

Environmental Finance Center Network California State University Hayward- Region 9 1999 Annual Report

ANNUAL REPORT 1999

California State University - Environmental Finance Center

U.S. EPA Region 9

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EXECUTIVE OVERVIEW

1999 In Review

EFC9 is a university-based Center working for cleaner business by advancing the environmental industry and promoting pollution prevention. At EFC9 we believe that new and innovative environmental technology means cleaner and more efficient industry. But we also understand that small businesses face numerous obstacles to growth and efficiency. As a result, our mission is two-pronged: 1) to help entrepreneurs develop and finance new and innovative environmental technologies and 2) to encourage small business to adapt pollution prevention techniques in their production process. To that end, EFC9 pursues its mission through numerous tools including project management, policy facilitation, workshops, focus groups, meetings, charrettes, publications and reports, and through hands-on assistance to smaller environmental businesses.

Because we are new to the P2 arena, the major focus of EFC9's work during 1999 was to solidify our experience with pollution prevention implementation and finance. EFC9 accomplished this through two primary projects: 1) the continuation of wet cleaning promotion and, 2) the Access to Capital pilot loan program which focused on providing much needed environmental capital to the metal finishing community in Los Angeles.

In general, our work throughout 1999 focused on the following four Tasks.

Coordination & Outreach Activities

Throughout 1999, EFC9 participated in activities with seven other EFC's and the Environmental Finance Advisory Board (EFAB). The EFC 9 Executive Director attended the scheduled EFAB meeting in August in San Francisco and the EFC Directors' meeting in September in Boise, sponsored by EFC 10. EFC9 also participated in monthly Environmental Finance Center Network conference calls

In addition, EFC9 maintained regular contact with US EPA Region IX through meetings and conference calls and attended and participated in numerous conferences, workshops, roundtables and committees in Region IX and beyond, including:

- 1999 California Resource Recovery Association Conference
- United Nations Environmental Program, Financial Institutions Meeting on Finance & The Environment
- Clean '99, the World Educational Congress for Dry Cleaning and Laundry
- Financing for Energy Efficiency
- Banking and Environmental Regulator Summit
- Bay Area Hazardous Waste Reduction Committee
- Bay Area Pollution Prevention Group
- California Department of Toxic Substance Control 1999 Pollution Prevention Roundtable
- California Reinvestment Act Roundtable on Brownfields

Access to Capital - EnviroLoan

Throughout 1999, EFC9 continued work on the Access to Capital Pilot Loan Program for metal finishers in

the Los Angeles area. Since October 1998, EFC9 has been working with the EPA to implement a Pollution Prevention Pilot Loan Program in the Los Angeles Area. During this time, EFC9 has accomplished numerous tasks including:

- Defining and developing the Access to Capital Loan Program
- Establishing and managing several Access to Capital workgroups, and
- Coordinating the work efforts of various public and private agencies and organizations including SBA, EPA, CalEPA, Southern California regulatory agencies and utilities, and various non-profits and educational institutions

In 1999, EFC9 continued to provide leadership and guidance for the project through various means including project management, conference calls, meetings, plans and reports and through hands-on assistance to Strategic Goals Program participants. The major focus of EFC9's work during this period was to complete the first phase of the Access to Capital Program that would culminate in a loan program for metal finishers in the Los Angeles area. As a result, the loan program - EnviroLoan - was launched in October 1999 and provides up to \$150,000 in funding for pollution prevention for qualified applicants.

Wet Cleaning Projects

For more than forty years, the vast majority of dry cleaners have relied on perchloroethylene (PCE or perc) as the solvent used to clean clothes as part of the dry cleaning process. This use has made dry cleaners the single largest market for PCE. While there is no clear consensus as to the exact toxicity of PCE, it has been deemed potentially hazardous to human health. As a result, in 1998 EFC9 launched a Wet Cleaning Charrette Series to determine new ways in which the use of PCE could be reduced both in the San Francisco Bay Area and the State of California. In response to the information gathered from charrettes, EFC9 established the following two new Wet Cleaning programs in 1999.

Promoting a Vocational Wet Cleaning Training Program in State Correctional Facilities

Throughout 1999, EFC9 worked with Soledad and Corcoran State Correctional Facilities to identify and secure program funding for two vocational wet cleaning training programs. With the support of three State Senators, the Director of the State Department of Corrections, the Sierra Club, the Center for Neighborhood Technology, Ecology Action, the Coalition for Clean Air, and Cleaner by Nature, both institutions received Vocational Education and Applied Technology Act (VEATA) federal grant funds for the half the cost of the wet cleaning equipment. The remaining funds will be provided by the individual correctional institutions.

Preparing a Bay Area Wet Cleaning Guide

In the past two years, EFC9's work has demonstrated the need for wet cleaning establishments in the San Francisco region. However, until dry cleaners perceive a demand for wet cleaning, they will be reluctant to provide the service. As a result, to promote consumer awareness about the value of wet cleaning and to increase the number of wet cleaning establishments in the Bay Area, EFC9 is preparing the first ever Pocket Guide to Bay Area Wet Cleaners. The Guide will be a small (4.25" x 2.75") 25-26 page easy-to-understand and read guide to wet cleaning. It includes simple descriptions of wet and dry cleaning, and a list of each business offering wet cleaning services in the Bay Area including their address, phone number and a map.

Small Environmental Business Assistance Program

In keeping with our original mandate to support and promote the environmental industry, EFC9 enhanced our Small Environmental Business Assistance Program by updating and improving our website by converting our Finance Directory (currently only available in text format) to a searchable online database. To accomplish that task, EFC9 took a four-pronged approach to providing better and more personal services for small environmental businesses. This approach included:

- Contacting and verifying every Finance Directory listing and keeping only those that prove useful, to small environmental businesses,
- Updating and establishing a list of all government loans and grants available to small environmental businesses,
- Converting the 1998 Environmental Finance Directory into a searchable database, and
- Launching the new Environmental Finance Database on our website.

Other Projects

Successful Follow-on National Laboratory Technology Transfer Initiatives by EFC9-Alameda Center for Environmental Technologies

In December 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. Building on the results of that charrette, EFC9 in partnership with the Alameda Center for Environmental Technologies (ACET), has been working with the Department of Energy (DOE) to develop an effective model to transfer environmental technologies from the National Laboratories. In 1999, after numerous interviews with Bay Area Entrepreneurs, a report was released entitled Evaluating the Technology Transfer Experience from Federal Laboratories/Research Institutions to Start-up Companies in the Bay Area.

A presentation of report findings to DOE Oakland and Lawrence Berkeley National Laboratory representatives in July 1999 received positive feedback. As a result, ACET is currently applying the findings of this study in a follow-on demonstration project sponsored by DOE Oakland. As part of this demonstration Phase II project, three technologies from Lawrence Berkeley National Laboratory are being marketed and several best practices concluded by the report are being tested.

