these segments? What is the availability of an appropriately skilled labor force to fill the projected employment demand? How well matched are the training programs offered in the marketplace with the skill sets needed to fill the growth segments' projected employment needs?

Again, this information is part of preparing the Environmental Industry entrepreneur to successfully obtain financing for business development or expansion.

Environmental Industry labor market database

EFC9 developed its own Environmental Labor Market Information database. The system is the implementation of the

labor market model design, discussed above.

Environmental training and education programs

To complete the information on the Environmental Industry labor market for inclusion in the environmental entrepreneur's Business Plan, EFC9 developed an inventory of existing environmental education and training programs. The inventory currently includes programs available in the California Bay Area. In time, its scope will be expanded to include the remainder of California, and the other states within Region IX. For now, a total of fifty-five (55) environmental training program providers were identified.

The inventory includes the availability of programs from each of the following types of sources:

- universities and colleges
- private vendors
- facilitators/liaisons
- regulatory agencies
- environmental consultants, and
- other providers

The information varies based upon the knowledge and cooperation of the different program administrators, however, the following types of program information are included:

- program description
- program objective
- when introduced
- still offered
- stimulus for program development
- target audience
- enrollee profile
- number of program participants
- credential awarded, if any
- post program employment placement rate
- reason for discontinuing program
- plans for new programs

In addition to the program profile, the institutional program marketing materials were collected, when available. These materials are available, at the EFC9 library, for reference and perusal by interested parties.

Business and financial plan review

EFC9 participated, at the request of the Bay Area Defense Conversion Action Team (BADCAT), in a group review and evaluation of the business and financial plans of approximately 60 small environmental businesses. Twenty-one of these businesses were selected as candidates for further BADCAT assistance.

Funding directory for the Environmental Entrepreneur

EFC9 compiled a 100 page directory of sources of funding for the Environmental Entrepreneur. The Directory includes information on:

- Barriers to Development
- Funding Options
- Private Funding Sources
- Federal Government Programs
- California Government Programs
- International Opportunities
- Other Opportunities
- Key Contacts List Within DoC

- Major Environmental Industry Associations
- Resource Guide for Small Businesses
- Glossary of Terms

In time, EFC9 will add an inventory of the State Government Programs available to Environmental Entrepreneurs in the remainder of Region IX.

Financial model development

EFC9 developed a financial model for assessing the viability, short and long-term financial characteristics and capital needs necessary for the establishment and operation of an Environmental Technology Incubator.

Environmental technology database blueprint

EFC9 worked with the three Bay Area national laboratories (Lawrence-Berkeley, Lawrence-Livermore, and Sandia) during FY 96 to complete a concept design and implementation blueprint for the development of an integrated environmental technologies-available-for-transfer database. The database blueprint design calls for technologies to be cross-coded with the Environmental Industry segment and subsegment to which the technologies apply in the business marketplace. The database can be keyword' searched on environmental media, environmental process, industry segment & subsegment, and originating laboratory. The design also calls for the identification of other competitive technologies either available or currently being commercialized, and when possible, information on what organizations have licensed other relevant technologies from the Labs, and when they did so.

This database will be instrumental in allowing want-to-be environmental industry entrepreneurs to select the most appropriate and competitive technologies that they will have the greatest opportunity to successfully commercialize. Again, this type of competitive knowledge is what environmental industry investors want to see when evaluating the viability of an entrepreneur's Business Plan., and assessing their own willingness to invest.

To-date, ninety-five (95) environmental technologies available for transfer from the greater Bay Area national and non-national labs have been identified and loaded into the database. Twenty (20) of these technologies were further evaluated and detailed in group working sessions organized with the national labs. The detailing of the identified technologies will continue and will update the database on an on-going basis.

EFC9 worldwide web site

EFC9 established a worldwide web site on the Internet. The Center's mission, focus, address, and other particulars are available there for interested browsers and others. The Site will be further enhanced and expanded during the coming year.

