

Unclassified

ENV/JM/MONO(2001)16



Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

06-Dec-2001

English - Or. English

**ENVIRONMENT DIRECTORATE
JOINT MEETING OF THE CHEMICALS COMMITTEE AND
THE WORKING PARTY ON CHEMICALS, PESTICIDES AND BIOTECHNOLOGY**

**ENV/JM/MONO(2001)16
Unclassified**

**OECD SERIES ON POLLUTANT RELEASE AND TRANSFER REGISTERS
Number 4**

**Why Pollutant Release and Transfer Registers (PRTRs) Differ:
A Review of National Programmes**

JT00118155

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

English - Or. English

OECD Environment, Health and Safety Publications

Series on Pollutant Release and Transfer Registers

No.4

**WHY POLLUTANT RELEASE AND TRANSFER
REGISTERS (PRTRs) DIFFER:**

A REVIEW OF NATIONAL PROGRAMMES

IOMC



INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS

A cooperative agreement among **UNEP, ILO, FAO, WHO, UNIDO, UNITAR and OECD**

**Environment Directorate
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
Paris 2001**

Also published in the Series on Pollutant Release and Transfer Registers:

Pollutant Release and Transfer Registers (PRTRs): A Tool for Environmental Policy and Sustainable Development. Guidance Manual for Governments (OECD/GD(96)32) (1996).

PRTR Series No. 1: Proceedings of the OECD International Conference on Pollutant Release and Transfer Registers (PRTRs). PRTRs: National and Global Responsibility. Tokyo, 9-11 September 1998. Part 1 (1999).

PRTR Series No. 2: Proceedings of the OECD International Conference on Pollutant Release and Transfer Registers (PRTRs). PRTRs: National and Global Responsibility. Tokyo, 9-11 September 1998. Part 2 (1999).

PRTR Series No. 3: Presentation and Dissemination of PRTR Data: Practices and Experiences, Getting the Word and Numbers Out (2000).

ABOUT THE OECD

The Organisation for Economic Co-operation and Development (OECD) is an intergovernmental organisation in which representatives of 30 industrialised countries in North America, Europe and the Pacific, as well as the European Commission, meet to co-ordinate and harmonise policies, discuss issues of mutual concern, and work together to respond to international problems. Most of the OECD's work is carried out by more than 200 specialised Committees and subsidiary groups made up of Member country delegates. Observers from several countries with special status at the OECD, and from interested international organisations, attend many of the OECD's Workshops and other meetings. Committees and subsidiary groups are served by the OECD Secretariat, located in Paris, France, which is organised into Directorates and Divisions.

The OECD began work on Pollutant Release and Transfer Registers (PRTRs) in 1993 as a follow-up to the United Nations Conference on Environment and Development. In co-operation with UN organisations and representatives of OECD Member governments, industry and the public, it prepared a Guidance Manual for governments considering the establishment of PRTRs. The Guidance Manual was published in 1996; a Recommendation on Implementing Pollutant Release and Transfer Registers was adopted by the OECD Council in the same year.

Environment, Health and Safety Publications appear in several series, including: **Testing and Assessment; Good Laboratory Practice and Compliance Monitoring; Pesticides; Risk Management; Harmonization of Regulatory Oversight in Biotechnology; Pollutant Release and Transfer Registers;** and **Chemical Accidents**. More information about the Environment, Health and Safety Programme (EHS) and EHS publications is available on the OECD's web site (see next page).

This publication was produced within the framework of the Inter-Organization Programme for the Sound Management of Chemicals (IOMC).

This publication is available electronically, at no charge.

For the complete text of this and many other Environmental Health and Safety publications, consult the OECD's World Wide Web site (<http://www.oecd.org/ehs/>)

or contact:

**OECD Environment Directorate,
Environmental Health and Safety Division**

**2 rue André-Pascal
75775 Paris Cedex 16
France**

Fax: (33) 01 45 24 16 75

E-mail: ehscont@oecd.org

The Inter-Organization Programme for the Sound Management of Chemicals (IOMC) was established in 1995 by UNEP, ILO, FAO, WHO, UNIDO, UNITAR and the OECD (the Participating Organizations), following recommendations made by the 1992 UN Conference on Environment and Development to strengthen co-operation and increase international co-ordination in the field of chemical safety. The purpose of the IOMC is to promote co-ordination of the policies and activities pursued by the Participating Organizations, jointly or separately, to achieve the sound management of chemicals in relation to human health and the environment.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	9
CHAPTER 1: INTRODUCTION AND CONTEXT	11
1.1 Introduction	11
1.2 Background	11
1.3 Approach	12
1.3.1 What is a PRTR?	12
1.3.2 Objectives of a PRTR	12
1.3.3 Basic characteristics	12
1.3.4 Guiding principles	13
CHAPTER 2: HOW DO PRTRs DIFFER?	14
2.1 PRTRs in operation	14
2.2 Designing a PRTR	14
2.2.1 Goals and objectives	16
2.2.2 Scope of PRTRs	16
2.3 Programme components	16
2.3.1 Definition of release and transfer	17
2.3.2 Chemicals covered by a PRTR	17
2.3.3 Who reports to a PRTR?	18
2.3.4 Reporting thresholds	18
2.3.5 Diffuse sources	19
2.3.6 Mandatory or voluntary reporting	19
2.3.7 Dissemination of data	19
2.3.8 Estimation techniques for quantifying releases and transfers	20
2.3.9 Temporal variations in the release of data	20
2.3.10 Confidentiality provisions	21
2.3.11 Source classification	21
2.3.12 General PRTR management	21
2.4 PRTR data elements	21
2.4.1 Additional information and data	22
2.5 Top-down <i>versus</i> bottom-up approach	23
2.6 Building a common framework for comparability	23
CHAPTER 3. GOALS AND HOW THEY AFFECT PRTR DESIGN	24
3.1 Drivers	24
3.2 Goals	24
3.2.1 Informing the public and workers – the public’s right-to-know	25
3.2.2 Monitoring policy and programme performance and targets	26
3.2.3 Voluntary pollution reduction and prevention	26

3.2.4	Other goals.....	27
3.3	Application of PRTR data.....	27
ANNEX 1: PRTR GUIDING PRINCIPLES.....		29
ANNEX 2: GOALS AND OBJECTIVES OF PRTR SYSTEMS.....		31

EXECUTIVE SUMMARY

All of the Pollutant Release and Transfer Registers (PRTR) programmes that exist today are based on the principles found in the OECD PRTR Council Act, yet each one is designed differently due to different national environmental needs, priorities and circumstances. Understanding the similarities and differences between national programmes can provide important insights into the operation and application of a PRTR. It will also help governments create PRTRs that will be more effective and meet the needs of all stakeholders.

This report reviews the key features of a PRTR programme, discusses how different drivers have influenced programme design, and explains why similarities and differences between PRTRs exist. It should be viewed as a reference guide for countries that are developing or modifying a PRTR.

Background

The final statement from the OECD 1998 PRTR Tokyo Conference “*calls upon the OECD in preparing the 1999 report to Council to provide an analytical description of existing and developing PRTRs, identifying key features that may contribute to success based on experience to date*”. While the report on Member country progress (ENV/EPOC(2000)8) describes existing and developing PRTR programmes, this report reviews in more detail the features, or components, that affect the application of different PRTRs. The actual success of PRTR programmes is not evaluated here as PRTRs are national programmes and their success can only be determined by how a country’s PRTR meets its own stated goals and objectives. However, this report does provide a description of each operating PRTR programme and identifies the key features or components of a PRTR that contribute to its success as an environmental policy tool.