1999 Accomplishments

As discussed in the Executive Overview above, EFC9 completed numerous projects in 1999. The following is an in-depth review of our major accomplishments.

1999 Outreach Activities in Region IX and Beyond

1999 Year-Round Outreach

EFC9 regularly attended Bay Area Hazardous Waste Reduction Committee (BAHWRC) and the Bay Area Pollution Prevention Group meetings that focus on preventing pollution in San Francisco Bay.

EFC9 attended EPA's bi-monthly Strategic Goals Program for Metal Finishers meetings in Los Angeles throughout 1999.

As part of our original mandate, EFC9 continued to assist small environmental business both through its website and personal consultation on a weekly basis.

February - May 1999 EFC9 helped plan the City of Oakland's Strategic Plan workshop entitled "Ensuring a Quality Environment." The workshop was held on May 20, 1999 and will result in the publication of strategic, measurable and sustainable actions to be achieved over the next four years.

June 1999 The Executive and Associate Directors of EFC presented Pollution Prevention Finance papers at the 1999 California Resource Recovery Association (CRRA) in June 1999.

In June 1999, EFC9 attended Clean '99, the World Educational Congress for Dry Cleaning and Laundry in Orlando, Florida at which innovative pollution prevention technology was demonstrated and described.

EFC9 staff attended the DOE sponsored Financing for Energy Efficiency conference held in Oakland in June, 1999. The conference focused on small business finance.

In June of 1999, EFC9's Executive Director participated in the Small Business Innovation Research (SBIR) Phase II grant review in Washington DC and has done so again in January, 2000.

August 1999 EFC9 participated in the Banking and Environmental Regulator Summit, held in San Francisco on August 17, 1999. The meeting was held to discuss ways that financial institution regulators can encourage their member banks to become more involved in environmental lending. EFC9 was the only non-public entity to be invited to the Summit.

September 1999 EFC9's Executive Director was the keynote speaker at the September 1999 Bay Area Hazardous Waste Reduction Committee meeting. She presented a description of the EnviroLoan Access to Capital Pilot Loan Project.

Upon invitation, EFC9 attended the California Reinvestment Act Roundtable on Brownfields in Sacramento in September 1999 coordinated by the Federal Deposit Insurance Corporation.

October 1999 EFC9's Executive Director attended the United Nations Environmental Program, Financial Institutions Meeting on Finance and The Environment in Chicago in October 1999. EFC9 represented the EFC Network.

November 1999 In November 1999, EFC9 helped the City of Gonzales, CA identify possible funding sources for its volunteer fire department to receive hazardous materials training and equipment.

EFC9 provided consulting assistance to the Soledad Prison Hazardous Materials Coordinator regarding pollution prevention for her fleet management program.

December 1999 EFC9 attended California EPA's and the California Department of Toxic Substance Control December, 1999 roundtable to help determine Proposed Targets for its 2-Year Pollution Prevention Workplan. EFC9 will continue attend these roundtables throughout 2000.

ACCESS TO CAPITAL PILOT LOAN PROGRAM ½ ENVIROLOAN

Since October 1998, EFC9 has been working with the EPA to implement a Pollution Prevention Pilot Loan Program in the Los Angeles Area. During this time, EFC9 has accomplished numerous tasks including:

- defining and developing the Access to Capital Loan Program
- establishing and managing several Access to Capital workgroups, and
- coordinating the work efforts of various public and private agencies and organizations including SBA, EPA, CalEPA, Southern California regulatory agencies and utilities, and various non-profits and educational institutions.

Throughout 1999, EFC9 continued to provide leadership and guidance for the project through various means including project management, conference calls, meetings, plans and reports and through hands-on assistance to Strategic Goals Program participants. The major focus of EFC9's work during this period was to complete the first phase of the Access to Capital Program which would culminate in a successful working loan program for metal finishers in the Los Angeles area. In October 1999, the pilot loan program, now known as EnviroLoan, was launched. A discussion of the EnviroLoan program, including a metal finishing industry overview, the program's history and the loan process are presented below.

Industry Overview

The metal finishing industry includes a broad array of processes that usually involve altering the surface of an item to impart a decorative finish by applying a metallic coating or provide additional characteristics such as corrosion resistance. In general, metal finishing operations include electroplating, electroless plating, anodizing, conversion coating and painting. Other metal finishing operations may include cleaning (i.e., degreasing with organic solvents) and etching. As a result, the metal finishing industry is involved in the manufacture of numerous items from automobiles and heavy machinery, to household appliances and musical instruments. Moreover, virtually every piece of metal in use in our daily lives, has been professionally finished to some degree. According to the EPA, there are about 13,000 metal finishing shops found throughout the United States, but most are concentrated in industrialized areas in the Northeast, Midwest, Texas, and California.

There are numerous toxic and hazardous compounds involved in metal finishing including, cyanides, arsenic, cadmium, lead mercury, various acids including hydrochloric and sulfuric, chlorine, benzene, toluene and many other metals, alkalis, cyanides, acids, and inorganic and organic substances that can be hazardous to human health. The most obvious source of waste, is wastewater generated during rinsing operations. Wastewater is often treated on-site, producing a hazardous sludge that must then be disposed of as hazardous waste.

As a result of the strong reliance on toxic and hazardous materials for the finishing process, the metal finishing industry, like other traditionally polluting industries, is heavily regulated by all agencies and public departments concerned with the impacts of hazardous emissions on human health and the surrounding environment. The regulatory burden for the industry is extremely costly, especially for smaller businesses that maintain a much lower profit margin and can least afford the time and money to comply with local, state and federal regulations.

Common Sense Initiative

In 1993, the United States Environmental Protection Agency, under the direction of Vice President Al Gore, began to look at ways to "reinvent" the nation's environmental regulatory system by establishing the Common Sense Initiative (CSI). The impetus behind the Common Sense Initiative was to work with industry to create common environmental goals. The Common Sense Initiative, led by a multi-stakeholder CSI Council, is a non-traditional approach to environmental and public health protection that uses a non-adversarial, stakeholder consensus process to find more flexible, cost-effective and environmentally-protective solutions tailored to specific industry needs.

The metal finishing industry was identified as one of six industry sectors $\frac{1}{2}$ automobile manufacturing, computers and electronics, iron and steel, printing, metal finishing, and petroleum refining $\frac{1}{2}$ to test new ideas derived from the Common Sense Initiative for improved environmental performance. In 1995, EPA established the CSI Metal Finishing Subcommittee with representatives from EPA program and regional offices, the metal finishing industry and its suppliers, state and local governments, national and regional environmental organizations, the environmental justice community, and organized labor to address issues specific to the industry.