State Revolving Fund for water systems

EFC9 collaborated with Ytell and Associates and Ellen Miller Associates for the development of a training seminar in how to improve and finance state water systems of small and rural counties and cities. The seminar will be given in at least three locations during FY 97, and is focused on public sector managers.

Environmental business opportunities conferences

EFC9 hosted its third Environmental Business Opportunity Conference (EBOC) in San Bernadino, California, in February FY 96. More than 45 entrepreneurs, business managers, local government officials and university professors and students. The Conference was co-sponsored by the Inland Empire Small Business Development Center, the Inland Empire Economic Partnership, and the California State University, San Bernadino.

EFC9 also presented two conferences on the business opportunities available to entrepreneurs in the Environmental Industry in the Hawaiian Islands marketplace. EBOC attracted more than 100 participants.

One conference was held on the Big Island of Hawaii, in Hilo. This conference focused on environmental business opportunities that lend themselves to development in more rural economies. A second conference, held in Honolulu,

focused on possibilities in urban settings. Ecotourism emerged as the environmental business that held the most interest in the Islands, both rural and urban. The list of participants at these two conferences is at the back of this report.

The Hawaii conferences were co-sponsored by local organizations that included the University of Hawaii in both Hilo and Honolulu, as well as the Clean Hawaii Center of the Hawaii Department of Business, Economic Development, and Tourism.

Hosted EFC annual meeting

EFC9 hosted the third annual Environmental Finance Center Network meeting. The meeting took place on August 13 and 14, 1996 at The Presidio of San Francisco. EFC9 held the Network meeting in conjunction with the annual meeting of the Environmental Finance Advisory Board (EFAB) which EFC9 also hosted at The Presidio on August 15th and 16th.

The EFC Annual Conference brings together the Executive Directors of the Program's regional centers to discuss their projects, and exchange ideas and strategies for extending and enhancing the work of the individual Centers and the Program at-large.

Safe Drinking Water Act (SDWA) EFC9 Project Plan

EFC9 completed a detailed task plan of activities it would undertake in its Region in regards to an inventory and assessment of current and planned water system improvements, expansions, and additions. EFC9, in keeping with its primary mission, will make this assessment with particular emphasis placed on the role of private sector management and financial participation in the long-term viability of these systems.

Environmental Opportunity Funding Corporation Project Plan

EFC9 completed a detailed task plan of activities it would undertake to evaluate and make operational an innovative financial model designed to stimulate equity capital investment in the Environmental Industry. EFC9 is shopping the Plan for institutional investment in the investigation and establishment of the concept.

New EFC9 headquarters

EFC9 has negotiated, with the U.S. Park Service, the refurbishment of an historic building on The Presidio of San Francisco. This site will function as the new headquarters for the EFC9. All conditions and contracts were completed and the building will be available for EFC9 occupancy in January, 1997.

1995 ANNUAL REPORT

The Environmental Finance Center, Region 9 (EFC9), is a University-based Center providing expertise on environmental financing and economic issues. EFC9 is affiliated with California State University, Hayward (CSUH), and is supported through the auspices of the U. S. Environmental Protection Agency (EPA). The mission of EFC9 is to educate and assist business/financial managers, owners, and advisors, public and private, in the application and use of innovative financing techniques that can further the implementation of environmental programs and projects; and to support the establishment of new environmental businesses and environmental technology development enterprises. EFC9 achieves its mission through various undertakings, which include: conferences and seminars demonstrating methods of applying financial and economic mechanisms to environmental aspects of management; course curriculums developing environmental finance course content and case studies for use by education institutions through out Region 9; advisory panels addressing specific financial and economic issues related to programs and projects for the support of Region 9's environmental infrastructure; and financial research evaluating the effectiveness of existing financial mechanisms and develop finance models that enhance the utilization of capital in the environmental needs marketplace. EFC9 is particularly interested in the use of public-private partnerships, supporting minority and small business owners in capitalizing on environmental business opportunities and achieving regulatory compliance, promoting the adoption of pollution prevention technology by existing businesses, and encouraging and facilitating the funding of environmental innovation.