Why PRTRs differ

The development and implementation of PRTRs can be considered as an important part of environmental policy. The specific scope and content of a PRTR, and how it is implemented, are driven predominantly by its goals and objectives. However, the goals and objectives are not the only factors affecting the design and implementation of a PRTR. Other factors include, *inter alia*, resources, scale of economy – types and size of industrial sectors, programme and register expertise, national policy priorities, geographic or political circumstances and environmental needs.

The reasons for establishing a PRTR vary from country to country. In general, they include: i) informing the public about chemicals released; ii) collecting integrated data (*e.g.* data from all environmental media) to track progress towards targets and indicate performance of environmental policies and strategies; iii) collecting release and transfer data as input for environmental policy-making and environmental programmes (*e.g.* chemical management, risk screening, *etc.*); and iv) encouraging voluntary action to prevent or reduce releases. Generally speaking, industry has been driven by government regulations to establish PRTR reporting mechanisms; however, concerns about performance, corporate image and gaining the confidence of the financial community are becoming increasingly important drivers for companies to establish a PRTR.

National PRTR programmes from eight countries were reviewed to identify the similarities and differences between programmes. While there are a set of key components that make up a PRTR programme, how each component is defined and implemented, and the reasons for these differences, is a key focus of this report.

These key components of a PRTR that are examined in this report are:

- definition of terms, in particular, *release and transfer*;
- chemicals covered by the PRTR;
- who is required to report;
- reporting thresholds;
- inclusion of diffuse sources;
- mandatory or voluntary reporting;
- dissemination of data
- estimation techniques used to quantify releases and transfers;
- temporal variations in the release of PRTR data to the public;
- confidentiality provisions;
- source classification; and
- general PRTR management.

This report is divided into three chapters. Chapter 1 provides information about PRTRs and describes the context of this report. Chapter 2 discusses how PRTRs differ. Chapter 3 presents the goals and drivers for PRTRs and describes how they affect the design of a national programme.

CHAPTER 1: INTRODUCTION AND CONTEXT

1.1 Introduction

This report examines an important aspect in the development of a Pollutant Release and Transfer Register (PRTR) system: why do the national programmes differ, what are the motivating factors for developing a PRTR, and how these affect the programme and system design. On the international level, this information can play an important role. As more and more countries develop a PRTR, questions are raised as to how and why systems differ across OECD countries. For example, it is often asked why the number of chemicals covered changes from one PRTR to another, or why some PRTR systems have different reporting thresholds or data dissemination practices.

Why PRTRs Differ: A Review of National Programmes responds to a request made by participants at OECD's 1998 PRTR Tokyo Conference. The OECD was asked to prepare a report that reviews the different goals and objectives of existing PRTRs and their results. It should complement *PRTR Implementation: Member Country Progress* [ENV/EPOC(2000)8] and the report made to the OECD Council in 2000.

This report, which is based on information provided by OECD countries¹, reviews the key features of a PRTR programme, discusses how different drivers have influenced programme design, and explains why similarities and differences between PRTRs exist. It should be viewed as a reference guide for countries that are developing or modifying a PRTR.

1.2 Background

Chapter 19 of Agenda 21 calls on governments, in co-operation with industry and the public, to implement and improve databases for chemicals, including inventories for emissions. It says that industry should provide data on substances released, specifically for the assessment of potential risks to human health and the environment. One environmental tool used to this end is a PRTR. This is a database or register of potentially toxic chemicals released to air, water or soil, or transferred off-site, listed by source.

In 1993, as a follow-up to the United Nations Conference on Environment and Development (UNCED), OECD countries asked the OECD Secretariat to prepare - in co-operation with UN organisations - a guidance manual for governments that are considering establishing a Pollutant Release and Transfer Register. A PRTR Guidance Manual for Governments was completed in 1996, the same year that an OECD Council Act on Implementing PRTRs was adopted.

1. In February 1999, a questionnaire was sent to OECD governments requesting information about the status of their PRTR systems. Responses to the questionnaire can be found in Annex 3: *PRTR Implementation: Member Country Progress*, ENV/EPOC(2000)8.

1.3 Approach

This study is based on information reported by eight Member countries (Australia, Canada, Ireland, Mexico, the Netherlands, Norway, the United Kingdom and the United States) in response to a questionnaire sent to them in 1999. This questionnaire requested information on PRTR programme implementation and progress. The experience reported by these eight countries span from two to twenty years.

1.3.1 What is a PRTR?

Before reviewing PRTR programmes in these OECD countries, it is important to first define what is a PRTR. Even though there are different ideas as to what constitutes a PRTR, in the OECD context and in tandem with the PRTR Council Act (1996), the following definition has evolved (see Box 1).

Box 1: Definition of a PRTR

A Pollutant Release and Transfer Register (PRTR) is a database or register of chemicals released to air, water and land, and wastes transferred off-site. Based on a list of priority chemicals, facilities that release one or more of the listed chemicals report periodically – usually annually – on the amount released and/or transferred and to which environmental media. Reported data are then made available to the public.

A PRTR is not an emission inventory *per se*: it is a system that brings together data on releases to all environmental media and transfers of chemicals off-site. A principal advantage of a PRTR over an emission inventory is that it provides consistent facility-specific data on the amount of a chemical that has been released or transferred to all media collectively and to each individual media. Government then makes these data widely available to the public. A PRTR adapted to national environmental priorities provides a means to track the generation, release, management and fate of a chemical over time. With this information a government can set priorities for reducing, or even eliminating, the most potentially damaging releases and transfers.

A PRTR is a national programme and it reflects a country's needs, conditions, environmental objectives and priorities. As countries, cultures and environmental conditions vary, so do the PRTR programmes in operation today. All PRTR programmes are based on different goals and objectives, therefore, their design and operation differ -- one size or design does not fit all.

1.3.2 Objectives of a PRTR

The main objectives of a PRTR are: 1) collecting and collating data on releases and transfers, by source, of potentially harmful chemicals to air, water and land, and of waste transferred off-site, 2) making these data available to the public, and 3) integrating data that are critical to governments for pollution prevention and chemical management programmes in one place.

1.3.3 Basic characteristics

Although PRTRs are designed to be country-specific, there are commonalities between the programmes – common characteristics that create the backbone of a PRTR system. These include:

- listing potentially hazardous chemicals;
- multi-media reporting (or integrated reporting) of releases to (air, water and land) and transfers;
- reporting data by source/facility;
- reporting on a periodic basis (usually annually); and
- making data and information available to the public, normally on a site-by-site basis.

1.3.4 Guiding principles

In the 1996 PRTR Council Act, the OECD identified the basic principles that should underlie the establishment of an effective PRTR system. These principles, which can be found in Annex 1, provide the broad framework for a national PRTR.

While these guiding principles are applicable to any PRTR, they are not meant to suggest that a single 'global' PRTR system is achievable or even desirable. Factors such as environmental priorities, experience in emissions inventories, available resources, political needs and environmental policies all have a critical influence on the specific goals and objectives that are set for a national PRTR and on the information that is collected. While similar principles and objectives underpin the national PRTRs that have been developed, there are differences in their specific requirements. These differences have implications for how PRTR data are used and the intended results. The next part of this report addresses more fully the basic components of a PRTR programme and how various PRTRs differ.

CHAPTER 2: HOW DO PRTRs DIFFER?

2.1 PRTRs in operation

When the OECD Council Act on PRTRs was adopted in February 1996, two countries—the United States and Canada—had PRTR programmes in operation that conformed to the guiding principles of the Act. Four other countries—Ireland, Norway, the Netherlands and the United Kingdom—had programmes under development or revision. Table 1 presents the status of PRTRs in OECD countries in 2000. It illustrates how countries are treating the different aspects of a PRTR system. (*NB:* The chart indicates that there were eight programmes in June 1999. From June 1999 until 2000, three additional countries have put a PRTR programme into operation: Japan, Korea and the Slovak Republic. Sufficient information, however, was not available to review these programmes for this report.)