The direction of the Common Sense Initiative was determined by individual subcommittees that worked to identify major issues that needed to be addressed within each industry. The Metal Finishing Subcommittee was comprised of about 24 stakeholders from various backgrounds including metal finishing companies, trade associations, suppliers, environmental and community groups, organized labor and local governments. According to Brown, the EPA hoped that the Common Sense Initiative, by incorporating a diverse and comprehensive group of stakeholders, would serve as a model for changing the environmental regulatory process from one of conflict to one of cooperation, collaboration and consensus.

Strategic Goals Program

In 1998, the CSI Metal Finishing Subcommittee launched a nation-wide voluntary program for metal finishers called the National Strategic Goals Program. Metal finishers who sign up for this program are pledging to make a good-faith effort to achieve "better than compliance" environmental goals including better metals utilization, reduction in energy/water use, and reduced emissions of metals and organic TRI chemicals to the environment. In response to the Common Sense Initiative's motto of "cleaner, cheaper, smarter," goals were laid out by the Metal Finishing Subcommittee in 1997 and again by the Strategic Goals Program to be accomplished by the industry by 2002. These goals are presented in the table below.

METAL FINISHING NATIONAL PERFORMANCE GOALS

Facility-Based and Sector-Wide Performance Goals by 2002

Improved Resource Utilization ("Smarter")

98% of metals ultimately utilized on product ("a pound of metals bought = a pound used")

50% reduction in water purchased/used (from 1992 levels)

25% reduction in facility-wide energy use (from 1992 levels)

Reduction in Hazardous Emissions and Exposures ("Cleaner")

90% reduction in organic TRI emissions and 50% reduction in metals emissions to air and water (from 1992 levels)

50% reduction in land disposal of hazardous sludges and a reduction in sludge generation (from 1992 levels)

Reduction in human exposure to toxic materials in the facility and the surrounding community, clearly demonstrated by actions selected and taken by the facility

Increased Economic Payback and Decreased Costs ("Cheaper")

Long-term economic benefit to facilities achieving goals 1 and 2 50% reduction in costs of unnecessary permitting, reporting, monitoring and related activities (from 1992 levels) as long as such efforts do not adversely impact environmental outcomes *Industry-Wide Achievement of Facility Goals*

80% of facilities nationwide achieve goals 1 & 3

Industry-Wide Compliance With Environmental Performance Requirements

All operating facilities achieve compliance with federal state and local performance requirements

All metal finishers wishing to cease operations have access to a government sponsored "exit strategy" for environmentally responsible site transition

All enforcement activities involving metal finishing facilities are conducted in a consistent manner to achieve a level playing field, with a primary focus on those facilities that knowingly disregard environmental requirements

Source: *National Performance Goals and Action Plan: CSI Metal Finishing Sector*. USEPA, Dec 16, 1997.

Both governmental and non-governmental agencies have signed on to support metal finishers who choose to adopt the national performance goals as described above. Metal finishers will also be able to use their status within the CSI as a marketing and public relations tool. Finally, a commitment to a cleaner shop should provide incentive for lenders and insurers to look more favorably upon metal finishers who have adopted the goals. While adopting the goals is voluntary, the CSI Metal Finishing Subcommittee has determined that metal finishers will be attracted to the program because of the favorable recognition they will receive from both the public and private sectors. To some degree, this has been true, although neither the Common Sense Initiative or the Strategic Goals Program has managed to sign up the number of metal finishers they had

originally hoped would join the program. Indeed, of the over 600 metal finishers in Southern California, roughly 50, about 3%, have signed up for the Goals program.

The Metal Finisher's Association of Southern California determined that most finishers are waiting for more "carrots" before they sign on. In other words, if metal finishers voluntarily agree to reduce their waste beyond regulatory requirements, they want something in return, such as reduced regulatory burdens, standardization between regulatory agencies, and easier access to capital for environmental improvements. In order to provide incentive for metal finishers in Southern California, the Los Angeles subcommittee identified access to capital as a major hurdle for metal finishers interested in environmental improvements, and as a result, pursued the implementation of a pollution prevention loan program for the metal finishing industry as the first big carrot.

Access To Capital

The majority of metal finishing shops in the United States are small businesses, and as such, they have more difficulty than their larger peers when trying to obtain financing for environmental improvements. Indeed, the CSI Metal Finishing Subcommittee identified the metal finishing industry's inability to access capital for environmental improvements and investments as one of its biggest obstacles in meeting and/or exceeding current environmental requirements. According to Bob McBride, Vice President of the National Association for Metal Finishers, the metal finishing industry believes that the financial community treats them like lepers. Lenders fear that any assets associated with a metal finishing shop (i.e., equipment, property) taken as collateral will lose value due to past and/or future toxic contamination. As a result, lack of capital leads to three primary problems within the metal finishing industry.

- I. Older, and often more polluting, firms that would like to exit the industry stay open longer than necessary because they fear the remediation costs of closing a facility. The clean-up costs alone can climb as high as \$200,000.
- II. Firms that would like to close, may not close responsibly because they cannot obtain the necessary capital to do so. In some cases, shops are simply abandoned, leaving local communities with a contaminated waste site, and local governments with a costly clean-up bill.
- III. Firms that would like to improve their environmental performance cannot obtain the necessary capital to pay for costly pollution prevention equipment.

In addition, most lenders have lost significant profits in the past due to environmental problems and many banks now maintain environmental risk assessment divisions that assess the likelihood of tainted collateral. Indeed, according to a 1995 Banker's Roundtable survey, a trade group representing 125 of the nation's largest banks, 95 percent of respondents had been forced to spend funds on environmental remediation to facilitate use or disposal of a property. As a result, 83 percent of Roundtable lenders agreed that certain types of chemical-intensive businesses are more likely to receive a more thorough review for environmental risks when applying for loans.

Today, metal finishers hoping to obtain financing are usually required to undergo a Phase I and Phase II environmental assessment for toxic contamination. Phase I assesses a property for potentially significant contaminants and Phase II identifies the extent of the contamination problem and estimates the cost of any necessary cleanup. The costs of these assessments are usually between \$10,000 and \$25,000, for which the potential borrower is responsible before he or she can receive a loan. In addition, many firms are wary of undergoing an environmental assessment, because if evidence of significant contamination is found, they are then liable to clean up the site. To make matters even more difficult, according to a study of the credit needs of Chicago's metal finishing industry, more than 60 percent of metal finishers found pollution control equipment more difficult to finance than other types of investments. Because pollution control or prevention equipment rarely adds profits or productivity, banks see environmental equipment as more of a liability against the bottom line, than an asset. Yet, banks often request that metal finishers safeguard the bank's environmental liability by requiring environmental equipment investments, but will not finance the purchase

of environmental equipment because it does not enhance revenue.

