

European Pollutant Release and Transfer Register (E-PRTR)

Capturing and reporting industrial pollutant emissions data

In November 2009, the European Commission (EC) and the European Environment Agency (EEA) launched a new web-based European Pollutant Release and Transfer Register (E-PRTR), replacing the previous European Pollutant Emission Register (EPER).

The new web-based register can be found at <http://prtr.ec.europa.eu> and provides public access to pollutant emissions data covered under the terms of the E-PRTR Regulation ((EC) No 166/2006). These data are submitted by about 24,000 industrial and agricultural facilities across the EU-27 Member States plus Iceland, Norway and Liechtenstein.

An article in the Autumn 2007 CONCAWE *Review* (Vol. 16, No. 2) reviewed the main differences between EPER and the new E-PRTR, and made specific recommendations to facility operators regarding the need for accurate collection and reporting of data. This article re-emphasizes the need for accurate and complete reporting and explores some key issues that have been identified in the new web-based register.

Collection, reporting and publication of pollutant emissions data

Under the previous EPER requirements, pollutant emissions data were collected every three years, in 2001 and 2004. The new E-PRTR Regulation now requires that facilities exceeding certain thresholds report pollutant emissions every year starting in 2007. This would have been the third EPER reporting year under the previous regulation. The 2008 data will be available later this year under the new E-PRTR Regulation.

The E-PRTR Regulation specifies a reporting threshold for 91 different substances that have been classified as pollutant emissions. Facilities which fall within the threshold for any of these pollutants are required to report data on:

- releases to air, water and land;
- off-site transfers of pollutants in waste water that is treated outside of the facility; and
- off-site transfers of waste for recovery or disposal.

Pollutant emissions data must be reported for deliberate and routine releases as well as for emissions associated with accidental and non-routine activities. All reporting facilities are named.

The reporting process comprises a number of discrete steps. First, each facility is responsible for collating data for each of its releases and submitting the yearly totals to the relevant authority. This authority is then responsible for compiling the data from all sectors and conducting data validation tests. The compiled data are then submitted to the EC where the final data are entered into a single database for publication on the E-PRTR website. Experience with the first dataset from 2007 is that this publication on the website is really the first opportunity to review the data in its entirety. Should the reporting countries identify any errors with the data appearing on the E-PRTR website, then a window of opportunity exists for amending the data or rectifying omissions.

This data correction process took place in the first quarter of 2010 for the 2007 data. Some of the findings concerning data completeness and errors are now available as a report that can be accessed from the *About E-PRTR* page of the website. Eight member states reported a few errors in their submissions for 2007 while two other countries (Germany and Italy) reported that data, known to have been collected for a considerable number of facilities, were missing entirely from the database. The lost data included submissions from a number of oil refineries in both of these countries.

The report explains that the incomplete data reporting was due to a combination of technical issues related to

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data format, confidentiality claims, and delays in data collection, validation and compilation. The expectation is that these errors will be corrected in 2010 during the 2008 data submission phase, when reporting countries will also have the opportunity to re-submit corrected data for 2007. It is clear, therefore, that the current version of the E-PRTR database will be incomplete, at least until the next update of the E-PRTR database, and hence will be misleading to those interested in undertaking sectoral analyses.

Initial review of air pollutant data

The E-PRTR website includes a search engine which enables searches to be carried out using one or more criteria, for example, by pollutant, facility, country/region/river basin, industrial/economic sector, etc. In addition, a 'map search' option provides a graphical approach to searching the E-PRTR database. The complete database (in Microsoft Access format) can also be downloaded via the website.

As well as information on controlled releases from facilities, the register currently contains limited data on emis-

sions from diffuse sources to water. This feature will be expanded in due course as more information becomes available.

Historical data from the 2001 and 2004 EPER submissions are also available in the E-PRTR, allowing a trend analysis for common substances.

Using these search facilities, for example by industrial activity or economic sector, it is possible to refine the search according to specific sectoral codes. The two sectoral codes that are relevant to oil refineries are:

- Industrial Activity (IA) Code 1.(a): 'mineral oil and gas refineries'; and
- Economic Sector (NACE) Code 19.2: 'manufacture of refined petroleum products'.

Although most IA codes are limited and tend to be somewhat generic, the refining sector is fortunate in that there is a particularly tightly-scoped IA code covering 'mineral oil and gas refineries'. In comparison, there are 740 NACE codes that are very specific for each economic sector.

The E-PRTR website, at <http://prtr.ec.europa.eu>, includes a search engine that enables searches to be carried out using a range of criteria; this example shows a request for 'Industrial Activity' data.

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Classification of facilities

Using these search features, CONCAWE has undertaken an initial review of the data provided in the E-PRTR database for pollutant emissions to air from those facilities which fall within the sectoral codes for oil refineries.

In the first release of the E-PRTR database, 172 facilities were classified with IA Code 1.(a) and 160 with NACE Code 19.2. Unfortunately, the number of facilities classified with these codes is considerably greater than the number of oil refineries that are known to actually exist in the reporting countries. By examining the 105 facilities that are coded as 1.(a) and as 'oil refineries' in the register, it can be seen, for example, that a number of these include very specialised sites manufacturing lubes or bitumen. It is clear, therefore, that the database includes a significant number of facilities that have been incorrectly classified.

