FAQ

Arpa Lombardia
15:44 11/07/2017

Table of Contents

FAQ

What is an emission inventory?

Air Emission Inventories (AEIs) can be considered as a structured collection of both information about emissions and technological, economical and territorial data. By organizing data, inventories permit the individuation of pollution sources and their localization. By quantifying emissions, they permit the best feasible allocation of emitted pollutants to the originating sources. The management of air quality and the necessity of imposing effective limits to pollutant emissions into the atmosphere require the availability of that kind of quantitative information about emissions. Thus, AEI are a powerful instrument to satisfy this need.

The optimal methodology to set up an emission inventory would implies the direct quantification, by means of measurements, of all emissions of the different sources in the appointed area of the inventory during the selected time frame. However, this "analytical" approach can be used exclusively for some specific typologies of pollutants (i.e. sulfur dioxide, nitrogen oxides, carbon monoxide) and sources whose emissions are generally relevant and for this reason are mandatorily checked by means of in-continuous monitoring systems - typically those of great industrial plants (i.e. thermal power plants, waste incinerators, cement industries).

It is then necessary to apply the most common approach used in AEIs, which carries out emissions' evaluations by means of an indicator that characterizes the source activity and by means of an emission factor that is specific for the typology of the source, of the industrial process and of the adopted purification technology. This method is based on a linear relation between sources activity and emission, following a relation that can be generally outlined as:

Ei = A · FEi

where:

Ei = emission of the pollutant (g y-1);

A = activity indicator, i.e. produced amount of a certain good, fuel consumption, etc. (t y-1);

FEi = emission factor for the considered pollutant (g t-1 of product).

Thus, the reliability of this estimate depends on the precision of the emission factors, which is specific for each single production process and can vary depending on the plant typology.

Within an inventory, emissions are usually divided in the following categories:

"area sources", scattered on the territory, assessed by means of proper indicators and emission factors;

"point sources", pollution sources which can be geographically located, assessed by measured data collected by means of a special census; for some pollutants which have not been monitored, emissions can be estimated through the linear relation previously mentioned and then allocated to the source;

"linear sources", such as roads, assessed by means of proper indicators and emission factors, generally by detailed methodologies.

Gestione dei risultati Inventario delle emissioni Home INEMAR Progetti INEMAR