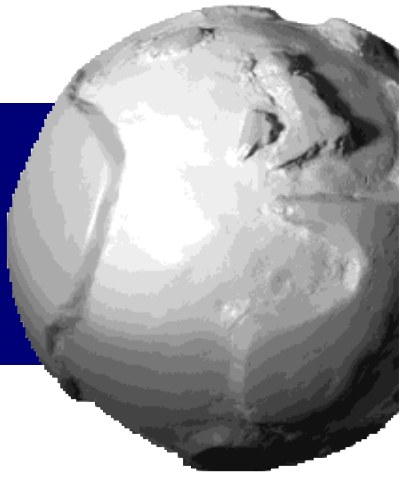
Counting Chemicals

Developing a Pollution Release and Transfer Register for Scotland



FRIENDS OF THE EARTH SCOTLAND

Campaigning for Environmental Justice

This report was written by Melanie Swann as part of a BSc Politics project for Edinburgh University, with subsequent additions and updates by Friends of the Earth. Melanie and FoE wish to thank all those who gave their time to take part in the project, particularly Bob Sargent and Fiona Birkinshaw from SEPA. The views expressed in this report are not necessarily those of Friends of the Earth.

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Summary

Freedom of information and access to environmental information have, in recent years, come to the forefront of international political and environmental debate. It is under this umbrella that Pollution Release and Transfer Registers (PRTRs) fall, providing the public with access to vital information on the environment. International and European agreements such as the Aarhus Convention (1998) are now requiring countries to implement such regimes.

This report examines existing PRTR systems in other countries including the USA, Australia and Canada. Some of these systems are run by governments, others by non-governmental organisations. Questionnaires regarding the operation of these and the ideas behind them, were also sent via e-mail to people involved in their establishment and implementation. There is a strong public demand for information such as that included in pollution registers, as seen in the usage statistics of two of the discussed systems.

PRTR/Emissions' Inventory System Requirements

	IPPC Directive	US EPA	Aarhus
No. of substances	50	600+	244*
Reporting	3yr, then annual	annual	annual*
Minimum access	SEPA office	Internet	Internet

Detailed discussions between Friends of the Earth Scotland and the Scottish Environment Protection Agency were carried out to gain an insight into Scotland's current situation in implementing a public access system for Scotland. Questionnaires were also sent to MSPs and industry representatives, in order to gain a broad view on PRTRs or inventory systems. In the main the results of these reflected the current lack of information and discussion on the subject.

The information on existing systems has been used as a basis to construct a proposal for the best possible system for Scotland, taking into account each one's strengths and weaknesses. This system should go well beyond the legal minimum - the 50-substance, initially 3-year reporting register required by European legislation by 2003. Our detailed recommendations include annual reporting, public access through the internet and the inclusion of waste management information (see chapter 6).

* The UNECE working group on PRTRs proposed 131 mandatory substances and a further 113 optional substances for inclusion in national lists of pollutants and resources.

CONTENTS

1. INTRODUCTION

A Pollution Release and Transfer Register (PRTR) is fundamentally based on the principles of freedom of information and open government. It empowers the public by giving free access to environmental information in the form of a pollution database, encouraging greater public participation in the political process. This database will enable information to be stored in one place, ultimately giving government the ability to monitor industrial activity in order to see who is generating potentially harmful releases, what pollutants are being released, in what quantities and what geographic patterns these reveal. This will make the government's job of legislating for pollution prevention, chemical control and sustainable development far easier and more informed. The right to know will give citizens access to a variety of information including the state of the environment and its elements such as water, air and land along with their consequences to human health. It is a mechanism to make accountable industries of all sizes, to report the amounts of chemicals they release whereby this information can be recorded into a database form. Simply by having access to information on annual pollution releases enables the public to put pressure on industry to reduce pollution and increase efficiency. In turn, this will enable industry to simultaneously reduce pollution and waste of material resources. Thus, the register is a means of ensuring cost-saving along with environmental protection from industries' perspective.

This is a logical progression from the 1992 'Environmental Information Regulations' which gives the public a legal right to know the same information as the government with the exclusions of commercial confidentiality, national security and so on. US legislation since 1986 has been the main driver of the creation of pollution registers all over the world and as such, shall be the main means of forcing Scotland to comply accordingly. The main and most recent agreement has been the Aarhus Convention in 1998, the "convention on access to information, public participation in decision-making and access to justice in environmental matters." This requires a publicly accessible register system to be implemented in all relevant countries.

Scotland currently operates under the Integrated Pollution Control (IPC) system for regulating industry which is being upgraded to the Integrated Pollution Prevention and Control (IPPC) system by a European Directive. A full Pollution Release and Transfer Register (PRTR) would go further than the current IPPC legislation which only requires data to be provided initially every three years, on only 50 chemicals, and on a facility specific basis. It is essential to gather data annually. This enables data to be used as a monitoring tool regarding damage to the environment and to identify problems before it is too late. It also better respects the principle of open government and the public's right to know.

As will be discussed later, register systems are currently in place or being introduced all over the world and have given the public the right to know what is going on around them. The United States for example has a Toxic Releases Inventory (TRI), the Canada a Pollution Release and Transfer Register and Australia has its National Pollution Inventory (NPI). With the creation of these databases, the public can find out who is causing pollution in their geographic area and are able to see the possible consequences of this to both public health and the environment.

Information should be free and easily accessible, hence the reason that these systems are now available on the internet for all to access in those countries with registers. Access to the information in these systems is simple, requiring only details such as a post-code or the name of a factory, plant and so on. Registers have already proven their importance in achieving increased public awareness and a reduction in environmental pollution.
The main aim of this research has been to compile a proposal for a successful and realistic PRTR system for Scotland. We have examined currently operating PRTRs from around the

world by looking at relevant websites where the information itself is accessible and have made contacts with people involved in the operation of the systems. This gives a good view of the successes and failures of those PRTRs already in place in order to learn from these and thus create the best possible system for Scotland. We have also gathered opinions from those bodies who will be directly involved in the implementation of such a system in Scotland, those being the government, the Scottish Environment Protection Agency (SEPA) and industry. This was done through either interviews or questionnaires. We have also examined the legislative background which is driving Scotland towards a PRTR system.

2. INTERNATIONAL COMPARISONS

Since the introduction of legislation such as Aarhus and various European Directives, there has been a significant international emergence of Pollution Release and Transfer Registers (PRTRs) or similar systems in countries such as Denmark, Japan, Norway, France and Mexico. Most are relatively new so must be seen as such, as any new system will inevitably incorporate its own flaws in the early stages. However, it is vital in formulating the best possible system for Scotland that we look at the existing systems, learning from their strengths and weaknesses.

2.1 THE ENVIRONMENT AGENCY (England and Wales)

Under the Integrated Pollution Control (IPC) regulations, this government agency controls industries by monitoring their annual release of chemicals to air, water and land. The objectives of the inventory system were to provide the public with more information about the releases from industrial sites into the environment on both a local and national basis. The Environment Agency also hoped to help the environmental regulators to be more effective via the use of the Chemical Release Inventory (CRI). Reporting is based on a mixture of measuring, calculating and estimating.