One very obvious example of a coding error is an Italian poultry farm that has been allocated the correct Economic Sector (NACE) code but which has an IA classification identifying it as an oil refinery!

A number of the remaining facilities that are clearly not 'refineries' are related to upstream oil and natural gas activities. For example, some facilities listed under IA Code 1.(a) have NACE codes that classify their economic activity as 'extraction of natural gas' or 'support activities for petroleum and natural gas extraction'. An example of this is the misclassification of two UK gas pipeline compressor stations as refineries. Although certain sites may have the correct NACE code, no IA code is available which accurately describes their activity.

So why is this important? The inclusion of these incorrectly coded sites within IA Code 1.(a) results in a sectoral estimate of total emissions for some pollutants that is significantly greater than those for which oil and gas refineries are actually responsible. For example, facilities that are not oil refineries but are listed in E-PRTR under IA Code 1.(a) contribute 99% of the total sectoral emissions of hydrofluorocarbons (HFCs), 61% of hydrochlorofluorocarbons (HCFCs), 46% of methane, and 19% of carbon monoxide.

There are similar issues with facilities that are incorrectly identified with NACE Code 19.2. These errors have a smaller, although still significant, impact on total sectoral emissions. For example, facilities identified with NACE Code 19.2 but which are clearly not oil refineries are responsible for 31% of total emissions of HCFCs and 20% of total CO emissions.

Thus, there are two serious problems with the current E-PRTR classification scheme:

- sites which have been allocated an incorrect code; and
- upstream oil and gas facilities for which no IA code exists to accurately describe their 'industrial activity'.

It should be relatively easy for a facility to identify which NACE code accurately describes their activity because these codes are quite specific. However, a supplementary list should be added to the EC *Guidance Document for the Implementation of the European PRTR*, providing the NACE codes and their corresponding IA codes in order to reduce the number of misclassifications. This information should be provided in addition to the current Annex 1 Industrial Activities list.

For upstream facilities, there is also a clear need for IA codes that would allow these facilities to be properly segregated from mineral oil and gas refineries.

The addition of new codes would appear to fall within the remit of the committee established under the terms of Article 19 of the E-PRTR Regulation. CONCAWE has already highlighted the type of classification errors that it has identified, and the EC has undertaken its own analyses to confirm these findings. It is clear that sectoral analyses of this type are valuable in identifying errors and omissions and CONCAWE will continue to work closely with the EC to find ways to reduce errors in the register. Although our particular focus is to ensure that facilities listed under our own industry's sector codes are correct, the lessons learned will be of much wider benefit.

A key message for refineries is that they can also help to reduce the number of errors in the E-PRTR database by checking their individual codes and data on the register.

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If sites identify any errors, then these should be reported to their competent authority for correction. It would also be helpful to notify CONCAWE, who can then report the correction for the sector. It is almost inevitable that errors will be found given the complexity of the data collection process and the amount of data handling between a facility reporting its pollutant emission data and the transcription of the collated data into the electronic register.

The need for data quality

It is, of course, essential that data provided by all industries are complete and accurate. The purpose of the on-line database is to allow the general public to easily search for information on pollutant emissions from individual facilities, across national regions, and from specific industrial sectors. Moreover, the review of pollutant emissions data over time will provide an important indication of the effectiveness of pollution control measures and legislation. It is important for the data to be properly handled and correctly coded prior to input, in order to ensure that the potential of the E-PRTR is fully realised.

Key points

The web-based E-PRTR is now available on-line and contains 2001, 2004 and 2007 pollutant emissions data from every European facility that exceeded reporting thresholds. All facilities are named.

The current (first) version of the E-PRTR contains a number of coding errors and omissions and these must be corrected. Until a corrected 2007 dataset has been published, however, the reported emissions from non-refinery facilities can have a significant impact on the sectoral total for some pollutant emissions, such as HFCs, HCFCs, methane and CO. This could easily result in a misrepresentation of the emissions data for our industrial sector.

The complexity and volume of data handling, from the collation of individual site data to their publication in the E-PRTR database, provides real potential for data errors to occur. Refineries should check their data in the E-PRTR, report any errors they find to their competent

authorities, and notify CONCAWE so that a sectoral overview of issues can be developed for further discussions with the EC and EEA.

To help with this reporting, CONCAWE published a new edition of the report, *Air pollutant emission estimation methods for E-PRTR reporting by refineries* (Report 1/09) in 2009. This report is accompanied by a software toolkit, available to CONCAWE member companies only, to assist facilities in their emission calculations. The aim of this report is to promote consistency and completeness in the estimation of pollutant emissions to air, and the guidance provided in the report has been accepted as a sector-specific methodology by the European Commission.

CONCAWE also continues to provide input to the revision of the EMEP/EEA *Air pollutant emissions inventory guidebook*, which is recognised by the European Commission as providing an internationally approved calculation methodology. This is important work to ensure that updated sectoral information is rapidly assimilated and harmonised. As a result, nearly all of the emissions factors for the refining sector in the EMEP/EEA publication are now aligned with CONCAWE Report 1/09.