Pollutant Release and Transfer Registers

A Pollutant Release and Transfer Register (PRTR) *is a tool that can augment government efforts to achieve integrated environmental management and promote pollution prevention. PRTRs are part of a new cooperative approach to environmental management involving governments, industry, and the public. All three groups can use the information generated in a PRTR to improve efficiencies, monitor environmental policy, initiate cleaner production, and reduce waste. Although this approach is now being implemented in several industrial countries, the relative novelty of PRTR means that the uses and benefits of these programs in developing countries are still unfolding.*[1]

A PRTR is an environmental database or inventory of potentially harmful releases to air, water, and soil, as well as of wastes transported to treatment and disposal sites. Facilities releasing one or more of the substances must report periodically on what was released, the quantities involved, and to which environmental media. Some PRTR systems include estimates of diffuse releases, such as those from transport and agriculture. Most national schemes make PRTR data available to all interested parties.

Several OECD members have established or are developing a PRTR system: Australia, Canada, the Czech Republic, France, the Netherlands, Mexico, Switzerland, the United Kingdom, and the United States. One of the earliest and best-known systems is the U.S. Toxic Release Inventory (TRI), which in 1993 included more than 23,000 industries. In September 1996, the European Union approved an amendment to the Integrated Pollution Control Directive requiring all member states to implement a pollutant emissions register. Each PRTR system is developed according to national (sometimes regional and local) goals and objectives, and no two systems are the same, even though many features are similar. Each PRTR responds to the conditions and priorities within the specific country. The design and operation therefore differ, but there are many commonalties between national PRTR systems.

What Are the Benefits of a PRTR?

Establishing a PRTR can lead to a number of benefits. However, it is important to note that governments, the private sector, and the public derive different benefits and uses from a PRTR system, and these depend strongly on the goals, objectives, design, and operation of the specific system.

Among the possible benefits are the following:

- A PRTR allows governments to develop environment strategies and identify priorities by providing baseline information about the pollution burden.
- It allows governments to monitor progress on achieving pollution or chemical reduction objectives and to identify trends over time.
- It helps firms identify material loss and stimulates more efficient use of chemical substances.
- It allows more informed participation of the public in environmental decisionmaking by providing the public with information about hazardous chemicals and potential risks in their communities.
- It can help identify priority areas for the introduction of technologies for cleaner production and provide indicators for monitoring the success of such approaches.
- It can provide information to help in planning for possible emergencies.

- It provides a template for environmental reporting under EMSs such as ISO 14000. (If industries have already implemented auditing, monitoring, and reporting systems this will greatly facilitate their ability to do PRTR work cost-effectively.)
- It complements active industry programs such as responsible care.
- It offers companies the opportunity to lead by example; providing release and transfer information can change the public's image of a company and its response to the company's activities and allow workers and the public to be informed about the pollutant releases in their local environment.

It is important to bear in mind that the benefits achieved through PRTR do involve costs. As might be expected, the costs are highest at the outset, when the reporting facilities must identify what data to report; the government needs to collect, collate, organize and disseminate data; and the public accesses the outputs of the PRTR system.

Experience of OECD member countries with operating PRTR systems indicates that the costs to government and reporting firms are incurred during the first and second reporting cycles. After this initial outlay, costs for collecting, reporting, and collating the information drop considerably.

Developing a PRTR System

Guidance Manual for Governments

Under the auspices of the International Programme for Chemical Safety, the UN organization with responsibility for the development of PRTRs, the OECD developed a guidance manual for governments wishing to implement a PRTR system. A series of workshops attended by representatives from governments, industry, and NGOs culminated in the development of a manual setting forth basic principles for developing a PRTR and presenting a set of options for implementing an effective system. The next section highlights key aspects of the guidance manual.

Basic Principles

Several basic principles underpin the establishment of an effective system. Governments wishing to implement a PRTR need to review and address each principle in the context of their own circumstances in order to develop a practical national PRTR system.

Use of Data

The PRTR data should be used to promote prevention of pollution at the source, e.g., by encouraging the implementation of cleaner technologies.

National governments should use PRTR data to evaluate the progress of environmental polices and to assess the extent to which national environmental goals are being or can be achieved.

Affected and Interested Parties

In devising a PRTR system, or when modifying existing systems, governments should consult affected and interested parties to develop a set of goals and objectives for the system, and to identify potential benefits, and to estimate the costs to firms that will have to report, to governments, and to society as a whole.

The results of the PRTR should be made accessible to all affected and interested parties on a timely and regular basis.