The database does not include information relating to the possible health and environmental effects of chemical releases although the Environment Agency has recently prepared an 'Environmental and Health Effects page'. The database also does not include all sources of pollution. Currently, it only regulates large industries. Smaller industries, capable of emitting equally damaging substances, are regulated by local authorities. However, the database remains a vital tool for all parties and usage statistics show that between November 1999 and October 2000, there were 52,000 'unique users', proving

that there is clearly a public demand for such information.

2.2 FRIENDS OF THE EARTH (ENGLAND, WALES AND NORTHERN IRELAND) 'FACTORY WATCH' DATABASE

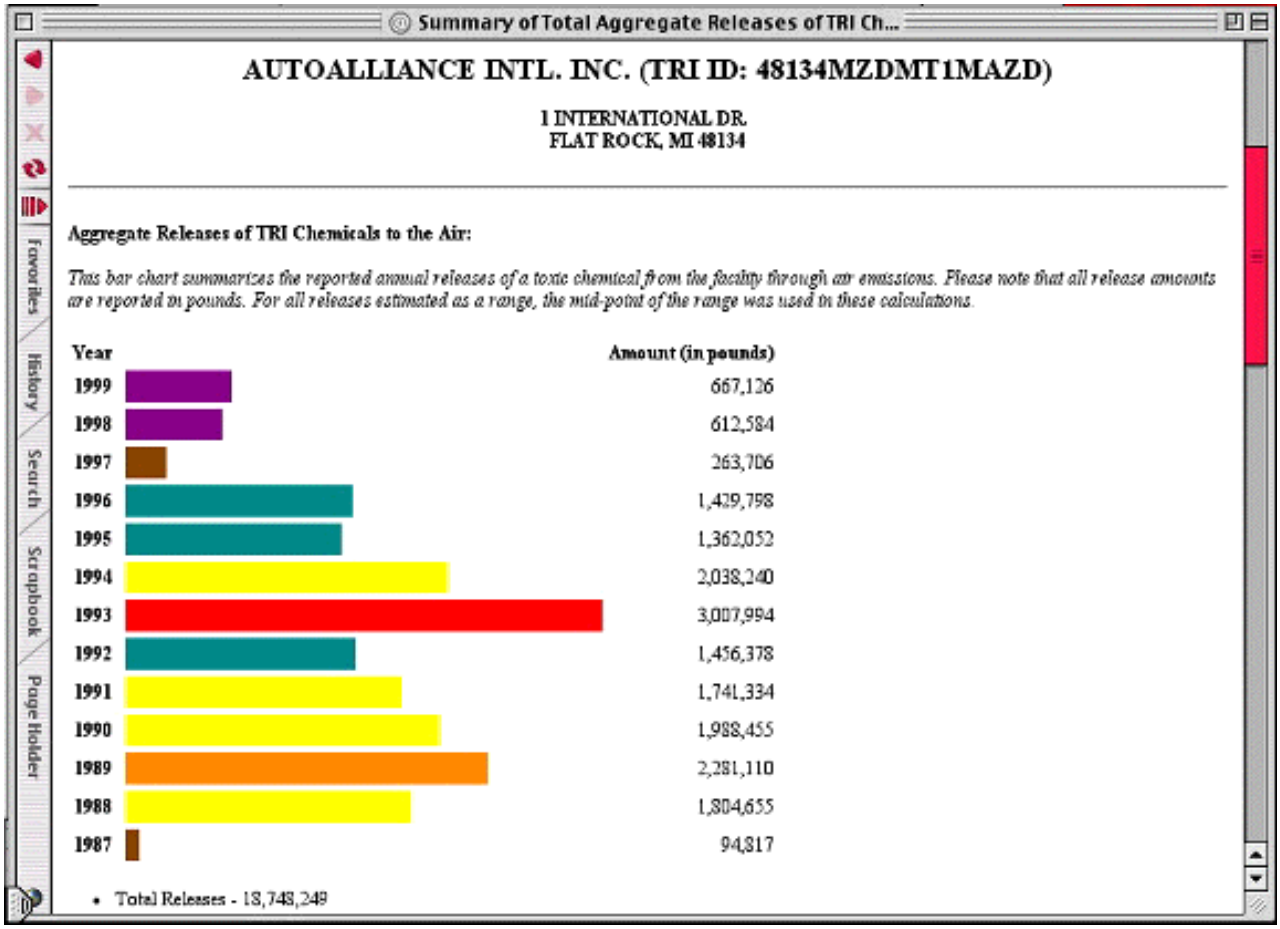
Friends of the Earth (EWNI), a non-governmental organisation, took the Environment Agency's database one step further, into a more user-friendly and in-depth format. Based on a list and map system, it shows the locations of the larger and more complex industrial processes in England, Wales and Northern Ireland, such as power stations, chemical factories, incinerators and steel producers. However, again smaller industries have not yet

been included thus omitting industries such as paint sprayers and small incinerators. League tables show the worst polluters, an effective means of persuading industries to reduce their chemical emissions. Information on health hazards, particular chemicals or companies and studies linking pollution with issues such as poverty, are also a fundamental

component of the system, allowing the data to be used in a more meaningful manner. Usage figures for this database have also reflected a high public demand for this environmental information, standing at 3,443 'unique users' in January 2001 alone.

2.3 THE UNITED STATES - Environmental Protection Agency

The EPA is the Federal government's environment agency. The United States uses the term 'Toxic Release Inventory' as opposed to PRTR. The TRI database was established by section 313 of the Emergency Planning and Community Right To Know Act of 1986 (EPCRA). Its primary purpose is to inform communities and citizens of chemical hazards in their areas, the ultimate goal being to reduce the risk to communities as a whole.



Reports are submitted to the US Environmental Protection Agency (EPA) and state governments.

The TRI database includes information on:

