200 IMPLEMENTATION INCENTIVES

Adopting a prevention paradigm requires change in individual and organizational behavior. While early adopters may be self-directed by principles of total quality management or corporate environmental stewardship, incorporation of pollution prevention into corporate decision making often occurs only after governmental intervention and mandatory requirements.

Four types of incentives to adopt pollution prevention are:

- verified efficacy of formulation and process changes,
- voluntary management standards,
- regulatory and enforcement actions, and
- publication of information.

201 VERIFICATION

Starting in October 1996, US EPA's Environmental Verification Program created a third party verification process to provide data to the coatings industry on materials and application methods that lower volatile organic compound (VOC) and hazardous air pollutants (HAPs) emissions. Surface coatings in the United States release approximately 43% of all VOC air emissions from industrial processes using solvents. This is more than 2.8 million tons per year which may be prevented by reformulation or process changes. Technological verification by US EPA, Office of Research and Development, promotes pollution prevention by providing third party data documenting efficacy for formulation and process changes.[1] (See http:/www.epa.gov/etv.) Additional data bases on solvent substitution can be searched by accessing the Envirosense Website at http:es.inel.gov.

202 VOLUNTARY MANAGEMENT STANDARDS

ISO 14000 is a set of management standards, not a numerical performance criteria. It was developed by the International Organization for Standardization (ISO) based in Geneva, Switzerland. A business voluntarily following this international standard is required to identify legal and other applicable requirements such as industry codes guidelines and voluntary agreements.

The organization then sets objectives (e.g. reduce air emission by 15% within one year), monitors actual performance, takes corrective action and after management review seeks continual improvement. A company may select and implement pollution prevention options as part of its ISO 14000 plan, as well as other pollution management practices such as recycling. Companies which pass a third party audit receive a certificate of compliance. Therefore, ISO 14000 can promote implementation of pollution prevention but does not require it.[2] (For more information, see http:www.epa.gov/owm/iso.htm.)

203 REGULATION AND ENFORCEMENT ACTIONS

The Clean Air Act is the comprehensive Federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes the U.S. Environmental Protection Agency to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. Under Title V of the Clean Air Act, stationary sources of air emissions may be subject to operating permit requirements. In order to encourage adoption of pollution prevention options, US EPA initiated a Title V Air Permit Pilot Project which offered industry permit flexibility as an incentive to project participants. As a result of this program, US EPA developed a model Clean Air Act Title V operating permit that incorporates both pollution prevention and permit flexibility for the Intel facility in Aloha, Oregon.[3]

As part of Project XL, Intel developed a multi-media environmental master plan at its Ocotillo, Arizona semiconductor facility. The final plan requires Intel to:

- reduce hazardous, solid and non-chemical hazardous waste,
- reduce fresh water consumption,
- use health-based guidelines for limits on emissions of hazardous air pollutants (HAPs),
- exceed zoning setbacks for its facilities, and
- maintain a cap on air emissions below the minor source level, even if a new facility is built on the site.

As part of this agreement, Intel will have the flexibility to:

- modify production processes without revising its air permits if emissions are below permit levels, and
- make operational changes if the total limit for air pollutants is not exceeded and the new emissions do not exceed health based guidelines.[4]

In addition to voluntary promotion of pollution prevention, government can require pollution prevention by legislative mandate, regulatory requirements and enforcement settlements. In California, one example of legislatively mandated pollution prevention is Senate Bill 14 (Statutes of 1989) which required that industries which generated threshold quantities of hazardous waste perform source reduction planning and publish reports.[5] (For more information, see http://www.dtsc.ca.gov/dtsc.htm.) At the national level, Maximum Achievable Control Technology (MACT) is a level of control that was introduced by Title III of the 1990 Clean Air Act Amendments to reduce emissions of Hazardous Air Pollutants (HAPs). The inclusion of pollution prevention in US EPA MACT standards is an example of promoting pollution via regulations. MACT information is available at http://www.epa.gov/ttn/uatw/eparules.html and http:www.epa.gov/ttn/oarpg/amend.html.

Enforcement can promote prevention of pollution. Lois J. Schiffer, Assistant Attorney General, US Justice Department wrote "When you talk to people in industry, they tell you that it is the possibility of enforcement, including criminal enforcement, that gets companies to spend money to prevent pollution."[6]

When enforcement is undertaken, pollution prevention can be incorporated into settlement agreements. US EPA has published a report which discusses this option and maintains a searchable database of Supplemental Environmental Projects which have been negotiated. [7]

204 PUBLICATION OF INFORMATION

Education and training programs bring information to sources and thereby promotes more extensive adoption of pollution prevention. Business assistance centers offer free or reduced cost consulting services. Over 30 states operate information clearinghouses and have some form of pollution prevention facility

planning program. In addition, there are at least 35 university based pollution prevention centers. Internet Web sites are repositories of free information for many of these programs. The Air Resources Board Web site provides numerous Internet links to site which post pollution prevention information. See "http://www.arb.ca.gov/html/pp.htm". The phone number for the ARB Business Assistance Center is 800-272-4572. Information on the Compliance Assistance Program (CAPs) publications as well as classes offered by the ARB Compliance Training Section is presented in 506 and 507.

205 REFERENCES

1. See http:/www.epa.gov/etv. Additional data bases on solvent substitution can be searched by accessing the Envirosense Website at "http:es.inel.gov".

2. For more information, see http:www.epa.gov/owm/iso.htm.

3. US EPA, Pollution Prevention 1997: A Nation Progress Report, Washington, D.C., 1997.

4. US EPA, Pollution Prevention 1997: A Nation Progress Report, Washington, D.C., 1997.

5. For more information, see http://www.dtsc.ca.gov/dtsc.htm.

6. The National Pollution Prevention Roundtable Fall Conference Proceedings, Washington, D. C., December 1995.

7. US EPA, Identification of Pollution Prevention (P2) Technologies for Possible Inclusion in Enforcement Agreements Using Supplemental Environmental Projects (SEPs) and Injunctive Relief, US EPA 300-R-001, Washington, D.C. March 199. See http://es.epa.gov/oeca/sep/ for more information.