

Explaining the City Fiche

The first part of this “city fiche” analysis provides some general information regarding the location of the urban area, its population, and the geographical extension of its core city and greater city areas. The black triangle in each city map (top-left) represents the location where source allocation is performed.

Information on measured $PM_{2.5}$ and PM_{10} concentration levels and on their compliance with the standards in the EU Ambient Air Quality Directive (AAQD) and the World Health Organization (WHO) air quality guideline is given in the top-right of the fiche. The histogram in each fiche provides an overview of reported PM concentrations in the considered cities³, while the colour coded dots indicate the values measured at all background monitoring stations located in the greater city area (green: below WHO guidelines; red: above AAQD limit values; orange: in between).

The central panel of the fiche contains the summary source allocation diagram. This diagram breaks down contributions in terms of their spatial (along the vertical axis) and sectoral (along the horizontal axis) origins. All values are expressed as relative percentages of the urban concentration (at the receptor point). The top bar provides the ‘total sectoral breakdown’, i.e. the contribution of different sectors to the total concentration of the urban background yearly average $PM_{2.5}$ concentrations. Note that the sum of all contributions, including the natural one, is usually less than 100%. The contributions that cannot be allocated are therefore attributed to ‘external’ emissions from outside the domain. Because of uncertainties the sum of all contributions, including the natural one, are in a few cities slightly larger than 100%. In such cases, contributions are rescaled to sum up to 100%, for consistency. The bars beneath provide similar information but in terms of spatial dimensions. For the largest cities, four spatial areas are considered (core city, commuting zone, rest of country, transboundary) while for smaller cities, the first two scales are merged.

The lower and central-right panel provides an overview of the emission breakdown used for the calculations for primary particulate matter ($PPM_{2.5}$), nitrogen oxides (NO_x), sulphur dioxide (SO_2), non-methane volatile organic compounds (NMVOC), and ammonia (NH_3). Each of the graphs shows the dominant sectors for each emitted air pollutant in the core city (red, when available) and the greater city (blue).