Because of lack of capital in the metal finishing industry, the entire firm lifecycle is distorted. According to McKenney and Koplow(1998), markets do not work effectively if assets and liabilities cannot be transferred among parties. Without an environmental assessment, shop owners will have difficulty financing facility upgrades, including pollution prevention equipment, or selling or transferring their business to new owners. Owners wishing to retire cannot sell without first assessing contamination on the site, the results of which may inhibit their ability to exit the market. In addition, industry consolidation and economies of scale do not take place, resulting in the continuation of small, under-financed and often polluting shops. Finally, once the metal finishing shop has been closed, the sites are difficult to redevelop because of investors concerns over toxic site contamination.

In 1997, EPA held a charrette with multi-stakeholder representatives and members of the Environmental Finance Advisory Board (EFAB)., The charrette determined that the metal finishing industry has some of the greatest difficulty obtaining capital when compared to other industries, including printers and printed wire board manufacturers. As a direct result of the Charrette and other collaborating evidence, the Environmental Finance Advisory Board, the CSI Metal Finishing Subcommittee, and the CSI Council made a recommendation to Administrator Browner that EPA should work with the Small Business Administration (SBA) to develop an Environmental Loan Program for small metal finishers. In response, the Small Business Administration set aside funds for its Los Angeles Regional Office to guarantee up to \$2 million in loans for a pilot Metal Finishers Loan program in Southern California. The actual loan program is described in the box below.

EnviroLoan Metal Finishers Access To Capital Pilot Loan Program

Introduction

The following is a conceptual Pilot Loan Program Outline that has been developed after careful deliberations among the Environmental Protection Agency (EPA), Environmental Finance Center, Region IX, trade association representatives, lenders, intermediary organizations, as well as, Small Business Administration Los Angeles Area District Office and Headquarters Capital Access staff.

Concept

The purpose of this lending initiative is twofold (1) to develop an integrated method of providing financial assistance to environmentally impacted businesses which often are unable to obtain credit and (2) to contribute to job creation and economic development, especially in but not limited to underserved communities where these businesses are often located. Importantly and more specifically, three essential components were identified: 1/2 interested lenders, trade and technical assistance intermediaries and strong governmental support (from among others, the EPA's National "Environmental Finance Advisory Board") to implement this effort on an initial trial 2 year "pilot" basis.

Prospective Applicants

The Metal Finishers Association of Southern California, Inc., (MFASC) identified 400-500 metal finishing businesses in LADO's Southern California tri-county service area, which employ 10,000-12,500 people. These businesses are typically family-owned with total annual sales of \$1-1.5 million and a large percentage of minority employees. Roughly 27.5% of the total capital expenditures of these firms are spent on compliance with environmental regulations through pollution control and prevention. A recent sampling by MFASC indicated that many of these entrepreneurs would be very interested in utilizing an SBA guaranteed Metal Finishers Access to Capital Pilot Loan Program to improve their environmental performance.

Technical Compliance and Assistance

While the need for this effort is clearly established, a key concern is the necessity for assurance that an

applicant-business' proposal for funding is not only financially sound but also technically proficient to meet EPA and other environmental concerns. In this regard, an EPA organized "Technical Review Panel" (TRP) will certify each transaction with regard to the applicant's pollution prevention readiness and the environmental benefits the financed equipment purchase(s) will provide. This TRP will be made up of such EPA credentialized and sanctioned technical assistance providers, as the "Regional Environmental Business Resource Assistance Center" (REBRAC) and the Environmental Finance Center, Region IX. Additionally, the technical assistance component of this effort will be very important inasmuch as many of the interested applicant businesses may need but not be quite ready to obtain financial assistance. The EPA, through its Common Sense Initiative-Strategic Goals Program partners, has committed to providing P2 technical assistance, for example, to ensure that businesses are ready and that needed support to all technical aspects of their business operations are provided.

Lenders, Lending Criteria and Pre-qualification Loan Processing Procedures

Working with local intermediaries, Barrio Planners, Inc., located in Los Angeles, California, and the Metal Finishers Association of California, as well as local lenders the following general lending criteria has been identified: Leverage ratio - not to exceed 5.0 to 1.0, Current ratio - 1.0 to 1.0, Debt coverage - 1.25 to 1.0. Importantly, and as part of the eligibility criteria, all applicants must register for EPA's Strategic Goals Program and the TRP will certify said applicant's compliance. Only businesses that meet the above criteria will be submitted for processing. Since all applicants will meet the above criteria, the processing of both the pre-qualification application as well as the subsequent 7(a) application can be streamlined. In addition, a minimum 10% investment will be expected and the pledged collateral will consist of the equipment purchased with personal guarantees required. Finally, each case will be analyzed individually with full credit justifications, including Sources and Uses Analyses, provided for any variations.

Use of Proceeds

Without exception all loan funds will be utilized only for the acquisition of pollution prevention equipment, machinery or processes to comply with or exceed EPA and other environmental regulations. The TRP will provide data and other information regarding the latest technology to guide applicants in the proper selection of the necessary equipment to meet these regulations. As noted above, the TRP will certify that the financed purchases and the applicant-business' subsequent technical capacity will allow the applicant to achieve one (1) or more of the Strategic Goals Program standards and other EPA environmental requirements. The maximum allowable borrowing amount is established at \$150,000, payable in most instances over a 10-year maturity.

The EnviroLoan Process

The overall EnviroLoan process maintains a two-pronged approach in which the application is reviewed both for its technical and financial merit. Barrio Planners, a small business assistance provider located in Los Angeles, will be responsible for financial approval and underwriting of the loan. In response to the need for a technical review of all applications submitted under this loan program, a standing Technical Review Panel (TRP) has been created to provide recommendations to EPA. The Panel is responsible for reviewing the proposed pollution prevention technology and its appropriateness at the subject facility. In addition, the Panel assesses the applicant's history of environmental compliance to determine if the applicant has been environmentally responsible in the past three years. The EPA will then determine, based on the panel recommendation, whether or not the application shall be approved from a technical standpoint.

In general, the Panel will be comprised of industry, regulatory agencies (water districts, air quality management districts, California EPA), the Regional Environmental Business Resource Assistance Center and EPA representatives. In addition, a non-governmental organization and utility representative may participate on the TRP. Agencies and organizations invited to participate in the Los Angeles Area Pilot TRP include:

US EPA Region 9,
Cal EPA,
City of Los Angeles,
South Coast Air Quality Management District,
Orange County Sanitation Districts,
LA County Sanitation Districts,
Metal Finishing Association of Southern California (MFASC),
Regional Environmental Business Resource and Assistance Center (REBRAC), and
Communities for a Better Environment.