2.2 Designing a PRTR

National PRTRs are designed to meet specific goals and objectives. Based on the OECD PRTR Guidance Manual for Governments (ENV/EPOC(96)32), there are several basic steps in the PRTR design process. These steps, while not necessarily sequential, represent the principal elements of the PRTR design process.

- Establish clear goals and objectives.
- Consult with interested and affected parties (stakeholders).
- Develop a list of potentially hazardous chemicals.
- Define the scope of the system: who must report, what will be reported, to whom, how often, *etc.*
- Define what will be reported, *e.g.* data from point and/or diffuse sources, name and co-ordinates of the facility, geographic description of the facility, latitude and longitude, *etc.*
- Analyse existing reporting requirements to identify how they can be used to attain PRTR goals and objectives.
- Define how claims of confidential data will be handled.
- Develop data verification method(s).
- Define resource needs.
- Develop a programme review system, *i.e.* facilitate updates and modifications to the system as it grows and advances.
- Formulate an information dissemination strategy.

Table 1: Summary of PRTR Development in OECD countries

This table is based on responses made by governments to the OECD PRTR questionnaire.
Operating systems as of June 1999 are highlighted in gray.

	<i>First year of data collection</i>	<i>Environmental media covered</i>	<i>Mandatory or voluntary system</i>	<i>Number of listed chemicals</i>	<i>Transfers offsite included</i>	<i>Reporting of public facilities</i>	<i>Diffuse sources included</i>	<i>Report cycle</i>	<i>Public Dissemination of full (raw) data</i>	<i>Public Dissemination of aggregated data sets</i>	<i>Pilot Study</i>	<i>Consultation with affected and interested parties on design</i>	<i>Site specific reporting</i>
Australia	1998	A,W,L	Mandatory	90	No	Yes	Yes	Annual	Yes	Yes	Yes	Yes	Yes
Austria¹	N/A												
Belgium Fl. (Air)	1993	Air	Mandatory ²	63		No	Yes	Annual	No	Yes	Yes	Yes	Yes
Belgium Fl. (Water)	1993	Water	Mandatory	162	Yes	No	No ³	Annual	No	Yes	No	No	Yes
Canada	1993	A,W,L	Mandatory	245	Yes	Yes	Yes	Annual	Yes	Yes	Yes	Yes	Yes
Czech Republic	N/A	A,W,L	Mandatory	N/A	Yes	Yes	No	N/A	No	Yes	Yes	Yes	Yes
Denmark	1989	Water	Mandatory	300	Yes	Yes	No	Annual	Yes	Yes	Yes	Yes	Yes
Finland	1988	A,W,L	Mandatory	50	No	Yes	No	Annual	No	Yes	Yes	No	Yes
Hungary	N/A	A,W,L	Mandatory	200-250	Yes	N/A	No	N/A	N/A	N/A	Planned	Yes	Yes
Ireland	1995	A,W,L	Mandatory	PER list ⁴	Yes	Yes	No	Annual	Yes	Yes	No	Yes	Yes
Italy	1995	Land	Mandatory		Yes	Yes	No	Annual	Yes	Yes	Yes	Yes	Yes
Japan	2001	A,W,L	Mandatory	354	Yes	Yes ⁵	Yes	Annual	No ⁶	Yes	Yes	Yes	Yes
Korea	1999	A,W,L	Mandatory	80	Yes	Yes	Yes	Annual	Yes	Yes	Yes	Yes	Yes
Mexico	1997	A,W,L	Both	191	Yes	Yes	No	Annual	No	Yes	Yes	Yes	Yes
Netherlands	1976 ⁷	A,W,L	Mandatory	180	Yes	Yes	Yes	Annual	Yes	Yes	Yes	Yes	Yes
Norway	1992	A,W,L	Mandatory	250	Yes	Yes	Yes	Annual	No ⁸	Yes	No	No	Yes
Slovak Republic	1998	A,W	Both	200	Yes	Yes	No	Annual	Yes	Yes	Yes	Yes	Yes
Sweden	N/A	A,W,L	Mandatory	N/A	N/A	N/A	Yes	N/A	N/A	N/A	Yes	Yes	Yes
Switzerland	2001	A,W	Voluntary	50	N/A	N/A	N/A	N/A	N/A	N/A	Yes	Yes	N/A
United Kingdom	1991 ⁹	A,W,L	Mandatory	183	No	Yes	Yes	Annual	Yes	Yes	No	Yes	Yes
United States	1987	A,W,L	Mandatory	643	Yes	Yes	No	Annual	Yes	Yes	No	Yes	Yes

A,W,L – Air, Water, Land

N/A – Not available or not answered

1. No PRTR or plans to develop a PRTR at this time

2. Started in 1980 as voluntary; since 1993, it is mandatory

3. Waste Register

4. Available through Republic of Ireland EPA, P.O. Box 300, Johnstown Castle Estate, Co. Wexford, Ireland

** Since June 1999, programmes were initiated in Korea, Japan and the Slovak Republic.

5. Planned

6. To be provided when requested

7. 1999 for new system

8. In 2000, data will be available on Internet

9. 1998 for new system

2.2.1 Goals and objectives

The goals and objectives of a PRTR play a paramount role in how the system will be designed. As PRTRs are national systems, their goals differ, ranging from public right-to-know to measuring specific environmental programme progress (see Annex 2 for a listing of goals and objectives as reported by OECD Member governments in the 1999 PRTR questionnaire). For example, PRTRs with the primary goal of public right-to-know might list a broad range of potentially toxic chemicals from a large number of sources, and there is usually active dissemination of data through a variety of communication methods. PRTR systems whose goal is to measure progress of specific environmental policies are more likely to include only chemicals that are specifically noted in law or other measures. These data may or may not be actively disseminated to the public, or may only be made accessible as reports containing aggregated data.

2.2.2 Scope of PRTRs

The specific goals and objectives of a PRTR programme will define its scope. That is, the goals and objectives will define parameters such as what data will be collected and data quality, and which chemicals and industrial sectors will be included. These parameters will also define how the PRTR system will be designed and implemented.

2.3 Programme components

OECD countries have developed PRTR programmes that take into account national environmental goals, priorities and circumstances, and so these programmes vary considerably from one country to the next. When developing a PRTR, the basic components for which each country will need to make country-specific determinations are:

- definition of terms, in particular, *release and transfer*;
- chemicals covered by the PRTR;
- who is required to report;
- reporting thresholds;
- inclusion of diffuse sources;
- mandatory *or* voluntary reporting;
- dissemination of data;
- estimation techniques used to quantify releases and transfers;
- temporal variations in the release of PRTR data;
- confidentiality provisions;
- source classification; and
- general PRTR management.

The approach that a country chooses for each of the components listed above is dependent not only on the goals and objectives of the PRTR, but also on national circumstances and conditions such as resources, expertise and the degree of accuracy required in PRTR data. In practice, these components are interdependent. For example, a country may decide to collect information on chemicals such as dioxins and

furans, for which a very low threshold is required to obtain sufficient data. It is also the case that countries adopt different solutions for dealing with these PRTR components and general relationships linking them cannot be drawn. The approach adopted in this report is to consider each of the basic PRTR programme components individually. The remainder of this section will focus on how different countries implement the various PRTR components.

