

**THE U S AGENCY FOR INTERNATIONAL DEVELOPMENT SPONSORED  
ENVIRONMENTAL POLLUTION PREVENTION PROJECT (EP3)  
EXPERIENCES IN CHILE**

**Introduction**

The EP3 program in Chile has just begun its second year of existence and has begun to mold itself into the shape most useful to the Chilean context. Chile was the first country to host EP3 support activities. As such, this program has been a leader in providing insight into different approaches for building a sustained pollution prevention program.

The EP3 project in Chile operates along two main market-based principles. These are the simultaneous development of both supply and demand for pollution prevention knowledge, expertise, and technology. To support the development of supply and demand, EP3 connects U S suppliers of industry and pollution prevention expertise to the demand for this expertise in Chile. The central theme tying these complementary initiatives together is sustainability. Developing the market forces that will result in local suppliers of pollution prevention and clean technology realizing a return on supplying these services is the single most critical organizing concept supporting EP3 activities in Chile. The text below outlines components and activities of the EP3/Chile project and illustrates how activities are directed toward this market development.

**Structural Components of EP3/Chile**

As in all EP3 country programs, EP3 hires local staff, heavily involves local consultants, and manages the project in cooperation with a local entity. The local cooperating entity in Chile is the American-Chilean Chamber of Commerce (AMCHAM). Through an agreement with the USAID/Chile Mission and the U S Ambassador, AMCHAM accepted responsibility as the local cooperator and manager of EP3/Chile activities. This liaison has benefited program development in several ways. It provides EP3 with comprehensive knowledge of the local economy, business practices, and political sensitivities. Importantly, AMCHAM also provides a credible forum through which the pollution prevention success stories are disseminated. "Getting the word out" is an important part of building market demand for cleaner production services and technology.

AMCHAM also provides EP3 with another important element in building initial demand for pollution prevention in Chile, direct access to American companies interested in, or already doing business in Chile. These persons arrive with considerable credibility in the eyes of Chilean facility managers and help to jump-start changes in facilities. American companies have been a main source of industry specific pollution prevention knowledge for the EP3/Chile. Finally, AMCHAM provides another longer term component of EP3's sustainability goals in Chile. Once the nascent market has been developed, AMCHAM provides the local base from which sustained pollution prevention business activities can launch.

Through secured funding, an EP3 Core Staff is maintained in Washington, D C that provides constant support and continuity to the EP3 program in Chile. Through the EP3/Core, communication and experience among different country programs are shared and made available to the Chile program. Elements that are critical to establishing a sustained

country program in Chile, and for which resources are not available in-country, are provided by the EP3 Core staff

### **Developing Supply and Demand Through Information Access**

To supplement AMCHAM's support of the project, EP3/Chile also involves specific trade associations, universities, and NGOs that help to disseminate information about pollution prevention opportunities and services. The EP3 Core support team in Washington maintains an information and training center that has developed numerous training modules and at present contains over 1000 documents on pollution prevention specifically selected for application in developing countries. Targeted training is provided to key audiences within the country and is particularly designed to train persons who will themselves become pollution prevention trainers in Chile. These include government regulators and policy development staff, industrial sectors important to Chile's economy, and other entities that support infrastructural development in the country.

Training modules and course materials are developed by EP3/Core staff and then specifically tailored for use in Chile. This includes translation to Spanish, inclusion of specific economic characteristics of the regions where training is provided, and inclusion of industrial or urban sector examples from Chile. To institutionalize pollution prevention in Chile, EP3 believes it is critical to train a cadre of professionals at various levels (e.g., plant managers and process operators) and from diverse institutions (e.g., government, consulting companies, universities, NGOs). As more people are exposed to the concepts of cleaner production, both demand and supply rise together.

Access to the Washington based EP3 Pollution Prevention Clearinghouse is available through a number of avenues. However, development of local capacity means sustained local access to pollution prevention information beyond EP3. In August 1994, EP3 signed a Memorandum of Understanding with the Centro de Investigacion y Planificacion del Medio Ambiente (CIPMA). CIPMA is an existing environmental information center that already provided information to industry and academia through its main office in Santiago, and through 8 regional network nodes that effectively service the major industrial and urban areas of the country.