In order to make their determination, the Panel requires an applicant to attend a workshop that introduces both the loan program and P2 processes. In addition, the Panel reviews both the technology and the vendor, the applicant's compliance history, and requires that the applicant be committed to the Strategic Goals Program as described in the table above. Finally, the applicant must submit to a site visit by the Regional Environmental Business Resource and Assistance Center which will determine if the metal finishing shop is adequately prepared for the proposed P2 technology. If the applicant's environmental and financial affairs meet the requirements set out in the EnviroLoan guidelines the EnviroLoan will be approved. If for some reason the applicant is denied, the TRP and Barrio Planners will work with the applicant to resolve any errors or problems so that he/she may resubmit for an EnviroLoan in the future.

WET CLEANING PROGRAMS

Program A Establishing A Vocational Wet Cleaning Demonstration Program In State Correctional Facilities (Reducing Perchloroethylene Usage In State Correctional Facilities)

In the Fall of 1997, the Environmental Finance Center for EPA Region 9 (EFC9) received a grant from the Environmental Finance Center for EPA Region 5 (EFC5), in conjunction with the US EPA to target a specific industry and produce a plan for stimulating more pollution prevention (P2) activities in that San Francisco Bay Area industry. After consultation with EFC5, US EPA Region 9 and the Bay Area Hazardous Waste Reduction Committee, EFC9 determined that the dry cleaning industry which maintains a heavy reliance on perchloroethylene, a toxic air contaminant would make the most suitable target. Since then, EFC9 has conducted two Dry Cleaning Industry Charrettes the results of which emphasized the need to increase the availability of wet cleaning, by increasing consumer awareness and by providing trained labor to new wet cleaning enterprises.

Using the charrettes as guidance, EFC9 implemented several programs to support and promote wet cleaning throughout the Bay Area and California. In 1999, the major focus of our promotional efforts was the establishment of a Vocational Wet Cleaning Prison Pilot Program at two State Correctional Facilities (SCFs) in California. The goal of this program was three-pronged:

To establish a State Correctional Facilities vocational wet cleaning demonstration training program at two State Correctional Facilities (SCFs) which currently run vocational dry cleaning programs, specifically Soledad and Corcoran Correctional Facilities,

To reduce perchloroethylene (perc) usage by State Correctional Facilities vocational dry cleaning programs, and

To provide trained wet cleaning and finishing operators to the dry cleaning community.

Throughout 1999, EFC9 identified all necessary tasks and insured that the work was accomplished. We coordinated the vocational education instructors' efforts, tracked their progress, determined their needs, and solicited their input. In addition, EFC9 worked with the vocational dry cleaning instructors at Soledad and Corcoran State Correctional Facilities (SCFs) to determine their exact equipment and training needs. Finally,

we provided them with up-to-date information on wet cleaning and tensioning equipment and training and their associated costs. As a result, the Environmental Finance Center, Region IX (EFC9) helped establish the first California Vocational Wet Cleaning Prison Pilot (CVWCP) Program which should be fully operational by late 2000.

The following describes the Program, its history and EFC9's role in the process of establishing vocational wet cleaning programs at two state correctional facilities in California.

Dry Cleaning

Dry cleaning is developed in the late 1800's to clean garments that could not be cleaned in water is not dry; it uses a liquid chemical solvent. In the modern dry cleaning process, clothes are cleaned in a large "washer" which functions much like a home washer to remove oil, dirt, and stains. Once cleaned, the machine essentially becomes a dryer, and the clothes are dried without having to transfer them to a separate dryer, thus reducing the loss of solvent vapors.

"For more than forty years, the vast majority of dry cleaners have relied on perchloroethylene (PCE or perc) as the solvent used to clean clothes as part of the dry cleaning process. This use has made dry cleaners the single largest market for PCE."

While there is not a clear consensus as to the exact toxicity of PCE, it has been deemed potentially hazardous to human health. According to the State of California, PCE is a "toxic air contaminant"; US EPA classified it as a "probable human carcinogen"; the National Institute of Occupational Safety and Health (NIOSH) recommends treating PCE as a "potential human carcinogen"; and the International Agency for Research on Cancer (IARC) places it in Group 2A ("probably carcinogenic to humans").

As a result of these assessments, regulations were established to reduce the exposure to perc of dry cleaning workers and residents living in co-location with dry cleaning establishments. While these regulations have reduced perc usage (by about 50 percent in the San Francisco Bay Area for example), it is still found in California's air, particularly in the most populous parts of California (Bay Area and South Coast). Therefore, the federal and state governments are encouraging dry cleaners to adopt safer fabricare alternatives. At the time of the charrette, EFC9 identified four safer fabricare alternatives: wet cleaning, petroleum-based solvents, CO2 and Rynex. Due to the relative advantages of wet cleaning, EFC9 believes that it is the most suitable of the alternative technologies for the State Correctional System.

Wet Cleaning

Wet cleaning is a water-based alternative to dry cleaning that is comparable to dry cleaning in cleaning performance. The wet cleaning process includes professional cleaning techniques, high-tech washing, drying and finishing equipment, and biodegradable detergents. Computers control water temperature, mechanical action, chemical injection, and washing and drying times to protect against shrinkage and dye bleeding. It also involves a high degree of professional skill and an in-depth knowledge of textile care.

Almost all "dry clean only" garments can be wet cleaned, including wool, silk, angora, cashmere, linen, down-filled items, suede and leather trimmed garments, beaded and sequined gowns. Wet cleaning leaves clothing soft to the touch with no "chemical smell" which is sometimes associated with dry cleaning. In addition, wet cleaning presents "no expected health risk to the general public" and "cleaners using state-of-the art wet cleaning technologies are able to clean at least 30 percent and up to 100 percent of all garments that are typically dry cleaned." , "Wet cleaning is relatively less effective in removing oil-based stains and PCE dry cleaning is relatively less effective in combating water-based stains. Consequently, different types of spotting chemical may be used in the two processes to compensate for their respective shortcomings."

While wet cleaning equipment is the least expensive of the alternatives to purchase, it presents higher labor costs due to more labor-intensive finishing and pressing requirements. In addition, cleaners who wish to

professionally wet clean up to 100% of garments "may be inclined to purchase specially-designed press equipment that uses tension to increase the quality and speed of the pressing".

California Department of Corrections Vocational Programs

The State of California Department of Corrections (CDC) operates 33 correctional facilities. In FY 98-99, the prison population averaged 157,482 including 11,485 women and 145,997 men. 28 of the 33 prisons offered inmates 19 different vocational programs. The CDC's Education Inmate Program Unit (EIPU) operates the largest accredited adult correctional education system in the world. The EIPU provides academic development, vocational training, library services and recreation programs throughout the State's 33 prisons. The adult schools within the prisons are accredited and 1,300 credentialed teachers provide training and instruction to over 30,000 inmates per month. Over half (52%) of the inmates participated in the vocational programs in fiscal year 1998-99.