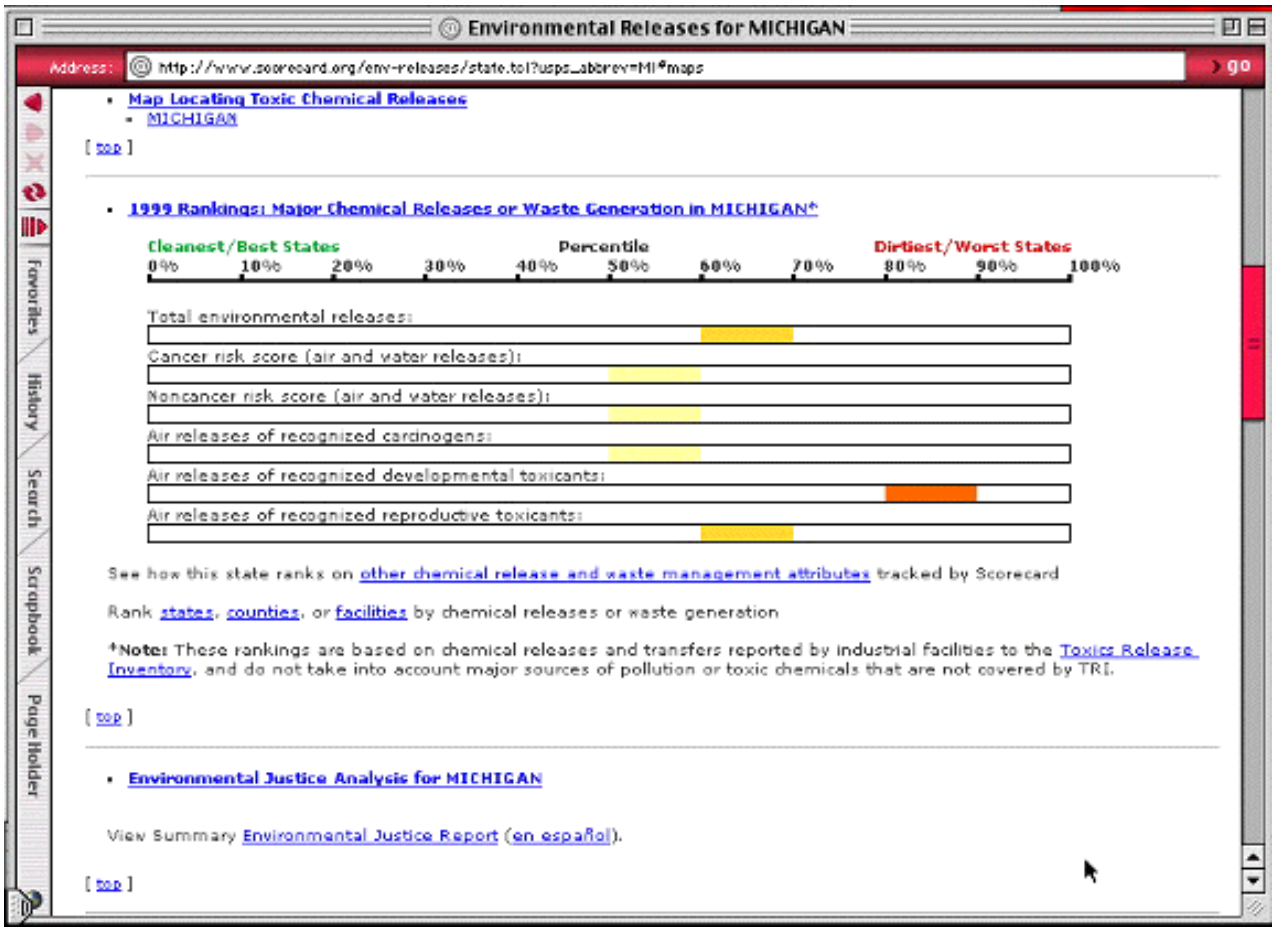
- What chemicals were released into the local environment during the preceding year.
- How much of each chemical went into the air, water and land in a particular year.
- How much of the chemicals were transported away from the facility for disposal, treatment, recycling or energy recovery.
- How chemical wastes were treated at the reporting facility.
- The efficiency of waste treatment.
- Pollution prevention and chemical recycling activities.

The problem remains that the law does not cover toxic chemicals that reach the environment from non-industrial sources, such as dry cleaning or auto service stations.

Reported releases are on the whole, only annual estimates so the amount released could have been released evenly over the year or in one large burst. However, the TRI is seen only as a starting point for assessing for example, possible health risks and must be used in conjunction with other more reliable sources.

2.4 THE UNITED STATES - Scorecard

The Scorecard website is provided by Environmental Defense, a non-governmental environmental protection agency who have created their own form of inventory. The Scorecard system uses the EPA's data but adds a great deal of health-based information on the pollutants listed, as well as producing league tables of polluters, and comparing different facilities and states to each other. This is almost certainly the most comprehensive PRTR system currently on-line.



Environmental Defense have a number of criticisms of the TRI data. Firstly, it does not cover all chemicals with potential to harm human health or the environment. Nor does it require reporting from many major sources of pollution release. Companies are not required to report the quantities of toxic chemicals used or the amounts that remain in products. Furthermore, it does not provide information about the exposures people may experience as a consequence of chemical use. It is yet to include motor vehicles, service business like dry cleaners and service stations, sewage treatment plants, hospitals, airports, agricultural application of pesticides and releases from contaminated sites like landfills or abandoned industrial facilities.

Industries are only required to report to the TRI if there are 10 or more full-time employees and only need to report if they manufacture or process over 25,000 pounds of at least one listed TRI chemical or use more than 10,000 pounds of at least one TRI chemical. Because

of TRI reporting thresholds, some important chemicals like lead and mercury escape the TRI reporting obligations. However, in 1998, there was an expansion of the industries covered to include coal and metal mining, electric power generation, commercial hazardous waste treatment, petroleum bulk terminals, chemical wholesalers and solvent recovery services.

A chemical qualifies for TRI reporting if it can be shown to cause significant adverse acute health effects at concentrations likely beyond facility boundaries. Cancer, teratogenic effects, reproductive effects, neurological effects, heritable genetic mutations or other chronic health effects in humans will all require TRI reporting. Furthermore, significant adverse effects on the environment because of toxicity, persistence or bioaccumulation potential will also require TRI reporting. As yet, there has not been a review to ascertain how many chemicals actually meet the TRI criteria and should, therefore, be subject to TRI's reporting requirements.

The use of the TRI could be expanded. Tracking chemical use would have benefits to all elements of society. It would allow consumers to learn about the incorporation of toxic chemicals into the products they buy. Workers could learn more about chemicals they handle in the workplace which could have adverse health effects. It would enable the public to learn more about potential 'upstream' (i.e. extraction, processing, transportation, handling and storage) impacts of chemicals used in a TRI facility. Finally, it would allow industries/facilities to identify opportunities to make more efficient use of chemical inputs. Some of these measures have been implemented in a couple of states and have been seen to be cost-effective pollution prevention measures.

However, as yet, there has been no enforcement challenging inaccurate reporting of data by industries. The EPCRA Act does not require any specific monitoring of emissions and estimating releases is generally seen as a cheap alternative. Therefore, nobody can tell if TRI data are in fact reliable.

2.5 AUSTRALIA - Environment Australia

The National Pollutant Inventory (NPI) was implemented by Environment Australia, the national government environment agency, through 1999 amendments to the 'Environment Protection Act 1997'.

Annual reports are available in printed form or on CD-ROM and the internet. The data comes from both industry and non-industry sources. Some data are based on estimated emissions from, for example, road traffic. The NPI is not yet extensive, only listing 90 chemicals as opposed to 600-650 on the American system.

Reporting handbooks have been developed to provide guidance to industry on how to estimate emissions and have been made for different sectors, allowing for the variety in reporting practices. The system was however, developed co-operatively by industry, the community and local and state governments.

The database also provides information about where the emissions occur and about the substances themselves, where they are derived from, what they are used for and the risks to human health and the environment associated with them.

A review in 2000 looked at:

- changes to the amount of substances facilities need to use before they are required to report (thresholds)
- effectiveness of the NPI
- the amount of resources allocated to implementing the NPI

- addition to or deleting of substances from the list
- whether reporting on transfers of wastes should become a part of NPI
- the reporting process

2.6 AUSTRALIA - Responses from 'territory' environmental officers

Environment Australia has officers in all of the Australian 'territories' or regions, to implement their national environmental policies, so we asked them for their views on the natiojnal NPI system. The main aims of the NPI are to provide government and industry with information to assist in environmental planning and management, to satisfy community demand for accessible information on emissions to the environment and to promote waste minimisation, cleaner production and energy and resource savings.

First year costs to industry were seen to be higher than in subsequent years due to one off costs of setting up the inventory procedure in the workplace. Industry estimates costs of setting up ranging from £75 to £3,800.

