



5 April 2019

Hon David Parker  
Minister for the Environment  
Parliament Buildings  
Wellington

Hon Eugenie Sage  
Associate Minister for the Environment  
Parliament Buildings  
Wellington

Dear Ministers,

In its 2017 review of New Zealand's environmental performance, the OECD recommended that New Zealand should "establish a Pollutant Release and Transfer Register (PRTR) to collect, and facilitate the public access to information on environmental impacts of private companies". This followed a similar suggestion a decade earlier in its 2007 review.

Since the first pollution inventory was established by the United States in 1987, pollution release registers have been fully developed or piloted in at least 50 countries. Countries with the largest economy profiles such as the United States, Canada, European Union Member States and Australia are the main drivers of PRTR reporting, although smaller developed countries such as Ireland and Switzerland also maintain PRTRs customised to their industrial activities.

New Zealand is now the only developed country without such a register. I am writing to suggest that you conduct an appraisal of the merits of establishing a PRTR and consider whether the reasons that have previously been advanced *not* to develop one still stand up to scrutiny.

There are two main rationales for maintaining a pollutant register. The first is as an adjunct to policy advice and implementation. Over the last fifteen years, the enactment of National Environmental Standards has contributed to the consistent monitoring and management of air quality and soil contamination in soils across New Zealand. However, there is an absence of standardised methods employed to estimate and track hazardous substances and waste releases to the environment.

While initiatives have been implemented in the past (i.e. WasteTRACK which is no longer active or regional public mapping platforms holding information on HAIL sites), there isn't a national platform collecting data on known discharges or information about the maximum allowable discharges for specific chemicals. The

importance of this type of information became apparent recently, when PFAS contamination was reported in different areas around New Zealand including the Ohakea, Woodbourne and Whenuapai airbases, and at the Ōaonui and Ngapirau streams in Taranaki. These events raised alarms about how little we know about the use and discharges of PFAS and the level of contamination in water bodies, land and reusable bio solids.

Following these events, the Ministry for the Environment (MfE) acknowledged the lack of understanding around PFAS use and the need for a database to monitor PFAS.<sup>1</sup> Additionally, it released a PFAS guidance document to assist councils identify potential sites with PFAS contamination, prioritise contaminated sites and assess potential risks for human and ecosystem health.<sup>2</sup>

This brings me to the second rationale for having a pollutant register: a public right to know what is entering the environment. This argument calls for improving the transparency of information on chemicals released to the environment via point and non-point sources. To take the PFAS case as an example, if residents from Ohakea and Woodbourne had known about the possibility of water contamination, they would have been able to decide whether to take drinking water or collect food from the contaminated water bodies. They would also have been in a much better position to hold authorities to account for their actions.

The Ministry for the Environment has been working on initiatives to promote access to information through the implementation of the Environmental Monitoring and Reporting project (EMaR) and the National Environmental Reporting programme in conjunction with StatsNZ. However, no projects have been commissioned yet to address pollutant releases and transfers despite the benefits it could bring to those members of the public using natural resources for recreational purposes or for food gathering and water consumption.

Although New Zealand has not as yet created a PRTR, it did consider the issue some twenty years ago. A 1998 Report commissioned by MfE assessed the feasibility of a PRTR and its conclusions can be summarised as follows: (1) pollution registers (at that stage) had mainly been set up in countries with large manufacturing facilities with significant release thresholds and that their value in small countries lacking this sort of industrial base was questionable; (2) the PRTR approach didn't align well with New Zealand's effect-based legislation; (3) New Zealand's environmental pollution profile largely reflects diffuse, non-point sources; (4) the cost-effectiveness of a PRTR was not clear (or convincing) to stakeholders at the time; (5) a PRTR was not one of the environmental priorities at the time, and; (6) there was a lack of evidence stressing the benefits of PRTRs in overseas settings.