### **EP3/Chile Staffing**

As in all EP3 countries, local staff are hired to manage the project. Through AMCHAM, a highly experienced Chilean engineer was hired as the in-country director for EP3. Hiring and training local staff is an important part of building an in-country supply of knowledgeable pollution prevention experts. Through the Chilean EP3 coordinator, in-country supplies of pollution prevention expertise is expanded by heavily involving local consultants and consulting firms. All involvement of these consultants is oriented to encourage them to begin including pollution prevention concepts in their existing business activities. At the end of the first year, three different firms have begun to provide pollution prevention consulting services outside of EP3 project support. Their ability to provide these services will rise as the demand for these services increases as a result of successful demonstration projects and increased information dissemination.

An important part of the transfer of information to local consultants in Chile is training on accurately determining and accounting for financial and economic benefits related to all

EP3 recommendations In the absence of strong regulatory drivers, this has become the cornerstone of sustainability for EP3 supported projects, including Chile Although many pollution prevention investments are financially attractive, the financial analysis necessary to convince decision makers (both companies and lenders) of this fact is often absent in developing countries Transferring appropriate financial analysis tools to industry and financiers is vital to reaching this goal The EP3 team assists in the financial analysis critical to making financing and loan decisions to support implementation of EP3 pollution prevention recommendations that analyze cash flows and environmental and productivity benefits

### **Direct Technical Assistance**

An important part of both training local consultants in pollution prevention and developing locally credible demonstration projects is direct technical assistance to facilities The technical assistance effort in Chile rests on an effective and comprehensive country analysis program and resulting selection of urban and industrial sectors for pilot demonstrations Through EP3's understanding of the critical elements necessary for producing good demonstration projects, and the understanding of the industrial sector in Chile by our network of local staff, environmental consultants and industry associations, we are able to make accurate assessments of areas that offer early successes and effective demonstration projects Candidate industrial sectors are selected based on such factors as economic importance to Chile, expected opportunity for pollution prevention implementation, and applicability to other sectors Then specific candidate facilities are selected for evaluation as actual demonstration projects

After final selection of specific facilities has been made, EP3 builds a team specifically suited to the needs of each facility Teams are usually made up of a U S industry expert with years of experience in the industry, a pollution prevention specialist who is responsible for "guiding" the team, and two or more local consultants who are being trained to carry out these assessments on their own Often the industry experts are provided pro bono through the Coalition for International Environmental Research and Assistance, a member of the EP3 subcontractor team, or the Water Environment Federation, which has a separate cooperative agreement with USAID to support the EP3 project These teams generally spend one week in each facility, and produce a draft report before they leave Chile Leaving this initial draft report has been critical to the success in many facilities Managers are able to immediately receive recommendations contributing to their not falling into the out of sight-out of mind syndrome Final reports are delivered to the facilities in Spanish as soon as research is finished in the United States

During the assessments, EP3 teams in Chile look at discrete operational unit opportunities in polluting industries, work closely with plant managers to establish baseline measures, recommend financially attractive measures, and recommend measures for documenting improvements Each facility signs an MOU with EP3 agreeing to implement opportunities discovered during assessments However, in the first year of the project it became increasingly clear that simply conducting an assessment and making recommendations to facility managers was not sufficient to get them to implement the recommendations, regardless of economic benefits Even in those facilities that began implementation, small obstacles brought implementation to a halt

As a result, every facility receiving an EP3 pollution prevention assessment in Chile also receives follow-up implementation assistance for a full year or until implementation of recommendations is completed. Consultants are scheduled to visit the facility at least once each month with the first visit focused on developing an implementation plan for all recommendations resulting from the EP3 assessment. This approach not only provides the facility with needed support. It also provides the consultant with training in developing and following an implementation plan, including all the obstacles this entails.

### **Sustainability**

As outlined above, the EP3 project is directed toward developing both supply and demand factors that will allow providers of pollution prevention and clean technology services to support their efforts after EP3 funding has ended. Both formal and on-site training is provided to key audiences to develop delivery capabilities of local providers and develop the demand for provision of these services. Demonstration projects are conducted that provide providers with on-site experience and provide case studies illustrating the benefits of pollution prevention within the Chilean market.

As mentioned above, consultants trained by the project have already begun to deliver pollution prevention training and other services for a charge, independent of EP3 support. This is an indication of the beginnings of a future market for these services. Over the next 15 years, the EP3 project in Chile will continue to develop this market and train local Chileans as providers of pollution prevention services and technology.