Emission Estimation Technique Manuals to help industries estimate emissions were created to try and harmonise procedures. These manuals can reduce the reporting costs to industry, giving guidance on going about the task themselves.
Reporting has only been practiced for the last 2 years and so the system is still in its early stages. There has been no enforcement for the first two reporting years but the plan is to make it cheaper to report than to receive fines. Penalties have been deliberately withheld for the first 2 years to allow for a 'phase in' period.

The 'Australian Capital Territory Act' has in place small fines for industry who trigger a chemical threshold but do not supply information for NPI purposes. These industries will be

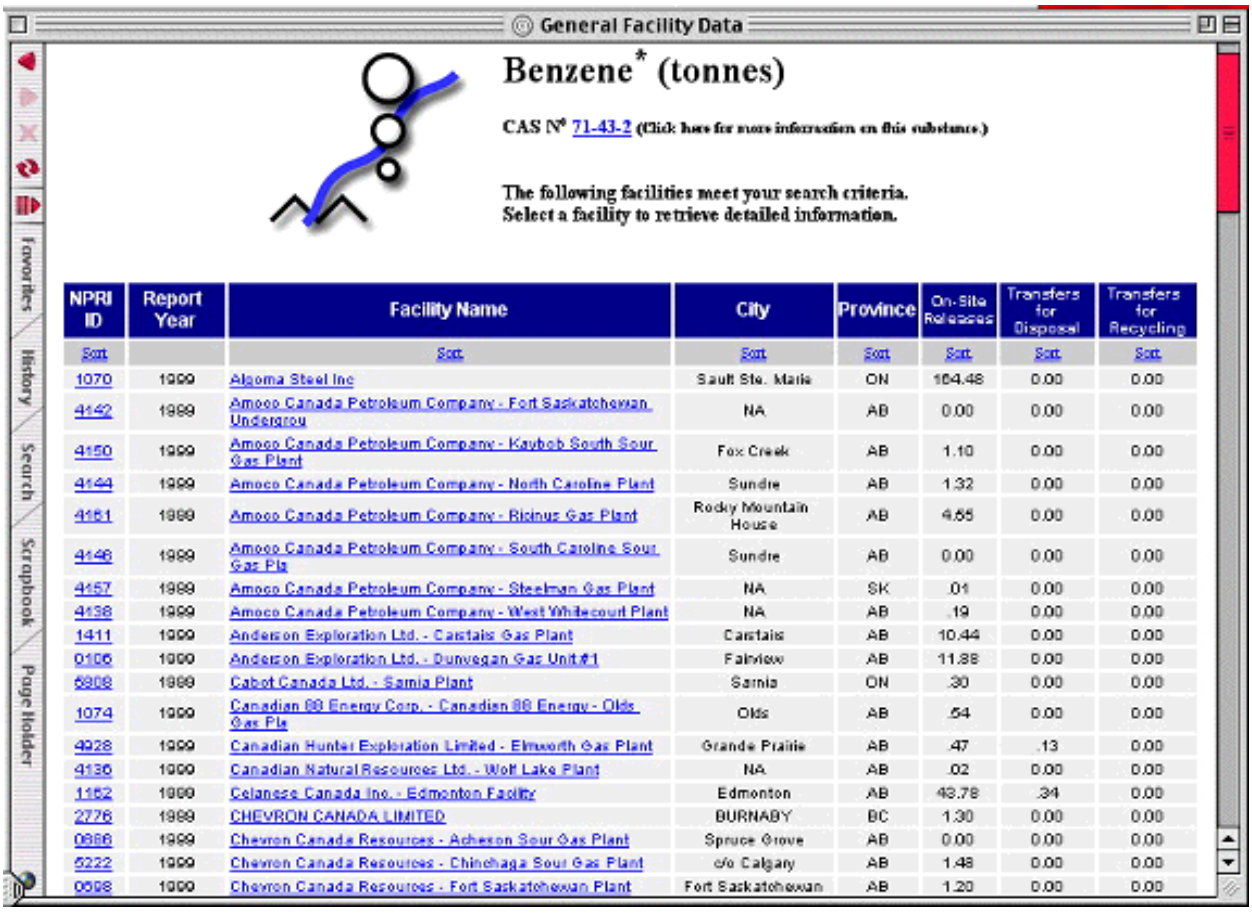
publicly named in Federal Parliament, further encouragement to comply.

Provision of "contextual information" enables the data to be read meaningfully, thus members of the public without a background knowledge for example on the health effects of chemicals, will have a greater understanding of the data. The need to educate the community in order to use data and avoid misinterpretation has been identified and is currently undergoing review. A co-ordinated approach to community education has been put on hold while the data quality settles down. The details of the education programme have not been finalised but groups such as secondary and tertiary students, local governments and community organisations will be targetted.

Each of the states/territories and the federal government participate in an 'Implementation Working Group'. An 'NPI Reference Group' was established with the membership of industry, community and environment groups to make recommendations and assessments.

The system is comprehensive, covering areas such as mining and agriculture. The system excludes some small industries from reporting such as dry cleaners with less than 20 employees. Currently, the website only provides information for one year so comparisons are not yet possible.

2.7 CANADA - Environment Canada



NPRI ID	Report Year	Facility Name	City	Province	On-Site Releases	Transfers for Disposal	Transfers for Recycling
Sort		Sort	Sort	Sort	Sort	Sort	Sort
1070	1999	Algoma Steel Inc	Sault Ste. Marie	ON	164.48	0.00	0.00
4142	1999	Amoco Canada Petroleum Company - Fort Saskatchewan Undergrou	NA	AB	0.00	0.00	0.00
4150	1999	Amoco Canada Petroleum Company - Kaybob South Sour Gas Plant	Fox Creek	AB	1.10	0.00	0.00
4144	1999	Amoco Canada Petroleum Company - North Caroline Plant	Sundre	AB	1.32	0.00	0.00
4161	1999	Amoco Canada Petroleum Company - Ricinus Gas Plant	Rocky Mountain House	AB	4.65	0.00	0.00
4146	1999	Amoco Canada Petroleum Company - South Caroline Sour Gas Pla	Sundre	AB	0.00	0.00	0.00
4157	1999	Amoco Canada Petroleum Company - Steelman Gas Plant	NA	SK	.01	0.00	0.00
4138	1999	Amoco Canada Petroleum Company - West Whitecourt Plant	NA	AB	.19	0.00	0.00
1411	1999	Anderson Exploration Ltd. - Carstairs Gas Plant	Carstairs	AB	10.44	0.00	0.00
0106	1999	Anderson Exploration Ltd. - Dunvegan Gas Unit #1	Fairview	AB	11.88	0.00	0.00
6808	1999	Cabot Canada Ltd. - Sarnia Plant	Sarnia	ON	.30	0.00	0.00
1074	1999	Canadian 88 Energy Corp. - Canadian 88 Energy - Olds Gas Pla	Olds	AB	.54	0.00	0.00
4928	1999	Canadian Hunter Exploration Limited - Elmworth Gas Plant	Grande Prairie	AB	.47	.13	0.00
4136	1999	Canadian Natural Resources Ltd. - Wolf Lake Plant	NA	AB	.02	0.00	0.00
1152	1999	Celanese Canada Inc. - Edmonton Facility	Edmonton	AB	43.78	.34	0.00
2776	1999	CHEVRON CANADA LIMITED	BURNABY	BC	1.30	0.00	0.00
0986	1999	Chevron Canada Resources - Acheson Sour Gas Plant	Spruce Grove	AB	0.00	0.00	0.00
5222	1999	Chevron Canada Resources - Chinchaga Sour Gas Plant	c/o Calgary	AB	1.48	0.00	0.00
0598	1999	Chevron Canada Resources - Fort Saskatchewan Plant	Fort Saskatchewan	AB	1.20	0.00	0.00

The Canadian Pollution Release and Transfer Register system has been modelled on the US Toxic Release Inventory. The national government's environmental protection agency, Environment Canada, states that the key to a good PRTR system is public accessibility to the information. Industries have until June 1st of each year to report on releases and transfers from the previous calendar year.