2.3.1 Definition of release and transfer

The way in which *releases* and *transfers* of chemicals are treated varies between operating PRTR systems. In general, *releases* to air, water or land are defined in a similar manner in all countries with only slight variations. All programmes reviewed here include releases of particular chemicals to each of the three environmental media. Some countries, however, further speciate air releases, water discharges and land releases. The PRTRs reviewed contain integrated data for each chemical reported, *i.e.* releases to air, water and land.

There is, however, limited consistency among national PRTRs when it comes to the breadth and definition of *transfers*. For instance, views differ on whether reporting should be required on the removal of certain chemicals in wastes from the place of generation to a recovery operation, treatment or storage or disposal facility (off-site), whether potentially harmful chemicals in products should be reported. For instance, Canada, which originally only collected quantities of chemicals transferred off-site for disposal and treatment, began collecting in 1998 the quantities of chemicals transferred off-site for combustion for energy recovery and recycling.

In addition to collecting data on the quantities of chemicals transferred off-site for treatment, disposal, combustion for energy recovery and recycling, the United States collects data on the quantities of chemicals in waste treated on-site, combusted for energy recovery on-site and recycled on-site.

The manner in which *releases* and *transfers* are reported for a PRTR differs as well. Transfers off-site may be included as a separate reportable category within a PRTR or combined with other releases. The consequence is that certain releases and/or transfers may not be easily identified in the reported data.

How releases and transfers are defined also has implications for the type of release estimation techniques that may be used. Specific definitions of release and transfer could effect the type of technique that could be selected for use (*e.g.* mass balance in lieu of emission factors)

2.3.2 Chemicals covered by a PRTR

The number of chemicals and the specific chemical species covered by PRTRs vary significantly. The reasons include: differences in national priorities (*e.g.* what chemicals are already regulated under other programmes and what potentially toxic chemicals are of public concern); the economic activities in a country; and the degree of maturity of the PRTR system (it is generally the case that PRTR reporting lists are extended or modified over time).

National programmes linked to a particular regulatory programme, such as the Irish Integrated Pollution Control (IPC) license or the Norwegian licensing programme, INKOSYS, include those chemicals that are regulated under the license. For instance, in Ireland, chemicals regulated under the integrated pollution control law are reported. Under the Norwegian system, "any release of significance" must be reported by the licensed facility. PRTR programmes with the principal objective of informing the public -- or public right-to-know -- may need to address both national and local priorities and cover a broader range of chemicals. If the main concern of the PRTR is tracking the release of priority chemicals from only large

sources, as in the Netherlands, then only large point sources will need to report. Some PRTRs require reporting on chemicals within a category (*e.g.* lead and compounds), based on the hazard around which the category is formed, while other PRTRs may require reporting on individual chemical species. A common example is the range of definitions used for volatile organic compounds (VOCs).

2.3.3 Who reports to a PRTR?

Point sources, such as factories or industrial facilities of a certain size, report under a PRTR. However, the reporting requirements and thresholds regarding the size of the facility and its type of economic activity generally differ from country to country.

With respect to publicly owned and/or operated facilities, most PRTRs require that they report releases and transfers like private facilities. The inclusion or exclusion of such facilities could affect the utility of PRTRs for public policy decision-making. All countries with a PRTR require public facilities to report.

Small and medium-sized enterprises (SMEs) often report to a PRTR programme. Under some PRTRs, such as the Netherlands, SMEs are included as a diffuse source (see section 2.3.5).

2.3.4 Reporting thresholds

Reporting thresholds are specified to determine who reports to a PRTR and what is reported. Reporting thresholds are generally designed to exclude smaller businesses and to capture the main sources of the targeted chemicals in order to ensure that a large percentage of all releases are represented in the estimates.

Countries use different kinds of reporting thresholds. Thresholds are usually based on the number of employees at a reporting facility and/or the amount of chemicals produced, processed or used, however, the quantitative value may differ. There are also likely to be exemptions, *e.g.* by industry sector or based on a *de minimis* threshold. Due to threshold variations, similar sources in different countries may not have the same reporting requirements.

Careful consideration is needed when deciding on the proper level for a threshold as they could be set too high to capture chemical releases or transfers that are, for example, known carcinogens, because they are released at below threshold levels. This could present some complicated issues for national governments. The United States and Canada have recently lowered their reporting thresholds for persistent bio-accumulative chemicals. Other countries are considering similar modifications in efforts to remedy this issue.

In most OECD countries, small and medium-sized enterprises (SMEs) are a significant source of releases and will usually fall below a PRTR threshold. Obtaining reliable and complete PRTR reports from SMEs can be difficult due to their lack of resources, lack of expertise in release estimation, and even lack of knowledge of what specific chemicals are contained in feedstocks, products and releases. Depending on the goals and objectives of the PRTR, SMEs may be exempt from reporting requirements through established reporting thresholds. However, government agencies may calculate emissions from such sources (*e.g.* as aggregated emissions) or assistance may be provided to enable SMEs to report. Some countries (for example the Netherlands) consider SMEs to be a diffuse source and calculate releases accordingly. These data are then factored into the national summary.

2.3.5 *Diffuse sources*

Some countries supplement the information provided by reporting facilities (or point sources) by estimating releases from diffuse sources, such as transportation, commercial activities, agriculture and households. Both the Netherlands and Australia include estimations of releases from SMEs and other diffuse sources. Australia collects such data from their States and Territories, while the Netherlands makes estimates at the national level. In other countries, the release estimates in a PRTR are limited to industry (or point source) data.

The inclusion or exclusion of non-point sources represents a particular issue in areas where these sources make a significant contribution to total pollutant loads. For example, in urban areas motor vehicles are a major source of pollutants such as oxides of nitrogen and carbon monoxide. This issue can affect the relative environmental policy decisions to be made.

2.3.6 *Mandatory or voluntary reporting*

The majority of PRTRs involve mandatory reporting for point sources based on reporting thresholds or other criteria. Over time, those countries that began with a voluntary PRTR reporting programmes have changed to mandatory reporting. Officials have often noted that mandatory requirements tend to provide more consistent and valid reported data. It has also been frequently noted that when reporting was changed from voluntary to mandatory, the reporting ratio increased significantly. Mexico is the only country with a *mixed* PRTR programme: a voluntary programme for a number of chemicals of concern and mandatory reporting for a few priority air contaminants.

2.3.7 *Dissemination of data*

The dissemination of data is a crucial aspect of any PRTR. There are several elements in data dissemination. One is whether the data are actively or passively disseminated. Active dissemination means using many methods of communication to put the data out to the public, whereas passive dissemination means, for instance, making the data available only if a request is made.

The type of data disseminated is also an important element. For example, are data disseminated on a facility-specific basis, by geographic area, or by political boundaries (*e.g.* by county or prefecture). Another element in data dissemination is whether summary sets of data, or full sets of reported data, are disseminated. For example, the United States and Canada actively disseminate full data sets through a variety of media, ranging from national journals to the Internet. Other countries, such as Norway, have just begun placing collected data on the Internet. Mexico provides a summary of release data, collated on a county-to-county basis.

The methods of communication used by OECD countries to disseminate PRTR data are widespread. Data are placed on the Internet, on micro-fiche in local libraries, in journals and newspapers. (For more information on OECD Member country dissemination practices, please refer to the OECD document, *Presentation and Dissemination of PRTR Data: Practices and Experiences*, ENV/JM/MONO(2000)17.)

Another important element of data dissemination is the integration of the data with geographic mapping systems to provide—in addition to facility, or site, specific data—a geographic representation of releases. Most countries with operating PRTR systems have combined data with a geographic mapping system. The releases and transfers of pollutants can be tracked by site address, postal code or other factors, such as country or region. This gives users an extra tool for understanding the distribution of releases and transfers in their local area.