PRTR System Characteristics

- PRTR systems should cover a realistic number of those substances that may be harmful to humans or to the environment into which the substances are released or transferred.
- PRTR systems should involve both the public and private sectors, as appropriate. A PRTR should include those facilities or activities that might release or transfer substances of interest and, if appropriate, should also include diffuse sources.
- To reduce duplicative reporting, PRTR systems should be integrated to the degree practicable with existing information sources such as licenses or operating permits.

- Both voluntary and mandatory reporting mechanisms for providing PRTR inputs should be considered with a view as to how best to meet national goals and objectives.
- The comprehensiveness of any PRTR in helping to meet environmental policy goals should be taken into account. For example, whether to include releases from diffuse sources ought to be determined by national conditions and the need for such data.
- Any PRTR system should undergo regular evaluation and have the flexibility to be altered by governments in response to the evaluations or to the changing needs of affected and interested parties.
- The data handling and management capabilities of the systems should allow for verification of data entries and outputs and be capable of identifying the geographic distribution of releases and transfers.
- PRTR systems should allow, as far as possible, for comparison of information and cooperation with other national PRTR data systems and for consideration of possible harmonization with similar international data bases.
- The entire process of the establishment, implementation, and operation of the PRTR system should be transparent, objective, and consultative.
- PRTR data are valuable to the general public only if they are interpreted and presented in a way that is understandable for nonspecialists.

PRTR Design

A PRTR is an incremental process. Before embarking on the detailed design of a system, it is important to review national policy goals and objectives and then coordinate local and regional needs. As goals and objectives are developed, governments should ensure that the system is compatible with other key data systems in operation (e.g., a global information system, or GIS, that could help meet the primary objective of the PRTR). There are several key components to designing a PRTR, as listed in Box 1.

During the preparation of the OECD's PRTR guidance manual, a common set of data elements emerged that can be seen as the building blocks for a national PRTR information system. These elements are listed in Box 2.

Box 1. Key Steps in the Design of a PRTR

- Establish clear goals and objectives.
- Consult with interested and affected parties (stakeholders).
- Develop a list of potentially hazardous pollutants or chemicals.
- Define the scope of the system (who must report, to whom, how often, and so on).
- Define what will be reported (e.g., which pollutants or chemicals, point or diffuse sources, data to specify the location and type of facility, etc.).
- Analyze existing reporting requirements to identify how they can be used to attain PRTR objectives.
- Determine how claims of confidentiality will be handled.
- Develop data verification methods.
- Define resource needs for the program.
- Define a program review system that will allow updates and modifications to the system as it grows and advances.
- Formulate an information dissemination strategy.

Box 2. Common Set of Data Elements

- Name and address of reporting facility (and mailing address if different)
- Grid reference or latitude and longitude of reporting facility
- Activity identifier—e.g., Standard Industrial Classification (SIC) or four-digit International Standard Industrial Classification (ISIC) code
- Chemical name and identifier for each substance covered
- Amount released and amount transferred, in agreed units
- Time period covered by the report
- Claim for confidentiality for any of the data provided

The Case of Small and Medium-Size Enterprises

Frequently, SMEs make up 80–90% of all industrial establishments in a country. For example, in the European Union over 90% of all firms have

fewer than 50 employees. Many SME operations are releasing large amounts of potentially hazardous pollutants into the environment as a result of their daily operations.

Countries with operating PRTR systems have developed different methods of handling SMEs at different levels. For example, Canada and the United States both have a reporting threshold: firms with 10 full-time employees or more must report PRTR data. In addition, there are thresholds for quantities of toxic chemicals released. The United Kingdom requires SMEs to report if they fall into a specific process or production category. These countries use a much simpler form for reporting of releases and transfers by SMEs, i.e., requiring coverage of only a subset of substances.

Whether or not SMEs are required to report, the inclusion of SME figures is important for establishing a national profile of potentially harmful releases and transfers. If it is decided that SMEs are not required to report, estimates of SME releases should be included in the PRTR to provide a better representation of the national situation.

Future Work by the OECD

During 1997, the OECD Secretariat collected information on the costs to industry of reporting under different PRTR schemes. The OECD will be conducting a study of reporting firms to find out whether and to what extent a PRTR has affected pollution prevention or promoted cleaner technologies; to identify the costs of reporting under different PRTR regimes; and to analyze the role of a PRTR within the context of the EMS ISO 14000. Following the first phase of the study, in 1997, the OECD in 1998 held an international PRTR conference for governments, industry, NGOs, academics, and experts from around the world. The preliminary results of the 1997 study were one of the topics of the conference.

Note

1. This chapter is based on a discussion paper prepared by the Environment Directorate of the OECD.

Sources

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