Costs of the system have been seen to vary greatly according to the particular sector or industry. When considering any substances for addition to the PRTR list, efforts are made to mitigate costs to industry by providing detailed guidance on the reporting of a substance. All changes made to the PRTR are made through consultations with Canadian stakeholders. Environment Canada also provides some funding for environmental organisations that wish to develop educational or informational tools (maps / citizens guides) based on PRTR information.

In one recent case, Environment Canada had an agreement with industry to voluntarily reduce emissions of a specific substance. When PRTR information revealed that reductions were not being achieved, Environment Canada implemented legislation to impose the reductions on industry. The system has achieved notable reductions in releases of certain chemicals to the environment and the programme expanded from 173 substances in 1998 to 268 in 2000.

3. THE LEGAL BACKGROUND

The 'right to know' via means such as pollution registers, would give citizens' access to a variety of information including on the state of the environment and its elements such as water, air and land. It would also include details of biological diversity, including genetically modified organisms. 'Information' further includes factors such as noise, radiation and activities including policies, plans and legislation. Information relating to human health and safety, conditions of human life and cultural sites and buildings which may be affected by the state of the environment are also eligible.

Since 1996, there have been two major pieces of European and international legislation which require the establishment of Pollution Release and Transfer Registers. These have resulted in the establishment of schemes such as those detailed in the last chapter.

3.1 EUROPEAN COUNCIL DIRECTIVE 96/61/EC CONCERNING INTEGRATED POLLUTION PREVENTION AND CONTROL - 24 SEPTEMBER 1996

"This Directive lays down measures designed to prevent or, where that is not practicable, to reduce emissions in the air, water and land....including measures concerning waste, in order to achieve a high level of protection to the environment taken as a whole, without prejudice to Directive 85/337/EEC and other relevant Community provisions." [1]

This is to be achieved by regulating the companies concerned through the issuing of permits. It also aims to harmonise practices through "general principles governing the basic obligations of the operator."[2]

Access to information and public participation is encouraged firstly through the permit procedure.[3] Member states are to take the necessary steps to ensure that applications for permits for new installations or for substantial changes are made available for an appropriate period of time to the public, to enable them to comment on them before the competent authority reaches its decision. The results of monitoring releases must be made available to the public. An **inventory** of the principal emissions and sources responsible shall be published initially every three years, till 2006, then annually by the Commission on the basis of the data supplied by the Member States. The Commission shall establish the format and particulars needed for the transmission of information. The Commission may propose measures to ensure inter-comparability and complementarity between data concerning the inventory of emissions and data from other registers and sources of data on emissions.

The system is however limited. There will only be requirements to report 50 chemicals (as opposed to at least 600 in the USA) and this is only required on a three-yearly basis, at least initially.

3.2 THE AARHUS CONVENTION - DENMARK, 25 JUNE 1998

The Aarhus Convention, originated in Denmark, is an international treaty of the United Nations Economic Commission for Europe (UNECE). In full, it was named the "Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters". It is a government commitment to disclose information pertaining to environmental matters. It also conveys the right to let the public participate in governmental decision-making and to aim for a more 'open' or transparent form of government. The public is empowered to take their government or other private

1 Council Directive - Article 1
2 Council Directive - Article 3
3 Council Directive - Article 15

enterprises to court if they fail to comply with their obligations.

Thirty-five countries signed the Convention at the Ministerial Conference on the 25th June 1998. Five signed or joined afterwards. In order for countries to ratify, some will be required to make changes to national legislation, although others can make changes after ratification. The Convention came into force on 31 October 2001, although the UK is still to ratify.

An international working group on compliance has been established in order to draw up a draft decision establishing a compliance mechanism. This group convened in February 2001, aiming to promote and improve compliance with the Convention. This special task force on compliance is being led by the UK.

The main aims of the Convention are to:

"contribute to the protection of the right of every person of present or future generations to live in an environment adequate to his or her health and well-being, each party shall guarantee the rights of access to information, public participation in decision-making and access to justice in environmental matters in accordance with the provisions of this Convention." [4]

This right to know will give citizens access to a variety of information, relating both to the environment and human health. The Convention states that information should be made available within one month free of charge[5] and that charges can only be levied if indicated in advance (at a reasonable rate).

The Convention specifically stipulates that

"each party shall ensure that public authorities possess and update environmental information which is relevant to their functions" and that "mandatory systems are established so that there is an adequate flow of information to public authorities about proposed and existing activities which may significantly affect the environment." [6]

Furthermore,

"Each party shall ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through telecommunications networks." [7]

Under these requirements to make environmental information available to the public are particular specifications such as state of the environment reports. On PRTRs, Article 5, paragraph 9 states that

"Each party shall take steps to establish progressively....a coherent, nation-wide system of pollution inventories or registers on a structured, computerised and publicly accessible database compiled through standardised reporting."

Unfortunately, to establish a system "progressively" puts little pressure on member states and this could lead to systems taking many years to establish and implement. Furthermore, terms such as "coherent" are fairly meaningless as they could be interpreted in a number of ways, or not at all.

4 Article 1 - Aarhus Convention
5 Article 5, Paragraph 2, b (i)
6 Article 5, Paragraphs 1a and 1b
7 Article 5, Paragraph 3

3.3 THE POLLUTION PREVENTION AND CONTROL (SCOTLAND) REGULATIONS 2000

The PPC (Scotland) Regulations 2000 implement the 1996 European Directive outlined above. Like previous environmental legislation, the PPC Regulations for Scotland are "designed to encourage public involvement in the regulatory process."[8] Again, as the Aarhus Convention stipulates, "registers of PPC information are available at all reasonable times for inspection by the public free of charge. Copies of any entry on a register must be available to any member of the public on payment of a reasonable charge."[9] The regulations have acknowledged the need for on-hand assistance for the public if records are to be made electronically available, which would cause problems to those unfamiliar with such information systems.