2.3.8 Estimation techniques for quantifying releases and transfers

The type of release estimation techniques used influences the manner in which PRTR data can be utilised and the credibility of the data provided in a PRTR. There are many issues associated with the selection and application of release estimation techniques and the implications this has for the data reported in a PRTR. Key issues include the trade-offs between accuracy and cost, and whether techniques are prescribed by the government to be used or in cases where techniques are not prescribed, if an appropriate technique exists. These issues are briefly discussed below.

The accuracy of release estimates is a fundamental consideration for any PRTR system. However, given that increased costs are inevitably associated with increased accuracy, governments need to decide how much accuracy is necessary to achieve their specific PRTR goals and objectives. For example, the objectives of a PRTR programme may be to support regulatory actions and provide the basis for related emission or licensing fees. In such situations, accuracy will be important for regulated facilities.

Another objective of PRTR programmes may be to provide the public with information about releases and transfers of chemicals, track changes over time, or assess the effects of various other regulatory programmes. In this type of PRTR programme, changes and trends may be expressed on a relative basis, and the consistency of the method used over time may be as important as accuracy. The collection and evaluation of release estimates, based on relatively simple and inexpensive methods, can often be used to clarify the problems posed by chemical releases and to define priorities for future improvements of the PRTR programme (*e.g.* improving release estimation techniques for the most important sources).

When reviewing PRTR data, it is important to understand the kind of accuracy that has been specified for the PRTR. If high quality release estimates can be obtained from release factors or simple calculation models, then these techniques should be considered whenever possible. This is particularly important in PRTR programmes that are just starting up.

2.3.9 Temporal variations in the release of data

An important feature of a PRTR is the consistency and timeliness of data releases *i.e.* the data disseminated should be recently derived and the timing of the data release should be relatively consistent with respect to the reporting cycle. All operating PRTRs require data to be reported on an annual basis, and the release estimation techniques that have been developed for PRTRs aim to produce emissions data that are reliable over this time period.

Annual reporting tends to provide valid and consistent data. Longer reporting periods, for example every three years, can result in the most recent data being up to five years old. This could cause problems for the public, government and industry. An example is a facility that reports 100 000 kilograms of releases for one reporting year *e.g.* 2000 and the data is made available several years later *e.g.* 2003. However, between the date that the data was reported and the date the data were made available, the facility took action to reduce releases 50 per cent. In such cases, data indicating action to reduce release will not be made publicly available until several years after the investment and action took place. This could create an unfair disadvantage for reporting facilities.

The timing of the PRTR data release to the public is of utmost importance. Releasing data years after the chemicals were emitted diminishes the overall value of the data. As PRTR systems mature, it is likely that national governments will be able to collate and disseminate the data more rapidly. As an example, in Canada, the 1999 PRTR data, for which reports were due to the government in April 2000, was released in December 2000.

2.3.10 Confidentiality provisions

Commercial confidentiality is an important consideration in PRTR design. Industry needs to be protected in cases where publication of information regarding their releases and transfers of chemicals could have an impact on their commercial viability. The importance of commercial confidentiality has impelled governments to define what constitutes confidential data during the PRTR design phase. Commercial confidentiality usually concerns the chemical identity of releases.

PRTRs in operation have defined processes for making, reviewing and dealing with confidentiality claims. Each PRTR programme has developed a different definition and provision for confidentiality that are in accordance with national commercial confidentiality laws. Under most PRTR systems, a company is obligated to provide proof to justify its commercial confidentiality claim. Some governments make all the data available except the identity of the chemical, which can be claimed as a trade secret. In some PRTRs, potentially confidential data are treated as aggregated or diffuse releases so that the release cannot be directly attributed to a specific facility or source. Experiences of countries with a PRTR indicate that there are relatively few applications for confidentiality protection each year.

2.3.11 Source classification

OECD countries have adopted different definitions for the sources that are included in a national PRTR. The three North American countries have developed the North American Industrial Classification System (NAICS). European countries use the Nomenclature for Source of Emissions (NOSE) and Nomenclature for Economic Activity (NACE) systems, while other countries, like Japan, have a national system for classifying sources or economic activities. The end result is that not all activity codes correspond to the ISIC (International Standard Industrial Codes) or to a similar international “base” system. Consequently, there are variations in the specific scope of some of the activities covered and on the sources that are to report PRTR data. Furthermore, direct comparisons between sectors or activities may not be possible due to the variation in the scope of activities covered and in the sources (point/fugitive).

2.3.12 General PRTR management

The processes that a government uses to review and validate reported data, respond to errors, and integrate results into a database all affect the reliability and usefulness of the reported data. The management of the PRTR, and the processes used, are linked to the goals and objectives of the PRTR as well as to the perceived use of the data. For example, in newly implemented PRTRs, the emphasis of data management may be on ensuring that all facilities that are required to report do so, whereas in mature PRTR systems greater emphasis is likely to be placed on the actual data reported.

In addition, for newly implemented PRTRs, release and transfer estimation methods (*e.g.* emission factors) that rely primarily on readily available data sources are generally used. This is to be expected, and can even be considered the norm, as the results of the first year or two of estimates will reveal important insights into the nature of the releases. This information also can help government and industry establish priorities for improving the release and transfer estimations for the most critical sources and pollutants.

2.4 PRTR data elements

Once the goals of the system are set and the components have been selected, the data reporting elements will have an affect on the structure of the PRTR. Through the preparation of the *OECD PRTR Guidance Manual for Governments*, a common set of data reporting elements emerged that are central to the data

handling and management function. They are of strategic importance for governments seeking to someday have data systems that will be comparable to other national systems (e.g. such as those used in economic trade zones like NAFTA or the European Union). Box 2 summarises the common set of data reporting elements that are used in the PRTRs reviewed for this report.

While there is a common set of data reporting elements, most PRTRs use different types of systems for characterising a specific reporting element. For example, as discussed under section 2.3.11, an activity identifier can be a specific internationally accepted source code, a regional code, or a national code.

Box 2: Common Set of Data Reporting Elements

1. Name and address of reporting facility (name of parent company if different and mailing address if different, and e-mail address).
2. Latitude and longitude of reporting facility.
3. Activity identifier, e.g. NACE, or 4 digit ISIC code.
4. Chemical name or identifier (e.g. C-A-S, IUPAC).
5. For each chemical, the amount released to each environmental media and the amount transferred off-site, and the total amount released and transferred in agreed units.*
6. Period covered by the report.
7. Additional elements may include unique facility identifier, name and details of how to reach a contact person at the facility, and the signature of an authorised official who filed the PRTR report.

* For data claimed as confidential, generic data should be submitted to the PRTR

2.4.1 Additional information and data

Any data additional to the basic data reporting elements listed above will depend on the specific objectives of the PRTR and on other environmental policy and vary across programmes. For example, there may be an interest in understanding the contribution of releases to environmental concentrations of various substances. Reporting facilities may be requested to provide information on releases from specific sources (e.g. stacks) on specific release conditions (e.g. flue gas velocity), or on temporal variations in emissions. In other instances, such as those in Canada, the Netherlands and the US, facilities are requested to provide information on environmental improvement measures, reduction targets or on the release estimation techniques that are being used.

Governments obtain additional data from other sources to complement the PRTR data and provide more details about the reported releases and transfers. For example, licensing conditions, diffuse source data (e.g. transport), potential risk or exposure information, or other regulatory reporting requirements are sometimes provided or combined with the PRTR data. These data can be instrumental in providing a broader picture of the environmental burden of the pollutant releases and transfers for a geographic region.

2.5 Top-down versus bottom-up approach

The final process in designing a PRTR is selecting the approach for estimating releases from sources. The process usually used by policy makers for getting the *big picture* or used in *screening* studies is known as the *top-down* approach. The process that is used by specific facilities to obtain detailed emissions estimations is known as the *bottom-up* approach. The type of approach taken will depend on the goals and objectives that have been set for the PRTR.