Twenty of the 33 state prisons or 61% offer vocational dry cleaning programs. This is the most prevalent vocational program. In FY 98-99, 5,856 inmates, 4% of all inmates, participated in the vocational dry cleaning programs. Participating inmates dry clean officers' uniforms, prison employees' and their families' clothing (if they are willing to "take their chances") and garments and fabric for local non-profit organizations, such as school bands, police and sheriff's departments, coats for children's drives, etc. Prisons are not allowed to compete with businesses and so do not offer their services to local residents.

The purpose of these vocational programs is to improve public safety based on the theory that inmates will be less likely to return to a life of crime and time in prison if they acquire more life skills, workplace readiness, career training and self-esteem. "The ultimate goal of correctional education is to reduce recidivism -- to help inmates become self-sufficient so that they can be re-integrated into society and become productive and successful workers, citizens and family members." According to Stephen Steurer, former Executive Director of the Correctional Education Association, "a recent CEA review of current studies indicates that inmates who undergo correctional education average up to a 20% reduction in recidivism from that of the general prison population."

Wet Cleaning in State Correctional Facilities

In December 1998, EFC9 was approached by the Vocational Dry Cleaning Instructors at Soledad Correctional Facility and California Substance Abuse Treatment Facility Corcoran Prison for help setting up vocational wet cleaning programs at their facilities. Both instructors had attended a US EPA-sponsored wet cleaning training seminar organized by Ecology Action (a non-profit organization based in Santa Cruz) in 1997 and based on what they learned, believed that their student/inmates and the prisons would benefit from vocational wet cleaning programs.

As mention earlier, wet cleaning equipment is the least expensive of the dry cleaning alternatives to purchase, but presents higher labor costs due to more labor-intensive finishing and pressing requirements. Because labor is cheap and plentiful in State prisons, wet cleaning labor requirements are not problematic. In fact, this technology presents the prisons with a unique opportunity to enhance the labor force. Because one of the identified barriers to purchasing wet cleaning equipment in the San Francisco Bay Area is the shortage of trained wet cleaning pressers, the SCFs can help alleviate this shortage by providing trained wet cleaning pressers, while at the same time reducing prison use of perc.

Although the prisons had been interested in establishing wet cleaning training programs since 1997, little had happened due to bureaucratic hurdles and other staff and budget constraints. According to Department staff, funding for new educational program equipment was very limited and often committed more than a year in advance. It was anticipated that trying to fund the CVWCP Program from the annual CDC budget would delay program implementation by at least 3 to 5 years or possibly kill it altogether, since other needs had higher

priority.

Therefore, the instructors approached USEPA to request financial assistance for the Program. Unfortunately US EPA's budget had been reduced and it was unable to provide the necessary funding. As an alternative, USEPA referred the instructors to the Environmental Finance Center, Region IX (EFC9). Because their proposed program coincided with EFC9's mission and current project goals, EFC9 agreed to help. Together, EFC9, the Correctional Training Facility (CTF) in Soledad and the California Substance Abuse Treatment Facility and State Prison (SATF) at Corcoran proposed the first vocational wet cleaning program in the nation located in a State Prison that would:

- Provide wet cleaning training for a total of approximately 70 inmates per year at two State Correctional Facilities;
- Support the California Department of Correction's mission to use alternatives mandated by the California Environmental Protection Agency;
- Reduce perchloroethylene (perc) usage and associated issues, including possible spills and contamination, hazardous waste disposal procedures and expenditures, and Air Quality Management District paperwork and fines;
- Test the feasibility of implementing this Program statewide;
- Increase participating inmates job readiness skills; and
- Enhance inmate awareness of pollution prevention.

Funding the Program

Upon determining the Program's equipment and training needs, EFC9 compiled up-to-date information on wet cleaning equipment and training, the associated costs, and where to purchase them from numerous resources including, the internet, trade publications, equipment manufacturers and Clean'99, the World Educational Congress for Laundering and Dry Cleaning, held in June 1999. The most difficult aspect of establishing a successful program at both prisons was obtaining funding which would be necessary for the following program items:

- Wet cleaning equipment,
- Employment assistance and outreach to the wet cleaning industry,
- Program documentation and publicity,
- Training,
- Miscellaneous items including associated travel, phone and postage expenses, and
- Project management and oversight.

Because prisons are not federally designated non-profit organizations, funding through private entities such as foundations was unlikely. As a result, EFC9 pursued the state as the most likely avenues and was advised to consider seeking Program funding through the State Budget.

With the support of three State Senators EFC9 gained approval for the Program within the Senate Budget but the State Assembly denied funding. This initial support however brought the Program to the attention of the California Department of Corrections administration including the CDC's Director. In addition, wardens at both Soledad and Corcoran endorsed the Program and promised to find annual operating funds if the one-time equipment and training costs could be covered from other sources. Program costs to be covered by each institution would include remodeling, water, electricity, detergents, and staff training time.

EFC9 leveraged this momentum and worked to secure equipment funding through the Vocational Education and Applied Technology Act (VEATA) which provides federal grants for innovative technology. The strategy was a success and by the end of September, both institutions were notified that their request for VEATA funding had been approved, but for only half the requested amount. Armed with VEATA seed grants both

Corcoran and Soledad agreed to provide the remaining funds from the individual institutions' budgets.

To accommodate the new equipment, both institutions will remodel their sites and EFC9 and the institutions anticipate that the California Vocational Wet Cleaning Prison Pilot Program will be operational by mid to late 2000.

Once the Program has been in place for at least one year, the State Department of Corrections will evaluate its effectiveness to determine whether to expand it statewide.

.Program B Increase Demand for and Availability of Wet Cleaning in San Francisco Bay Area

Overview

EFC9's work has demonstrated the need for wet cleaning establishments in the San Francisco region. However, until dry cleaners perceive a demand for wet cleaning, they will be reluctant to provide the service. Therefore, EFC9's second wet cleaning emphasis has been to focus on increasing demand for the services of the few "early adopters" of wet cleaning equipment by preparing the Pocket Guide to Bay Area Wet Cleaners. While the prototype for the Guide was completed in 1999, it was not until January 2000 that EFC9 was able to secure funding from the State Department of Toxic Substances Control for an initial printing of 10,000 copies.

Bay Area Guide to Wet Cleaning

The Guide serves as a model for teaching consumers about the power of informed shopping and how they can buy needed goods and services and at the same time reduce pollution and support sustainable development. At present, demand for wet cleaning is low, in part because consumers do not know what it is or where to find it. As a result, wet cleaning is not yet widely available in the Bay Area.