The PPC Regulations only require the reporting of 50 substances and not until 2003. Like most information legislation and Aarhus in particular, the Regulations allow exemptions for reasons of national security and commercial confidentiality (unless ministers override this in the name of public interest). However, confidentiality can only be granted for up to four years, at which point, the relevant person or organisation must re-apply for continued protection before the period ends.[10]

3.4 THE FREEDOM OF INFORMATION BILL

The current draft Freedom of Information Bill mentions how Scotland is to incorporate elements of Aarhus in its legislation relating to Environmental Information Regulations. It states the desire to ratify the Convention as soon as possible. The Bill will provide Scotland with a "new access regime" [11] enforced by the new Information Commissioner. The Scottish Information Commissioner (as in Canada or Australia for example) will perform a variety of functions to ensure that the legislation is carried out appropriately, and will oversee both the Scottish Freedom of Information regime and the forthcoming revised Environment Information Regualtions. He or she will be an independent office holder, with the power to investigate complaints against any Scottish public authority which has seemingly failed to comply with these information regimes, including non-compliance relating to disclosure, delays and excessive charges. He or she will have the power to order disclosure of information in the public interest, enforceable through courts, which will further ensure reporting under a PRTR system. Another function will be to publish reports on the outcomes of investigations which would thereby establish a body of precedents. In terms of PRTRs, this will encourage companies to comply with legislation as these public reports could otherwise prove commercially detrimental.

8 Article 9, Paragraph 1
9 Article 9, Paragraph 2
10 Article 9, Paragraphs 5-8
11 Draft Freedom of Information Bill - Article 7, Paragraph 81

4. QUESTIONNAIRE RESPONSES

From the outset, it was a priority of this research to gain an opinion of the proposed Pollution Release and Transfer Register system from all relevant perspectives, those being the Executive, the political Parties, the Scottish Environment Protection Agency (SEPA) and if possible, from industry. It proved difficult to make contact with or gain responses from the Parties themselves. The Scottish Executive Environment Protection Unit and MSPs from the Scottish National Party, Conservatives, and the Greens, were sent the questionnaire in Appendix A, along with researchers for the Green Party, the Liberal Democrats, Labour and the Scottish National Party. Of these, the Executive Environment Protection Unit, the Liberal Democrat and SNP researchers, and the Conservative and Green MSPs replied.

4.1 Scottish Executive

The Scottish Executive Environment Protection Unit returned a quick, positive and informed response to our queries. They related PRTRs to the Aarhus Convention and emphasised their commitment to the Convention's ratification and thus implementation in the UK. However, since the environment and freedom of information are devolved matters, it is up to the Executive how it is to implement the provisions of Aarhus. They stated that,

"The Scottish Executive intends to mirror the position in England and Wales by using the proposed Scottish Freedom of Information regime as a means of implementing the information provisions of the Aarhus Convention."

A consultation exercise would be undertaken at some point as to Aarhus' implementation. With regard to the EC Directive on freedom of access to information on the environment, the Executive has been gathering opinion on the issue. However, it is anticipated that the legislation would only come into domestic Scottish law in around 2004. As expected, Aarhus' provisions would come into force firstly through the Integrated Pollution Prevention and Control (IPPC) Directive which would first see the establishment of a pollution inventory. For this Directive, it is anticipated that the first round of reporting would be in 2003. While the Scottish Environment Protection Agency has been taking steps towards meeting IPPC requirements, the Executive stressed that this remains in the developmental stage but will be extended, stressing that, "the UK is committed to having a Polluting Emissions Inventory available to the public in line with that required by the IPPC Directive." The Scottish Executive seems to have no plans to take the Directive further, meaning that the system will remain limited, for example, to only reporting on 50 substances. However, both the Executive and SEPA are meeting twice a year with the Environment Agency's 'Pollution Inventory Advisory Group' to discuss how the existing inventory could be adapted and to discuss UK requirements.

4.2 Political Parties

The Liberal Democrats' environment researcher also returned the questionnaire with some enthusiastic responses. When asked if the Party believes that the PRTR system is an important tool for the community, they responded with a firm 'yes', believing it will raise awareness of environmental issues. They acknowledge that it will also assist in making the link between the environment and health, a vital benefit of the register system. Another benefit seen from the system would be the fact that it would be possible to identify the impact of cumulative emissions from separate sources. From a policy-making perspective, they see that the register will allow comparisons to be made with other areas so that policy makers and politicians can in turn be more accountable. In terms of the data itself, it is believed that it should be in a simple, understandable form and should indicate how much human health is likely to be affected. The Liberal Democrats are also in favour of using the data for comparative purposes, favouring measures such as league tables, believing such

options should certainly be addressed. Their view is that funding for the measuring equipment necessary for the system should come initially from SEPA but a requirement should be placed on industry to supply and monitor the collection of data. However, to ensure quality, SEPA should verify the data supplied. Clearly, it is not yet possible to state the time-scale of collecting the data but it will follow the necessary amendment of existing legislation. In general, PRTRs fit well with the Liberal Democrat commitment to improve freedom of information. It is seen as essential to securing a system of strategic environmental assessment for all government programmes.

Unfortunately, it was not possible to gain an opinion from the Conservative Party as they responded stating that they have had no time to research the matter.

The SNP acknowledge that a PRTR will enable communities to fully participate in decisions regarding their local area and how it is developed, in a more informed manner. It will allow them to hold the relevant bodies accountable and encourage an open and accessible attitude towards environmental information. They see PRTRs as "a means by which democratic control of the environment can be maintained by local communities" and a means of building partnerships between communities and local industry. In formulating the best system of data collection, the SNP suggest seeking expert advice from Scottish universities. However the system "must be properly established with set criteria on collection, baselines and margins of error." Both the costs of freedom of information and the costs to SEPA should be borne by the "public purse" but "costs to industry would have to be discussed with regard to economic competitiveness." When asked about Aarhus and its ratification, the SNP were keen to see this and other such freedom of information legislation brought forward relatively quickly.

The Green Party strongly support a PRTR for Scotland, seeing it as an important tool for the community. It is vital for communities to have access to such information, giving them a "lever to challenge the operations of polluting industries." The costs however should be shared, between industries, SEPA and the Executive, although they too see that SEPA is "clearly [currently] underfunded". Despite their support, the Greens still believe that only biennial monitoring will be enough to comply with Aarhus.

4.3 INDUSTRY

Despite having sent questionnaires regarding PRTRs to representatives in industry, we unfortunately received no responses. Those contacted were the Chemical Industries Association in London, CBI Scotland and Curtis Fine Paper, an industry already involved with SEPA's current steps towards a register system.

5. THE SCOTTISH ENVIRONMENT PROTECTION AGENCY (SEPA)

To find out the attitudes of SEPA regarding a pollution release and transfer register system for Scotland, we spoke, in February 2001, to their representative who has been involved in establishing the first stages of a pollution register covered by the Pollution Prevention and Control (2000) regulations, Bob Sargent. We were also taken through a demonstration system by Fiona Birkinshaw, SEPA's IPC specialist for the area support team. The following sections paraphrase the discussion and the situation has moved on somewhat since this discussion took place, as summarised in the last section of this chapter.

5.1 WHAT CURRENTLY EXISTS ?

An air emissions' database was set up in 2000 for use in the SEPA office to use as a trend analysis tool. It originated as three databases, one for chemistry data, one for mass emissions and one for concentrations. These currently only cover the East region of SEPA. Concentrations are harder to report but mass is far more useful in general terms; mass-based figures must be reported to the Scottish Executive at the end of each year for some substances. Expansion beyond East region is just about to take off but collection of data such as grid references and postcodes is a time-consuming process. Also, for instance, Northern region's method of coding rivers is different to the rest of Scotland so the regions need to adjust to become uniform. Scotland still lacks a system of collating the information and making it available but the time-scale for this is aimed at around 2002. SEPA need a further 6-9 months to gather data and to get it running but will still need to validate data. On some figures, measurements are only accurate to within 50%. There is a quality discrepancy with some companies who report really accurately and others who do not. SEPA already have an audit procedure to check for typing errors, for example, as a method of quality control. Figures need to be checked before access is given to the public. The cost of producing a public access database has been said to be around £150,000 for all three of SEPA's regions. Currently there is no direct funding specifically for this area of activity from the Scottish Executive but money comes from the government under the 'modernising government' umbrella to update systems.