The top-down approach is often applied for diffuse source inventories to produce national or regional estimates. Emission factors, or national- or regional-level emissions estimates, are used to estimate emissions in a state or country based on a surrogate parameter, such as population, sales data from products, or employment in a specific sector. For instance, programmes in the Netherlands, Canada and Australia include diffuse source data derived from statistical and other information.

The bottom-up approach involves estimating emissions for individual sources on a facility-specific level. Typically this approach is used to collect data from point sources. It generally requires more resources than the top-down approach to collect site-specific information on emission sources and activity levels. However, the use of the data and the accuracy desired will influence the approach used.

2.6 Building a common framework for comparability

While PRTRs are national programmes and their success can only be judged by how they meet the goals and objectives set forth in each PRTR programme, the differences between these programmes have some implications at the international level.

The primary consequence of variations between PRTR systems is the limited potential this provides for direct comparisons between countries. Governments seeking to share data on a regional basis should take into account the necessity to use certain data reporting elements to ensure that data and information can be compared. Basic data elements include: the use of specific chemical identifiers, such as C-A-S or IUPAC chemical identifiers; the use of similar source classification codes like ISIC; common units of weights and measures (kilograms, tonnes, *etc.*); agreed measuring and estimation techniques; and the time period covered by the report.

At this time, direct comparisons between all programmes reviewed in this report could only be made if reported data was aggregated on a national basis. Another more promising option would be to modify data reporting elements and components to be more consistent between countries (NB Canada and the US are able to compare data on a facility-specific basis due to similar programme components. For example, these two countries are able to compare information about the transfer of chemicals in waste because both collect quantities of chemicals transferred off-site for disposal, treatment, combustion for energy recovery and recycling.). This type of harmonisation is being seen in certain emissions inventories (most notably in national greenhouse gas emission inventories and in some of the inventories developed for assessing and managing transboundary pollution). Generally speaking, the international inventories that are most closely harmonised contain a limited number of substances (*e.g.* the six greenhouse gases covered by the UN Framework Convention on Climate Change) or substances that have been the traditional subject of regulatory programmes (*e.g.* oxides of nitrogen, oxides of sulphur). In contrast, PRTRs deal with a few to over 600 substances, and many of these have limited or no monitoring data available for estimating releases. Nonetheless, in designing or modifying a PRTR, governments may wish to consider ways to increase the value of their data by making components in their system more comparable with systems in other countries or regions of interest.

CHAPTER 3. GOALS AND HOW THEY AFFECT PRTR DESIGN

Chapter 2 of this report described the basic components of a PRTR and how they can differ from one country to the next. This chapter describes the drivers for PRTR development, examines different PRTR goals, and highlights how they affect the way a PRTR is designed.

3.1 Drivers

The factors driving governments to establish a PRTR vary from country to country. In general, four sets of interrelated factors can be identified: i) informing the public about chemicals released; ii) collecting integrated data (*e.g.* data from all environmental media and transfers) to track progress towards targets and indicate performance of environmental policies and strategies; iii) collecting release and transfer data as input for environmental policy-making and environmental programmes (*e.g.* chemical management, risk screening, *etc.*); and iv) encouraging voluntary action to prevent or reduce releases. In the private sector, concerns about performance, corporate image and gaining the confidence of the financial community are becoming increasingly important drivers for establishing PRTRs.

While these can be considered as the key drivers that affect PRTR design, each programme has developed and evolved differently. As previously mentioned, national priorities, conditions and circumstances will affect the design of a PRTR. For example, the Netherlands initially began collecting air and water emission data as input for policy decisions and to monitor progress towards targets set in their national policy plan. Canada developed their system to encourage voluntary action, monitor progress and inform the public about pollutant releases and transfers. Ireland began their programme as a way to track the fate and transport of certain chemicals in association with their integrated pollution control permit programme.

3.2 Goals

The goal or combination of goals for a PRTR will also affect its design. The following subsections describe the primary goals for PRTR programmes, as listed by OECD countries, and explain how a particular goal can affect the design of the PRTR. While (for the purposes of this report) each goal is treated separately here, it should be borne in mind that it is the combination of goals that ultimately define how a PRTR is designed and implemented.

The goals of a PRTR are usually based on the drivers and thus there is some similarity in meaning. Drivers are considered as the motive behind the establishment of a PRTR and the goals are considered as the overarching aim of the PRTR. For instance, in the US, the driver was to provide the public with information about the releases and transfers of potentially toxic chemicals from a specific site. This came about after a series of accidents at chemical production facilities, whereby it was found that neither the public living around the plant, nor the workers, had any information about what types of chemicals were being released into the air, water or soil. Hence, the principal goal of the US PRTR is the public's right to

know about what is being released into the environment, transferred off-site from a particular industrial site for further waste management, or managed on-site (See Box 3).

3.2.1 *Informing the public and workers – the public’s right-to-know*

A major role of PRTRs is dissemination of data to the public. Programmes inform the public about releases and transfers of chemicals while at the same time stimulating firms to take action to reduce releases. A primary goal of the Australian, Canadian, UK and US PRTR systems is to inform the public and workers of potentially toxic releases and transfers. The political will and the desire of the public to know about the chemicals that are released and transferred in their environment are considered to be the key drivers in PRTR programmes focusing on public right-to-know. It is believed that integrated, multi-media data ensures that the public has a comprehensive picture of how, and by what amounts, a chemical enters the environment and from which sources.

Box 3: Public Right-to-Know

The US PRTR programme was created as a result of a public right-to-know law. After the chemical explosion at a production plant in Bhopal, India, in 1984 and a smaller, but similar, explosion the next year in West Virginia, the U.S. Congress passed a law in 1986 to help communities better plan for such chemical emergencies. A primary objective of this law was to provide the public with information about the presence of hazardous chemicals at local industrial plants. In addition, the US Congress included a provision that industrial plants should provide the public with information about releases and certain other waste management activities involving toxic chemicals, thus establishing the US Toxics Release Inventory (US TRI).

While the establishment of the US TRI was not the initial focus of the public right-to-know law, it has proven to be one of the law's most significant accomplishments. The principle that the public should have access to information about toxic chemicals present in their communities was the main driver to influence the design of this PRTR.

Establishing public right-to-know as a goal affects PRTR programme design in several ways. First, it influences the number and types of chemicals that are included. Chemicals viewed as potentially toxic are usually listed and this list may be larger than those of PRTR programmes designed solely to meet specific regulatory requirements. Second, geographic representation of the data is an important part of PRTRs with the principal goal of public right-to-know. Third, various techniques may be used to estimate release and transfers in addition to monitoring data. This is in contrast to programmes whose purpose is to track compliance with permits and may rely exclusively on monitoring. Fourth, the public’s desire to know about the releases and transfers of potentially polluting activities in their local area or region influences the number and types of sources and activities that are included in PRTRs. In addition, the public may wish to have information for which other reporting elements may need to be added, such as which pollution reduction actions have been taken or what amount of waste has been transferred off-site. (Such information may or may not be required.)

With a public right-to-know goal, the timing of data releases is important. Generally speaking, the public wants to be informed before the data are *out of date*. For the PRTR systems in operation, reported data are usually released within 1.5 years after the reporting year has been completed.

Effective dissemination practices are critically important when public right-to-know is the principal goal of a PRTR. Making data widely available, through many different media, is an important element of any public right-to-know programme. Moreover, data should be accessible and available free-of-charge, or at a

minimal cost. As a result, dissemination and data presentation methods play a significant role in how PRTR systems are designed and operated.