Organizational Relationship Among the Environmental Finance Center, Region IX, Environmental Opportunity Funding Corporation, and Alameda Center for Environmental Technologies

Organizational Description

The Environmental Finance Center 9 (EFC9) provides the conceptual and empirical basis upon which the Environmental Opportunity Funding Corporation (EOFC) and the Alameda Center for Environmental Technologies (ACET) operate. The EFC identifies, analyzes, and selects the best ideas available in today's research on finance, technology transfer, and public-private partnership formation. Though associated with a major academic institution (California State University, Hayward), the Environmental Finance Center 9 has established a reputation for pushing the research 'envelope' beyond the constructs of theory and into the arena of the applied.

The Environmental Opportunity Funding Corporation and the Alameda Center for Environmental Technologies are operational organizations that the Environmental Finance Center 9 utilizes to apply and test its research results. The relationship among the organizations is symbiotic, each benefiting from the activities and services provided by the others; each providing on-going feedback to the other, thereby assuring additional future benefit.

The Environmental Opportunity Funding Corporation is a capital markets financing mechanism established to motivate a large flow of private sector equity capital for environmental industry. This organization utilizes the environmental business needs analyses and 'green' financing models identified or developed by EFC9 research activities. The EOFC applies these needs and models in its operating policies and procedures. Feedback on their appropriateness and success is cycled back to EFC9 researchers for further evaluation, refinement, or abandonment.

The Alameda Center for Environmental Technologies is an enclave of entrepreneurial environmental businesses located at the Alameda Naval Air Station. ACET utilizes the EFC9 research on streamlining and expediting existing national laboratory technology transfer processes to better assist ACET businesses in acquiring technology licenses from the Labs. ACET businesses can call upon the start-up business expertise at the EFC9 for consultation. And, ACET businesses are candidates for funding provided through EOFC sponsored services.

Region 9 - Environmental Finance Center Accomplishments

I. Coordinate Activities with Existing EFCs

To date, the EFC has focused on promoting the EFC Network through meetings and contacts with other EFCs. EFC9 collaborated with the University of New Mexico to share information and experiences that the two EFCs have in common regarding dealing with the downsizing of national laboratories in their regions. Both of these EFCs are involved in project efforts to transfer technology out of the public labs and into private sector business entities. The sharing of similar experiences will aid EFC9 in its attempt to develop models and transfer protocols that can be applied to military base conversions and defense industry downsizing wherever the need occurs.

EFC9 also engaged the Cleveland State University EFC in discussions concerning the issues surrounding the clean-up and reuse of so call 'brownfield' sites. The Cleveland State EFC focuses on brownfield remediation. EFC9 must deal with brownfield redevelopment as a part of the Alameda Center for Environmental Technologies (ACET) project.

These are just two examples of how calling upon the expertise available within the EFC Network provides synergistic benefits to the Network, collectively, and benefits the projects pursued by each of the EFCs, individually.

EFC9 participated in the second annual Environmental Finance Center Network meeting. This year's meeting was hosted by the University of Syracuse (EPA Region 4) and took place in August at the Minnowbrook Lodge in upstate New York. These conferences bring together the Executive Directors of the Program's regional centers to discuss their projects and exchange ideas and strategies for extending and enhancing the work of the individual Centers and the program at large. There is also a bi-monthly teleconference among the EFC administrators to keep all parties informed on important new issues.

II. Research Public-Private Partnership Programs

A search of the available literature to identify past and current Public-Private Partnership (P3) programs began during the 2nd quarter FY95 and was completed in the 4th quarter. The Public-Private Partnership programs identified will now be evaluated for their overall effectiveness as well as the effectiveness of the programs' individual components. From this research, EFC9 will be developing public-private partnership models to assist in military base conversion efforts, as well as P3 models for small/entrepreneurial business development.