What will the Guide look like? As presented in the example below, *[NOT AVAILABLE HERE - PLEASE REFER TO EFC 9 WEBSITE BELOW]*, the Guide is a small (4.25" x 2.75") easy-to-understand and read booklet. It includes simple descriptions of wet and dry cleaning, addresses and maps of wet cleaners throughout the Bay Area as well as a listing of other wet cleaning resources, the sponsoring organizations and a "\$2 Off" wet cleaning coupon.

Printing and Distribution

In 2000, EFC9 will print approximately 10,000 to 40,000 copies of the Guide. The Guide will be distributed for free through wet cleaners' neighborhoods, places of work, environmental businesses, health service providers, libraries, local governments, local utility, water and air districts and environmental and health non-profit organizations. The Guide will also be available on our website - <http://www.greenstart.org/efc9>.

Publicity and Tracking

To further consumer education, EFC9 will insure that the Guide is well publicized. The Guide launch will be timed to coincide with a wet cleaning public relations campaign being run jointly by the City of San Francisco and Ecology Action sometime in March 2000. In addition, EFC9 will work to secure coverage in local newspapers, radio and TV.

To measure the Guide's effectiveness at achieving its goals of

- 1) expanding demand for wet cleaning and
- 2) increasing the number of establishments offering wet cleaning,

EFC9 will determine a baseline prior to release of the Guide; monitor wet cleaning coupons used and the

number of businesses offering wet cleaning services during the year following Guide publication; and track Guide distribution.

In the future, if the Guide has proven effective at increasing wet cleaning demand and the number of wet cleaning shops, it will become self-supporting through charges levied on the participating wet cleaners and through Guide sponsors. Sponsors may include: wet cleaning equipment manufacturers and distributors; wet cleaning detergent manufacturers and distributors; dry cleaning associations; clothing designers and manufacturers; environmental organizations who want to make it available to their membership; and regional, state and federal agencies supporting pollution prevention.

SMALL ENVIRONMENTAL BUSINESS ASSISTANCE PROGRAM

Overview

EFC9 was founded on the premise that the success of the environmental industry is crucial to a more sustainable future. Throughout the years, we have honed our expertise in this area by offering small environmental businesses a wide array of opportunities from conferences and workshops to the more recent Environmental Finance Directory. As small companies have learned from us, we too have learned from them, and so this final task builds on our past experience by pointing us in a new and more effective direction for our Environmental Business Service Program.

It is, unfortunately, a truism, that once a directory is published it is almost immediately out of date. The EFC9 1998 Environmental Finance Directory, the linchpin of our small environmental business services, falls under this truth, and as useful as it is with hundreds of references and contacts, the Directory is in continuous need of updating. To issue an annual volume is proving to be too cumbersome both in time and money, yet the services that the Directory provides are both real and necessary. To that end, EFC9 has embarked upon a new approach to providing better and more personal services for small environmental businesses looking for help. This approach includes:

- Converting the Environmental Finance Directory into a database,
- Contacting and verifying every Directory listing and keeping only those that prove useful,
- Establishing a list of all government loans and grants available to small environmental businesses and keeping that list current, and
- Posting the Finance Directory on our website with full search capabilities.

Converting the Finance Directory Into a Database

Due to its sheer size, the Directory can no longer work in a hard-copy format. In addition, searching for potential funding can only be done through a table of contents and an index. The new Finance Directory database contains searchable fields relative to a small business including funding needs (i.e., grant or loan), type of technology, business phase (i.e., start-up, product commercialization, IPO), etc. With our new database format, we can match a company's funding criteria to potential resources with greater ease. In this way, we can now provide a more useful service for our clients.

Contact and Verify Directory Listings

As stated above, there are numerous listing that are now out-of-date. In 1999, EFC9 verified every listing in the Directory and rated them according to their usefulness to small environmental businesses. In the future, EFC9 will track and maintain a current database of all government loans and grants available for small environmental businesses. In addition, EFC9 will update and collect information on state grant and loan programs available in Region 9.

Updating Our Website

Perhaps the most valuable aspect of the new database format is that it will be available for free on our website. In early 2000, we will launch the database on our website so that environmental entrepreneurs can search for compatible funding opportunities.

New Initiatives

The following is a description of some of the major new initiatives that EFC9 will be undertaking throughout 2000.

Sustainable Urban Areas Charrettes -

Attracting Environmentally Benign And/Or Green Economic Development To The Bayview/Hunters Point Neighborhood in San Francisco

Background

In industrial urban core neighborhoods environment and economy have often become decoupled. Urban core neighborhoods have traditionally been the recipients of what have now become the least desirable of local industries, such as metal finishing, autobody shops, printing shops, and other highly regulated businesses. As a result, these communities are all too often plagued by activities that degrade the environment, affecting human health, natural environments and quality of life. Problems include brownfields, hazardous waste sites, cancer clusters, and an overall less healthy standard of living than what is available in other areas of the city.

Charrette Proposal

As part of the Sustainable Urban Areas project, aimed at addressing such problems, EFC9, in partnership with the Maryland EFC will look at ways to reconnect the economy and the environment in a sustainable economy in an urban core neighborhood. A local sustainable economy is one in which:

- hazardous and toxic waste is minimized,
- brownfields are redeveloped (not abandoned) as appropriate to the neighborhood,
- natural resource and energy conservation is encouraged,
- residents work where they live, thereby reducing their transportation impact on the local and regional environment, and
- environmentally benign jobs providing a living wage are a priority so residents can afford to make sustainable choices for their neighborhood.

By creating a sustainable economy, resources are channeled back into the community in both financial and environmental to allow for an improved quality of life.

The Bayview/Hunters Point district of San Francisco will be the focus of our charrette. The neighborhood has two Superfund sites, more than 400 toxic waste dumps, several brownfields, and numerous industrial emission sources within its environs. This ethnically diverse area believes that environmental health concerns have inhibited a broader range of investment in its community. Community leaders would like to explore options available to urban neighborhoods that are struggling to establish a sustainable economy while protecting and even reclaiming their local environment.

In general, a charrette is a gathering of various groups of people in a community to resolve common problems with the assistance of outside experts within a specified time limit. It has also been called a problem-solving focus group. In order to examine the challenges facing the Bayview neighborhood, EFC9 will assemble a panel of public and private sector representatives, from both outside and within the community, to discuss ways in which to reconnect the environment and the economy in the neighborhood. Working from a specified agenda, EFC9 expects the charrette panel to provide recommendations for and/or answers to the following question:

" *How can we attract sustainable redevelopment and green industries to the brownfields and Superfund sites in the Bayview/Hunters Point neighborhood?*"

Potential panel invitees may include representatives from the following agencies, organizations and businesses.