It is certainly true that in 1998 New Zealand faced many other pressing needs in terms of filling gaps in the architecture of its environmental institutions and management including the enactment of the Hazardous Substances and New Organisms Act (1996), the development and implementation of Environmental Performance Indicators and the SOE reporting programme. However, none of these reasons is

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<sup>1</sup><http://www.mfe.govt.nz/sites/default/files/media/Hazards/Tonkin&Taylor%20Non%20foam%20PFAS%20sources%20-%20FINAL.pdf>

<sup>2</sup> <https://www.mfe.govt.nz/sites/default/files/media/Hazards/HEPA-PFAS-NEMP-FINAL-January-2018.pdf>

entirely convincing particularly with the passage of time. I don't believe, in their totality, that they continue to make a decisive case against New Zealand developing its own PRTR. Let me discuss each in turn.

In the first place, the relative modesty of New Zealand's manufacturing sector does not provide a *prima facie* case for exemption from monitoring the release of pollutants to the environment. Other small nations, such as Ireland, have planned and implemented specific chemicals volume thresholds for PRTR reporting suitable to their industrial activities, and have demonstrated the benefits from it. For example, in its latest report, Ireland's EPA used the data collected from its PRTR to identify the trends in hazardous waste management across different industrial sectors. They noted a tendency towards the recovery and treatment of hazardous waste in place of disposal. The recovery of hazardous waste increased by 49%, from 25,556 in 2015 to 38,087 tonnes of waste in 2016.<sup>3</sup> Information like this is increasingly valuable to countries that are seeking to 'sell' the ambient cleanliness of their environments as part of the products they are selling.

**Secondly**, the argument that a PRTR is at odds with effect-based environmental legislation is not decisive. Over the last 20 years, New Zealand legislation has changed considerably, and effects-based environmental regulations such as the National Policy Statement for Freshwater Management (2014), the New Zealand Coastal Policy Statement (2010) and the National Environmental Standards for Air Quality (2004) have incorporated clear biophysical environmental bottom lines or limits. A PRTR would fit with this type of management and could be utilised as a complementary tool to gather information on loads of contaminants released to the environment. Information collected in a PRTR could be further used as baseline data to derive (or reassess) limits for pollutants' releases. Additionally, since 1998, the application of PRTR data has evolved with the development and implementation of chemical scoring systems that can help to identify risks and exposures associated with pollutants' releases.<sup>4,5</sup> These types of scoring systems are now actively applied in countries such as Australia, Canada, the US, and Mexico<sup>6</sup>. The potential use of PRTR data for risk assessments and for the derivation of pollutants limits aligns well with New Zealand current effects-based legislation.

**Thirdly**, the majority of pollution originating from non-point sources (i.e. commercial and domestic use of pesticides and fertilizers, transport and small-scale industrial activities) is not unique to New Zealand and is significant in most countries. Studies from overseas have shown that non-point source pollution accounts for about two-thirds of national-level total loading of pollution, with more than 60% of it attributed to agricultural practices.<sup>7,8</sup> The United Nations published a guidance document to estimate non-point source emissions in 1998<sup>9</sup>, followed by the European Commission

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<sup>3</sup> <http://www.epa.ie/newsandevents/news/pressreleases2018/name,64262,en.html>

<sup>4</sup> [https://www.epa.gov/sites/production/files/2014-03/documents/rsei\\_development.pdf](https://www.epa.gov/sites/production/files/2014-03/documents/rsei_development.pdf)

<sup>5</sup> [http://scorecard.goodguide.com/env-releases/def/tep\\_gen.html](http://scorecard.goodguide.com/env-releases/def/tep_gen.html)

<sup>6</sup> <http://www.npi.gov.au/system/files/resources/24faa1c9-ba5d-0184-cd99-9860c163cac8/files/interpretive-guide.pdf>

<sup>7</sup> U.S.EPA, 2003. National Management Measures for the Control of Non-point Pollution from Agriculture. EPA-841-B-03-004. US Environmental Protection Agency, Office of Water, Washington, DC, pp. 2-8

Ongley, E., Xiaolan Z., Tao Y. 2010. Current status of agricultural and rural non-point source Pollution assessment in China. *Environmental Pollution*. 158(5): 1159-1168.

<sup>8</sup> Xu, Qin. 2014. The study of agricultural non-point source pollution control policy system. Master's Thesis, Michigan Technological University.