III. Awareness and Use of State Facility Plans

During the fourth quarter, EFC9 began completion of its final study report that examines the level of awareness and the use to which the banking community puts state mandated or voluntary Facility Plans. These Plans focus on the methods, processes, and inputs a business will adopt over time in order to reduce its use and production of hazardous materials. Waste management and pollution prevention are the core of the Plans' concept. The study also allowed bankers to raise issues about lending to environmentally risky businesses. These discussions highlighted the struggle bankers face in their efforts to integrate environmental concerns into the business of lending, thereby placing the evaluation of awareness and use of Facility Plans into a larger context.

IV. Develop Green Technology Financing Gap Strategies

EFC9's major strategy for addressing the financing gap that exists in the marketplace for entrepreneurs wishing to develop environmental technologies took another step forward. The incorporation papers for the establishment of the Environmental Opportunity Funding Corporation (EOFC) as a legal entity has been processed and granted by the State of California.

The next step is to file for non-profit status with the Internal Revenue Service. At the completion of this process, the EOFC will be a non-profit 501 (c)(3) California corporation. Its function will be to expedite the flow of private capital into viable environmental business projects by lowering the capital market's perceived level of risk in funding these kinds of projects.

V. Environmental Business Opportunities Conference (California State University)

The first annual EFC9 Environmental Business Opportunities Conference was held at California State University, Hanyward, University Union on March 4, 1995. The conference was co-sponsored by Harold Yee, President, Asian, Inc., a non-profit economic development organization based in San Francisco.

The conference examined the characteristics and trends of the environmental industry and focused on opportunities within the industry that favor the participation of small, minority-owned, women-owned, and economically disadvantaged businesses. Owners and advisors to these businesses were encouraged to attend.

Speakers at the conference included experts from environmental businesses in the technology and retail sectors, venture capital and commercial banking communities, defense industry base conversion contracting specialist, and EPA representatives.

California Conference Speakers

Keith Carson, Supervisor, Alameda County Board of Supervisors

Raymond Carlisle, Vice President, Environmental Business International

Douglas P. Wheeler, Secretary, The Resources Agency

Leon Hampton, Jr., Director, Small and Disadvantaged Business Utilization, EPA

Dag Syrrist, Manager of Environmental Operations, Technology Funding

Paul Hirschberger, Founder and CEO, Earthsake, Berkeley & Palo Alto

Harold Logwood, Northern California Minority Business Opportunity Committee

Mark Meadows, Dir., Environ. & Facilities Contract, Naval Facilities Engineering Command

Jack Guro, Small Business Contracting Specialist, Naval Facilities Engineering Command

Jim Robbins, President of San Jose Environmental Business Cluster, San Jose

Andrea Wilson, Green Earth Office Supplies

Jim Marshall, Vice President, Silicon Valley Bank

VI. Environmental Business Opportunities Conference (Las Vegas, Nevada)

The second EFC9 Environmental Business Opportunities Conference was held at the Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas (UNLV) on December 9, 1995. The conference was co-sponsored by UNLV and the Nevada Small Business Development Center based in Las Vegas.

The conference focused on an overview of the environmental business sector. It then broke out into small groups focusing on industry areas identified as having growth potential in Nevada--waste management, commercializing environmental technology developed at local universities, solar energy and exporting environmental products. The meeting concluded with a panel discussion from local financial experts on potential sources of funding for environmental businesses.

Senator Harry Reid was the keynote speaker at the conference. Other speakers included environmental business operators, academics, and government officials with expertise in economic development, environmental economics, waste management, environmental technology commercialization, solar energy, environmental product export, venture capital, commercial banking, government financing, and the EPA.

Nevada Conference Speakers

Dr. Donald H. Baepler, Director of the Harry Reid Center and one of its principle developers

Fred Couzens, Rural Director of the Nevada Commission on Economic Development

Dr. Helen Neill, Assistant Professor of Economics at the University of Nevada, Las Vegas

The Honorable Rose McKinney-James, Director of the Department of Business and Industry for the State of Nevada

John Cavness, President of Logos Construction, and Vice President of VAC Asbestos Services, Inc., an environmental remediation firm

Dr. John Hess, Executive Director of the Water Resources Center of the Desert Research Institute

Dr. Jim Seiber, Director of the Center for Environmental Sciences and Engineering at the University of Nevada, Reno and the Sierra Pacific Professor of Environmental Sciences in the Department of Environmental and Resources Sciences

Dwaine Dunk, Executive Vice President of Vector Engineering Technologies, Inc.