San Francisco Planning Commission
San Francisco Mayor's Office of Economic Development
San Francisco Renaissance Entrepreneurship Center
University of Southern California Sustainable Cities Program
USEPA Region IX
Bayview Hunters Point Coalition for the Environment
Southeast Alliance for Environmental Justice
San Francisco Foundation
Bay Area Video Coalition
Business representatives from environmental benign and green industries
Catellus Corporation

Market Mechanisms and Incentives for Adoption of Voluntary Environmental Management Systems by Small- to Medium-Sized Enterprises in the Graphic Arts Industries

Partnering with the County of Alameda and the Center for Business and Environment Studies, EFC9 will examine Market Mechanisms and Incentives for Adoption of Voluntary Environmental Management Systems by Small- to Medium-Sized Enterprises in the Graphic Arts Industries.

Introduction

Private sector participation is a key component of environmental management yet the United States remains challenged to realize significant improvements among the nation's largest business sector, small- to medium-sized enterprises (SMEs). The proposed project for 2000 builds on ongoing programs with SMEs in the Graphic Arts Industries undertaken by the Alameda County Green Business Program, and also ties in with our own ongoing work with SMEs.

The myriad opportunities for SME involvement in environmental management systems (EMSs) raises the question, "*What market mechanisms and incentives motivate SMEs to participate in voluntary EMSs?*" Specific to the graphic arts industries, we hope to better understand the following.

How prevalent is small business participation in voluntary environmental management systems?
What are the barriers and opportunities to/for expanded deployment of environmental management systems?
Which policies, market mechanisms and incentives provide the strongest incentive to motivate small, graphics arts businesses to adapt environmental management systems?
What small businesses are seriously working within an EMS framework to continuously reduce their waste generation and why?
What measurable benefits can be expected to accrue to the environment, business and municipalities when market mechanisms and incentives are adopted by graphic arts businesses?

Several pilot studies underway in the United States are examining the motivators and mechanisms of implementing voluntary systems, but the primary focus remains on large enterprises instead of SMEs. Indeed, little is known about the factors that warrant, motivate, and reward voluntary beyond-compliant approaches to reductions in waste, energy and greenhouse gas emissions by SMEs in industries dominated by SMEs such as the graphic arts industry. As a result, this project will provide the Alameda County, Region IX and USEPA

with critical guidance for future policy and program initiatives that address small business involvement in pollution prevention, waste, energy, and greenhouse gas emissions reduction.

Clean Air Investment Fund

Partnering with the New Mexico EFC, EFC9 will work with USEPA to help administer and operate a Clean Air Investment Fund in the El Paso/Juarez/Las Cruces airshed. The project will be the first international, cross-border effort for EFC9. This project is still in the early planning phase and has yet to be well defined. EFC9 expects to begin work on the Clean Air Investment Fund sometime in February 2000.

Network Collaborations

The following projects reflect EFC9's ongoing Collaboration with other individual EFCs and the Network as a whole.

Coordination With EFCs, EFAB and EPA

EFC9 is part of a growing network of Environmental Finance Centers affiliated with universities throughout the United States. Like the other Environmental Finance Centers, EFC9 also serves as an expert witness to the Environmental Finance Advisory Board (EFAB), which provides authoritative analysis on finance issues to the EPA Administrator. Both the EFC Network and the EFAB have become an extension of our capabilities by contributing both valuable insight into numerous environmental and financial issues and providing new work and research opportunities for EFC9. To further that relationship, EFC9 continued to participate in the regularly scheduled monthly teleconferences between the EFC Executive Directors and EPA personnel. These teleconferences are intended to keep everyone informed about important new issues affecting the EFC Program and to allow the EFC's to share new programmatic ideas with each other.

Sustainable Urban Area Charrette and Clean Air Investment Fund

In addition to regular contact and coordination, EFC9 will be collaborating on two projects with other EFCs. As discussed above, EFC9 will partner with EFC3 (Maryland) for the Sustainable Urban Area Charrette in San Francisco and with EFC 6 (New Mexico) for the Clean Air Investment Fund Project in El Paso.

Other Projects

Successful Follow-on National Laboratory Technology Transfer Initiatives by EFC9-Alameda Center for Environmental Technologies

In December 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. Building on the results of that charrette, EFC9 in partnership with the Alameda Center for Environmental Technologies (ACET), has been working with the Department of Energy (DOE) to develop an effective model to transfer environmental technologies from the National Laboratories.

DOE-Sponsored Study on Technology Transfer in the Bay Area

Under sponsorship from DOE Oakland Operations Office, an important study was conducted on the local technology transfer experience of Bay Area entrepreneurs in April-July 1999. The objective of the project was to assess entrepreneurs' issues with the commercialization process, particularly from federal laboratories, and recommend possible program responses that might enhance the technology transfer process to start-up companies. As part of the project, 26 start-up companies were interviewed at three major Bay Area incubators, ACET, CALSTART, and the San Jose Environmental Cluster, and other sources. Based on these interviews, a report was released entitled *Evaluating the Technology Transfer Experience from Federal*

Laboratories/Research Institutions to Start-up Companies in the Bay Area highlighting best practices in August 1999.

A presentation of report findings to DOE Oakland and Lawrence Berkeley National Laboratory representatives in July, 1999 received positive feedback. As a result, ACET is currently applying the findings of this study in a follow-on demonstration project sponsored by DOE Oakland. As part of this demonstration Phase II project, three technologies from Lawrence Berkeley National Laboratory are being marketed and several best practices concluded by the report are being tested.

Successfully Marketing LBL Technologies in Phase II DOE Project

Currently ACET and EFC9 are working together with the LBL technology transfer office to market three technologies to the private sector (Sept 1999-Feb 2000). The ACET incubator approach to technology transfer involves the following aspects:

- Developed screening criteria for "commercial potential" of technologies,
- Organized ACET panel of entrepreneurs to screen and select three technologies with best commercial potential,
- Utilized ACET panel/entrepreneurs' commercialization and market expertise and industry contacts,
- Targeted small-medium-sized companies because more inclined to pursue innovation and easier access to decision-makers, and
- Focused on small customer demonstration as first step to technology transfer.

As a result, three technologies were selected: (1) *titanium coating process*, (2) *UV-controlled electrochromic device*, (3) *low Nox burner*. In late 1999, two companies agreed to conduct a small customer demonstration of the titanium coating technology and the low Nox burner technology.

Marketing Lab Technologies to DOE Sites.

Due to the success of the above projects, another DOE-sponsored technology transfer project focused on transferring Lawrence Berkeley or Lawrence Livermore technologies to a DOE site is expected to begin in February, 2000.

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- 15) A charrette is similar to a focus group which is assembled to seek answers to problems facing both the public and private sectors.
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