<sup>9</sup> [http://cwm.unitar.org/publications/publications/cw/prtr/prtr\\_en/prtr\\_tech\\_support\\_3\\_nov2003.pdf](http://cwm.unitar.org/publications/publications/cw/prtr/prtr_en/prtr_tech_support_3_nov2003.pdf)

diffuse water emissions document providing estimation methods to quantify diffuse releases of pollutants for PRTR reporting.<sup>10</sup> Further guidance documents on diffuse releases estimation techniques (RETs) have been developed and implemented in Australia, Canada, Japan and the USA. Therefore, methods exist for the estimation of non-point-source pollutant releases that could be adopted by New Zealand.

**Fourthly**, while the issue of cost-effectiveness should always be carefully scrutinized, it is too easy to point to compliance costs when the cost of not having information to hand is much harder to assess in advance. It would be interesting to know if, in retrospect, it has been worth not knowing how much PFAS is out there and simply scrambling for resources when a problem arises. The European Commission and the Czech Republic have assessed the regulatory burden of a PRTR on the private sector and have concluded that the impact is not significant. In those jurisdictions, most stakeholders expressed the view that the E-PRTR implementing costs were similar to those required by other environmental reporting obligations.<sup>11</sup>

While the situation in Europe is unlikely to be simply translatable to New Zealand's circumstances, a pollution register in New Zealand would not have to be constructed from scratch. Data on the storage, use and discharge of hazardous chemicals is already collected by industrial and commercial facilities holding resource consents or by the managers of contaminated sites registered under the HAIL programme. Further information is also enforced and collected (but not necessarily made available) by Worksafe under the HSWA and the EPA under the HSNO legislation. A re-examination of the desirability of a PRTR would provide an opportunity to evaluate whether the existing fragmented and partial system of information collection imposes unnecessary costs.

**Fifthly**, now that many other elements of New Zealand's environmental management systems have been developed it would be timely to re-consider the adequacy of our oversight of contaminants emerging from point and non-point sources. As highlighted in MfE's 1998 EPI Programme report, state of the environment monitoring may be the most direct approach to addressing current contamination levels, but can tell us little about predicting future impacts (i.e. a measured chemical cannot be used to estimate future levels of ongoing inputs of it into the environment). Neither can it provide rapid responses to environmental contamination.<sup>12</sup> Furthermore, one of the current environmental priorities in New Zealand is the implementation of a national objective framework to help regional councils set freshwater objectives, which, as mentioned earlier, could be assisted with information provided by a PRTR.

**Finally**, while in 1998 there may have been few reports about the benefit of PRTRs overseas, there is now a wealth of evidence. Reports and scientific papers have addressed the use of PRTRs in environmental decision making in Japan, Australia, Korea and some of the European Union countries.<sup>13</sup> As an example, Japan, Spain and Korea have used PRTR data to assess the risks of effluents from wastewater treatment plants. These assessments have allowed for the identification of amounts of chemical

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<sup>10</sup> <https://circabc.europa.eu/sd/a/dd20cdae-c76a-49b1-bf75-675c15a454d4/Diffuse%20water%20emissions%20in%20E-PRTR%202013%20background%20document.pdf>. [Accessed 9 January 2019].

<sup>11</sup> <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SWD:2017:0710:FIN:EN:PDF> [Accessed 10 January 2019].

<sup>12</sup> <https://www.mfe.govt.nz/sites/default/files/epi-toxic-review-oct98.pdf> [Accessed 11 Jan 2019].

<sup>13</sup> Kwon Y. et al., 2014. Changes of Heavy Metals in Pollutant Release and Transfer Registers (PRTRs) in Korea. *International Environmental Research Public Health*. 11(3): 2381-2394.

released by sector, the exceedances above thresholds<sup>14,15</sup> and the calculation of hazardous quotients necessary to assess environmental risks resulting from the re-use of treated wastewater for irrigation.<sup>16</sup>

In proposing that you re-examine the case for developing a PRTR, I would note that New Zealand already collects a wide range of information on different pollutants. For example, the National Air Emission inventory for greenhouse gases is collated and released on an annual basis, and many hazardous substances are tracked and monitored as part of hazardous substance and health and safety requirements. Similarly, local government collects information on discharges of pollutants as part of its monitoring of compliance with consented activities.