The content of the database is based on IPC regulations and processes - what is asked for on authorisation documents. It is soon to include IPPC categorisations for example, enabling the public (or government) to find a specific industry such as paint sprayers, and all the locations related to that industry. Companies regulated under IPPC are not however, required to report waste activities, which would make the legislation thus the system, far more comprehensive and efficient. Sometimes companies actually volunteer more information than is required, for example the amount of fuel used is collected but given voluntarily by certain industries, not all. In general, it can be expensive to report but this cost should be reduced once equipment is installed and reporting becomes an everyday business practice. Not very many figures are estimated but individual methods of estimation are recorded to be uniform. All results' methods are recorded as measured, calculated or estimated. There exists a system of continuous monitoring for some pollutants with SEPA officers double checking data. Certain industries have employed contractors who send full reports with detailed information of the reporting process. A 6-monthly audit has been put in place to check data is coming in when it should but a lack of person-power on the project as yet due to a lack of funding is holding back the system's development, hence it will be some time until all data is collected for the whole of Scotland.

5.2 IMPLICATIONS FOR INDUSTRY AND SEPA

Currently regulated industries will not require new equipment (more than they have now) but those which will be newly incorporated may have to adapt a little more. Requirements for continuous improvement will lead to more costs but could in fact profit industry and

save them money. The implications vary from industry to industry but the introduction of a PRTR system should not require industry to change much from now. SEPA as yet have not formulated a policy on non-compliance but are not keen on naming and shaming as is used in Australia or league tables as in England. In some cases the name and addresses of companies rather than emissions themselves may be confidential because of national security concerns. SEPA can hold this data but risk for example of terrorist attacks will limit the information available. This could lead to a problem of compiling two types of data - the public and private. Current licensing regimes also allow for the inventory of chemicals held on a site to be withheld for reasons of commercial confidentiality. In reality there are very few exclusions, most for national security reasons.

In the longer term, guidance for industry will be needed, at the moment SEPA is working on protocols - dependent on factors such as the size or age of the site. This involves a large scale research programme. Consultations with industry are planned but the greatest problem is to incorporate the industries which are not yet regulated such as food processing and agriculture. If a PRTR scheme is introduced, criteria for compliance will be compiled by the Executive but may involve SEPA (as laid out in legislation for IPPC). Criteria for SEPA to be able to use to say to industry that they must fulfil certain requirements by a certain date would be useful. SEPA also aim to have data electronically sent to them rather than in paper form as now.

Under the current system, it is difficult even for SEPA staff to make comparisons for example between industries or areas. SEPA are sceptical that public demand will be very high although the USA and England, for example, have found that the public certainly do want to know this sort of information. The system benefits SEPA as they will be able to answer public queries in a more informed manner or by simply referring the inquirer to their website. SEPA state that industries are often only as helpful as they want to be and because they know that they have no choice but comply. However, a PRTR would help industry in competition terms, allowing them to make comparisons between themselves and other businesses and work towards best practice.

5.3 LOOKING FORWARD

The biggest challenge to SEPA now appears to be the creation of the public access database system itself. SEPA are aware of the need to construct a user-friendly format but are still waiting for funding from the Executive. It is currently possible to do a keyword search to find particular sites and it is also possible to access historical data. SEPA also want to gradually build up the amount of information in the database. However, this was somewhat contradicted when SEPA stated that they do not want to go down the same route of the England and Wales Environment Agency who have more pollutants and lower thresholds than is actually required by IPPC claiming that "it [SEPA] will go as far as it has to", not putting extra demands on industry nor to collect "over and above what is actually required". Bob Sargent does not see SEPA going that far beyond minimum requirements as it is not "SEPA's business style". SEPA's immediate aims are to get a database operating and to make it a public access tool and then have it accessible on the web, leading to a map-based system which can be accessed by keys such as the post-code or company name or selecting an area of interest. Presently, the system is too complicated with the need for authorisation numbers and codes and so on, thus cannot be used without the assistance of SEPA staff. SEPA have not yet done any thorough examinations of other existing systems but are "aware of them" and have "had a look". However, SEPA were keen to continue consultations with Friends of the Earth Scotland regarding the system's establishment and implementation.

There is still a lot needed before SEPA reaches the requirements of electronic data available to the public since the current system is not very user-friendly. Information is held in SEPA

offices so is not easily accessible, but access is free with people on hand to help. Scotland will need to increase the number of substances included in order to comply with Aarhus. Current proposals for 50 substances are a long way from the USA who include 650. SEPA may not include information on health effects of chemicals but basic descriptions of chemicals will be included.

5.4 UPDATE SINCE MEETING

SEPA have discussed with the Environment Agency the possiblility of launching a joint inventory to cover the whole of the UK when the Agency re-develop theirs over the next couple of years. This would allow rapid progress to be made in Scotland The plan is for this register to incorporate some additional information regarding the effects of various substances as well as the usual data on levels of outputs and substances used. Like the current Environment Agency register, this system will be accessible on the website.

6. THE PROPOSAL

Having examined a number of the systems in place around the world, it has been possible to assess both their strengths and weaknesses. Furthermore, the research has sought the opinions of those who will be involved in the implementation of a Scottish PRTR system. Combining the best elements of the current systems along with new ideas, the following proposal suggests the seemingly best ideas for the implementation of a Pollution Release and Transfer Register (PRTR) for Scotland:

- The primary concern which is at the root of any PRTR is that of a **publicly accessible** (computer) database. The current system with SEPA's air pollution register does not yet give easily accessible information in a user-friendly format since it is only in its early stages. If the system is to respect the public right to know, the implementation of such a system must be the first priority. This may require seeking expert advice on devising a suitable computer/on-line system which could be costly and time-consuming but will only be a one-off cost. If advice is taken from the right sources, a system should only take a short time to implement as has been seen with the 'Factory Watch' register of Friends of the Earth England, Wales and Northern Ireland. This is a system which has been adapted from the original register held by the Environment Agency. Seen by Friends of the Earth as not user-friendly enough, they spent just three months adapting the existing system with their in-house IT team. Altogether, they spent one year building the 'Factory Watch' database with an overall cost of only £2,000 plus staff time. Had the services of an external team been employed, costs could have been in the region of £40,000 and the task would have been more time-consuming.

- There must be a commitment to collect data on an **annual** basis - the European IPPC Directive only requires triennial reporting, at least initially, but the success of annual collection in helping to reduce pollution in other international systems suggests that this is the only realistic option. This also enables the data to consistently feed into governmental policy and better respects the public right to know. Once the systems of measuring and collection are actually implemented and equipment is bought, annual collection should cost little more than triennial collection.