3.2.2 *Monitoring policy and programme performance and targets*

Some governments have developed a PRTR to obtain valid and consistent data to monitor targets set forth in national (and international) environmental policies and strategies. In the Netherlands, the emission inventory system began as a means to collect emissions data to indicate policy performance and progress towards targets set in their original National Environmental Policy Plan (NEPP). Other countries use their national programme to similar ends. For instance, in Ireland, the Pollutant Emissions Inventory is used to track the releases and transfers of major pollutants, providing information on the material flow of chemicals in a facility and in assessing policy performance and identifying priorities for environmental policy-making. Canada uses PRTR data to monitor environmental policy and programme progress and to support targeted regulatory initiatives.

When PRTR goals focus, at least initially, on monitoring policy and programme performance, the number of chemicals and sources covered tends to be limited to those under regulation. Special information may need to be reported to ensure sufficient information is available to indicate if the target is being met and how well a programme is performing (*e.g.* by how much a certain type of chemical release is being reduced per year). Diffuse source data are usually included in PRTR programmes for which monitoring policy and programme performance is a stated goal. This helps to get a sense of the overall pollution load of a given chemical.

With respect to national programmes designed to provide data required for licensing agreements (*e.g.* as in Norway and Ireland), the goal of these programmes is to fulfil regulatory requirements and, second, to provide data to the public. They may have more data and information requirements than PRTRs in other countries and may require certain types of monitoring or estimation techniques. Typically, only point sources are included and the type and number of chemicals listed are directly related to the legal requirements. Sources covered by this kind of PRTR are generally those that operate under the licensing agreement.

3.2.3 *Voluntary pollution reduction and prevention*

Under some operating PRTRs, voluntary reductions of chemical releases and transfers are cited as a goal. Encouraging voluntary action by reporting facilities can affect the design of a PRTR in terms of the chemicals that are covered, the types of facilities that report, and the type of data that is collected (*e.g.* production/activity ratios, source reduction actions and pollution prevention targets). Details on transfers off-site or on-site and waste management information are often also included. Collecting and making this data publicly available have stimulated voluntary actions to reduce releases and waste. PRTR programmes in which voluntary action to reduce or prevent pollution is a goal nonetheless have mandatory reporting requirements.

PRTRs are valuable tools for tracking pollution prevention efforts. The multi-media releases and transfer data collected by a PRTR allows for a more thorough picture of how a facility manages each chemical. Integrated release and transfer data highlights whether reductions in the releases of a chemical to one environmental medium are real or whether those releases are shifted to another environmental medium, such as transfers off-site for disposal. For example, the 1997 US PRTR data showed an increase in the transfers off-site for disposal of certain heavy metals. By calling the facilities that reported these increases, it was found that a metal recycling facility had raised its prices, causing the reporting facilities to shift from recycling to disposal.

Voluntary challenge programmes such as the US EPA 33/50 programme or Canada's ARET are excellent ways to bring about voluntary reductions for specific chemical releases. They can complement a mandatory PRTR programme, and the PRTR can provide a tracking and verification mechanism for indicating progress the voluntary action programme is making.

Some PRTR programmes require that the reporting form submitted to government be signed by a company official. This requirement has helped to stimulate voluntary reductions. The reasons are twofold: first, the official must take responsibility for the data that have been reported and brought to his attention. Releases and transfers of chemicals are often translated into wastage, or material loss, thereby inciting company officials to initiate voluntary programmes to decrease losses and/or improve public relations. Second, many company officials have noted that they were unaware that the releases and transfers in their facilities were as high as indicated by the data reported to the US TRI and the Canadian NPRI. This then spurred action and budget allocations on their part to reduce releases and transfers. This concept is similar to the content of environment management systems, which seek to elevate awareness of environmental issues to the management level.

3.2.4 Other goals

Sections 3.2.1 to 3.2.3 describe the three primary goals of operating PRTRs. However, other PRTR goals that are cited by OECD countries include the need for release and transfer data as input to risk reduction and screening programmes as well as for environmental planning or strategies, and the desire to simplify or harmonise reporting requirements for different environmental media within a country. These goals are generally coupled with one of the three principal drivers therefore affecting the design of each system. The combination of goals selected for a PRTR directly affects the design and implementation of the programme's components, such as the number and type of chemicals that are selected, or the reporting thresholds that are set (by activity, number of sources, or facility size).

3.3 Application of PRTR data

Applications of PRTR data in countries with operating PRTRs are summarised in Table 2. This Table illustrates how PRTR data can be used to meet specific goals and objectives, and influence how the PRTR system is designed initially or modified over time. While all applications have ancillary effects, Table 2 aims to illustrate their more direct influences on PRTR design.

Table 2: Applications of PRTR Data

Goal	Country	Area of Application
Public right-to-know	Australia, Canada, Ireland, Mexico, Netherlands, UK, US	<ul style="list-style-type: none"> • Providing the public with release and transfer data of sources and chemicals covered by the PRTR • Encouraging involvement of the public in environmental decision-making and action • Assisting with emergency planning • Providing input to community planning
Voluntary pollution prevention and reduction, and cleaner production	Australia, Canada, Ireland, Mexico, Netherlands, Norway, UK, US	<ul style="list-style-type: none"> • Promoting pollution reduction and prevention • Reducing risks to humans and/or the environment arising from chemical releases and transfers • Encouraging the use of cleaner technologies • Promoting integrated pollution prevention and control
Environmental policy development and evaluation	Australia, Canada, Ireland, Mexico, Netherlands, Norway, UK, US	<ul style="list-style-type: none"> • Identifying and accounting for sources of chemical releases and transfers, including how much is released and the geographic distribution of these releases • Ensuring that regulated or controlled chemicals are monitored and reported in a periodic and consistent fashion • Identifying key environmental burdens and their sources • Promoting more precise priority-setting and environmental decision-making by public sector • Monitoring the effectiveness of regulatory regimes • Comparing reporting facilities • Tracking specific releases and/or transfers over time • Facilitating innovative approaches for addressing environmental problems • Providing performance measures for resource efficiency • Assisting in emergency planning • Providing input to land use planning • Linking environment to broader public policy
Other specific applications	Canada, UK, US	<ul style="list-style-type: none"> • Risk assessment screening • Impact/exposure and hazard screening and assessment

ANNEX 1: PRTR GUIDING PRINCIPLES

The following set of guiding principles is from the PRTR Council Act (C(96)41/FINAL).

- [1] PRTR systems should provide data to support the identification and assessment of possible risks to humans and the environment by identifying sources and amounts of potentially harmful releases and transfers to all environmental media.
- [2] The PRTR data should be used to promote prevention of pollution at source, e.g. by encouraging implementation of cleaner technologies. National governments might use PRTR data to evaluate the progress of environmental policies and to assess to what extent national environmental goals are or can be achieved.
- [3] In devising PRTR systems, governments should co-operate with affected and interested parties to develop a set of goals and objectives for the system and estimate potential benefits and costs to reporters, government and society as a whole.
- [4] PRTR systems should include coverage of an appropriate number of substances which may be potentially harmful to humans and/or the environment which are released and or transferred.
- [5] PRTR systems should involve both the public and private sectors as appropriate and include those facilities which might release and/or transfer substances of interest, as well as diffuse sources, if appropriate.
- [6] To reduce duplicative reporting, PRTR systems should be integrated to the degree practicable with existing information sources such as licenses or operating permits.
- [7] Both voluntary and mandatory reporting mechanisms for providing PRTR inputs should be considered with a view as to how best to meet the goals and objectives of the system.
- [8] The comprehensiveness of any PRTR in helping to meet environmental policy goals should be taken into account, e.g., whether to include releases from diffuse sources ought to be determined by national conditions and the need for such data.
- [9] The results of a PRTR should be made accessible to all affected and interested parties on a timely and regular basis.
- [10] Any PRTR system should allow for mid-course evaluation and have the flexibility to be altered by affected and interested parties in response to changing needs.