In many cases, the information needed to populate a PRTR will already exist. Of course, this information would need to be examined to see whether it was fit for purpose or what other information collection or interpretation might be required.<sup>17</sup> The national environmental reporting programme can play a vital role in this task.<sup>18</sup> While a pollution registry system wouldn't be able to fill the information gaps we currently have, it could assist in collecting harmonized data in a single platform, thereby improving our ability to assess environmental risks and improve operational oversight.

There are also several information collation and interrogation initiatives underway that could help in the development of a PRTR. Both the Environmental Protection Authority's Chemical Map, and Fire and Emergency New Zealand's mapping platform could provide useful frameworks and systems to form the basis of a pollution register for New Zealand.

To illustrate what we know and don't know about the discharge of contaminants to the environment, I have prepared a brief description of reporting under current arrangements on five substances or classes of substance. They are: sulphur dioxide, chlorinated solvents, arsenic, atrazine, glyphosate and neonicotinoids. These are annexed to this letter. As you will see, it is not that we know nothing but rather that we have only partial information, often without any idea about the quantum or locality of the environmental burden that is accumulating.

I would like to emphasise that these contaminants have not been chosen because I think should be included in a PRTR – that has not been the purpose of my enquiries. Rather they were chosen to illustrate the different levels of information that are available. I should also point out that the fact that something is not currently

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<sup>14</sup> Cabanillas, J. et al. 2012. Fuzzy logic based risk assessment of effluents for wastewater treatment plants. *Science of the Environment*. 439: 202-210.

<sup>15</sup> Xue, Mianqiang et al. 2018. Application of fuzzy c-means clustering to PRTR chemicals uncovering their releases and toxicity characteristics. *The Science of the Total Environment*. 622-62: 861 868

<sup>16</sup> Takeda, F. et al. 2015. Initial Environmental Risk Assessment of Japanese PRTR in Treated Wastewater. *Journal of water and Environmental Technology*. 13 (4): 301- 312.

<sup>17</sup> For example, information collected on discharges is neither consistent across councils nor collated into one national database.

<sup>18</sup> The last two National State of the Environment reports have identified the gaps in environmental information. For example, the *Our Land Report 2018* highlights the need for better and robust databases to collect data from land contamination. The report noted the lack of a nationally database for land use, its intensity (in terms of fertilizers and pesticides use), and highlighted the variation in data quality and collection methods to address environmental impacts from legacy and current mining activities, oil and gas production and quarrying operations.

perceived to pose of a problem does not of itself mean there is no value in knowing about its incidence or prevalence in the environment. Knowledge about where and in what quantities contaminants have been used can provide valuable baseline information should questions or unforeseen problems arise in the future. In this sense, requiring the collection and maintenance of information can be seen as a precautionary investment.

Inevitably, any judgment about constructing the architecture of a PRTR must reflect on the cost of doing so and the benefits that could be derived from one. In this regard I feel it worth underlining that such an undertaking would need to be incremental, focusing on those pollution pressures that are most relevant to New Zealand's environment as a producer of food and biological materials. There would be little point in replicating the substance lists that large industrial economies have developed. Equally, where the scale of releases *is* worth tracking (say, for example, pesticides), there are good reasons to take stock of how other economies have approached data collection since there is now a move to harmonise PRTRs to enable policy makers to understand the global loadings of some pollutants.

I recommend that you commission an independent assessment of the case for developing a New Zealand-relevant PRTR. In doing so you should spend some time talking to OECD experts who have the best feel for what has been trialled internationally and who are responsible for maintaining a knowledge platform to support the efforts of governments.

As a succession of environmental domain reports have demonstrated, one of New Zealand's challenges is a dearth of high quality information on which policy can draw. The absence of a PRTR is one of the information gaps that makes it difficult to draw conclusions about some important environmental pressures and therefore respond to them.

I would welcome the opportunity to meet with both of you to discuss this matter further.

Yours sincerely,



Rt Hon Simon Upton  
Parliamentary Commissioner for the Environment

CC:

Dr Allan Freeth, Chief Executive of the Environmental Protection Authority

Rhys Jones, Chief Executive of the Fire and Emergency New Zealand