

## **Introduction to the spatial allocation factsheets of the Netherlands Pollutant Release & Transfer Register (PRTR)**

The main objective of the PRTR is to determine national emission totals. A second important task is to map out the spatial distribution of emissions in the Netherlands, as this gives an idea of the developments on a regional scale. As these can be different from trends on a national scale, this is especially important for the development and evaluation of regional environmental policy.

For each of the spatial allocation categories the PRTR, uses, a factsheet is available. These factsheets contain a brief description of the methods used, an example of the relevant distribution map, references to background documents and a list of the institutes concerned. Furthermore, an Excel sheet is available which can be used to link emission, emission source, allocation and factsheet.

Methods used for spatial allocation fall into three categories:

- direct linkage to location
- model calculation
- estimation through 'proxy data'

The first category applies only to point sources (usually large ones) of which both the location and the emissions are known. This initially concerns all companies that are required by Dutch law to report their air and water emissions by means of a so-called 'electronic environmental annual report' (known by the Dutch abbreviation e-MJV). In addition, data are obtained from Statistics Netherlands (CBS) about a number of substances (nitrogen, phosphate, heavy metals) in the effluent of sewage treatment plants (RWZIs). Finally, emissions to the air from small airports are supplied as point sources. Altogether, this category encloses almost three thousand sources.

For the topics below, the spatial distribution is based directly on model calculations:

- Ammonia from agriculture
- Particulate matter (PM<sub>10</sub>) from agriculture (barn emissions)
- Deposition on surface water
- Leaching and run-off to surface water (heavy metals and nutrients)
- Emissions of crop protection chemicals to air and surface water

Due to the uncertainties (which are sometimes large) in both basic data and methods used in modelling, results are not shown at the highest possible level of detail but are aggregated. The minimum level of aggregation is the water-discharge unit (for emissions to water) and the 1 x 1 km grid cell (for emissions to the air). On this basis, further summation can take place, for example to indicate the emissions per municipality, province or catchment basin.

Finally, there are the emissions for which the distribution is approached by means of an allocation key; this is the largest group. Examples of these allocation keys are population and housing density, vehicle kilometres (roads, shipping routes, and railways), land cover and numbers of jobs per business. The quality of this approximation not only relates to the nature of the source, but also to the availability of data. Here as well, there may be large uncertainties in the basic data, and the most detailed presentation level is 1x1 km.

Some emission sources may have multiple spatial allocations: residential space heating, for example, is allocated according to the type of housing (6 categories). In these cases, the total emission is spread over the available allocations according to agreements between PRTR and the Netherlands Organization for Applied Scientific Research (TNO).

### ***How does the Excel sheet work?***

The Excel sheet contains the link between the emission source, the allocation of the emissions and the description in the factsheet. In order to search for the allocation(s) linked to a specific emission source, the data in the sheet can be filtered according to the name (emission source description), the code (emission source code) or parts thereof. Of course, the reverse is also possible; for example, one could determine the emission sources for which emissions are allocated according to the number of residents. Example: for the emission source 'Residential combustion, space heating '(0012102) it can be seen that the spatial allocation is based on the spatial distribution of six housing types. Factsheet number 21 provides further information on the method used.