- [11] The data handling and management capabilities of the system should allow for verification of inputs and outputs and be capable of identifying geographical distribution of releases and transfers.
- [12] PRTR systems should allow as far as possible comparison and co-operation with other national PRTR systems and possible harmonisation with similar international databases.
- [13] A compliance mechanism to best meet the needs of the goals and objectives should be agreed by affected and interested parties.
- [14] The entire process of establishing the PRTR system and its implementation and operation should be transparent and objective.

ANNEX 2: GOALS AND OBJECTIVES OF PRTR SYSTEMS

The following chart contains the actual responses received by OECD Member countries to a 1999 PRTR questionnaire. The complete survey and set of responses from Member countries can be found in Annex 2 and 3 of the report PRTR Implementation: Member Country Progress (ENV/EPOC(2000)8/FINAL).

Country	Goals and objectives of PRTR system (information was submitted to OECD in 1999 as part of a survey of Member country implementation of the PRTR Council Act).
Australia	The objectives of the NPI are to: <ol style="list-style-type: none"> (1) provide information to enhance and facilitate policy formulation and decision making for environmental planning and management; (2) provide publicly accessible and available information, on a geographic basis, about specified emissions to the environment, including those of a hazardous nature or involving significant impact; and (3) promote and assist with the facilitation of waste minimisation and cleaner production programmes for industry, government, and the community.
Austria	N/A
Belgium (Flanders)	<ul style="list-style-type: none"> • The emission inventory system in the Flemish region comprises the registration, analysis, localisation and presentation of emission data of both industrial and non-industrial sources in Flanders; • To monitor annually the emission from all sources of air pollution; to evaluate the progress of environmental policy; • To provide the official emission data to (inter)national bodies; and • To disseminate the emission data to the public and to pollution modelling.
Canada	Encourage voluntary action, monitor progress, inform the public, and support targeted regulatory initiatives.

Country	Goals and objectives of PRTR system (information was submitted to OECD in 1999 as part of a survey of Member country implementation of the PRTR Council Act).
Czech Republic	Development of an integrated register, harmonised with existing reporting systems (REZZO) in order to: avoid gaps and duplicities in reporting; obtain readily accessible, geographically based information on chemical use, release and disposal; improve the feedback on the efficacy of legal measures.
Denmark	The Water PRTR shall serve as a tool for getting information about emissions and as a comparison with the goals in the Aquatic Environment Plan. The EPER should serve as a tool for providing information for the public and policy-makers.
Finland	Compliance with permit conditions, assessment of emissions for national and international reporting, preparation of new policy measures.
Hungary	<p>The proposed objectives:</p> <ul style="list-style-type: none"> • support authorities for review of environmental impact assessment; • enable development of national and regional data bases; to support the determination of fines and charges; • provide data for submission under international agreements and for environmental performance reviews; to estimate the environmental performance of enterprises; • provide information to the public; • raise attention to contaminants of environmental health; • reveal relevant trends in qualitative and quantitative aspects of contamination; • give reasons for programmes aimed at risk reduction; and • motivate enterprises to improve technology.
Ireland	One of the primary purposes of the PER report is to ensure that the destination of major pollutants is tracked. Annual publication of summary information on the PER reports provides the public with information on the use, control, transfer and release of certain specified pollutants in IPC facilities. The PER is based on a mass balancing methodology, which provides important information on material flows in the facility. This highlights priority areas for improvement such as options for waste reduction and improved operation procedures.
Italy	<p>Waste Register: to take a census, to plan management activity.</p> <p>EPER: to deliver data to the EU Commission, to take a census, to plan management activity.</p>
Japan	To promote the businesses' voluntary improvements in the management of specific chemical substances and to prevent any impediments of environmental protection.

Country	Goals and objectives of PRTR system (information was submitted to OECD in 1999 as part of a survey of Member country implementation of the PRTR Council Act).
Korea	To encourage individual enterprises to voluntarily reduce the amount of release and transfers of toxic chemicals; to provide data to support the identification and assessment of possible risks to humans and the environment.
Mexico	<ul style="list-style-type: none"> • Provide a reliable and updated database of releases and transfer of specific pollutants. • Provide information to assist industries in management decision-making. • Provide information on the emissions of substances which impose risks to human health and the environment. • Simplify industrial reporting requirements. • Allow follow-up and quantification of progress on reducing the release of pollutants. • Facilitate the development of a mechanism that enables Mexico to meet its international commitments related to environmental information. • Develop a pollutant emissions information system that provides public access.
Netherlands	Monitoring emissions from all sources to all compartments, including transfer and environmental load.
Norway	The Norwegian Pollution Control Authority's internal control system has been devised to standardise and increase the efficiency of the emission reports submitted by industrial enterprises. Only enterprises with a current discharge permit granted by the Norwegian Pollution Control Authority are required to report within the system. Enterprises are selected on the basis that reports shall be submitted by all enterprises with emissions of any significance.
Slovak Republic	Harmonisation with international (OECD, UNITAR, EU) approaches, protection of human health and environment, making the information publicly available, and development of an integrated list of point sources of pollutants and waste.
Sweden	The proposal is expected to cover individual reporting by the largest industrial activities, while SMEs have to be covered by statistics/emission factors. The aim is also to cover the future reporting on emissions required by IPPC Directive, Art. 15&3.
Switzerland	N/A
UK	<p>The primary objectives:</p> <p>To provide the public with easily accessible information about pollution from industrial and other sources in their local area and nationally;</p> <p>To help environmental regulators to protect the environment; and</p> <p>To help the government meet national and international commitments and obligations.</p>

Country	Goals and objectives of PRTR system (information was submitted to OECD in 1999 as part of a survey of Member country implementation of the PRTR Council Act).
USA	<ul style="list-style-type: none"> • Raising community awareness: Communities surrounding facilities should have access to information about the releases and other waste management of toxic chemicals from those facilities. • Raising public awareness: The PRTR data provides information about national, state, and regional releases and other waste management of toxic chemicals. The PRTR data also provides information about specific chemicals, industry sectors or companies. • Raising industry awareness: The management of each reporting facility must sign each PRTR report to ensure high-level awareness of the facility's releases and other waste management of toxic chemicals. • Targeting: Federal, state and local governments use the PRTR data to identify chemicals, industry sectors, geographic regions or media that require specific regulatory action. • Prioritisation: Federal, state and local governments use the PRTR data with other data, such as toxicity, demographics, and weather patterns, to select chemicals or industries for more immediate action, enabling the government to use its resources more effectively. Industry uses PRTR data to prioritise chemicals or processes for actions to reduce releases. • Risk management: PRTR data informs stakeholders, allowing them to take effective steps to minimise potential harm to human health or the environment from toxic chemicals. • Tracking trends: PRTR data allows the public and other stakeholders to track the year to year trends in releases and other waste management of chemicals. Tracking can be conducted for individual industry sectors, companies or facilities; carcinogens, chemicals of regional concern, or chemicals targeted by international conventions; or national, regional, state, or local trends. • Communication: Industry should use the PRTR data to communicate information about the policies and efforts to protect the environment to the public and other stakeholders. • Education: Environmental groups, industry and the government use PRTR data to increase public understanding about toxic chemicals and the potential impact of the releases and other waste management of those chemicals on the environment. • Empowering the public: PRTR data enhances the ability of the public to work on a more equal footing with facilities when working to improve environmental conditions.