- **Clear rules** must be created to ensure that measurements/estimates are taken using the same methods. This could be done using a focus group consisting of members of government, SEPA and industry to find the most efficient and easy system. Guidance manuals have proven effective in helping industries to report in a uniform and easy manner. This would enable the data to be used for purposes such as comparisons between industries or companies, geographical regions and so on. This will also enable computer processing of the data.

- In order to ensure data is collected accurately and regularly, there will need to be some sort of **enforcement procedure**. Inaccuracies are inevitable but many will only be identifiable once the data begins to be used. Only then is it possible to make the necessary amendments, done through a constant process of evaluation. 'Naming and shaming' and league tables have in existing international systems such as Australia, proved a successful means of minimising pollution and fines have also been seen to ensure conformity with regulations. However, a penalty-free phasing-in period should be allowed (a period of two years appears to have been successful for example in Australia) for industries to change over to the new reporting system, to allow for higher initial costs in the first year or two due to buying equipment and so on and to allow industries time to adjust to the new methods. Costs and speed of implementation will vary according to the different industries (size, type etc.). The threat of actions such as on-site visits, audits and warning letters will likely ensure conformity but SEPA must be able, for example, to impose reductions of certain chemical emissions. However, in order

for this to be successful, it must be supported by legislation.

- **Consultation** between public, industry and government has been shown to be the best means of creating a system based on all parties' needs.

- The database must contain **basic health and environmental information** to make it meaningful to those using it. This would require at least a basic description of the chemicals and the implications these particular chemicals have on both public health and the environment, thus creating a link between the two. The more meaningful the data, the more it will enable the public to play a more participatory role in government. The government would also be able to formulate policy on a more informed basis, being able to monitor the behaviour of industries.

- The **public must be informed** about the availability of the data along with being taught how to use it. This could easily be done by having public access points in places such as public libraries or post-offices and having on-hand assistance, manuals or step-by-step guidelines on the software.

- **Minimal data should be withheld** due to reasons such as 'national security' or 'commercial confidentiality' in order to make data accessible. If data is concealed, clear reasons should be stated, available for both government and the public. When information withheld on commercially-confidential grounds ceases to be so it should also be made accessible.

- It is vital not only to record amounts of chemicals released but to **monitor waste and recycling activities**. These practices could benefit industry, as consciousness will increase efficiency, and would enable government and SEPA to monitor a greater range of activities.

- Aside from releases, the database would be more comprehensive if it required companies to report the amount of **chemicals used** and the amounts which remain in products. This would allow consumers to learn about the incorporation of toxic chemicals into the products they buy. It also allows the workers to learn about the chemicals they handle in the workplace. The public and government benefit from this knowledge as they can learn about the potential 'upstream' (extraction, processing, transportation, handling and storage) effects of the chemicals used in any given industry. Industries in turn benefit as with this information, they can identify opportunities to make more efficient use of chemical inputs, thus making the system more cost-effective.

- **Estimations should be kept to a minimum**. Measurements are far more transparent for both industry and government, and providing the costs are accounted for, will provide a better long-term tool for pollution control. However, if estimations must be used, manuals should be compiled to ensure uniform procedures at least within particular industries.

- It is also vital that when measurements or estimates are taken, that the industry states whether this **amount released** is released in one large burst or gradually over the course of the year.

- The system needs to be more comprehensive than that required by either Aarhus or the European Directive. **Fifty chemicals is not sufficient** in comparison to the thousands of chemicals actually in use, particularly when other register systems are operating which analyse between 200 and 600 chemicals. The system should also at least include all chemicals with the potential to harm human health or the environment. Linking the two issues is vital and highly relevant public information.

- There must exist a variety of **means to access data**. Not only should the postcode be a means of access, but specific names of sites, maps and grid references should also be available tools to enable the public to find the data they require. This variety of access points enables those both within Britain and abroad to access data without having to know Scottish post-codes, otherwise a possible restriction. Searches should also be available by chemical/substance, source, facility and location in order to make the database both more user-friendly and comprehensive. This would be simplified by a step-by-step system with lists and options for the user to choose from in order to find specific, relevant information.

Clearly, for practical and legal reasons, the implementation of a Pollution Release and Transfer Register in Scotland will take some time. Cost will also be a barrier, for example to smaller industries or of providing public access points in the form of computer databases, so full implementation may be delayed by these initial practical barriers. Clearly the Executive has a role in providing additional resources to SEPA in such a major undertaking. Strict deadlines should also be required from the Executive in order not to allow the delays to be unlimited.

APPENDIX A: POLLUTION RELEASE AND TRANSFER REGISTER QUESTIONNAIRE

PLEASE RETURN TO MELANIE SWAN C/O FRIENDS OF THE EARTH SCOTLAND, 72 NEWHAVEN ROAD, EDINBURGH, EH6 5QG

1 Do you believe that the PRTR system is an important tool for the community?

2 Is it important for communities to have access to this data?

3 How do you see the Aarhus Convention and the PRTR system being implemented and once implemented, used?

4 How is compliance to be achieved?

5 It has been seen that in Australia for example, much of the data collected in their pollution inventory are estimates which can lead to often unreliable data. How would Scotland overcome this problem and would estimates be good enough?

6 It appears that there is currently some confusion as to where the funding for the initiative will come from. How do you best see this working and what do you see will be the costs to the relevant bodies - government, SEPA, industry?

7 What time scale can we expect this to be done by since Aarhus is close to ratification (anticipated to be ratified by the end of 2001)?

8 Does your Party have any agreed policy relating to PRTRs?

APPENDIX B: SOURCES

BRIEFINGS

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Paper addressed to the Task Force meeting, February 21-23, 2000, Prague. Prepared on behalf of the ECO Forum NGO Coalition by Mary Taylor (co-ordinator, ECO Forum Public Participation Campaign - Aarhus Convention / PRTRs)

Counting on Chemicals- Friends of the Earth Scotland Briefing, January 2002

WEBSITES

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http://www.europa.eu.int/eur-lex/en/lif/dat/1996/en_396L0061.html

Australian national pollution inventory (government home page):
http://www.npi.ea.gov.au

Organisation for economic co-operation and development (OECD) website:
http://oecd.org/ehs/prtr/moreprtr.htm

Czech Republic environmental / PRTR formulation group website ('Pilsen Environment Foundation'):
http://www.ecn.cz/prtr/prtrwide/prtr-en.htm

Friends of the Earth England, Wales and Northern Ireland website:
http://www.foe.org.uk

Scottish Executive website:
http://www.scotland.gov.uk

Scottish Environment Protection Agency Website:
http://www.sepa.org.uk

'International PRTR Activities' - United Nations Environment Programme:
http://www.unep.ch/prtr/intl01.html

'Aarhus Convention: Legislation and Practice in the Czech Republic' - Pilsen Environment Foundation:
http://www.econnect.cz/pen/aarhus/Aarhus2a.htm

Environment Agency of England website:
http://www.environment-agency.gov.uk

Scorecard (US):
http://www.scorecard.org

US Environmental Protection Agency:
http://www.epa.gov/tri

Complete and original text of the Aarhus Convention 1998, compiled by the United Nations Economic Commission for Europe:
http://www.unece.org/env/europe/ppconv.htm

Environment Canada's National Pollution Inventory home page:
www.ec.gc.ca/pdb/npri/npri_home_e.cfm