Sharolyn Craft, Director for the Nevada Small Business Development Center

Tom Guthrie, President and Chief Executive Officer of the Southern Nevada Certified Development Company

Paul Michaelson, Michaelson & Associates, a legal firm focusing on securities/corporate law and estate planning

Anthony Roman owns a consulting business specializing in loan packaging and capital acquisition.

VII. Environmental Business Opportunities Conference (San Bernadino, CA)

The third EFC9 Environmental Business Opportunities Conference was held at California State, San Bernadino, Lower Commons in San Bernadino, CA on February 10, 1996. The program was co-sponsored by the California State University, San Bernadino and the Inland Empire Small Business Development Center.

Prior to the conference, EFC9 members made a visit to San Bernadino to introduce themselves to the local economic development groups. During the discussion with these parties, it was determined that the topic of the conference be Emerging Environmental Business Opportunities. Modifications to the Northern California agenda were made in order to customize this conference to reflect the local economic base.

The conference began with an overview of the environmental industry and the business opportunities that exist within the industry, today and in the future. After the overview, participants broke out into small groups focusing on industry areas specifically identified as having growth potential in the San Bernadino region. The conference concluded with a panel discussion by local financial experts. They enlightened the audience on potential sources of funding for starting and growing an environmental business. Representative George Brown from the 42nd Congressional District and Member of the Technology Assessment Board gave the keynote address.

San Bernadino, California Conference Speakers

Dr. Sam Basu, Professor of Finance in the School of Business and Economics at California State University, Hayward

Dr. Eldon Lewis, Dean, School of Business & Public Administration, California State University, San Bernadino

Monica Hykes-Tullai, Environmental Business Assistant, Inland Empire Small Business Development Center

Representative George Brown, from the 42nd Congressional District and Member of the Technology Assessment Board

Daniel Noble, Vice President and Director of Research, Environmental Business International

Don Blakemore, Public Information Officer, Mojave Desert Air Quality Management District

John Barbay, Facility Manager, TPS Technologies, Inc.

Dr. Joseph Norbeck, Director, Bourns College of Engineering, University of California, Riverside

Mark Merson, President & Co-Founder, Eco-Expo

Craig Ronai, Vice President, Green Retailers Association

Don Ecker, Inland Empire Managing Partner, Southern California Director of Entrepreneurial Services, Ernst & Young

Michael Owen, Vice-President, Certified Development Corporation

John Colladay, Vice-President, Consumer Banking Manager, Bank of America

SUMMARY OF PROJECTS AND ACTIVITIES RELATED TO CAPACITY DEVELOPEMENT FOR DRINKING WATER SYSTEMS

The Region 9 Environmental Finance Center (EFC9) will focus on two aspects of the new Safe Drinking Water Bill:

1. Working with small privately-owned drinking water systems businesses, or those owned by public-private partnerships.
2. Assisting entrepreneurial environmental businesses commercialize new safe drinking water technologies.

EFC9 will provide existing private and private/public water system businesses with:

technical support on their water systems (through EFC9's relationship with national laboratories),

- Assistance in complying with state and federal regulatory guidelines.
- Advice on obtaining financial resources to implement pollution prevention programs or achieve environmental compliance.
- Consultation on how to shift from a regulation-driven to an economic-driven water systems technology and service provider.

EFC9 will work with entrepreneurial drinking water systems businesses by assisting in:

- Identifying drinking water technologies available for transfer from national and university laboratories to the private sector for commercialization.
- Understanding the underlying market dynamics of the water systems and management industry segment.
- Positioning environmental companies in growth niches of the water systems management segment.
- Securing equity investment financing for technology development and commercialization.
- Managing the development of new water system technologies.

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